



# STATE of ALASKA - OIL & GAS RESOURCES -



## GEOLOGIC BASINS AND ENERGY RESOURCES OF ALASKA

SPECIAL REPORT 66  
SWENSON AND OTHERS, 2012  
SHEET 2 OF 2  
REPORT ACCOMPANIES SHEET



# STATE *of* ALASKA

## - OIL & GAS RESOURCES -

### North Slope

USGS estimates that Alaska's North Slope has more undiscovered, technically recoverable oil than any other province in the Circum-Arctic

- **OIL:** Est. 40 billion barrels of conventional oil (USGS & BOEMRE)
- **GAS:** Est. 200 trillion cubic feet of conventional natural gas (USGS & BOEMRE)
- Alaska has world-class unconventional resources, including tens of billions of barrels of heavy oil, viscous oil, and shale oil, and hundreds of trillions of cubic feet of gas hydrates, tight gas, and shale gas

*Compared to most basins, Alaska is relatively underexplored, with 500 exploration wells on the North Slope, compared to Wyoming's 19,000.*

*Alaska is one of the few places to explore both conventional and unconventional resources in the same basin*

### Cook Inlet

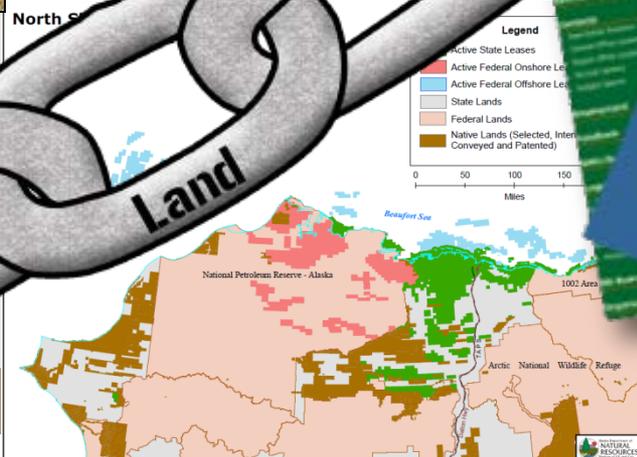
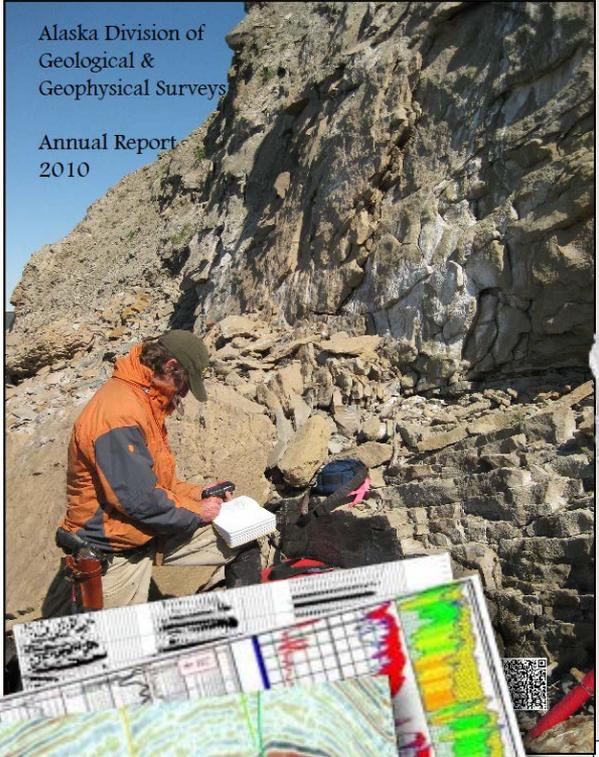
USGS estimates that significant undiscovered volumes of hydrocarbons remain to be found in the Cook Inlet:

- 19 trillion cubic feet of natural gas
- 600 million barrels of oil
- 46 million barrels of natural gas liquids



# The Resource Development Chain

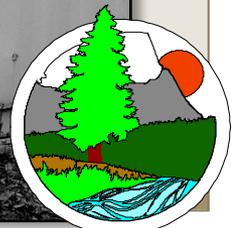
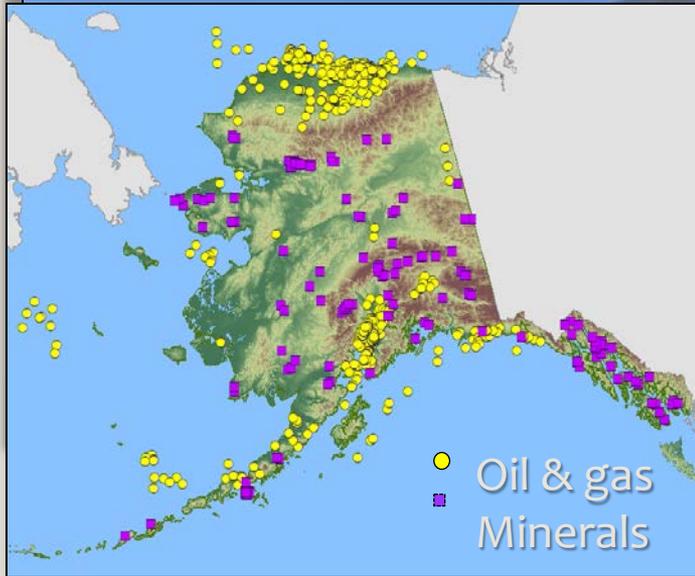
Development



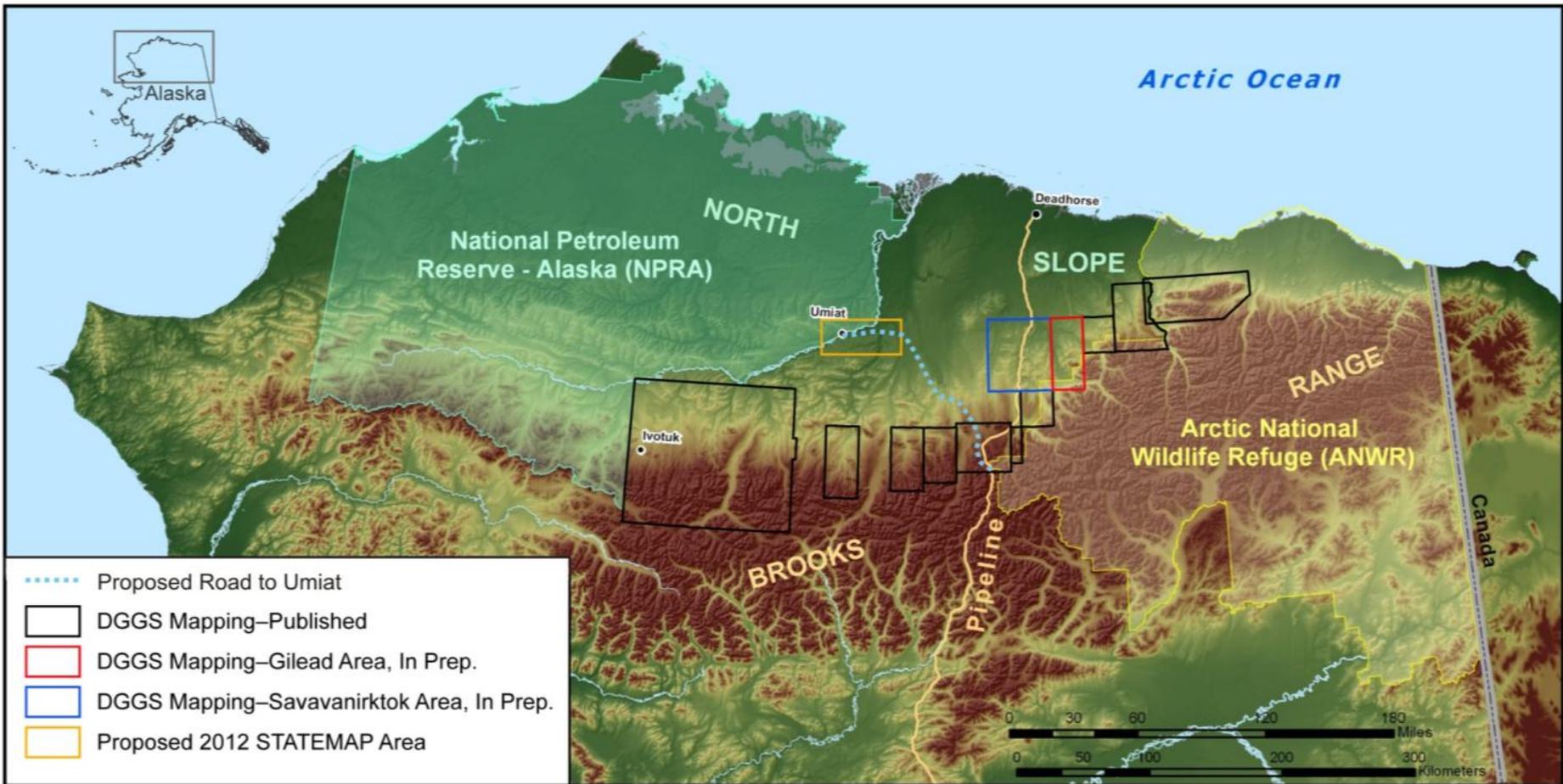
Geology

# Geologic Materials Center

*Mission - Archive and provide public access to non-proprietary oil and gas and mineral rock samples and data*

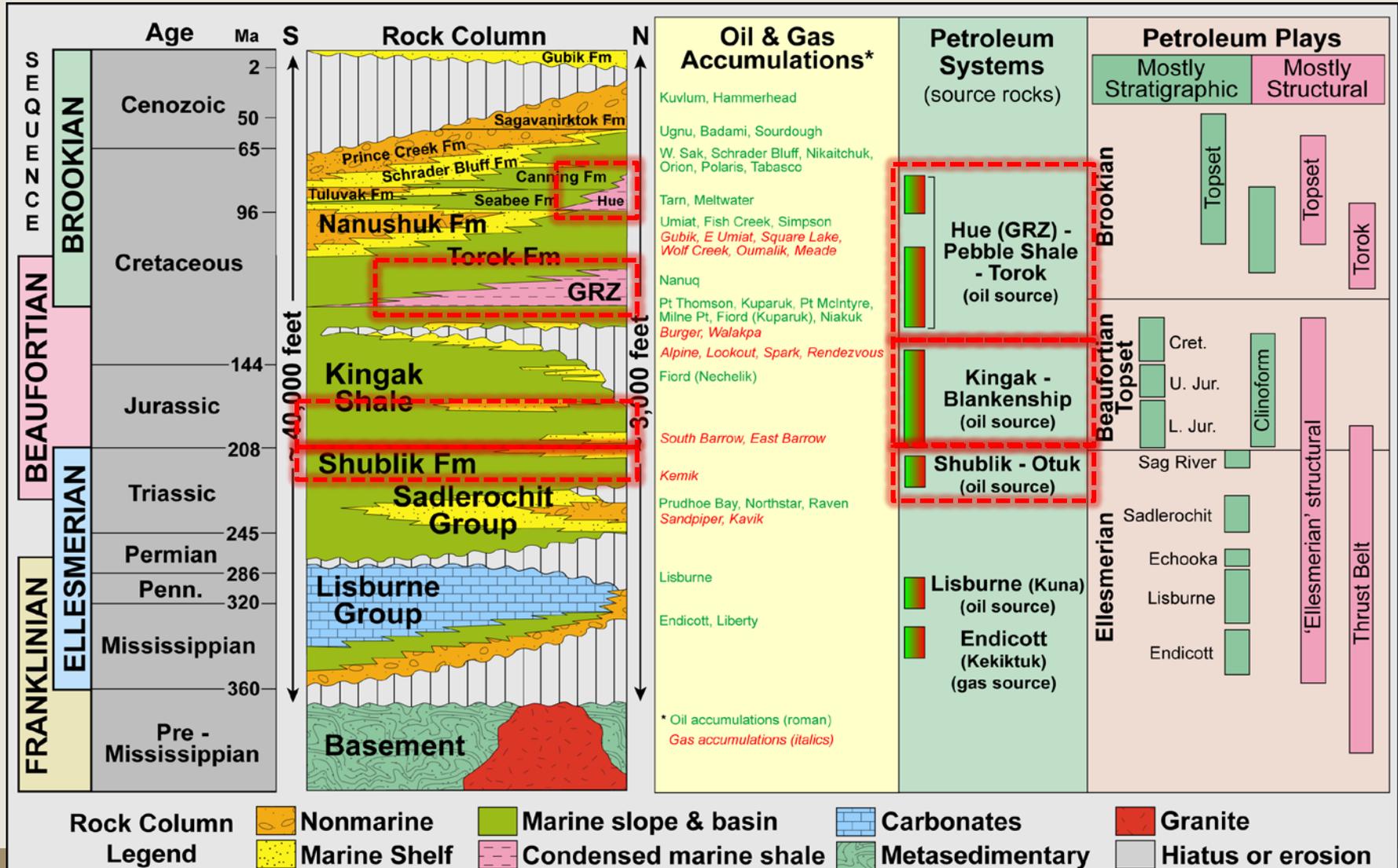


# DEPARTMENT OF NATURAL RESOURCES DGGs GEOLOGIC MAPPING AND ANALYSIS

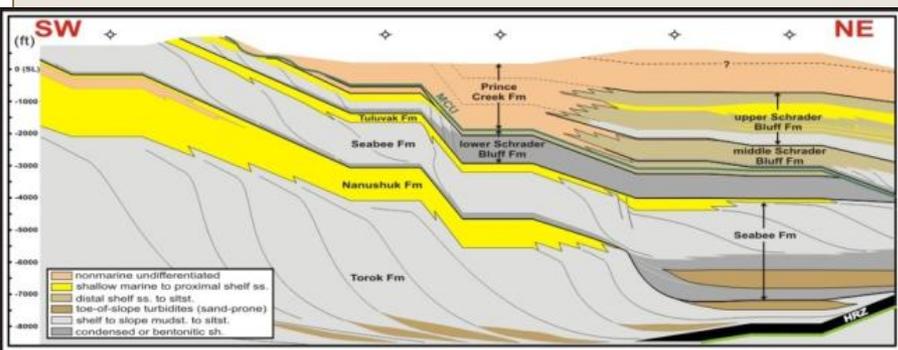
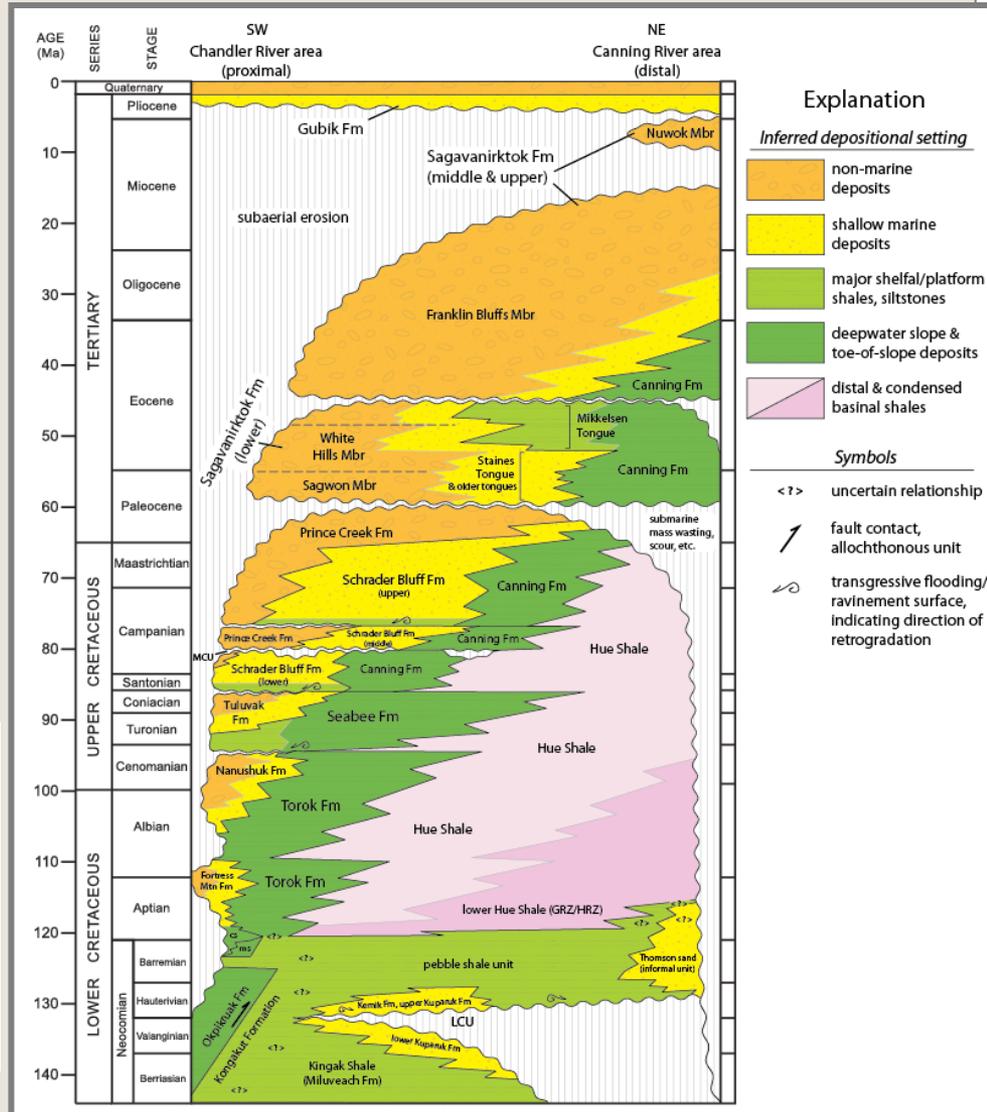


# North Slope Petroleum Systems

## 3 prolific source rock intervals



# Colville Basin Stratigraphy



Simplified from Decker (2007)

# DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL AND GAS - OIL & GAS RESOURCES -

## Sedimentary Basins in Alaska



## Access to Seismic

- Leases not required for conducting seismic operations
- Commercially available 2-D & 3-D datasets in many basins
- USGS National Archive of Marine Seismic Surveys (NAMSS): online repository of free, public seismic data in select areas, both onshore and offshore

[http://walrus.wr.usgs.gov/NAMSS/search\\_and\\_download\\_data.html](http://walrus.wr.usgs.gov/NAMSS/search_and_download_data.html)

# DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL AND GAS - OIL & GAS RESOURCES -

## Seismic Data Sources and Public Release



- Multiple Land Use Permits on state lands require seismic data
- State tax credits require project seismic data
- Seismic data held by the state
  - MLUP is indefinitely confidential
  - Tax credit seismic data held confidential for up to ten years, or two years for Frontier Basin credits
- Provisions vary regarding the public release of data from private lands
- Released surveys will be distributed to the public through the Geologic Materials Center
  - No surveys released to date
  - First survey release scheduled for 2014 (small 2-D survey in Cook Inlet)

# DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL AND GAS - LEASING -

State is divided into five large, predefined areas

- Cook Inlet: ~4.2 million acres
- Alaska Peninsula: ~5.8 million acres
- North Slope Foothills: ~7.6 million acres
- North Slope: ~5.1 million acres
- Beaufort Sea: ~2.0 million acres

*Leasing system designed  
to tap into Alaska's many  
undiscovered resources*

*Favorable and  
competitive lease terms  
and conditions*



# DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF OIL AND GAS

### - OIL & GAS RESOURCES -

#### Terms and Conditions – Areawide Lease Sales

	Options	NSFH; North Slope and Beaufort Sea (adjacent to federal lands)	North Slope (north); and Beaufort Sea (non-adjacent)	North Slope (south)	Cook Inlet	Alaska Peninsula
Min bid/acre	\$5 min	\$10	\$25	\$25	\$25	\$5
Royalty	12.5% min, fixed, net profit, sliding scale	12.5% fixed	16 2/3% fixed	12.5% fixed	12.5% fixed	12.5% fixed
Primary term	5 – 10 yrs	10 yrs	10 yrs	10 yrs	10 yrs	10 yrs
Rental	Default: \$1-3/acre Or: may set as appropriate	\$1-\$3/acre	Year 1-7, \$10/acre; Year 8+, \$250/acre	Year 1-7, \$10/acre; Year 8+, \$250/acre	Year 1-7, \$10/acre; Year 8+, \$250/acre	\$1-\$3/acre
Bid variable	Cash bonus, royalty, net profit share	Cash bonus	Cash bonus	Cash bonus	Cash bonus	Cash bonus

# DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF OIL AND GAS

### - LEASING -

#### New Lease Extension Provisions

- Allows a one-time lease extension.
- Maximum 10 years total (original term + extension).

#### Results on the North Slope

- 6 applications processed
- 3 approved, 3 denied

Applicant	Decision	Work Commitment
Repsol (June 2013)	Approved; 2-yr extension	Drill 1 new well by 7/31/2015
Repsol (Nov 2013)	Approved; 4-yr extension	Drill 2 new wells, sanction development of 2 pads
Repsol (Nov 2013)	Approved; 4-yr extension	Drill 2 new wells; conduct 3-D seismic

#### Competitive Improvements for Industry

- Accommodates short drilling windows.
- Lessees who have invested significant work in shorter-term leases have a reprieve to bring their leases into production.
- Provides a legitimate alternative to applying for a unit, saving time and money.

#### Competitive Improvements for State

- Encourages work that has already been started to be brought to completion.
- For leases that are on the verge of production, eliminates time and work required to re-offer them in lease sales.
- Decreases unwarranted unit applications, saving time and effort.

# DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL AND GAS - OIL & GAS RESOURCES -



- **Exploration Licensing**
  - Encourages exploration in new areas
  - Industry submits license proposal each April
  - Must specify a dollar amount work commitment
  - Includes public process and opportunity for industry competition
- **Frontier Basins**
  - Tax credits for exploration in key under-explored areas
    1. Alaska Peninsula
    2. Kotzebue basin
    3. Nenana basin
    4. Yukon Flats basin
    5. Copper River basin
    6. Yukon River delta
  - State, private, onshore federal lands

# DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL AND GAS - PERMITTING EFFICIENCIES -

## Goals

- Reduce the length of time to authorization
- Ability to meet statutory/regulatory requirements
- Process consistency, reliability and transparency
- Clear and precise guidance on what needs to be submitted
- Clear and precise guidance on how to evaluate and issue authorizations
- Standardized application packets (applications, guidance documents & decision templates)
- Other Land Management Considerations knowledge
- Guidance on identified authorities
- Established and published timelines
- Public and industry awareness of current permitting projects

## Project Status

### **Phase I: Permitting Internal Processes: Completed**

- Define permitting processes and establish their timelines
- Develop and implement
  - Permitting Project Management System
  - Permitting Status Report in the Permitting Project Management system

### **Phase II: Permitting Application Packet: In Progress**

- Design and implement application packets for
  - Lease and Unit Plan of Operations
  - Miscellaneous Land Use Permits
  - Guidance document for the permitting adjudicators

### **Phase III: DNR Resources Portal: In Planning**

- Design and implement DNR Resources Portal to allow
  - DOG Permitting Applicants to
    - Submit applications
    - Check application status
    - View/receive authorizations in one place
  - Public to view the status and decisions of all Permitting authorizations in one place.
  - Other DNR agencies to share land authorizations in one place