

ANCHORAGE DAILY NEWS

ConocoPhillips cracks open giant petroleum reserve, with good results

ConocoPhillips is enjoying better-than-expected results at the first commercial oil wells drilled in the nation's largest stretch of wild land. But achieving production has been a challenge and the oil opportunities in the National Petroleum Reserve-Alaska aren't what they once were.

 Author: **Alex DeMarban, Annie Zak**  Published February 20, 2016

With oil exploration effectively dead in the U.S. Arctic Ocean and the Arctic National Wildlife Refuge, Alaska's hope of recharging its oil pipeline depends greatly on one last swath of federal land.

There, in the National Petroleum Reserve-Alaska, ConocoPhillips is enjoying better-than-expected success with a small field that recently began producing the reserve's first commercial oil.

CD5, as it's called, is a stepping stone to larger prospects the company wants to develop in the NPR-A, an Indiana-sized sweep of tundra on the western edge of the giant North Slope fields.

But the promise of a huge oil discovery in the reserve, one that could reverse long sagging oil production and begin to refill the trans-Alaska pipeline, seems unlikely, experts say.

Instead, with luck, the oil industry will string together enough small fields to make a sizable contribution to the 800-mile line, helping slow a decline that contributes to the state's \$3.8 billion budget deficit.

[Photos: ConocoPhillips cracks open giant petroleum reserve, with good results]

"It's the old string of pearls concept," said David Houseknecht, project chief for the U.S. Geological Survey's Energy Resources Program for Alaska. "If you can't find a big field, then string a number of small fields together," he said. Such activity makes for greater efficiencies by connecting roads and pipelines to make projects more economic.

It's a strategy that helped ConocoPhillips crack open the petroleum reserve for oil production nearly a century after it was created on behalf of the U.S. Navy, when ships powered by petroleum replaced coal burners.

Into the reserve

CD5, built on Alaska Native corporation land within the boundaries of the 23-million-acre reserve, began producing oil in October. The field quickly topped expectations.

In early February, ConocoPhillips said it had already met the company's peak daily production estimate of 16,000 barrels. The accomplishment came with eight production wells completed out of 15 planned in an initial round of drilling.

"It's doing better than we anticipated," said Scott Jepsen, ConocoPhillips Alaska's vice president of external affairs. The company is looking to expand that site, "drilling more wells out there than we have in the initial phase."

Amy Burnett, a communications specialist with ConocoPhillips, said "it is too soon to project" how much oil more drilling could produce.

The results were shared on a chilly day in early February as ConocoPhillips led Alaska journalists on a tour of CD5 and its nearby North Slope operations, in an area some 600 miles north of Anchorage. Officials said the trip, organized by the company, came in response to reporters wanting to learn more about the site.

Read more: What's it like to work at an oil field on the North Slope?

It also came as state lawmakers in Juneau were weighing changes to the state's oil tax system, including a possible reduction of tax credits for industry and an increase in the minimum production tax from 4 percent to 5 percent. The proposed changes could be worth \$500 million to the state, even with oil around \$30 a barrel, the lowest price in years.

During the tour, ConocoPhillips representatives shied away from questions about taxes and what the company's falling income means for its stake in the pricey Alaska liquefied natural gas project. Some Alaskans fear ConocoPhillips will back out of the \$55 billion effort to build a gas pipeline from the North Slope and liquefy and sell natural gas, leaving Alaska and two other oil producers with one less major investor.

"Here's what I'd rather do on this tour: Focus on CD5," said Jepsen. "We have a favorable tax framework right now. We hope it stays that way."

Under the state's tax law, the fields in NPR-A produce "new oil." As a result, the fields will not pay production taxes unless prices rise to \$73 a barrel. The state will however receive royalty shares of some of the oil, including half of the federal government's 16.5 percent share of oil produced from federal lands.

Costly development

On that February excursion, getting to CD5 from the Kuparuk field, where jets from Anchorage deliver workers, involved traveling by bus on an ice road to ConocoPhillips' giant Alpine oil field east of the reserve.

The nearly 25-mile frozen route costs ConocoPhillips \$20 million to build each year, with ice chips used like gravel to build up the road bed, officials said. The winter crossing allows critical delivery of heavy equipment and supplies that can't be sent by air. When the road melts every summer, the land returns to green and Alpine is accessible only by plane.

On a recent February day, buses full of workers, Halliburton trucks and oversized rigs called Rolligons – with big tires for traveling over tundra – crawled the corridors between drill sites.

Often, not much else was visible against the white-blue landscape, except for elevated pipelines zigzagging from CD5 to Alpine so oil can be delivered to the trans-Alaska pipeline.

Bringing the \$1.1 billion CD5 project into production was a 10-year effort that involved building four bridges, including a 1,405-foot span over the Colville River's Nigliq Channel. Maintained by ConocoPhillips, it's one of the longest bridges in the state.

Development was slowed by court challenges to a key permit issued in 2011 by the U.S. Army Corps of Engineers, including one brought by the nearby Inupiat village of Nuiqsut, whose residents argued the project threatened streams and subsistence foods.

During a lunch break on the tour, Isaac Nukapigak, president of Kuukpik Corp., a Native village corporation that owns land at CD5, said the village was able to find common ground to allow development to move forward. ConocoPhillips had invited Nukapigak to field questions from reporters, mostly about the village's relationship with the company.

"In the beginning, we had a little disagreement (with ConocoPhillips) on how the project itself should be developed," Nukapigak said. "We were able to manage to compromise in the way of responsible development, balance."

Two more pearls

At the CD5 pad itself, the derrick of a Doyon drilling rig rose 200 feet. Inside, a massive drill spun into the ground, extending some 2 miles into the earth.

The visit didn't include a trip to ConocoPhillips' second development in the reserve, 8 miles southwest of CD5, called Greater Mooses Tooth. ConocoPhillips plans to bring Greater Mooses Tooth 1 into production in 2018 at a cost of \$900 million, with an estimated peak of 30,000 barrels of oil daily.

Also nearby is Greater Mooses Tooth 2, a third play that could be larger, officials said.

Jepsen said ConocoPhillips has drilled more than 20 exploration wells in NPR-A since 2000. On the western side of the reserve, the company has sometimes found oil, but not enough to pay for the costs of production. It has also found gas.

"There's no way to monetize gas that far west, period," he said.

Gas-filled reserve

President Warren Harding created the reserve in 1923 to provide emergency oil for U.S. Navy ships after World War I. But it turns out the reserve contains far less oil than previously thought.

Houseknecht, with USGS, led a 2010 review that analyzed more than 30 wells drilled after private industry began exploring there in 2000.

With the exception of the reserve's northeast corner, virtually every exploration well produced mostly natural gas, not oil, he said.

The report concluded the reserve is more gas-prone than oil-prone. It slashed the estimate of undiscovered oil from 10.6 billion barrels to 896 million barrels.

By comparison, Prudhoe Bay has produced 12 billion barrels since 1977. Meantime, state lands on the North Slope contained an estimated 2.9 billion barrels of oil reserves in 2013, mostly in Prudhoe Bay.

Houseknecht believes that millions of years ago, huge volumes of natural gas originating beneath the Brooks Range spread to the north, flushing pools of oil from several reservoirs. Some of that oil ended up at the surface as seeps, and perhaps some of it disappeared, devoured eons ago by microbes.

Instead of large opportunities like Prudhoe Bay, NPR-A appears to contain relatively small, scattered pools, he said.

Jepsen, with ConocoPhillips, said the company has not found "gigantic accumulations" of oil at CD5 and Greater Mooses Tooth 1. But they are "prolific reservoirs."

Off limits

Interior Secretary Sally Jewell, during her visit to Alaska in early 2015, encouraged Alaska leaders to look to NPR-A and permitted areas of the Arctic Ocean for future oil production.

But industry interest in Alaska's federal offshore has plummeted following the pullout of Shell in September, after it spent more than \$6 billion and completed one dry well.

The Obama administration canceled a lease sale for the region in October, citing a lack of interest by companies. For now, no exploration is planned there. None is likely given today's low oil prices, said Houseknecht.

And with the ANWR in northeastern Alaska politically shut down — Congress and the president have never simultaneously agreed to allow oil exploration there — about 33 billion barrels of potential oil is unavailable for development, said Mark Myers, the state natural resources commissioner and a former USGS director.

Alaska is left with an estimated 4 billion barrels of undiscovered resources to look for on state land, he said.

On federal land, NPR-A's estimated undiscovered oil of less than 1 billion barrels is not entirely accessible to industry. The Bureau of Land Management has prohibited development in some of the most promising areas of the reserve's northeast corner, around Teshekpuk Lake, Myers said.

"Much of the highest potential acreage is off-limits," Myers said. "If the goal is to develop oil and gas, you have to go to the more prospective areas, and NPR-A is currently not it."

Balanced approach

Melanie Smith, conservation science director at Audubon Alaska, said BLM has done a good job balancing protections for wildlife while allowing some development.

A portion of the Greater Mooses Tooth Unit extends into an area declared biologically important that's a key corridor for calving caribou. But the BLM says oil development can still occur there.

"Audubon has always recognized the NPR-A is set aside for oil," Smith said. "We don't expect the whole thing to be off-limits to development."

She said the reserve's name — describing its role as a petroleum warehouse — is partly why NPR-A has escaped the fierce controversy over drilling seen with the Arctic Ocean and on the coastal plain of the 19-million-acre ANWR.

"(The reserve) is the most remote wild part left in our entire country, but it has this unfortunate name making it sound like a big oil tank waiting to be tapped," she said.

Audubon, which has long fought to protect the petroleum reserve's sensitive areas, in particular around Teshekpuk Lake, plans to closely monitor wildlife habitat to make sure future development, where it's allowed, proceeds safely.

"We are just starting to develop this wilderness for the first time, and we have to do it right," she said.

Undeterred

Jepsen said ConocoPhillips won't do anything unless it's done safely. Steps it has taken to protect the environment and workers, include building the permanent road between CD5 and Alpine, where the company maintains a fire station, clinic and oil-spill response equipment.

Not having a road would create dangerous delays during emergencies, including on foggy days when planes can't fly, he said.

"For us it's been critical from an operational and environmental point of view to have a road out there," Jepsen said.

Despite the challenges in NPR-A, ConocoPhillips has big plans, even with the plunge in prices over the past 19 months.

It's also evaluating another prospect in the reserve called the Bear Tooth Unit, next to its Greater Mooses Tooth projects -- both were named after the Alaska Range peaks popular with mountaineers. The company also plans to drill two exploration wells in the reserve this winter.

"We don't anticipate that we're going to see \$30 oil forever," Jepsen said. "We anticipate that we will see a recovery. It's hard to predict exactly when. But we're obviously investing for the future."

About this author

Alex DeMarban

Alex DeMarban is a longtime Alaska journalist who covers the oil and gas industries and general assignments. Reach him at 907-257-4317 or alex@adn.com.

Annie Zak

Annie Zak covers business news and general assignments. She joined the Daily News in 2015 and previously was a reporter at the Puget Sound Business Journal in Seattle and the Orange County Register in California.