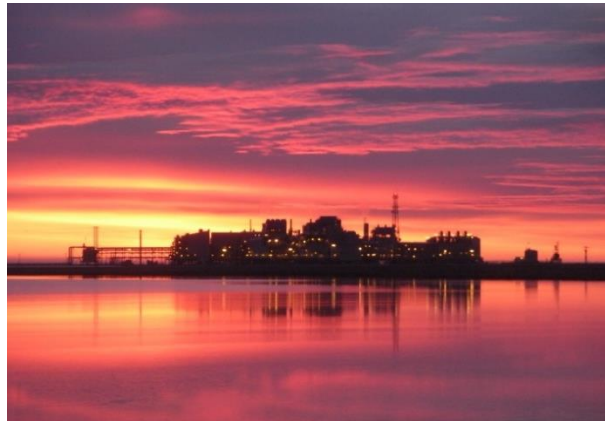


Alaska Oil & Gas Update

House Resources Committee



Presented by Derek Nottingham, Director
John Crowther, Deputy Commissioner
Alaska Department of Natural Resources
January 19, 2024



NORTH SLOPE POTENTIAL



In various reports, the United States Geologic Survey (USGS) has estimated that Alaska's North Slope has more oil than any other Arctic nation:

- **Produced Oil:** >18.9 billion barrels to date
 - Significant oil production continues from existing and developing fields
 - Recent large discoveries moving into development
- **Undiscovered Oil:** >48 billion barrels
- **Discovered Gas:** ~50 trillion cubic feet
- **Undiscovered Conventional Gas:** ~194 trillion cubic feet
- **Unconventional Gas:** ~125 trillion cubic feet of methane hydrates and shale gas

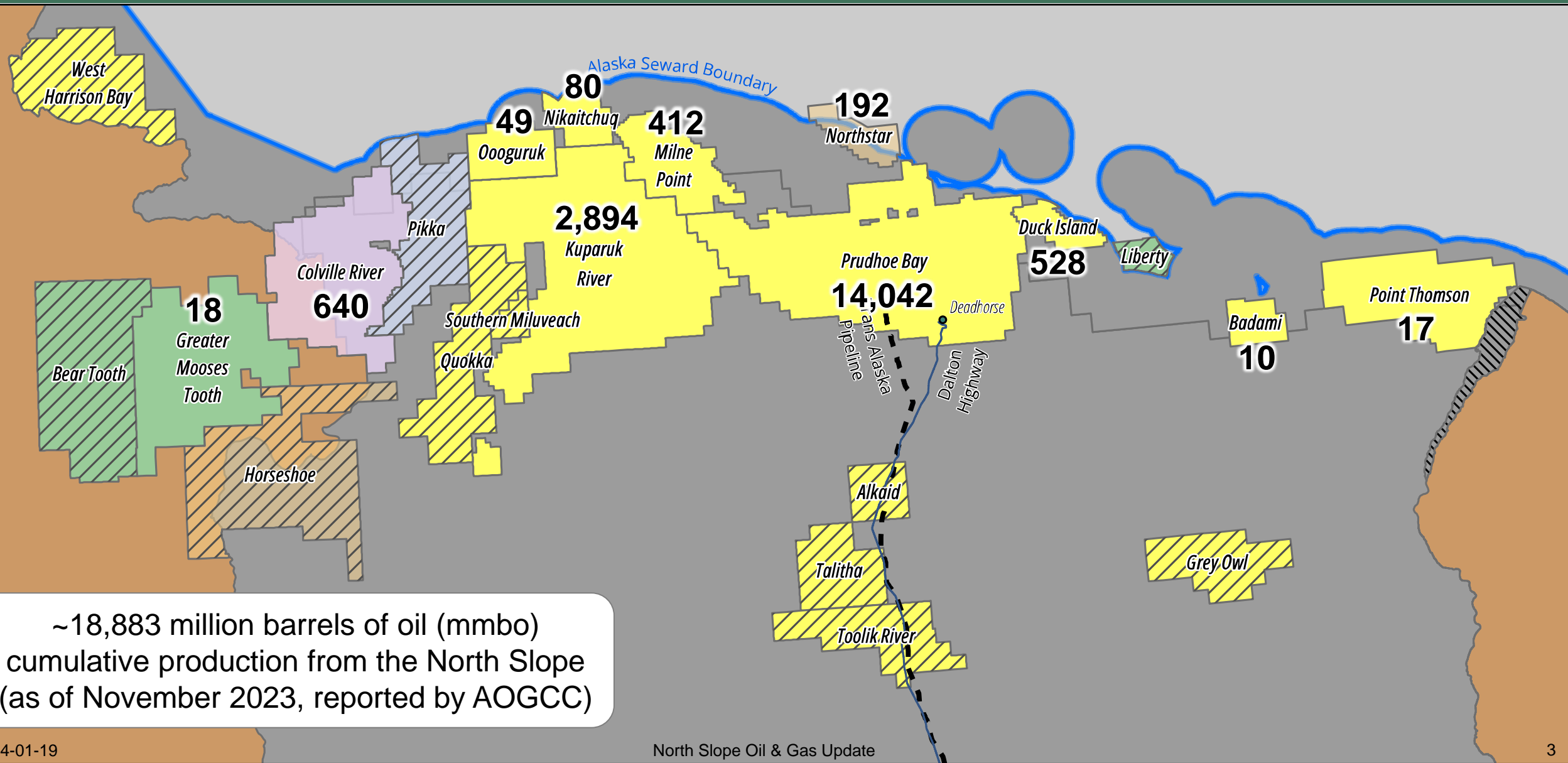
Compared to most basins, Alaska is underexplored.

Steady incline in North Slope activity and investment points to a bright future:

- **Recent finds** on state lands demonstrate great potential, and new areas are being actively explored
- **Nanushuk and Torok** formations are driving major interest across the Slope
- **Legacy fields** including Prudhoe Bay and Milne Point continue to exceed expectations through infield work



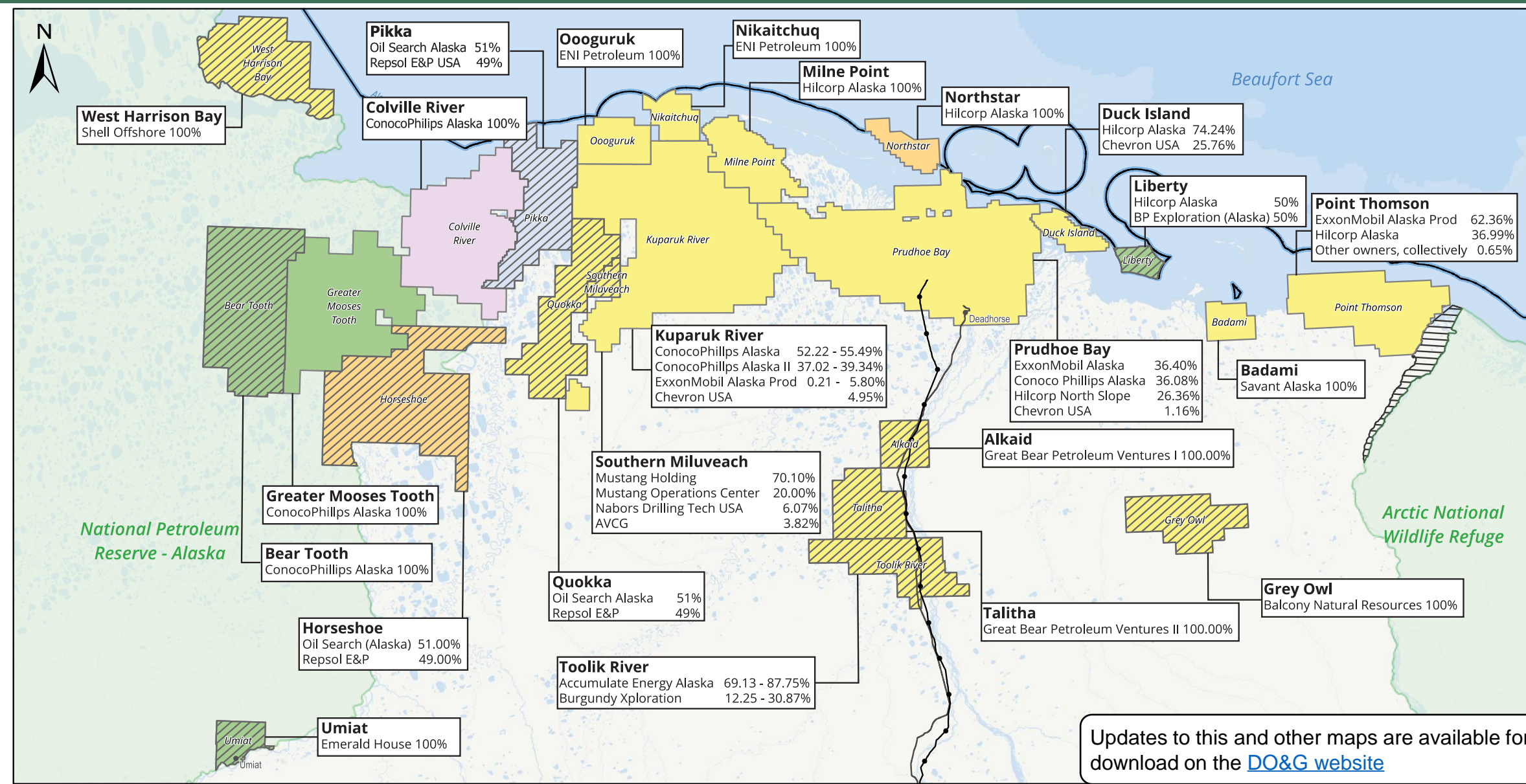
NORTH SLOPE OIL PRODUCTION



~18,883 million barrels of oil (mmbbo)
cumulative production from the North Slope
(as of November 2023, reported by AOGCC)

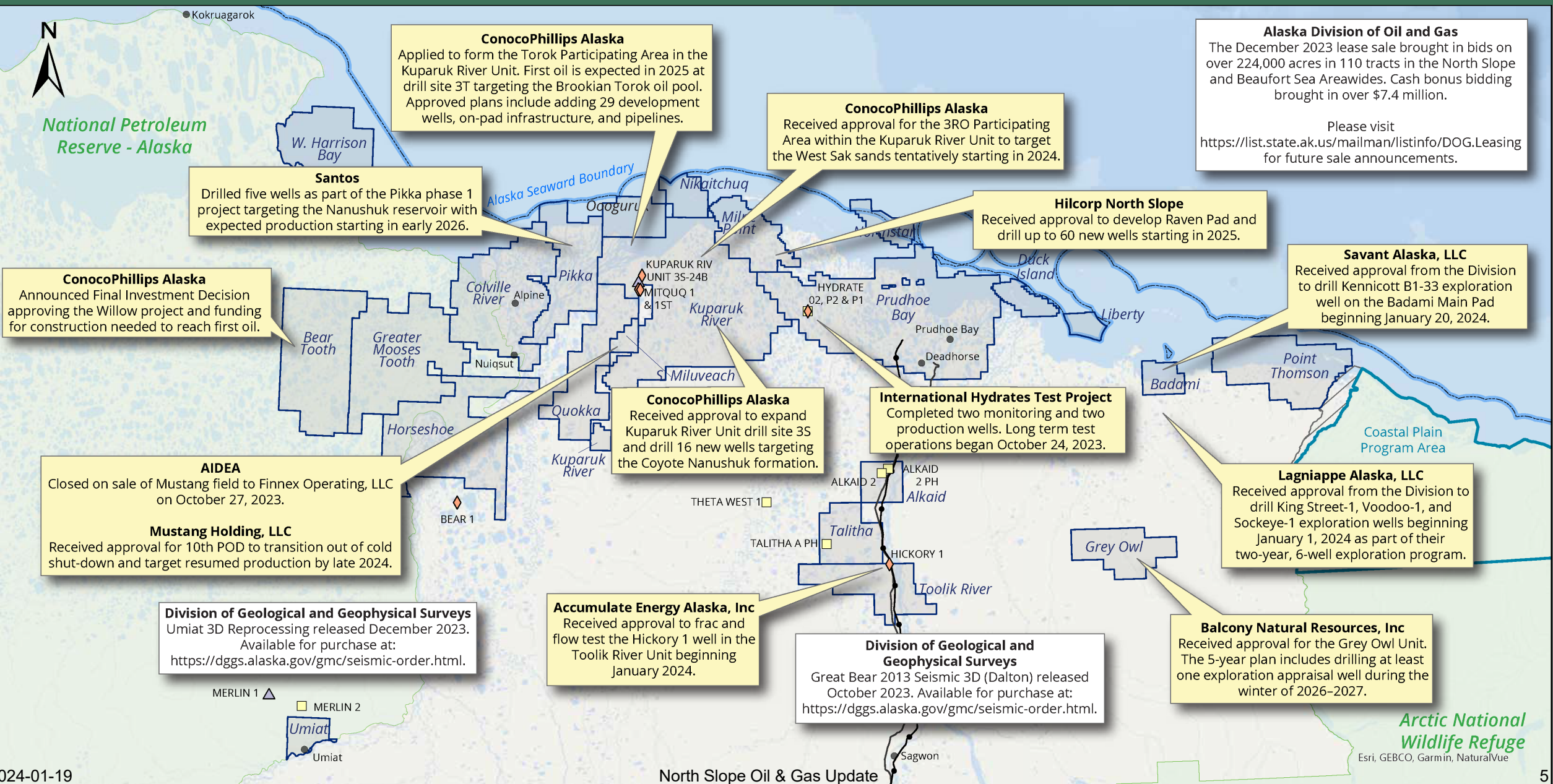


WORKING INTEREST OWNERSHIP



Updates to this and other maps are available for download on the [DO&G website](#)

NORTH SLOPE ACTIVITY

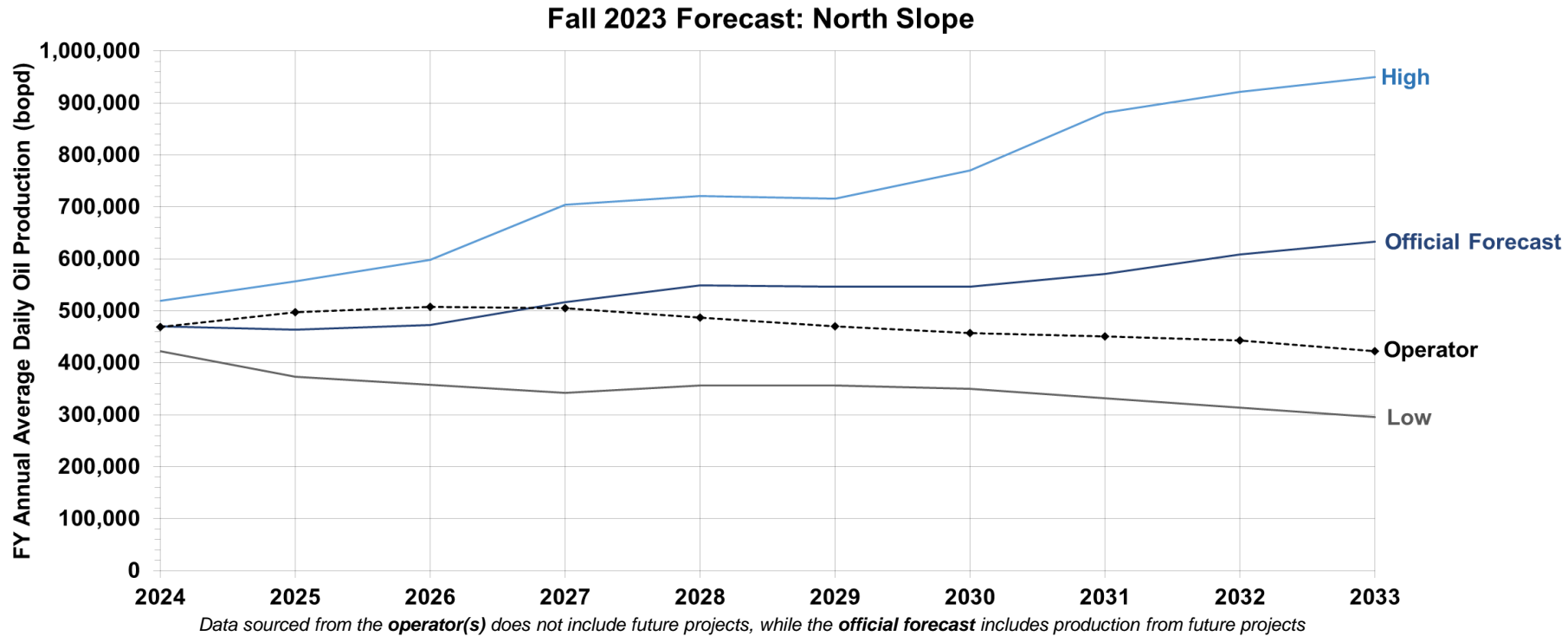


KEY NORTH SLOPE PROJECTS



	Status: January 2023	Status: January 2024	Production Rate Estimates
Pikka	Project Final Investment Decision (FID) approved in August 2022 for Pikka Phase 1. Project first oil anticipated in 2026.	Project construction and drilling activities ongoing, and project first oil anticipated in Q2 of 2026.	Peak design capacity rate, Phase 1: 80,000 bopd
Willow	Awaiting BLM Record of Decision (ROD) on SEIS. FID cannot be made before the ROD is made. First oil expected 6 years after FID, if approved.	BLM ROD on SEIS issued in 2023 and Conoco started construction activities in April 2023. FID announced December 2023. First oil expected in 2029.	Peak rate: ~180,000 bopd
CRU Narwhal CD8	Sustained production from CD8 could commence as early as 2028, pending stakeholder alignment, permitting, internal studies and alignment. This conceptual first oil date remains consistent with the 23rd POD submitted in 2021.	The conceptual first oil date changed to 2030 in the 25 th CRU POD submitted in 2023, pending stakeholder alignment, permitting, and internal studies and alignment.	Peak DNR estimates >32,000 bopd
MPU Raven Pad	November 2022 Hilcorp applied for approval to construct a new drilling and production pad (R Pad) within the Milne Point Unit.	DNR approval granted for R Pad construction in February 2023 within the Milne Point Unit. Construction activities ongoing.	Peak DNR estimates ~10,000 bopd. Analogous to the 2018 M Pad development at MPU.
KRU Nuna-Torok	2022 KRU POD states rotary drilling is planned in Q3 of 2022 with an additional injector/producer pair for additional Torok reservoir appraisal to inform future developments.	Conoco project funding approved in 2023, and subsequently DNR approved drill site 3T expansion activities. Construction activities are ongoing, and first oil is anticipated in 2025.	Peak rate up to 20,000 bopd

FALL 2023 NORTH SLOPE OIL FORECAST



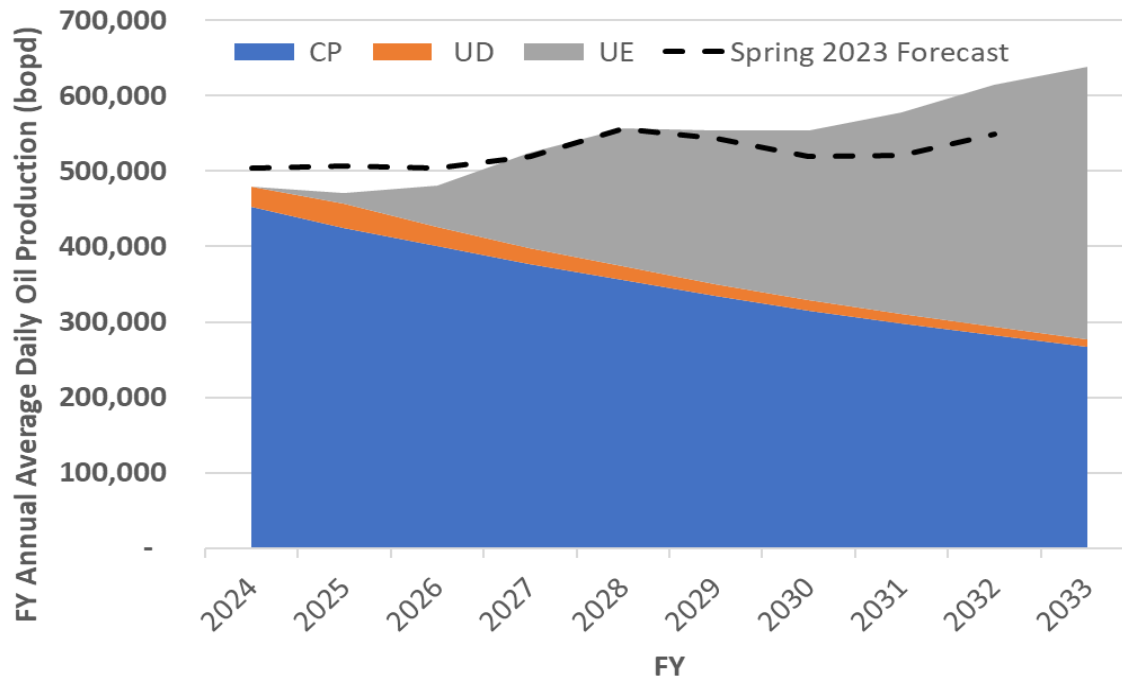
- **Short Term:**
 - DNR forecasts FY2024 annualized average daily statewide production at 478 MBOPD, and North Slope production at 470 MBOPD, with a range of 422 MBOPD and 519 MBOPD.
- **Long term:**
 - Long term forecast reliability is gauged by general comparison between DNR and operators' aggregate forecasts. Operators' long-term outlook falls within DNR's long term forecast range.
 - Specific differences are expected and do highlight DNR's ground-up uncertainty analysis on all included projects.
- Outlook on production assumes that operators' plans and other project drivers remain unchanged.

MBOPD: thousand barrels of oil per day

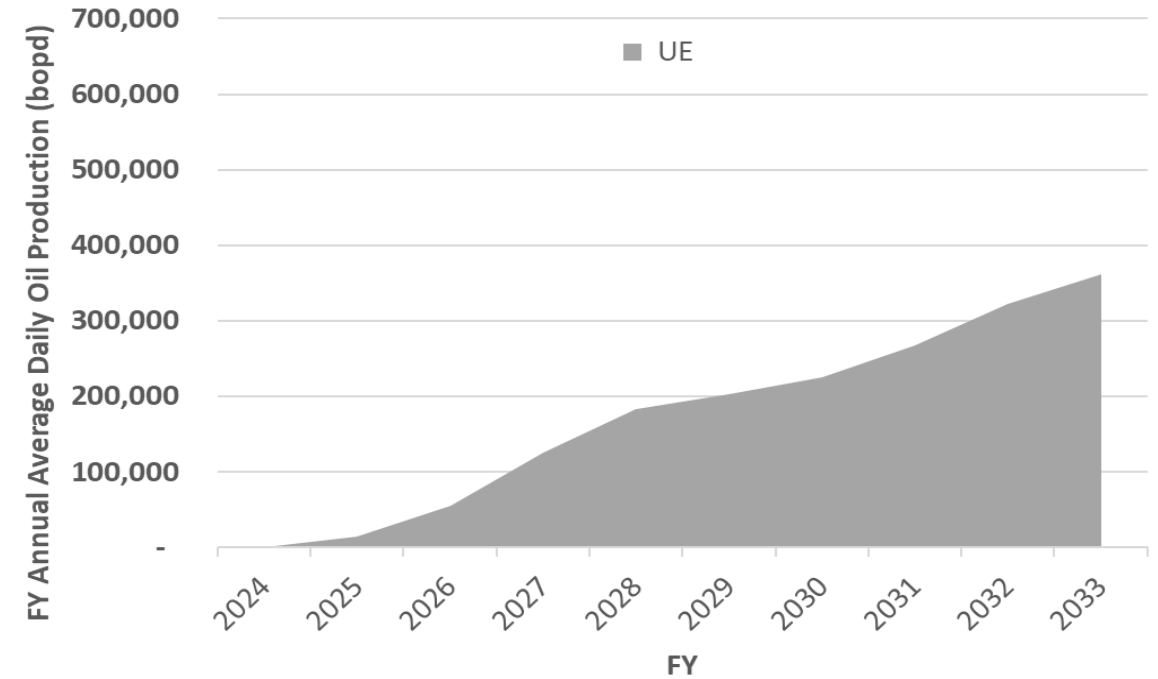
FALL 2023 STATEWIDE OIL FORECAST



AK Fall 2023 Production Forecast (Expected Case):
Production Categories



AK Fall 2023 Production Forecast (Expected Case):
UE Only



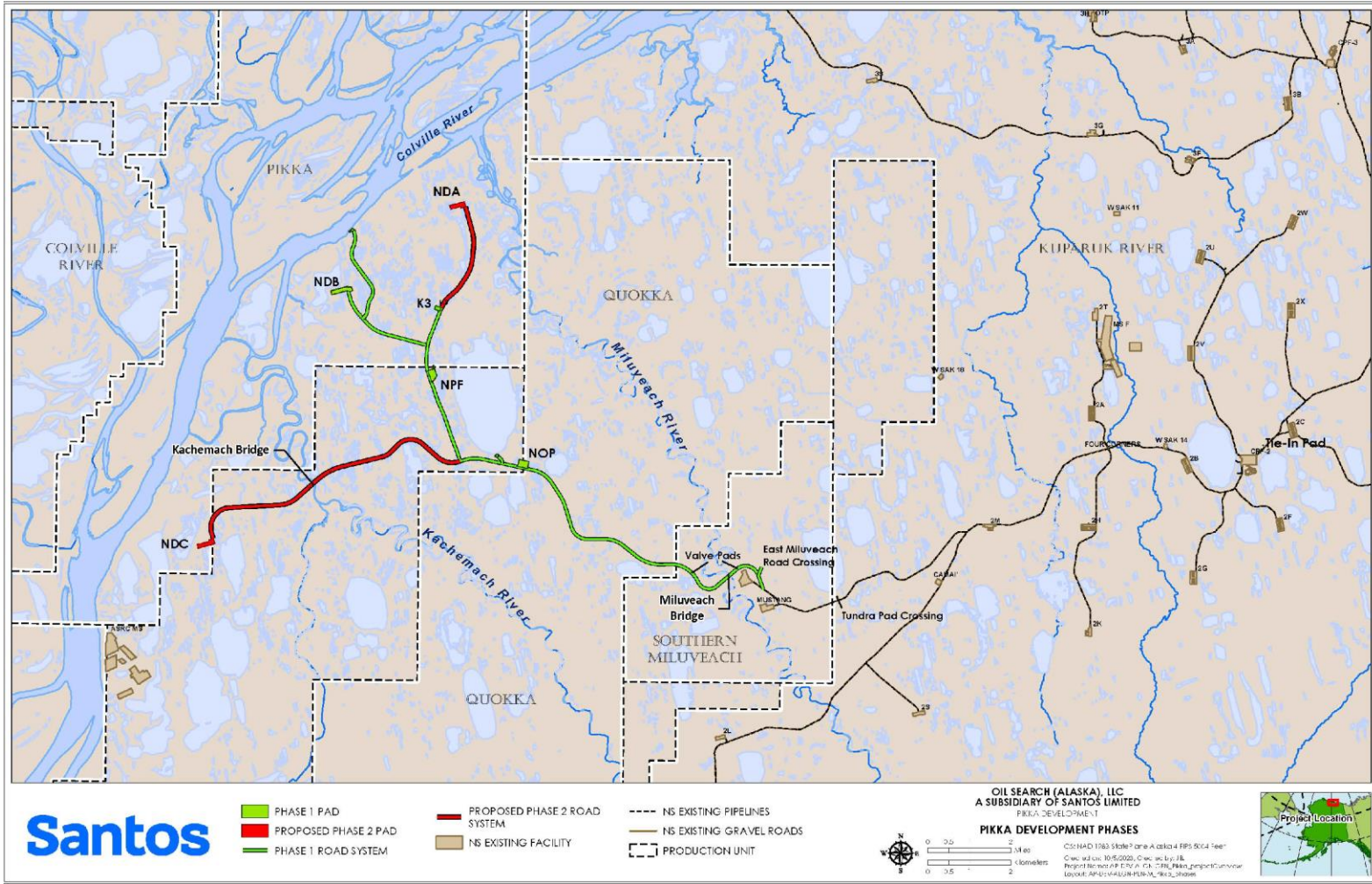
- Current Production (CP) remains the backbone of state production in near and medium term.
- Under Development (UD) segment represents production expected from wells drilled in FY2023.
- Near term (*i.e.*, 3 to 4 years out), new forecast is lower than Spring 2023 Forecast due to greater than expected decline rates in key fields and less than expected production from recent development projects.
- Under Evaluation (UE) begins to play a more significant role in production in the next 5 to 10 years as Pikka, Willow, and other major projects materialize.

The logo of the Alaska Department of Natural Resources is a circular emblem. It depicts a landscape with a large evergreen tree on the left, a winding river in the foreground, and a mountain range in the background. A red sun is positioned on the right side of the mountain. The text "ALASKA DEPARTMENT OF NATURAL RESOURCES" is written in a circle around the central image.

Project Vicinity Map with Constructed and Future Project Phase Proposed Infrastructure

- ## Anticipated Performance

- Phase 1: Expected peak production of 80,000 barrels of oil per day (bopd)
- Phase 2: Santos continues to mature it plans for more wells and additional production



WILLOW UPDATE

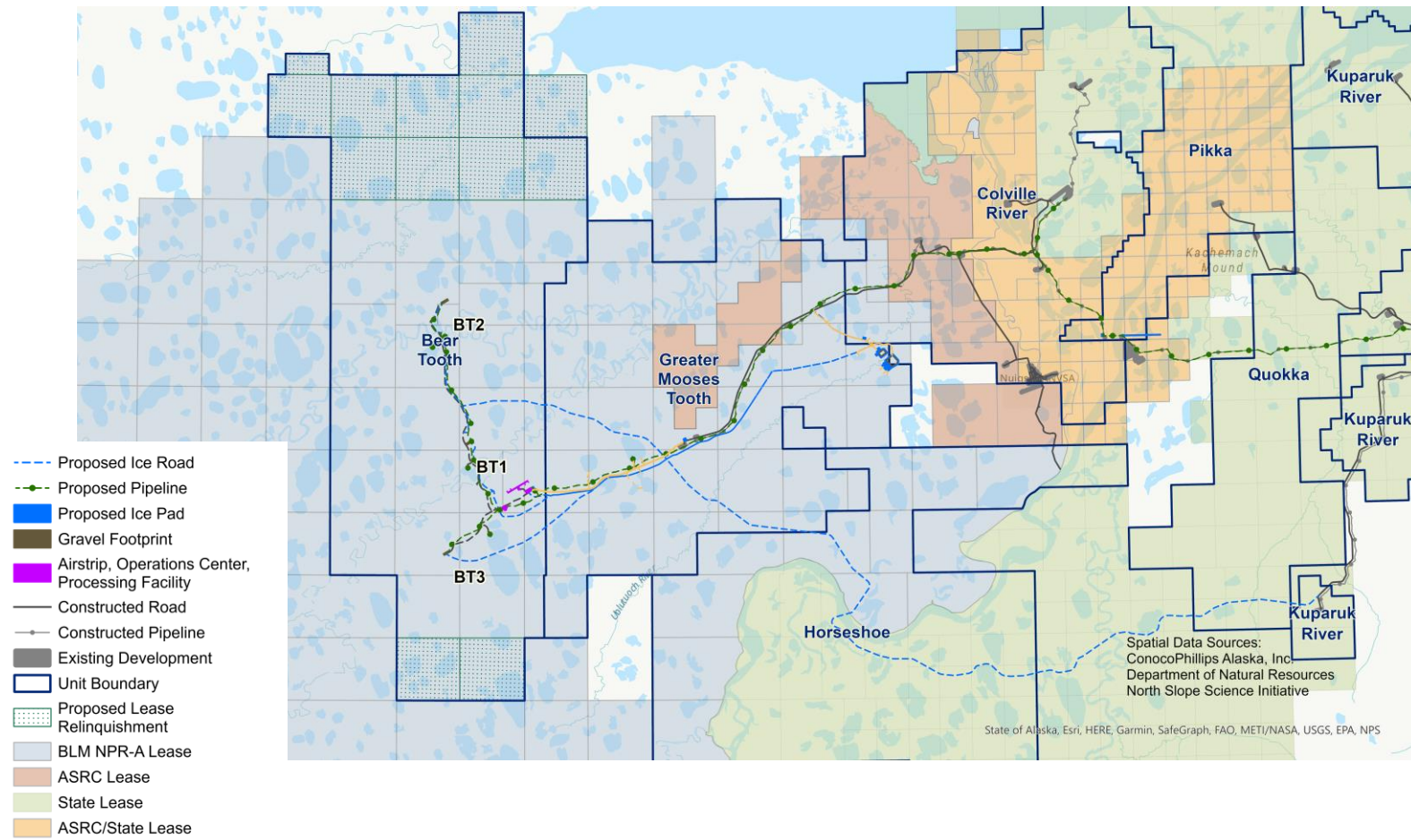


Permitting

- Federal approvals received in 2023.
- Arguments challenging federal review to be heard in February before 9th Circuit — following favorable decision from Alaska District Court.
- Final investment decision announced December 2023.
- Pipeline right-of-way permits approved by DNR.
- Development activities underway now.

Anticipated Performance

- Expected peak production of 180,000 barrels of oil per day.
- 600 million barrels of oil estimated over project life.
- \$8–17 billion in royalty and property tax payments to State of Alaska, US, and municipal governments.

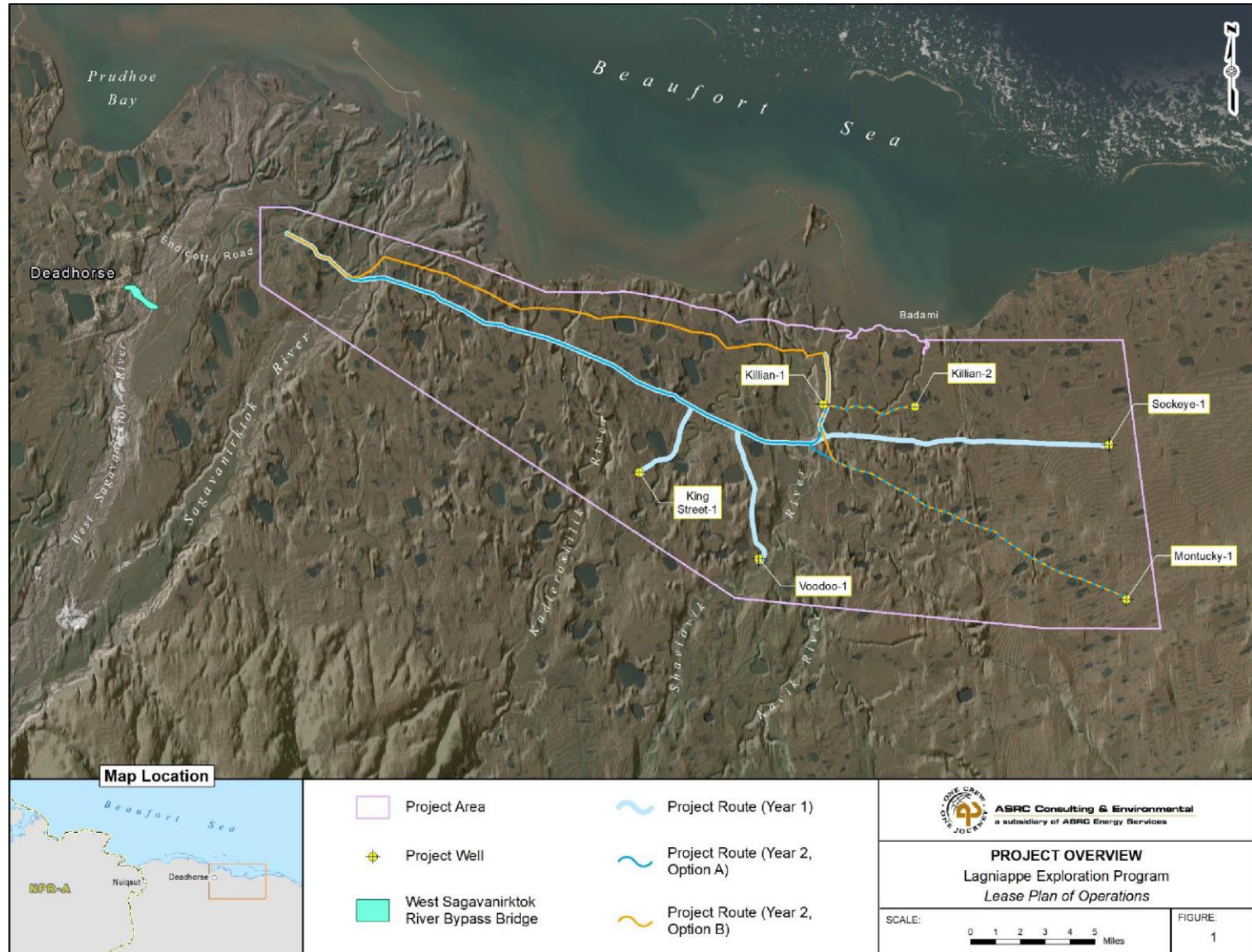


EASTERN NORTH SLOPE EXPLORATION

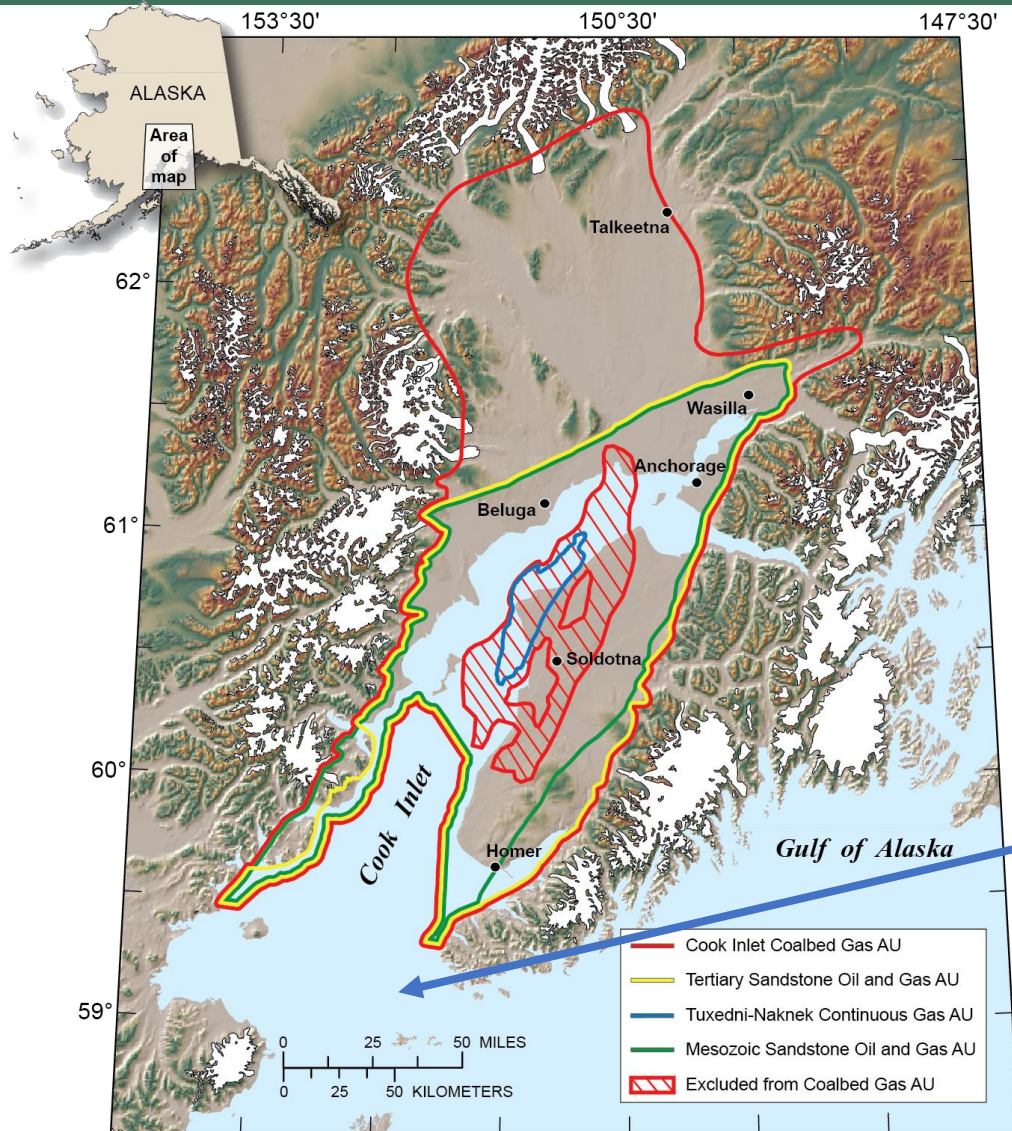


Ambitious Program

- This exploration marks major new drilling in an area that has seen almost no exploration to date, and holds major potential for the State if successful
- The exploration program is a partnership between Armstrong, Santos, and Apache
- Located south of the Badami Unit
- Mobilizing three drilling rigs on ice roads to drill three exploration wells in 2024 with three more in 2025
- Will provide valuable information about the underexplored eastern side of the North Slope – there are almost no exploration wells in this area
- South of the exploration area is the recently-approved Grey Owl Unit, owned and operated by Balcony Natural Resources

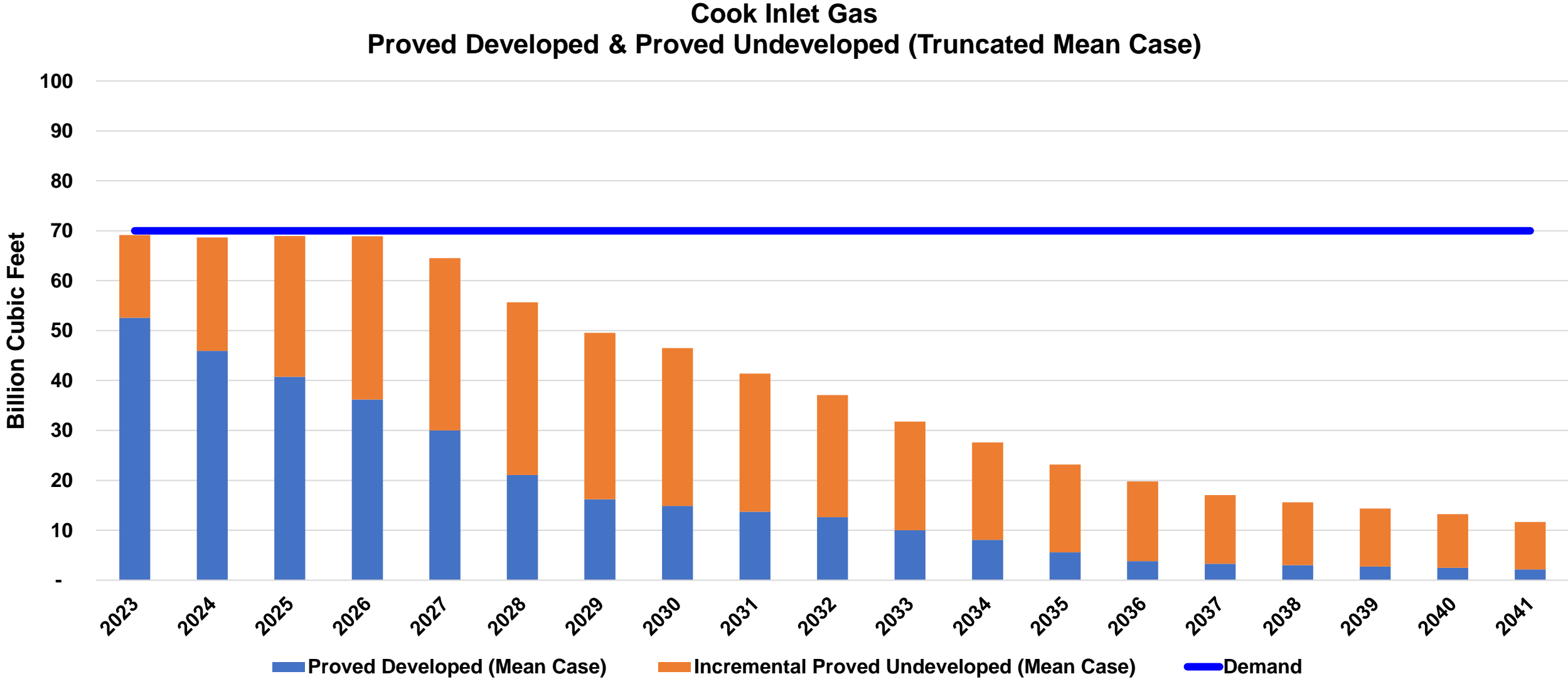


COOK INLET EXPLORATION & DEVELOPMENT: UNDISCOVERED RESOURCES



- **Undiscovered, Technically Recoverable Oil & Gas** (U.S. Geological Survey 2011):
 - mean conventional oil 599 million barrels of oil
 - mean conventional gas 13.7 trillion cubic feet
 - mean unconventional gas 5.3 trillion cubic feet
- **Undiscovered, Technically Recoverable Gas:**
 - 1.2 trillion cubic feet additional mean resource assessed in the federal Southern Cook Inlet Outer Continental Shelf area (Bureau of Ocean Energy Management 2011)
- Governor's Legislation targets making these prospects more economic for development

DNR's 2022 Cook Inlet Forecast





DNR's 2022 COOK INLET FORECAST

2022 - Cook Inlet Gas Forecast

- Technical reserves assessment of 90 different gas & oil pools using publicly available production data obtained from AOGCC.
- Decline Curve Analysis (DCA) used to estimate volumes from currently producing well set. Type Curve(s) were developed to estimate volumes from future development wells.
- Discovered resources contingent upon more favorable commercial conditions and undiscovered (prospective) resources were not included in the forecast.
- Estimated field level economic limits were used in the “truncated” forecast cases.
- Forecasted volumes do not account for gas produced from gas storage to avoid duplicative gas volumes produced.
- Flat gas demand of 70 billion cubic feet per year does not assume future additional requirements nor does it assume possible substitutes or increasing efficiency in consumption both for energy producers and commercial or domestic consumers.

Key Assumptions:

- Assumes 15 development wells per year until 2030, and no new wells beyond that. That is not a prediction that no drilling will occur after that date, it was the horizon for which 15 wells per year was assumed to be reasonable.
- Assumes gas price is flat, with escalation for inflation. Does not forecast market changes responding to supply/demand.
- Does not include contribution from non-producing known prospects and does not forecast likelihood of their development.

QUESTIONS?



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