



Bear 1 well analysis concluding, CPAI earns lease rent reduction

On June 26 Alaska's Division of Oil and Gas approved a rental reduction for ConocoPhillips Alaska Inc.'s 74 contiguous leases on 136,197 acres in a vertical block along the eastern border of the National Petroleum Reserve-Alaska. The non-unitized leases are 19 miles south of the village of Nuiqsut.

CPAI earned the reduction by completing exploration and development work during the primary term of the leases, work that included drilling the Bear 1 wildcat well this past winter.

Prior to spudding Bear 1 in February, CPAI acquired and processed the Bear 3D seismic survey. Additionally, the company licensed well data for the Horseshoe 1 well, Stirrup 1 well, and the Horseshoe 3D and Kuukpik 3D seismic surveys that covered portions of the 74 leases. CPAI conducted analysis of the data including reprocessing of seismic surveys, fluid and rock samples, surface sediment sampling and analysis for hydrocarbon typing.



EREC ISAACSON

see RENTAL REDUCTION page 12

Alaska looks to hold geothermal lease sale for Mount Spurr area

On June 23 the Alaska Department of Natural Resources' Division of Oil and Gas said it is designating 38,315 acres on the south flank of Mount Spurr as a competitive geothermal area.

The intent of this preliminary written decision, signed by division Director Derek Nottingham, is to approve a lease sale over the acreage, which is on the west side of Cook Inlet, northwest of Trading Bay, and includes the east end of Chakachamna Lake and a portion of the Chakachatna River. The sale area is approximately 40 miles west of the village of Tyonek and roughly 80 miles west of Anchorage.

Disposals in this area for geothermal exploration have been approved in the past, with geothermal lease sales in May 1983, June 1986 and in 2008. The division awarded two non-

see GEOTHERMAL LEASES page 10

AOGCC fines ConocoPhillips \$913,796.80 for CD1 gas release

The Alaska Oil and Gas Conservation Commission has issued its investigation findings and notice of proposed enforcement action for the subsurface blowout and gas release at Alpine CD1 in the Colville River unit on the North Slope in March 2022, proposing a civil penalty on ConocoPhillips Alaska, the Colville River unit operator, of \$913,796.80.

ConocoPhillips has 15 days to respond; if it does not, the commission said, the proposed action will be deemed accepted by default.

The commission said June 28 it reviewed what was initially described as a gas release incident, reported by ConocoPhillips March 4, 2022.

While the incident was originally referred to as a gas release, that was "because the cause of the release and the source of the gas, was not immediately known. The AOGCC has concluded, based on its investigation, that the CD1 gas release was in fact a shallow underground blowout of the WD-03 well due to the uncontrolled nature of the event and

see CONOCO FINED page 10

EXPLORATION & PRODUCTION

Going back in

Unitizing Grey Owl; well to twin 1969 W Kavik, Brookian Canning oil to Badami

By KAY CASHMAN

Petroleum News

As previously reported, in early June Glacier Oil & Gas acquired a minority interest partner in a deal that expanded its lease holding on the eastern North Slope to include the Grey Owl prospect, which is approximately 25 miles south of the Badami unit.

Operated by Balcony Natural Resources the Grey Owl leases had been controlled by JPD Family Holdings, which is Glacier's new minority partner having traded Grey Owl for its ownership.



DAVID PFEIFFER

Per the public notice posted by the Alaska Department of Natural Resources' Division of Oil and Gas, on June 22 Balcony filed to unitize the Grey Owl prospect, which encompasses 52 leases on 74,677 acres. Per the application and division lease records, Balcony holds a 100% working interest in the Grey Owl leases.

The unit application was signed by Balcony Chief Financial Officer David Pfeiffer.

Balcony's proposed initial 5-year plan of exploration for the Grey Owl unit calls for the drilling of

see GREY OWL UNIT page 9

UTILITIES

Gas supply options

Imported LNG to Kenai included in phase 1 of Railbelt utilities assessment

By KRISTEN NELSON

Petroleum News

Imported LNG is on the table as Railbelt utilities look at ways to meet natural gas demand later this decade. So is North Slope gas, but the challenges to moving that gas to the Railbelt in time to meet expected shortfalls in supply present a major stumbling block. And there is more gas in Cook Inlet but developing that gas is challenged and it would probably only provide a short-term supply.

Those were major results of phase 1 of an assessment of Cook Inlet natural gas supply and demand released by the Alaska Railbelt utilities working group June 28.

In a statement the working group members —

The companies said developing additional supplies from Cook Inlet "is viewed only as a very short-term fix, given the challenging market conditions limiting the economically recoverable volumes of gas remaining."

Enstar Natural Gas, Chugach Electric Association, Interior Gas Utility, Homer Electric Association, Matanuska Electric Association and Golden Valley Electric Association — said the assessment is part of a multi-phase project to find near- and long-term solutions for Cook Inlet gas supply users.

see GAS SUPPLY page 8

FINANCE & ECONOMY

Bears gain upper paw

Massive US crude draw boosts ANS June 28; fails to stem five-day slide

By STEVE SUTHERLIN

Petroleum News

Alaska North Slope crude jumped \$1.47 June 28 to close at \$75.48 per barrel, while West Texas Intermediate leapt \$1.86 to close at \$69.56 and Brent popped \$1.77 to close at \$74.03.

The leap was stimulated by a much larger than anticipated weekly drawdown of U.S. oil reserves for the week ending June 25.

U.S. commercial crude oil inventories — excluding Strategic Petroleum Reserve actions — fell by 9.6 million barrels from the previous week, the U.S. Energy Information Administration said in its June 28 report. At 453.7 million barrels,

"Supply concerns, geopolitical turmoil, and the long-term technical picture suggest that oil may be ready to resume its uptrend soon." —Andrew Rocco, Zacks investment analyst

inventories were 1% below the five-year average for the time of year. Analysts polled by Reuters had expected a draw of 1.8 million barrels. SPR reserves fell by 1.4 million barrels to 346.6 million barrels.

Prices suffered a loss June 27. ANS dropped

see OIL PRICES page 7

● EXPLORATION & PRODUCTION

US rotary count continues drop, down by 5

The number of working rigs, 682, has declined for eight consecutive weeks and is the lowest it has been since April of last year

By **KRISTEN NELSON**
Petroleum News

The Baker Hughes' U.S. rotary drilling rig count continued its drop June 23, down five to 682 from the previous week's count of 687 and down 71 from 753 for the same period a year ago. A drop of 17 on May 12 was the steepest drop since June of 2020. The June 23 count is the lowest since April 1, 2022, when the count was 673. The count dropped below 700 the week ending June 2, the first time it has been below 700 since April 2022.

The count has dropped for eight consecutive weeks, with the current count down from 748 eight weeks ago and down from a high so far this year of 771 on Jan. 20. The high for 2022 was a count of 784 rigs at the beginning of December.

When the count dropped to 244 in mid-August 2020, it was the lowest the domestic rotary rig count had been since the Houston based oilfield services company began issuing weekly U.S. numbers in 1944.

Prior to 2020, the low was 404 rigs in May 2016. The count peaked at 4,530 in 1981.

Baker Hughes shows Alaska with eight rotary rigs active June 23, down by one from the previous week and unchanged from a year ago.

The count was in the low 790s at the beginning of 2020 prior to the COVID-19 pandemic, where it remained through mid-March, when it began to fall, dropping below what had been the historic low in early May with a count of 374 and continuing to drop through the third week of August 2020 when it gained back 10 rigs.

The June 23 count includes 546 rigs targeting oil, down six from the previous week and down by 48 from 594 a year ago, with 130 rigs targeting natural gas, unchanged from the previous week and down 27 from 157 a year ago, and six miscellaneous rigs, up by one from the previous week and up by four from a year ago.

Fifty of the rigs reported June 23 were drilling directional wells, 613 were drilling horizontal wells and 19 were drilling vertical wells.

Alaska rig count down by 1

New Mexico (106) was up by two rigs from the previous week and Pennsylvania (23) was up one.

Louisiana (47) was down three rigs week over week, while Texas (345) was down two.

Alaska (8), North Dakota (35) and West Virginia (12) were each down by a single rig.

Rig counts in other states were unchanged from the previous week: California (2), Colorado (16), Ohio (13), Oklahoma (42), Utah (13) and Wyoming (17).

Baker Hughes shows Alaska with eight rotary rigs active June 23, down by one from the previous week and unchanged from a year ago. All eight of the Alaska rigs were onshore, down one from the previous week, and no rigs were working offshore, unchanged the previous week.

The rig count in the Permian, the most active basin in the country, was down by one from the previous week at 341 and down by eight from 349 a year ago. ●

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EXPLORATION & PRODUCTION

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The number of working rigs, 682, has declined for eight consecutive weeks and is the lowest it has been since April of last year

4 ANS production down by 6,496 bpd, 1.4%

Drop April to May; largest volume declines at Prudhoe, Colville River, Milne, Point Thomson; largest gain at Greater Mooses Tooth

SIDEBAR, PAGE 4: Cook Inlet natural gas down 4.2%

PIPELINES & DOWNSTREAM

7 RCA receives application for Willow line

With necessary approvals, vertical support member construction would begin in January, with pipeline completion in September 2027

THIS MONTH IN HISTORY

6 California exploring LNG options

20 years ago this month: Valdez-sponsored LNG summit hears from California regulators, project proponents on subject of Alaska LNG



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ENGINEERS

Alaska-Mackenzie Rig Report

Rig Owner/Rig Type Rig No. Rig Location/Activity Operator or Status

Alaska Rig Status

North Slope - Onshore

All American Oilfield LLC			
IDECO H-37	AAO 111	Stacked in MagTec's Yard	Available
Doyon Drilling			
Dreco 1250 UE	14 (SCR/TD)	Milne Point, M-64	Hilcorp Alaska LLC
Dreco 1000 UE	16 (SCR/TD)	Standby	Available
Dreco D2000 Uebd	19 (SCR/TD)	Standby	Available
AC Mobile	25	Alpine, MT7-14	ConocoPhillips
OIME 2000	141 (SCR/TD)	Standby	Available
	142 (SCR/TD)	Kuparuk, 1C-157	ConocoPhillips
TSM 700	Arctic Fox #1	Demobilizing	Available
ERD	26	Alpine, CD4-588	ConocoPhillips
Hilcorp Alaska LLC			
Rotary Drilling	Innovation	Prudhoe Bay, Z Pad	Hilcorp Alaska LLC
Nabors Alaska Drilling			
AC Coil Hybrid	CDR-2 (CTD)	Milne Point, B-15A	Hilcorp Alaska LLC
AC Coil	CDR-3 (CTD)	Kuparuk	ConocoPhillips
Dreco 1000 UE	7-ES (SCR-TD)	Kuparuk	ConocoPhillips
Dreco 1000 UE	9-ES (SCR/TD)	Stacked	Available
Oilwell 2000 Hercules	16-E (SCR/TD)	Stacked	Brooks Range Petroleum
Emsco Electro-hoist			
Oilwell 2000 Canrig 1050E	27-E (SCR-TD)	Stacked	Available
Academy AC Electric CANRIG	99AC (AC-TD)	Stacked	Available
OIME 2000	245-E (SCR-AC-TD)	12 Acre Pad, stacked	Available
Academy AC electric CANRIG	105AC (AC-TD)	Stacked	Available
Academy AC electric Heli-Rig	106AC (AC-TD)	Stacked	Available
Nordic Calista LLC			
Superior 700 UE	1 (SCR/CTD)	Deadhorse	Available
Superior 700 UE	2 (SCR/CTD/TD)	Deadhorse, stacked	Available
Ideco 900	3 (SCR/TD)	Kuparuk	ConocoPhillips
Rig Master 1500AC	4 (AC/TD)	Oliktok Point	ENI
Parker Drilling Arctic Operating LLC			
NOV ADS-10SD	272	Pikka	Santos
NOV ADS-10SD	273	Undergoing startup maintenance	Hilcorp Alaska LLC

North Slope - Offshore

Doyon Drilling			
Sky top Brewster NE-12	15 (SCR/TD)	Demobilizing	ENI
Nabors Alaska Drilling			
OIME 1000	19AC (AC-TD)	Oooguruk, Cold Stacked	ENI

Cook Inlet Basin – Onshore

BlueCrest Alaska Operating LLC			
Land Rig	BlueCrest Rig #1	Stacked	BlueCrest Alaska Operating LLC
Nordic Calista LLC			
Land Rig	Rig 37	Kenai, stacked	Glacier Oil & Gas
	36 (TD)	Kenai, stacked	
Hilcorp Alaska LLC			
TSM-850	147	Beluga River Unit, F Pad	Hilcorp Alaska LLC
TSM-850	169	Pearl Pad	Hilcorp Alaska LLC

Cook Inlet Basin – Offshore

Hilcorp Alaska LLC			
National 110	C (TD)	Platform C, Stacked	Hilcorp Alaska LLC
	Rig 51	Steelhead Platform, Stacked	Hilcorp Alaska LLC
	Rig 56	Monopod A-13, stacked	Hilcorp Alaska LLC
Spartan Drilling			
Baker Marine LLC-Skidoff, jack-up		Spartan 151, Tyonek Platform	Hilcorp Alaska LLC
Glacier Oil & Gas			
National 1320	35	Osprey Platform, activated	Glacier Oil & Gas

Mackenzie Rig Status

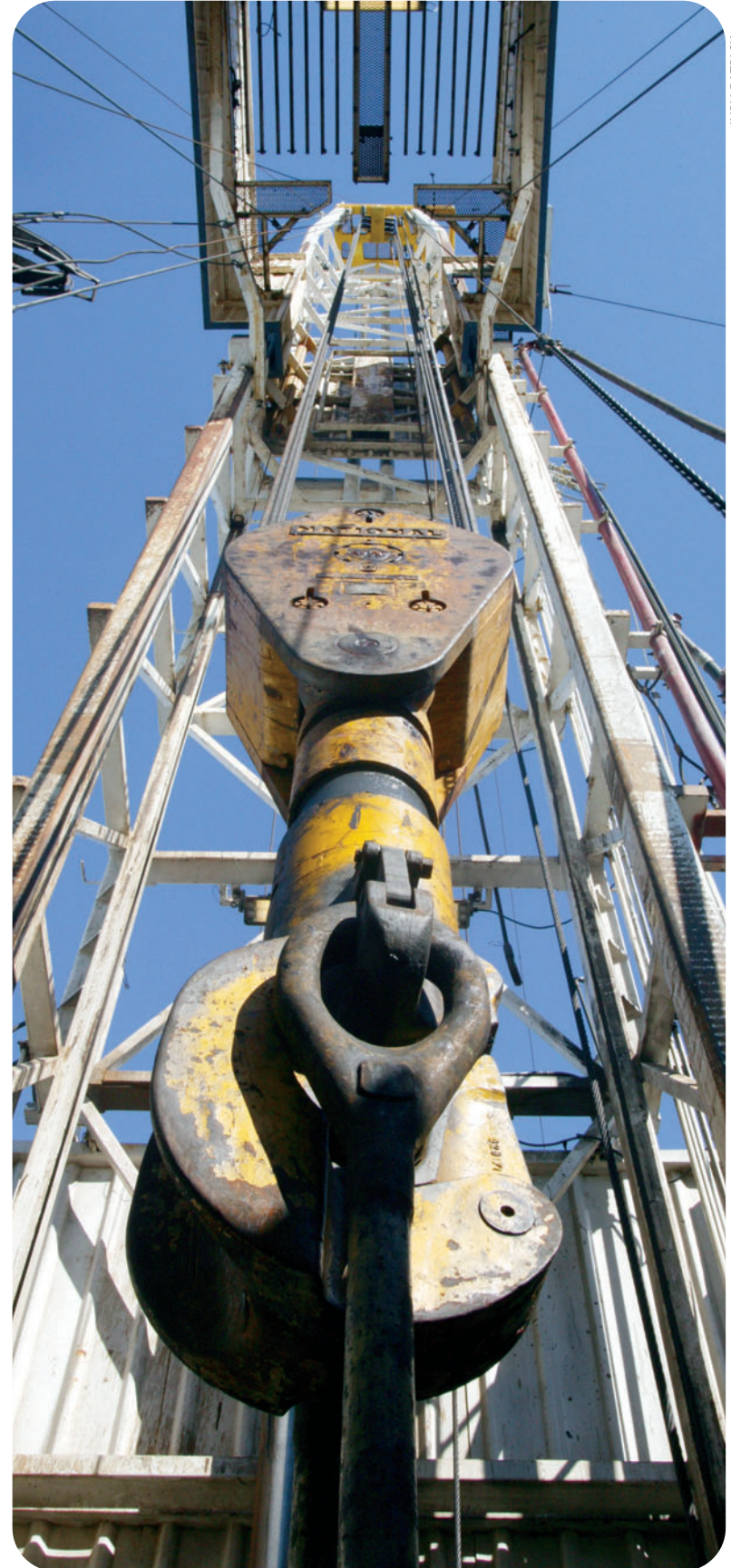
Canadian Beaufort Sea

SDC Drilling Inc.			
SDC Mobile Offshore Drilling Unit Rig #2		Set down at Roland Bay	Available

The Alaska-Mackenzie Rig Report as of June 28, 2023.
Active drilling companies only listed.

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

This rig report was prepared by Marti Reeve



JUDY PATRICK

Baker Hughes North America rotary rig counts*

	June 23	June 16	Year Ago
United States	682	687	753
Canada	169	159	154
Gulf of Mexico	18	19	15

Highest/Lowest

US/Highest	4530	December 1981
US/Lowest	244	August 2020

*Issued by Baker Hughes since 1944

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● EXPLORATION & PRODUCTION

ANS production down by 6,496 bpd, 1.4%

Drop April to May; largest volume declines at Prudhoe, Colville River, Milne, Point Thomson; largest gain at Greater Mooses Tooth

Cook Inlet natural gas down 4.2%

Cook Inlet natural gas production for May was down 4.2% from April, with six of the seven largest producers, accounting for 82.5% of volume, showing month-over-month declines, with four of the seven also down year-over-year. May Cook Inlet natural gas production averaged 200,719 thousand cubic feet, mcf, per day, down 8,780 mcf from an April volume of 209,499 mcf per day and down 7.2% from a May 2022 average of 216,384 mcf per day.

Data is from the Alaska Oil and Gas Conservation Commission, which reports production on a month-delay basis. For natural gas AOGCC reports measurements in thousands of cubic feet, mcf.

Hilcorp Alaska's Niniichik averaged 39,167 mcf per day in May, 19.5% of inlet production, down 4,047 mcf per day, 9.4%, from an April average of 43,214 mcf per day, but up 15.9% from a May 2022 average of 33,804 mcf per day.

Hilcorp's North Cook Inlet averaged 37,664 mcf per day in May, 18.8% of inlet production, down 876 mcf per day, 2.3%, from an April average of 38,539 mcf per day but up 27.3% from a May 2022 average of 29,586 mcf per day.

Hilcorp-operated Beluga River averaged 32,573 mcf per day in May, 16.2% of inlet production, down 2,874 mcf per day, 8.1%, from an April average of 35,447 mcf per day but up 2.3% from a May 2022 average of 31,837 mcf per day.

Hilcorp's Kenai gas field averaged 20,024 mcf per day in May, 10% of inlet production, down 217 mcf per day, 1.1%, from an April average of 20,241 mcf per day and down 21.5% from a May 2022 average of 25,494 mcf per day.

Hilcorp's McArthur River averaged 15,037 mcf per day in May, 7.5% of inlet production, down 455 mcf per day, 2.9%, from an April average of 15,492 mcf per day and down 18.4% from a May 2022 average of 18,431 mcf per day.

Hilcorp's Swanson River averaged 10,811 mcf per day in May, 5.4% of inlet production, up 1,383 mcf per day, 14.7%, from an April average of 9,428 mcf per day but down 2.1% from a May 2022 average of 11,038 mcf per day.

Furie's Kitchen Lights averaged 10,260 mcf per day in May, 5.1% of inlet production, down 128 mcf per day, 1.2%, from an April average of 10,388 mcf per day and down 17.8% from a May 2022 average of 12,479 mcf per day.

The smaller 14 fields reporting gas production in May collectively accounted for

see **INLET GAS** page 5

By **KRISTEN NELSON**

Petroleum News

Alaska North Slope production averaged 475,814 barrels per day in May, down 1.4%, 6,496 bpd, from an April average of 482,330 bpd and down 3.5% from a May 2022 average of 493,179 bpd. Crude oil, accounting for 88.6% of the total, averaged 421,582 bpd in May, down 4,432 bpd, 1%, from an April average of 426,014 bpd and down 3.6% from a May 2022 average of 437,313 bpd. Natural gas liquids averaged 54,232 bpd in May, 11.4% of the total, down 2,064 bpd, 3.7%, from an April average of 56,296 bpd and down 2.9% from a May 2022 average of 55,866 bpd. NGL production is from three North Slope fields: Prudhoe Bay, Endicott and Northstar.

Production data come from the Alaska Oil and Gas Conservation Commission which reports production by field and well on a month delay basis.

Declining volumes

Of 11 fields on the Slope, eight had month-over-month declines; only three had month-over-month increases.

The largest month-over-month per-barrel decline was at the Prudhoe Bay field, the Slope's largest, operated by Hilcorp North Slope. May production averaged 263,482 bpd at Prudhoe, down 5,993 bpd, 2.2%, from an April average of 269,475 bpd and down 1.8% from a May 2022 average of 268,367 bpd. Prudhoe crude production, 80.7% of the total, averaged 212,695 bpd in May, down 4,298 bpd, 2%, from an April average of 216,992 bpd and down 1.9% from a May 2022 average of 216,738 bpd. Prudhoe NGLs averaged 50,787 bpd in May, 19.3% of the total, down 1,695 bpd, 3.2%, from an April average of 52,483 bpd and down 1.6% from a May 2022 average of 51,629 bpd.

In addition to the primary reservoir, production volumes from Prudhoe include Aurora, Borealis, Lisburne, Midnight Sun, Niakuk, Polaris, Point McIntyre, Put River, Raven and Schrader Bluff.

ConocoPhillips Alaska's Colville River averaged 35,605 bpd in May, down 3,483 bpd, 8.9%, from an April average of 39,088 bpd and down 4.9% from a May 2022 average of 37,426 bpd.

In addition to oil from the main Alpine pool, Colville includes production from the Nanuq and Qannik oil pools.

Hilcorp Alaska's Milne Point averaged 37,322 bpd in May, down 2,307 bpd, 5.8%, from an April average of 39,629 bpd and down 0.4% from a May 2022 average of 37,884 bpd.

The Hilcorp Alaska-operated Point Thomson field averaged 5,081 bpd in May, down 1,197 bpd, 19.1%, the largest percentage decline, from an April average of 6,279 bpd and down 44.2% from a May 2022 average of 9,113 bpd, also the largest year-over-year decline.

Eni's Oooguruk averaged 6,970 bpd in May, down 518 bpd, 6.9%, from an April average of 7,488 bpd and down 19.9% from a May 2022 average of 5,816 bpd.

Hilcorp's Northstar averaged 6,186 bpd in May, down 442 bpd, 6.7%, from an April average of 6,628 bpd and down 14.3% from a May 2022 average of 7,218 bpd. Northstar crude production averaged 3,532 bpd in May, 57.1% of the total, down 26 bpd, 0.7%, from an April average of 3,558 bpd and down 11.5% from a May 2022 average of 3,992 bpd. Northstar NGLs averaged 2,654 bpd in May, 42.9% of the total, down 415 bpd, 13.5%, from an April average of 3,070 bpd and down 17.7% from a May 2022 average of 3,226 bpd.

Eni's Nikaitchuq averaged 15,500 bpd in May, down 420 bpd, 2.6%, from an April average of 15,920 bpd and down 16.6% from a May 2022 average of 18,574 bpd.

Hilcorp's Endicott averaged 6,217 bpd in May, down 77 bpd, 1.2%, from an April average of 6,294 bpd and down 12.2% from a May 2022 average of 7,088 bpd. Endicott crude averaged 5,427 bpd, 87.3% of the total, down 124 bpd, 2.2%, from an April average of 5,551 bpd and down 10.6% from a May 2022 average of 6,067 bpd. Endicott NGLs averaged 790 bpd in May, 12.7% of the total, up 46 bpd, 6.2%, from an April average of 744 bpd but down 21.8% from a May 2022 average of 1,010 bpd.

Month-over-month increases

The largest month-over-month increase was at ConocoPhillips' Greater Mooses Tooth in the National Petroleum Reserve-Alaska, which averaged 19,152 bpd in May up, 6,380 bpd, 50%, from an April average of 12,772 bpd, but down 5.9% from a May 2022 average of 20,349 bpd. The May 2022 average was the highest Greater Mooses Tooth production has

see **ANS PRODUCTION** page 5

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INLET GAS

17.5% of inlet production.

Hilcorp's Ivan River averaged 8,296 mcf per day in May, down 585 mcf per day, 6.6%, from an April average of 8,882 mcf per day and down 37.1% from a May 2022 average of 13,196 mcf per day.

Hilcorp's Beaver Creek averaged 6,212 mcf per day in May, down 955 mcf per day, 13.3%, from an April average of 7,168 mcf per day and down 59% from a May 2022 average of 15,144 mcf per day.

Hilcorp's Cannery Loop averaged 5,521 mcf per day in May, down 106 mcf per day, 1.9%, from an April average of 5,626 mcf per day and down 21% from a May 2022 average of 6,989 mcf per day.

Hilcorp's Deep Creek averaged 3,725 mcf per day in May, down 205 mcf per day, 5.2%, from an April average of 3,929 mcf per day but up 16.9% from a May 2022 average of 3,186 mcf per day.

Hilcorp's Granite Point averaged 3,274 mcf per day in May, up 18 mcf per day, 0.6%, from an April average of

3,256 mcf per day but down 7.3% from a May 2022 average of 3,531 mcf per day.

Vision Operating's North Fork averaged 2,378 mcf per day in May, down 101 mcf per day, 4.1%, from an April average of 2,479 mcf per day and down 22.8% from a May 2022 average of 3,080 mcf per day.

AIX's Kenai Loop averaged 2,010 mcf per day in May, up 155 mcf per day, 8.4%, from an April average of 1,854 mcf per day but down 44.6% from a May 2022 average of 3,630 mcf per day.

BlueCrest's Hansen averaged 1,449 mcf per day in May, up 29 mcf per day, 2.1%, from an April average of 1,420 mcf per day but down 18% from a May 2022 average of 1,768 mcf per day.

Hilcorp's Trading Bay averaged 1,278 mcf per day in May, up 67 mcf per day, 5.5%, from an April average of 1,212 mcf per day but down 5.9% from a May 2022 average of 1,359 mcf per day.

Hilcorp's Lewis River averaged 362 mcf per day in May, up 148 mcf per day, 69.4%, from an April average of 214 mcf per day but down 53% from a May 2022 average of 770 mcf per day.

Amaroq's Nicolai Creek averaged 267 mcf per day in May, up 9 mcf per day, 3.5%, from an April average of 258 mcf per day but down 29.8% from a May 2022 average of 380 mcf per day.

Hilcorp's Nikolaevsk averaged 161 mcf per day in May, down 37 mcf per day, 18.5%, from an April average of 198 mcf per day and down 19% from a May 2022 average of 199 mcf per day.

Cook Inlet Energy's Redoubt Shoal averaged 143 mcf per day in May, down 13 mcf per day, 8.1%, from an April average of 156 mcf per day and down 34.1% from a May 2022 average of 217 mcf per day. CIE is a Glacier Oil and Gas company.

CIE's West McArthur River averaged 106 mcf per day in May, up 7 mcf per day, 7.5%, from an April average of 98 mcf per day and up 1,223% from a May 2022 average of 8 mcf per day.

Cook Inlet natural gas production peaked in the mid-1990s at more than 850,000 mcf per day.

—KRISTEN NELSON

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ANS PRODUCTION

been overall, and the highest it has been since the second pad, GMT2, came online in mid-2021. In May, GMT2, which produces from the Rendezvous pool, accounted for 90.4% of the field's production, while GMT1, producing from the Lookout pool, accounted for 9.6%.

The ConocoPhillips-operated Kuparuk River averaged 79,717 bpd in May, up 1,486 bpd, 1.9%, from an April average of 78,231, but down 1.3% from a May 2022 average of 80,743 bpd.

In addition to the main Kuparuk pool, Kuparuk produces from satellites at Tabasco and Tarn, and from West Sak.

Savant's Badami averaged 580 bpd in May, up 75 bpd, 14.8%, from an April average of 505 bpd but down 42.7% from a May 2022 average of 1,012 bpd. Savant is a Glacier Oil and Gas company.

Cook Inlet up 1% from April

Cook Inlet averaged 8,664 bpd in May, up 154 bpd, 1.8%, from an April average of 8,510 bpd, but down 10.4% from a May 2022 average of 9,674 bpd. Of eight Cook Inlet fields, six reported small month-over-month production gains, with two registering small declines. Cook Inlet liquids are 99.1% crude oil, with the only natural gas liquids, 0.9% of the May volume, from the Swanson River field.

Hilcorp Alaska's McArthur River averaged 2,618 bpd in May, up 79 bpd, 3.1%, from an April average of 2,539 bpd, but down 14% from a May 2022 average of 3,046 bpd.

Hilcorp's Granite Point averaged 2,270 bpd in May, up 26 bpd, 1.2%, from an April average of 2,244 bpd, but down 4.2% from a May 2022 average of 2,369 bpd.

Hilcorp's Trading Bay averaged 877 bpd in May, up 26 bpd, 3%, from an April average of 852 bpd but down 1.1% from a May 2022 average of 887 bpd.

Hilcorp's Swanson River averaged 777 bpd in May (696 bpd of crude, 81 bpd of NGLs), up 19 bpd, 2.6%, from an April average of 757 bpd but down 3.1% from a May 2022

average of 801 bpd.

BlueCrest's Hansen field average 717 bpd in May, down 1 bpd, 0.1%, from an April average of 718 bpd and down 10.2% from a May 2022 average of 799 bpd.

Cook Inlet Energy's Redoubt Shoal averaged 610 bpd in May, up 10 bpd, 1.6%, from an April average of 600 bpd but down 26.4% from a May 2022 average of 828 bpd. CIE is a Glacier Oil and Gas company.

Hilcorp's Beaver Creek averaged 414 bpd in May, up 15 bpd, 3.7%, from an April average of 399 bpd but down 55.2% from a May 2022 average of 923 bpd.

CIE's West Trading Bay averaged 381 bpd in May, down 20 bpd, 4.9%, from an April average of 401 bpd but up 1,714.6% from a May 2023 average of 21 bpd.

ANS crude oil production peaked in 1988 at 2.1 million bpd; Cook Inlet crude oil production peaked in 1970 at more than 227,000 bpd. ●

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• THIS MONTH IN HISTORY

California exploring LNG options

20 years ago this month: Valdez-sponsored LNG summit hears from California regulators, project proponents on subject of Alaska LNG

Editor's note: This story appeared in the July 6, 2003, issue of Petroleum News Alaska.

By KRISTEN NELSON

Petroleum News

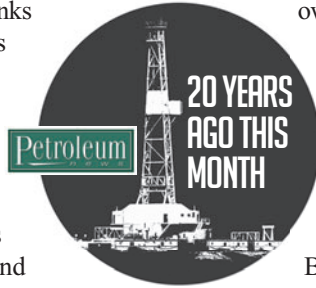
The bottom line is what price producers will accept for North Slope natural gas, Alaska Gov. Frank Murkowski said June 28, 2003. That price has never been determined, he said in Valdez at an LNG summit sponsored by the City of Valdez and the Alaska Gasline Port Authority. The state owns one-eighth of the gas and has to be a major player in how to bring gas to market, he said, and is open to all proposals with legitimate financing options.

In addition to the governor, U.S. Senators Ted Stevens and Lisa Murkowski participated, along with former Alaska Gov. Walter Hickel, Alaska Senate President

Gene Therriault of Fairbanks and Alaska Representatives John Harris of Valdez and Jim Whitaker of Fairbanks.

Also at the table were representatives of the Alaska Gasline Port Authority, the Alaska Gas Development Authority and Yukon Pacific, groups proposing LNG projects, and companies proposing Alaska LNG receiving facilities in Mexico. Potential gas buyers included Korea Gas, a representative from the Office of the Japanese Consulate and officials from California.

Commissioner Jim Boyd of the California Energy Commission described California as “potentially a very large customer” for Alaska’s natural gas. The state’s power plants are gas-fueled and historically the state has only provided 12-15% of its



own natural gas. California has an energy action plan, he said, and that plan specifically mentions LNG. The governor’s Natural Gas Working Group, established two years ago, has begun quietly educating people about LNG, Boyd said, starting with California agencies which would deal with LNG facilities in the state.

David Maul, manager of the office of natural gas and special projects at the California Energy Commission, said California needs new infrastructure to bring in natural gas: “either pipelines from the East or ... a pipeline from the West: gas by land or gas by sea.”

That new infrastructure — either “more pipeline capacity or LNG” — will be needed to meet California needs by 2008. The state’s biggest concern is states to the east

Commissioner Jim Boyd of the California Energy Commission described California as “potentially a very large customer” for Alaska’s natural gas.

— Arizona, New Mexico and Nevada — which also need pipeline capacity.

“We’re at the end of several very long, very leaky straws,” Maul said. “And those straws can leak a lot of gas. We need more pipeline capacity in the other states to make sure that they stop leaking and they get the gas to California.”

LNG delivered to the West Coast could help California’s supply needs, and also those of other western states, he said. “We looked at scenarios that involved LNG to Baja and LNG to California and two different cases involving LNG in Northern California and Southern California.”

While LNG offers multiple benefits to California, there are unresolved issues.

Agencies need to determine how to deal with LNG facilities and there would need to be a clear permitting process. Maul said state agencies are working together on regulation and permitting issues and are also working with the Federal Energy Regulatory Commission.

But, he said: “My view is the public’s perception of risk is the single biggest issue facing LNG facility development in California.”

Sempra Energy, parent of Southern California Gas Co. and San Diego Gas and Electric, is permitting an LNG facility in Baja, said Greg Bartholomew, the company’s director of strategic planning and analysis.

He said there is a lot of interest in putting LNG terminals on the West Coast, with as many as five projects proposed for Baja. There are quite a few projects proposed for Southern California, he said, perhaps 50% of which haven’t been publicly announced. “People are moving very aggressively here, trying to create LNG terminals,” he said and that is a reflection of “how severe the natural gas problem is in North America.”

Sempra expects to have the remainder of major permits for its Costa Azul project in Baja by the end of July, with construction starting in the fourth quarter.

Sempra is talking to numerous suppliers of LNG for Costa Azul, he said.

“But certainly with regards to Alaska, there’s no doubt you are behind.” The competition is fierce from all over the Pacific Basin, he said: “So if Alaska really intends to have an LNG project it needs to have extremely strong convictions and be able to ... move quickly.” ●

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● PIPELINES & DOWNSTREAM

RCA receives application for Willow line

With necessary approvals, vertical support member construction would begin in January, with pipeline completion in September 2027

By **KRISTEN NELSON**
Petroleum News

Willow Transportation Co. has filed an application with the Regulatory Commission of Alaska for a certificate of public convenience and necessity, CPCN, for construction and operation of the Willow Sales Oil Pipeline. Comments on the filing are due by 5 p.m. July 17.

The commission said in a June 26 public notice that the proposed WSOP would be a common carrier oil pipeline, the 16-inch diameter above-ground line originating at the Willow Central Facility in the Bear Tooth unit and running some 32.4 miles to a new tie-in point on the Alpine Sales Oil Pipeline at the MIGI pad near the Colville Delta 4 pad in the Colville River unit.

There is a July 26 deadline for anyone planning a competing application to file a notice of intent with the commission; the competing application must be filed by Sept. 23.

The commission said if no notice of intent to file a competing application is filed, it will grant or deny the Willow Transportation Co. application based on the relevant provisions of state statute.

The application

In its filing with the commission Willow Transportation Co., WTC, said the proposed line would be API 5L Grade X65 carbon steel and would carry sales-quality crude processed at the Willow Central Facility to a new tie-in at the MIGI pad near CD4. The line will be on vertical support members and is designed with a maximum capacity of 200,000 barrels per day and a minimum engineering design life of 30 years.

The Alaska Pipeline Act requires companies to obtain a construction permit and a CPCN prior to construction for lines which will carry oil or gas subject to RCA's jurisdiction.

ConocoPhillips Alaska is the primary construction contractor and operator, WTC said, "and will design, construct, operate, maintain, and terminate the WSOP."

Peak production from Willow is estimated at 180,000 bpd, with an expected 600 million barrels of recoverable oil.

Construction can only take place in the winter with access via ice roads, and if necessary approvals are obtained, WTC said, construction would begin with vertical support member installation in January 2024.

Construction of the pipeline is scheduled to be com-

plete in September 2027, with on-pad facilities completed by the fourth quarter of 2028 and an in-service date for the pipeline shortly thereafter.

An estimated 2,500 jobs are expected during construction, with some 300 long-term jobs for operation of the Willow project.

Estimates are that the project would generate some \$8.7 billion in royalties and tax revenues, including \$1.2 billion in property taxes for the North Slope Borough, \$2.3 billion from National Petroleum Reserve-Alaska impact mitigation grant funds returned to the state and \$1.3 billion to the state in production, property and income taxes.

WTC said this would be the largest project and size and scale to be built on the North Slope in more than 20 years.

A right-of-way lease application for WSOP is pending a decision from the Alaska Department of Natural Resources, WTC said.

The rate for transportation on the line is subject to final costs of construction and operation but is projected to be in the range of 78 cents to \$2.34 per barrel. ●

Contact Kristen Nelson
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OIL PRICES

\$1.65 to close at \$74.01, WTI dropped \$1.67 to close at \$67.70 and Brent slumped \$1.92 to close at \$72.26.

The give and take repeated a familiar pattern — gains following losses; losses following gains — which held ANS near \$75 and WTI near \$70 or below.

Despite bullish news, such as the Saudi production cut of a million barrels per day set to commence in July and reserve drawdowns, worries over central bank inflation fighting and China COVID recovery woes gave bears the "upper paw" in command of price action.

The Saudis sought to balance their budget with the production cut, but the \$80 level needed for that purpose remained out of reach.

ANS rose 34 cents June 26 to close at \$75.66, as WTI rose 21 cents to close at \$69.37 and Brent rose 33 cents to close at \$74.18.

ANS fell 26 cents June 23 to close at \$75.31, as WTI fell 35 cents to close at \$69.16 and Brent fell 29 cents to close at \$73.85.

Downward action was even steeper June 22, as ANS plunged \$2.85 to close at \$75.57, WTI plummeted \$3.02 to close at \$69.51 and Brent plunged \$2.98 to close at \$74.14.

Analysts postulated that much anticipated Chinese interest rate cuts would be too tame to make much difference in charging up the nation's recovery from COVID-19 lockdowns earlier in the year.

The Chinese central bank on June 20 trimmed its one-year loan prime rate by 10 basis points from 3.65% to 3.55% and eased its five-year loan prime rate by 10 basis points from 4.3% to 4.2% — for the first time since August.

Oil prices rose initially. ANS jumped \$1.46 June 21 to close at \$78.42 — its highest price in weeks, WTI vaulted \$2.03 to close at \$73.52 and Brent added \$1.22 to close at \$77.12.

But optimism soon faded.

"On their own, 10 bps cuts are too small to make a great deal of difference to monetary conditions, especially since market interbank rates are already below policy rates," Capital Economics' Julian Evans-

Despite bullish news, such as the Saudi production cut of a million barrels per day set to commence in July and reserve drawdowns, worries over central bank inflation fighting and China COVID recovery woes gave bears the "upper paw" in command of price action.

Pritchard and Zichun Huang wrote in a note quoted by CNBC June 20.

The analysts offered some hope for bulls, however.

"The PBOC tends to use changes in policy rates as signaling tool, with the heavy lifting being done by other tools such as adjustments to reserve requirements and bank loan quotas," they said. "The latest round of rate cuts suggests that these tools will be deployed too."

From Wednesday to Wednesday, ANS fell \$2.94 from its close June 21 of \$78.42

to June 28. ANS traded at a \$1.45 premium to Brent June 28.

Five indicators for higher prices

Although oil prices are oscillating, five factors indicate improvement could be in the works, Andrew Rocco, Zacks investment analyst wrote June 26.

The Strategic Petroleum Reserve is drained, down from 650 million barrels three years ago to some 350 million barrels recently, Rocco said.

"Similar to a short squeeze, if prices begin to rise, the U.S. government will be forced to chase price to refill the SPR stockpile," he said.

Second, in early 2022 oil retook the 200-week moving average and has remained above it since — a sign that bulls are willing to defend the level, Rocco said.

Third, the Organization of the Petroleum Exporting Countries earlier in June announced it would be making significant cuts to output and would seek to limit supply for the remainder of 2023, Rocco said.

Fourth, there is no end in sight for geopolitical concerns.

The Wagner Private Military Co. has abandoned its attempted coup against Russian President Vladimir Putin, Rocco said, adding, "From an oil perspective ... further oil disruptions are likely to take place before the world reaches some semblance of peace."

Fifth, valuations are a bargain.

"Though prices have not moved in months for many oil stocks, valuations are becoming attractive," Rocco said. Savvy investors like Warren Buffett have noticed and have amassed large positions in cheap oil stocks such as Occidental Petroleum.

"Though oil prices have been choppy in the short term, it is essential not to fall victim to recency bias," he said. "Supply concerns, geopolitical turmoil, and the long-term technical picture suggest that oil may be ready to resume its uptrend soon." ●

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GAS SUPPLY

Enstar is the major direct user of Cook Inlet natural gas followed by Chugach Electric.

The assessment results were presented at a Regulatory Commission of Alaska hearing June 28 by Enstar President John Sims and Lieza Wilcox of the Berkeley Research Group, which was contracted by Enstar to conduct a planning assessment of options.

The utility working group was formed in May 2022 after Hilcorp announced that it would not be extending its current gas contracts.

The Cook Inlet supply issue

The assessment confirmed that Cook Inlet natural gas supplies “begin to taper as early as 2027,” the companies said, allowing little time for Railbelt gas users to assess solutions and make decisions, with timing a critical component to avoid a shortfall in gas supplies. The companies said they also focused on reliability “as a key factor to ensure the project predictability meets area needs for several years.”

Ten options were explored, then narrowed “to three categories of projects which could meet the expected gas shortfall in 2027 and beyond.”

Those categories are additional Cook Inlet gas production; importing gas from outside Alaska; and bringing gas from the North Slope.

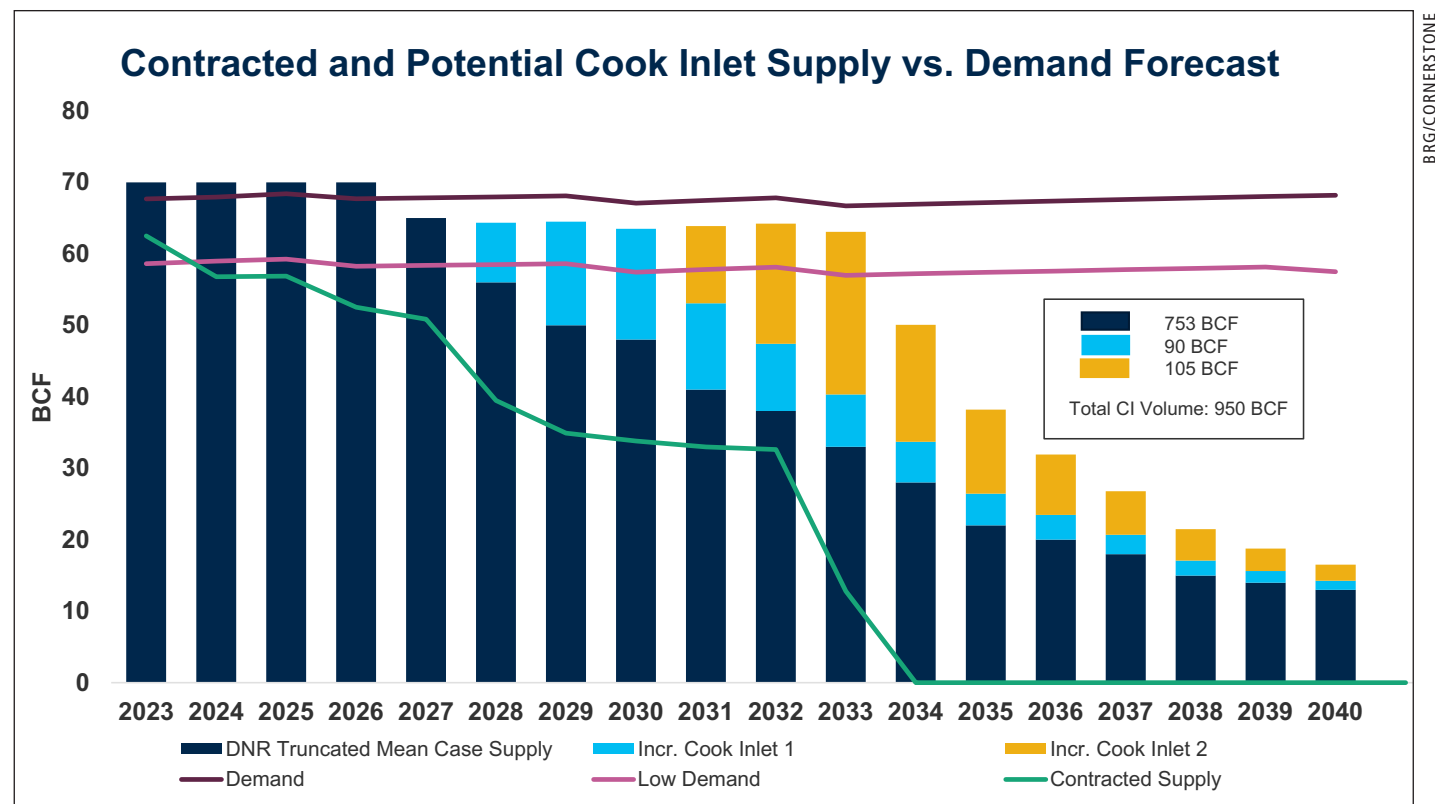
Pros and cons

The companies said developing additional supplies from Cook Inlet “is viewed only as a very short-term fix, given the challenging market conditions limiting the economically recoverable volumes of gas remaining.”

That option continues to be pursued in confidential negotiations with producers.

Importing liquefied natural gas “was identified as a leading project” because it could meet the gas needs of the utilities by 2027 and will continue to be explored in the next phase of the assessment, which is underway and expected to be completed by the end of the year.

North Slope gas was also considered — both a small-diameter line for in-state use and a larger diameter line for export, but “the permitting and construction



process may not be compatible with the utilities’ timeline,” the companies said, but will continue to be explored as part of a longer-term supply solution.

RCA presentation

In a package prepared for the June 28 presentation to RCA, supply and demand assumptions were analyzed.

The forecast demand was supplied by the utilities with high, medium and low gas demand were considered.

On the supply side, the study used the Alaska Department of Natural Resources’ “2022 Cook Inlet Mean Truncated supply forecast,” with Cook Inlet reserves not yet contracted estimated at some 290 billion cubic feet in the 2027-40 period. DNR, the presentation said, expects a gas supply gap to develop in 2027.

DNR’s gas availability study from 2018 was used “to estimate incremental Cook Inlet supply and price levels beyond base case.”

Existing gas cannot fully meet demand beyond 2026 based on current proved reserves “or beyond early/mid 2030s assuming incremental local supply development.”

BRG assessment

The assessment by Berkeley Research Group, BRG, recommended that, based on scoring of the options considered in

phase 1 of the assessment, the working group select one permanent solution or multiple short and long-term options by the end of 2023 and target first delivery of gas in 2027-28. Ten options were considered and ranked by the working group, with options falling broadly into four categories, BRG said: Cook Inlet supply; Alaska North Slope supply; LNG options; and renewable and low-carbon gas.

In the assessment each option was analyzed based on:

- Year when first gas would be delivered
- Maximum annual supply and how long supply would meet expected demand
- Total estimated capital investment required
- Direct investment required by utilities
- Estimated cost of supply

Assessment of alternatives

BRG said some 188 billion to 220 billion cubic feet of incremental production might be developed by 2040.

However, the assessment said, new capital is difficult for Cook Inlet operators to secure for a number of reasons, and while utilities are best positioned to gauge availability and pricing of additional Cook Inlet gas, “it is our opinion that it would be risky and inadvisable

under current market conditions to count on sufficient Cook Inlet or other regional gas supply to fill the Unmet Gas Demand beyond 2026 without developing alternative supplies.”

While North Slope gas, either through an in-state pipeline or from a large line providing gas for export as LNG, would provide stable long-term supply, BRG sees issues, primarily around those projects being unfunded and, especially with the LNG project, unlikely to be available in time to meet Cook Inlet needs.

The assessment looks at several options for bringing in LNG: using the existing Marathon-owned Kenai LNG export facility for import and regasification; building a new LNG import terminal in the area; using a floating storage and regasification unit, FSRU; and using a small-scale FSRU serviced by vessels smaller than typical LNG carriers.

British Columbia and Mexico would be potential sources of LNG for an import and regasification facility, BRG said.

The assessment also looked at trucking LNG from the North Slope, involving between 28 and 35 daily truck deliveries (depending on trailer size) to move LNG from the North Slope to the Matanuska-Susitna area for unloading, storing and vaporizing as needed. ●

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GREY OWL UNIT

one “exploration appraisal” well during the winter of 2026-27, although as the company gathers more information its plans might be modified.

For example, in its proposed plan of exploration, or POE, Balcony said it is in the process of attempting to license the 2001 Shaviovik proprietary 3D seismic survey acquired originally by Phillips and AEC.

This survey, which Balcony said covers most of the Grey Owl prospects and leads, is now held by ConocoPhillips and Ovintiv.

“We are currently waiting on a response from ConocoPhillips ... regarding the Shaviovik survey,” Balcony told the division in its POE.

If successfully licensed, “we would then undertake to reprocess the entire 3D survey through the WesternGeco Houston Processing Center using the same algorithms that were so successful in removing noise and multiples from the 2D seismic,” Balcony said, referring to the 2D seismic line WGAK120 used to select the tentative location of the first well it will drill in the Grey Owl prospect, Grey Owl Unit No. 1, or GO-01.

Geologic targets

The primary exploration targets of that well will be the light oil bearing Canning formation turbidite sandstones seen in the West Kavik Unit #1 well, drilled by Texaco in 1969.

The Texaco well had unsuccessfully targeted the deep

rocks in the Ellesmerian but encountered significant shows of light oil in the Brookian age Canning — somewhat analogous to the major Nanushuk discoveries in the western North Slope.

The potential reservoir rock at Great Owl is directly analogous to the Badami field reservoir, geologist Richard Garrard told Petroleum News in an Oct. 11, 2019, interview.

But whereas oil production at Badami has proven challenging, the location of possible Great Owl reservoirs, more in the axial region of the marine basin in which the potential reservoir sands were deposited, is advantageous, he said.

There should be bigger basin-floor rock sequences, with more stacked reservoirs, Garrard said.

At the time of the 2019 interview Garrard was chief technical officer for Borealis Alaska, the previous Grey Owl leaseholder, and today he is chief technical officer for Balcony.

Garrard on wells

In a June 26 email to Petroleum News, Garrard referred to the Glacier deal as Balcony joining in the Badami unit and Glacier now owning a majority interest in the Grey Owl leases.

“The synergy between these two oil and gas assets is good for both companies,” he said.

“We will be participating in the ERD Killian 28 exploration well this winter to test a Killian objective offshore to the NE of the Badami facility. We then hope to re-drill West



RICHARD GARRARD

Kavik Unit #1 on the Grey Owl leases during the winter of 2026-27,” Garrard said, referring to GO-01.

The Texaco well, he said, encountered light oils “over an extended interval” within the Canning formation.

“It feels good to be exploring once again on the North Slope especially as we now own part of the Badami facility, pipeline and some modest production,” Garrard said.

Badami production facility

The existing oil infrastructure at Badami has a large amount of spare capacity, particularly in its 38,500 barrel-a-day processing facility that was built by BP, the field’s original operator, in the late 1990s.

From nearly the beginning, the Badami sands reservoir’s complex geology — compartmentalized into multiple, discrete sand bodies — rendered the Badami unit challenging to produce.

Starting early in the field’s life, oil output declined so severely that BP suspended production on several occasions, with one suspension lasting for 2 years. Field suspension allowed the Badami sands reservoir pressure to recharge, as subsurface oil slowly migrated between the various sand units.

By August 2007 production had fallen to 876 barrels a day.

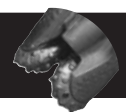
In mid-2008, BP brought in Savant as a partner and operator, eventually selling out to the small independent.

Savant, which later became a Glacier company, has been much more successful with oil production from the Badami sands with only one multi-month shutdown (due to the

see GREY OWL UNIT page 11



Oil Patch Bits

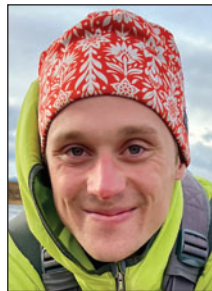


ABR welcomes Jojo Baldus and Isabel Eaton to its team

ABR Inc. said June 12 that it is pleased to announce the addition of Jojo Baldus and Isabel Eaton to its team.

Baldus is joining ABR’s fisheries and aquatic ecology program. He has an array of field and lab research experience in aquatic ecology and the earth sciences. Most recently, he has led extensive stream and lake sampling on the North Slope as part of a long-term, nationwide ecological monitoring project. Baldus also brings a complementary background in sedimentary geology and GIS to the aquatics team.

Eaton is joining ABR’s land rehabilitation program. As a plant ecologist, she has spent the past several years doing field work in Alaska, including north of the Brooks Range. She



JOJO BALDUS



ISABEL EATON

also has experience in database management and working with large data sets. Eaton’s current work with ABR focuses on land rehabilitation projects on the North Slope and at the Red Dog Mine, and she will assist the other work around the state.

Airgas announces dry ice production system upgrade

Airgas, an Air Liquide company, said June 22 that it has recently completed installation of its new dry ice production equipment, replacing its nearly 60-year-old system.

The new equipment is state-of-the-art and will more than double production capacity to nearly 20,000 pounds per day. It also allows the company to produce more size options. Airgas will now offer four sizes: 11 pound block, 1/8 pellet, 5/8 pellet and a 2 pound individually packaged wafer. With the additional capacity, Airgas will begin to offer dry ice at four of its local branches — Anchorage, Fairbanks, Wasilla and Kenai. “Airgas is the only producer of dry ice in Alaska and this upgrade was long overdue given the increasing demand we’ve seen in the marketplace,” said BJ Murdock vice president-Alaska, NorPac region.

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GEOTHERMAL LEASES

competitive geothermal prospecting permits in the area in 2021, three each to Raser Power Systems (7,666 total acres) and GeoAlaska (6,376 acres).

The division said DNR's commissioner is asserting authority under state statute and regulations to designate this a sale area "based on the history of commercial exploration interest in this area as well as the available geologic information indicating a substantial likelihood of commercial geothermal resources in the area."

The decision is bolstered by the financial incentives provided by the federal Inflation Reduction Act 2022, which was signed into law Aug. 16 by President Joe Biden. One of the effects of this bill includes the geothermal federal tax credit to a bonus rate of 30% until 2032.

Geothermal power plants are eligible for either a production tax credit for clean electricity at \$25 per megawatt hour for the first 10 years of operation of the facility, or an investment tax credit for clean electricity equal to 30% of the investment in a new geothermal facility.

In sum, federal energy policy has shifted significantly since the noncompetitive permits were issued in 2021,

which has generated renewed interest in geothermal exploration.

Southcentral power grid

Geothermal resources are reservoirs of hot water that exist at varying temperatures and depths below the Earth's surface.

Geothermal wells can be drilled into underground reservoirs to tap steam and very hot water that can be brought to the surface for use in a variety of applications, including electricity generation.

To be extractable, geothermal resources must be trapped in reservoirs near the surface of the Earth.

Geothermal features can be observed in areas of active or inactive volcanoes.

Mount Spurr, elevation 11,070 feet, is one of the northernmost peaks in the Aleutian Island-Alaska Peninsula volcanic arc. It is an active snow- and ice-covered stratovolcano.

The sale area lies entirely within the Kenai Peninsula Borough, although the state owns the subsurface mineral rights and the surface estate.

The Mount Spurr sale area is in relatively close proximity to the Southcentral Alaska power grid that makes this project area potentially viable as a geothermal energy production site.

Geologic hazards in the Mount Spurr area include volcanic ash clouds, ash fallout and volcanic bombs, pyroclastic flows, debris avalanches, tsunamis, earthquakes, directed blasts, lahars and floods, volcanic gases, and lava flow.

Best interest decision

Before approving the sale area and disposing of the land through a lease sale (Mount Spurr Competitive Geothermal Lease Sale Number 4), Nottingham must determine whether the disposal is in the best interest of the state.

A geothermal lease will grant a lessee the exclusive right, for a period of 10 years, to prospect for geothermal resources on state land included under the lease. The commissioner has the discretion to renew a lease for an additional five-year term if the lessee is actively engaged in drilling operations.

A geothermal lease is valid for the duration of commercial production.

Comments on the preliminary decision are due by 5 p.m. July 24.

—KAY CASHMAN

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CONOCO FINED

because gas breached the surface at multiple locations."

Violations

The commission's order addresses five violations of its regulations:

•Casing and cementing program for the WD-03 well under 20 AAC 25.030 "as it relates to confining fluids to the wellbore, preventing the migration of fluids from one stratum to another and protecting significant hydrocarbon zones."

•Gas disposition from Alpine CD1 drill site under 20 AAC 25.235 "as it relates to waste of resources."

•Conduct of operations for WD-03 per 20 AAC 25.526 "as it relates to CPAI's internal Section Plan for the well and communication of pressure limits to the field."

•Well safety valve systems per 20 AAC 20.265 "as they relate to producing natural gas up the outer annulus of well WD-03."

•Change of approved program per 20 AAC 25.507 "as it relates to submission of an Application for Sundry Approvals form following oral approval from the commission."

Cementing issue

On the casing and cementing issue, AOGCC said drilling operations began on the WD-03 well, a Class I underground injection control well, Jan. 25, 2022, using the Doyon 142 drilling rig. Zones recognized as hydrocarbon bearing were cemented as drilling progressed. AOGCC said ConocoPhillips' "historically established geologic evaluation methods and criteria indicated that the C10/Halo interval was not a significant hydrocarbon-bearing zone or abnormally

geo-pressured," and the company did not cement the interval.

AOGCC said since the CD1 events the company has refined its evaluation methods to provide more confidence "that significant hydrocarbon zones will be identified while planning and conducting future drilling operations."

The proposed fine for the casing and cementing violation is \$760,000, including \$100,000 for the initial violation and \$10,000 per day for each of the 66 days until the C10/Halo interval was isolated with cement.

Other violations

Waste of oil and gas in Alaska is prohibited by state statute, AOGCC said, with the civil penalty for wasting gas twice the prevailing value of the gas. ConocoPhillips estimated the volume of gas released to the subsurface and/or atmosphere at 7,200 thousand cubic feet, and AOGCC said it finds that estimate reasonable, resulting in a proposed fine of \$33,706.80.

Discussing the drilling operations, the commission said ConocoPhillips' section plan for drilling was not followed, with freeze protection fluids pumped into the well at a higher pressure than the not-to-be-exceeded pressure specified in the plan. AOGCC said the company was aware of the elevated pressure, "but took no action to evaluate the cause."

Because the section plan was not followed by field personnel, AOGCC said, the leak-off-test pressure was "significantly exceeded," creating "a pathway for

gas from the C10/Halo to migrate upward to the thaw bulb beneath the CD1 Drill Site and eventual release to the atmosphere."

The commission said the company has revised its standard operating procedure for freeze protection "to include procedures, pressure limits, and contingent solutions, when pumping operations reach limits."

The proposed fine for failure to follow the section plan is \$100,000.

The company also violated regulations governing well safety valve systems by failing to obtain an approved waiver for the system installed on the WD-03 outer annulus before commencing flow and failure to perform safety valve system performance tests on adjacent wells.

The proposed fines are \$10,000 each for the two violations.

The company also failed to submit an application for sundry approvals within three days of receiving verbal approval to flow WD-03 gas from the outer annulus to the Alpine Central Facility through another well. "Even though production of the gas up the OA and the routing of the gas to the ACF resulted in the controlled production of the C10/Halo gas and mitigated the damage of the uncontrolled release, CPAI was still required to submit an Application for Sundry Approvals," the commission said, noticing the company of the violation but imposing no fine.

—KRISTEN NELSON

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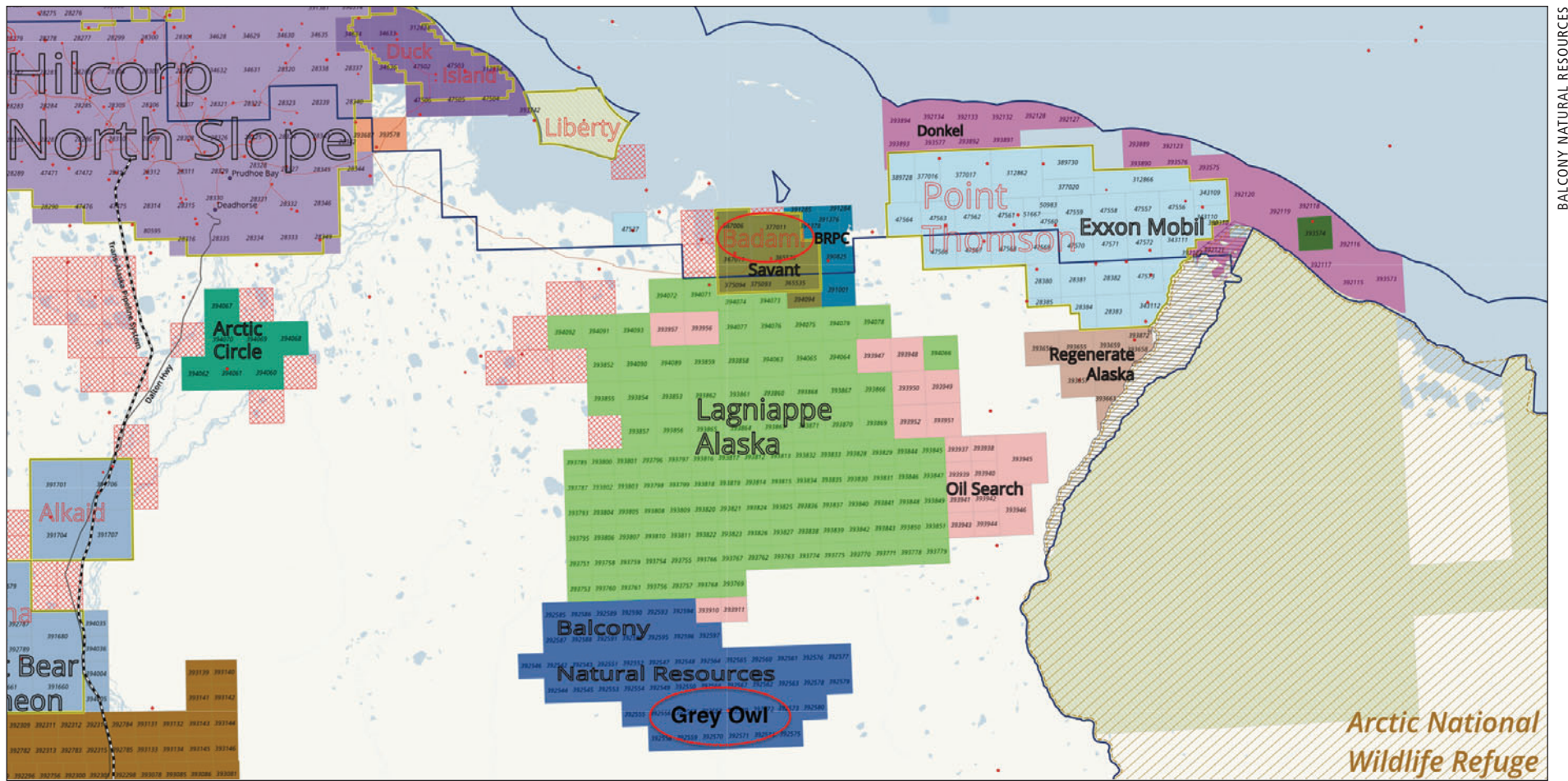
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BALCONY NATURAL RESOURCES

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GREY OWL UNIT

2020 oil price crash). The company has also looked outside the Badami participating area for new sources of oil.

Drilling GO-01

The tentative drill site for GO-01 is approximately 2,500 feet WSW of the West Kavik well.

Per the company’s proposed exploration plan, GO-01 is intended to twin the original West Kavik well in such a way as to “optimize the drilling process and completion in order to avoid formation damage to the main oil bearing Canning formation reservoirs and thereby establish commercial flow rates of light oil on test.”

GO-01 will be drilled from a 500-foot by 500-foot ice pad connected back to the Badami unit by an ice road or snow trail. It is estimated the drilling operation will take approximately 53 trouble free days from spud to rig release.

The tentative planned drilling operation for GO-01 is as follows:

- Spud Grey Owl Unit No. 1 and drill surface hole to ~3,000 feet
- Run and cement 9.625-inch casing
- Drill intermediate hole to ~7,500 feet
- Run and cement 7-inch casing
- Drill production hole to ~11,500 feet
- TD well, log including RSWC’s & MDT and cement 5-inch liner
- Conduct fracture stimulation of the two zones of interest & conduct short term tests
- Re-inject fluids down annulus or transport back to the Badami Production Facility
- Suspend or P&A well
- Demobilize rig back to the Badami unit

The availability of a rig with an adequate BOP stack will be critical, Balcony said.

During the summer of 2026 mobilization of the rig and materials by barge will take place from Prudhoe Bay West Dock to Badami.

Alternatively, as part of the recent alignment with Glacier a drilling rig may already be operating in the Badami unit and could then be transported south to the GO-01 drill site in the winter of 2026-27.

By this stage, Balcony said, “all of the necessary permitting and compliance including the spill plan (ODPCP) will have been completed and approved.”

The drilling of GO-01 to a maximum depth of roughly 11,500 feet to test the two main Canning turbidite reservoirs seen at West Kavik will commence in early 2027.

The Texaco well ... encountered significant shows of light oil in the Brookian age Canning — somewhat analogous to the major Nanushuk discoveries in the western North Slope.

Main goal of drilling GO-01

The primary goal of the Grey Owl drilling operation is to “acquire a comprehensive logging suit (including shear wave sonic), collect rock data (RSWC’s) through the main reservoirs, obtain pressures and fluid samples (MDT’s), acquire a VSP to accurately tie the seismic, and finally conduct two fracture stimulated tests,” Balcony said in its POE.

The tests will be designed to recover PVT quality fluids, establish oil gravity and formation GOR, or gas oil ratio, and investigate whether commercial flow rates might be achievable. The remote location of this well will limit the amount of tankage available to store fluids or transport back to Badami, Balcony said.

A “comprehensive analysis of the results and samples will be conducted including petrophysics and log derived Kh, reservoir quality (porosity, permeability, grain density etc.), petrology, fluid analysis, oil geochemistry, gas bag composition and isotopes, and possible biostratigraphy,” Balcony said.

The well test results will be “analyzed in detail to understand the pressure build up, the radius if investigation (Ri) and the potential flow rate that is achievable on a straight hole and alternatively a hypothetical horizontal completion in a 3,000’ lateral with 11 stages of fracture stimulation,” Balcony said, noting that based on these data, a “calculation of PTA derived Kh should be achievable.”

More drilling opportunities

Assuming the 3D survey Balcony hopes to get from ConocoPhillips is plagued by the same noise and multiples at the 2D, Balcony believes the data can be significantly improved.

At that point a complete re-interpretation and mapping of the area would be conducted by PRA.

“At the same time, we plan to engage AGILE Seismic to perform an updated AVO analysis and study. We would also use these data to complete a shallow hazards analysis of the tentative drilling loca-

tion together with other potential drill sites within the proposed Grey Owl unit,” Balcony said.

A license to the existing Shaviovik 3-seismic will enable the ongoing evaluation of the unit area to “proceed quicker and in a more cost effective manner as compared to the acquisition of a new 3D seismic survey,” the company said.

As the location of the GO-01 to twin the existing West Kavik Unit #1 is already confirmed, the Shaviovik seismic data will be most useful in identifying additional drilling opportunities, Balcony said.

If successful with GO-01, a follow-up drilling program will be conducted in the winters of 2027-28 or 2028-29 to evaluate the Lower Sagavanirktok prospect to the west including an appraisal tail into the Canning formation in order to investigate the possible extent of GO-01 reservoirs into this area.

Grey Owl development

The main objective however, “is to try and achieve early production from the Canning turbidite reservoirs back to the Badami facility and thereby commence a revenue flow,” Balcony said.

Existing gravel at West Kavik could be re-used to speed up early development.

“Another development advantage as a result of the ongoing Badami partnership, might be to consider a three-phase pipeline scenario north to the Badami Production Facility for processing. In this situation the facility capital and fixed

OPEX would be significantly less,” Balcony said.

In an early development scenario by PRA, “development drilling at the Grey Owl Central Prospect might tentatively commence in late 2029 with first oil production back to the Badami facility by late 2030.”

A possible peak oil production of 62,000 barrels per day would then occur by 2040, or thereabouts, Balcony said, noting that a Grey Owl Central development would have a field life of 30 years and a gross EUR assuming production from the two Canning prospects of up to about 385 million barrels of oil.

Lease date, POE modifications

The lease effective date is listed as March 1, 2014, through Feb. 29, 2024, so 10 years. The state royalty is 12.50% on all the leases, with an overriding royalty, or ORRI, of 4.400%.

The initial plan of exploration filed with the Grey Owl unit application represents Balcony’s current thoughts and analysis of existing geologic, geophysical and engineering data.

“As additional information is collected and exploration activities are completed, this plan of exploration may be modified to optimize exploitation of identified resources within the Unit Area,” Balcony said. ●

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RENTAL REDUCTION

The work completed on the leases added to CPAI's understanding of the prospective reservoir targets on the acreage, the division said in its approval.

Bear 1, which was on oil and gas lease ADL 393519, was completed on April 3.

"Post well analysis of the Bear 1 well is currently being completed. A sustained effort to explore and develop the leases is exercising reasonable diligence. This well work continues to inform new phases of development for the leases," the division said in its approval.

The agency, which is part of the Alaska Department of Natural Resources, approved the rental reduction for the seventh and eighth years of the primary term of the leases from \$100 and \$250, respectively, per acre to \$10 per acre. All the leases have a July 1, 2017, effective date with an eight-year primary term.

Connections to Stirrup, Horseshoe

The block of CPAI's leases is bordered on the north and east by Santos' Oil Search (Alaska), or OSA, leases.

Following consultation with a G&G team studying the area, Petroleum News believes Bear 1 is likely on trend with OSA's 2020 Stirrup discovery.

Bear 1 is approximately 12 miles south of Stirrup 1, which had one of the highest flow rates of any Nanushuk single-stage stimulation of a vertical well on the North Slope.

Stirrup 1 successfully penetrated the Nanushuk reservoir and encountered an oil column with net pay of 75 feet. The wellbore was cored, perforated through a single-stage stimulation and shut-in for six days to enable pressure build-up prior to testing in which Stirrup flowed at a stabilized rate of 3,520 barrels of oil per day.

Bear 1 is also approximately 11 miles south southwest of the Horseshoe discovery, also currently held by OSA.

The Horseshoe 1 and 1A wells were drilled by Bill Armstrong during the 2016-17 winter campaign, confirming the Nanushuk play in the Pikka-Horseshoe area.

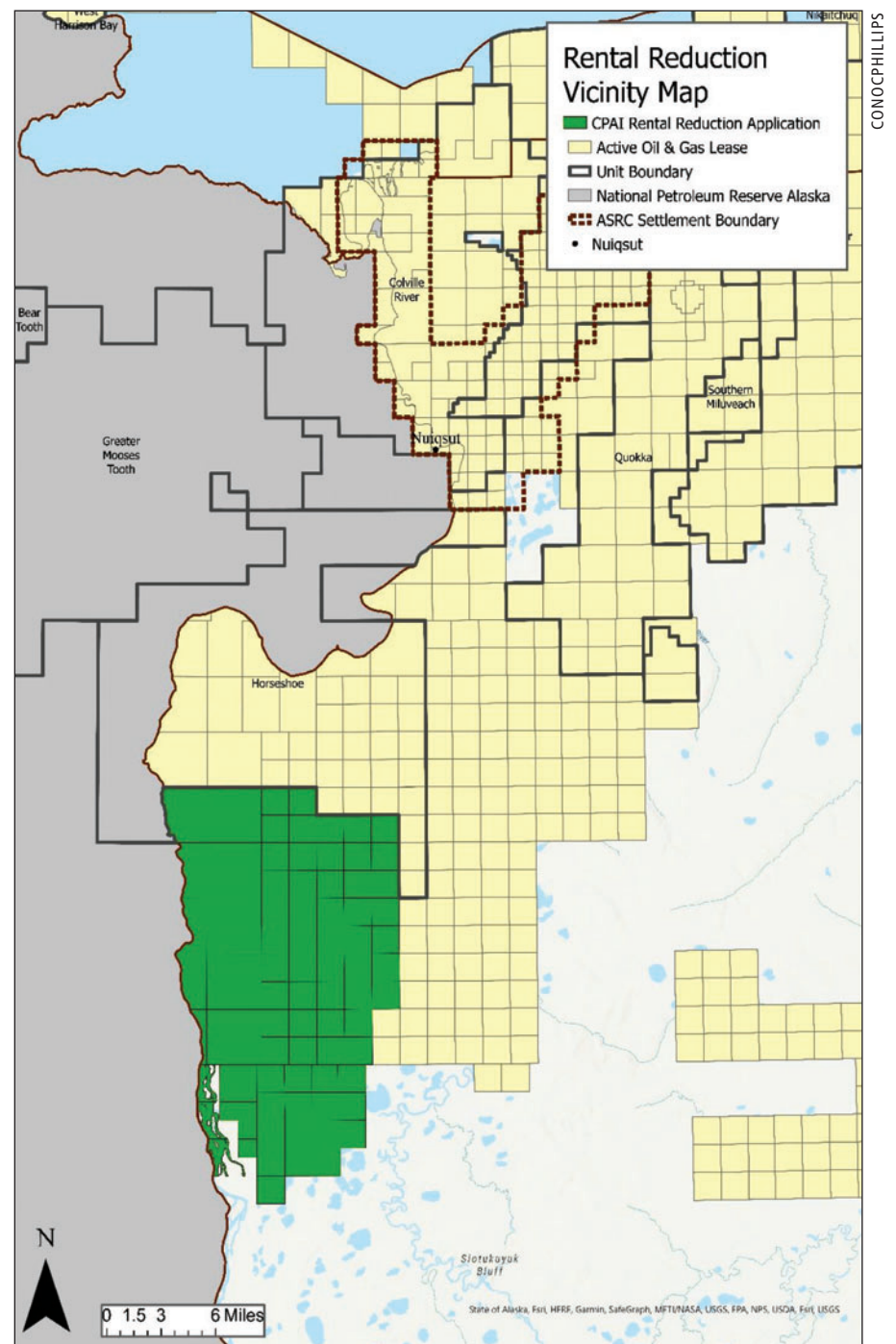
Per OSA reports, Stirrup 1 is a direct analogue to the Horseshoe 1 and 1A Nanushuk discovery.

As previously reported, ConocoPhillips Alaska President Erec Isaacson described the company's Bear 1 well as a Brookian Topset play, which was what the OSA/Armstrong team drilled at Pikka, Horseshoe, Stirrup, Mitquq — and that ConocoPhillips drilled at Willow.

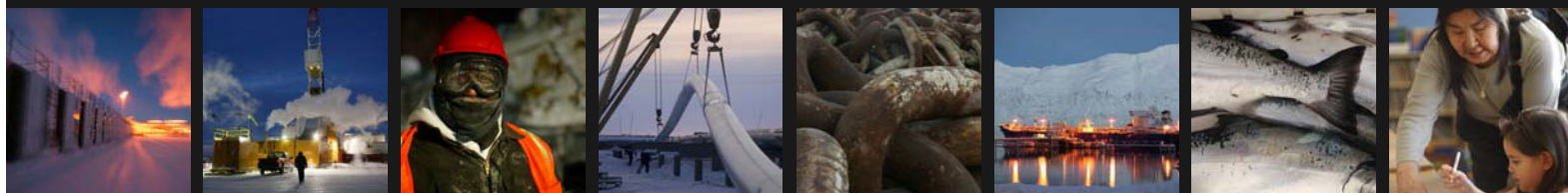
As of June 28, no Bear 1 results have been made public.

—KAY CASHMAN

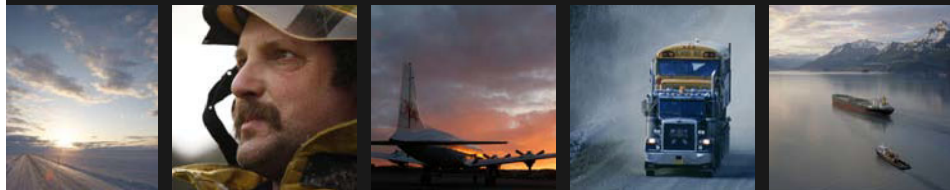
"Post well analysis of the Bear 1 well is currently being completed. ... This well work continues to inform new phases of development for the leases."



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