

# Alaska Oil and Gas Activities

Division of Oil and Gas  
January 2001

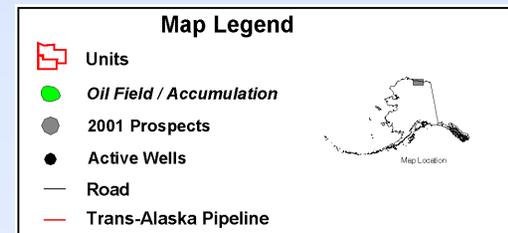
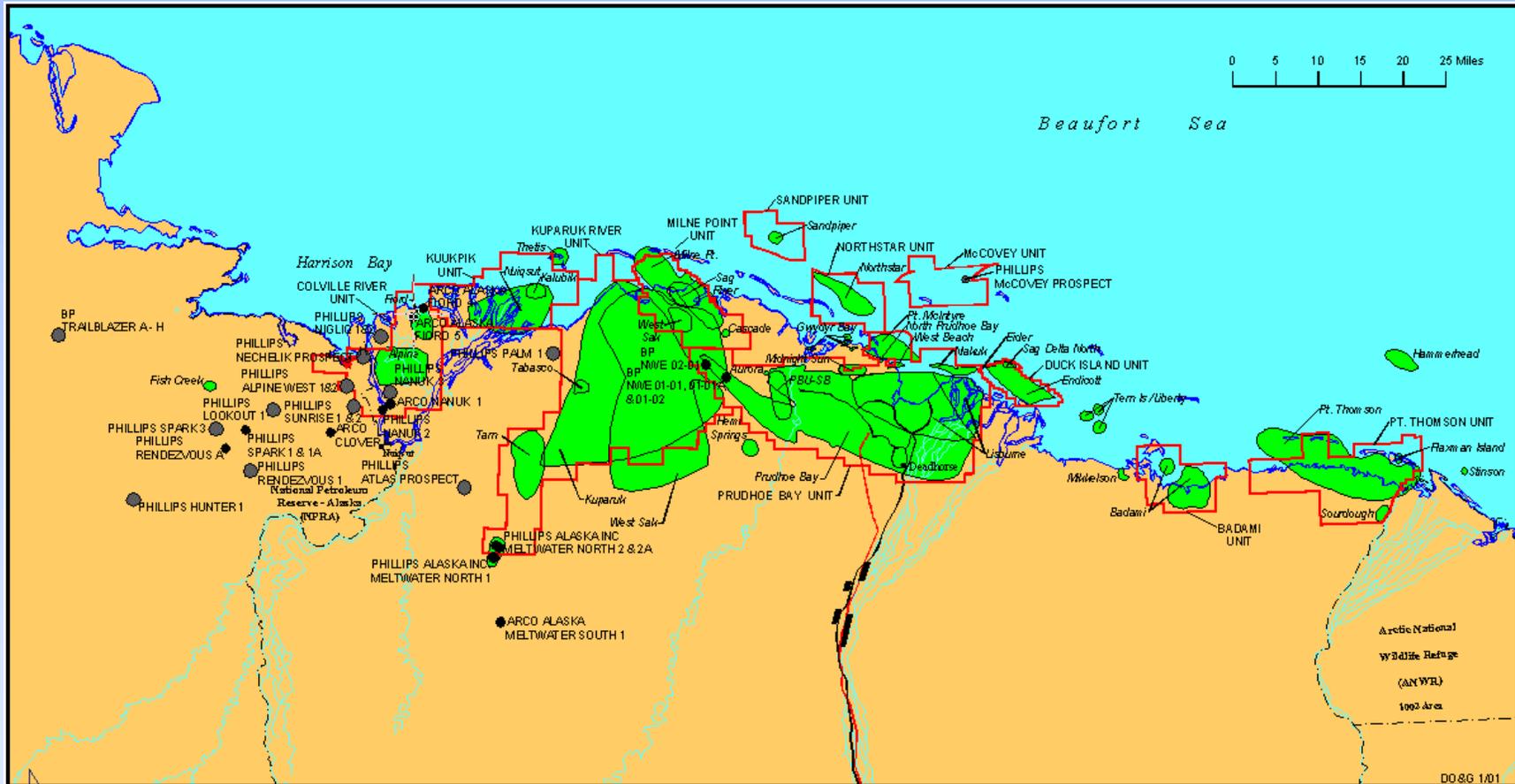


Alaska Department of  
Natural  
Resources

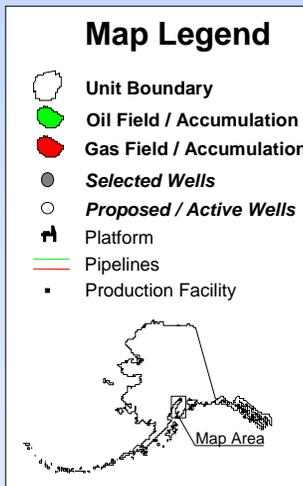
<http://www.dog.dnr.state.ak.us/oil/products/products.htm>



# Proposed North Slope Activity - 2001

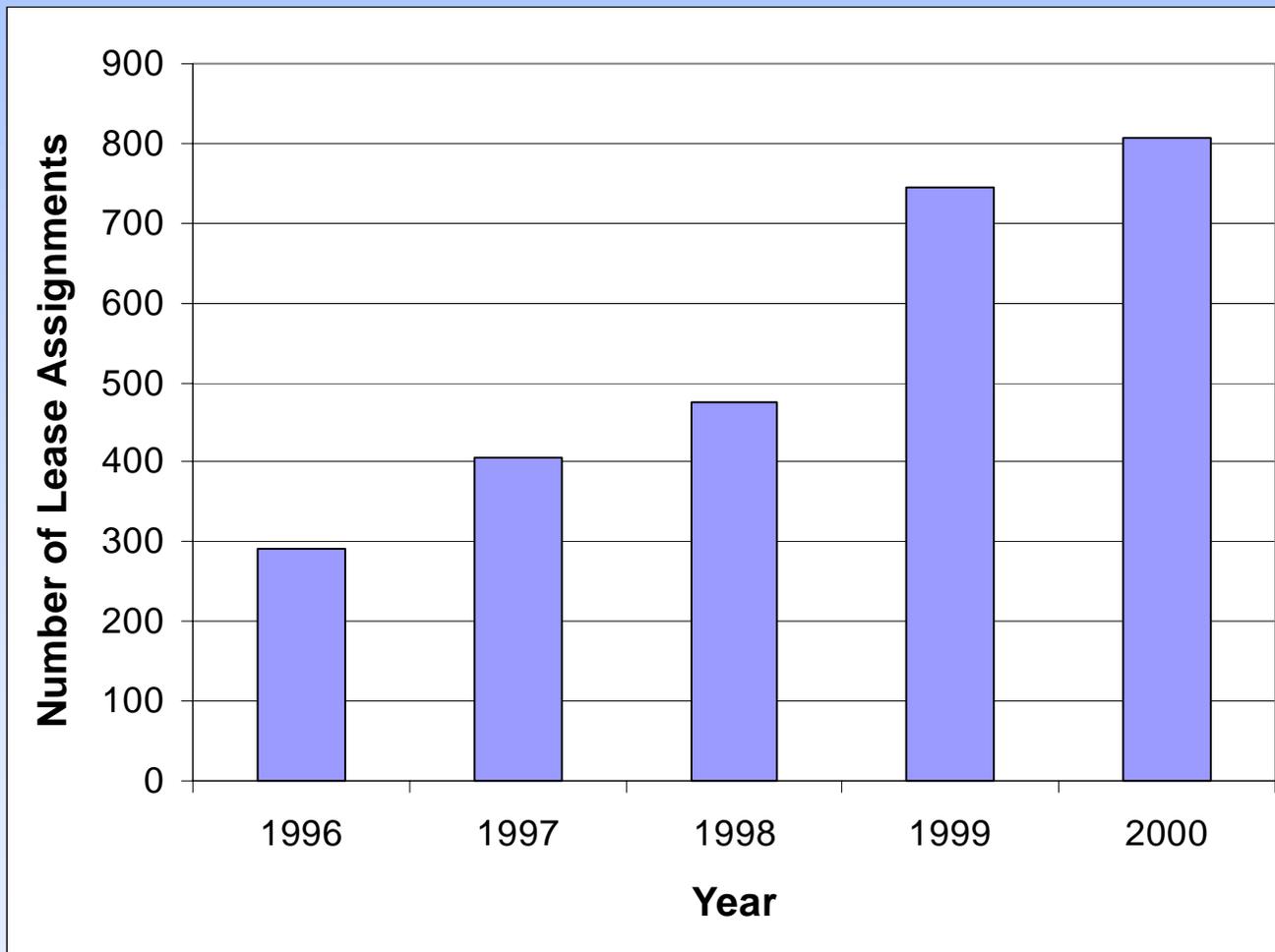


# Cook Inlet Activity



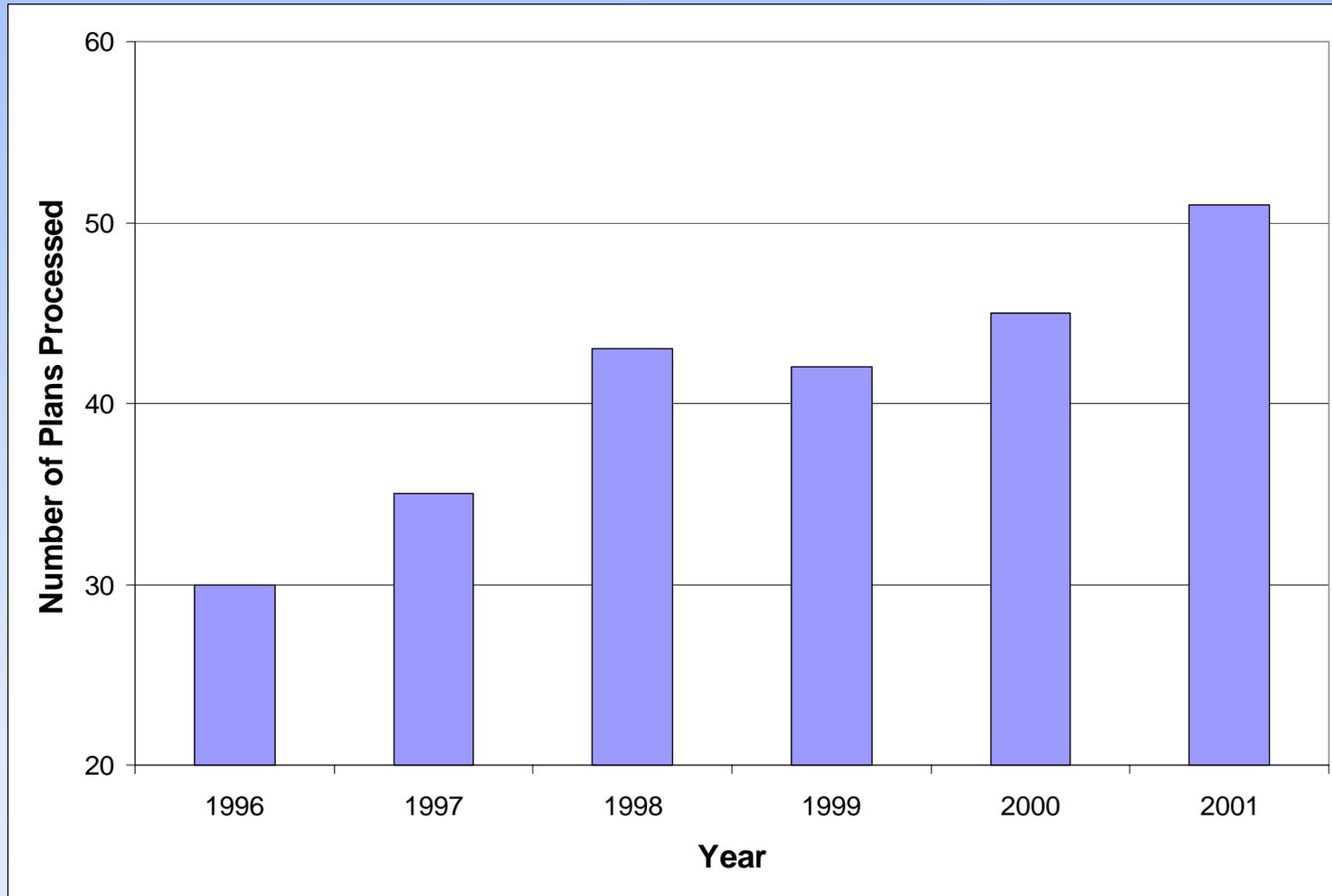
DO&G 01/01

# Lease Assignments in Alaska

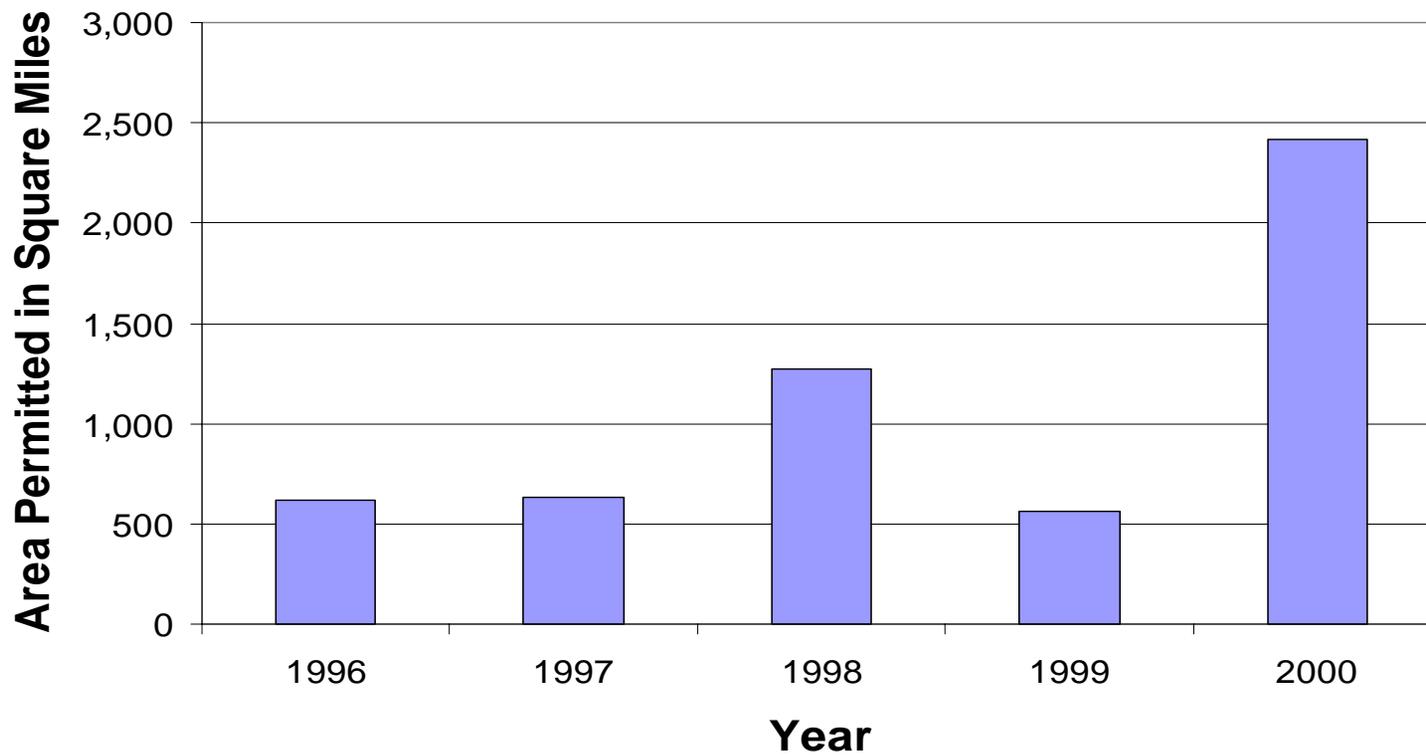


# Unit Activity

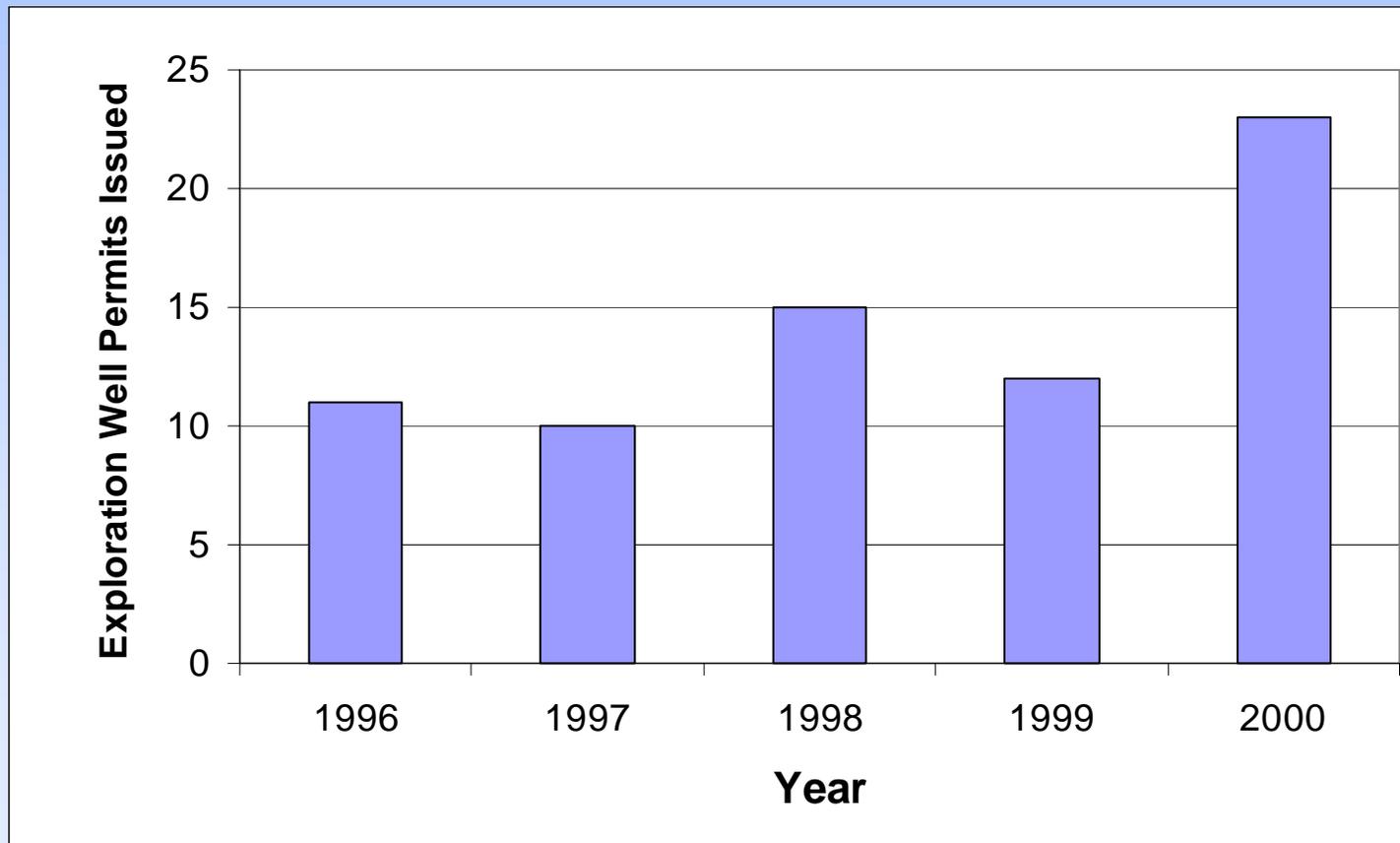
## Plans of Development / Exploration



# 3-D Seismic Survey Miles in Alaska

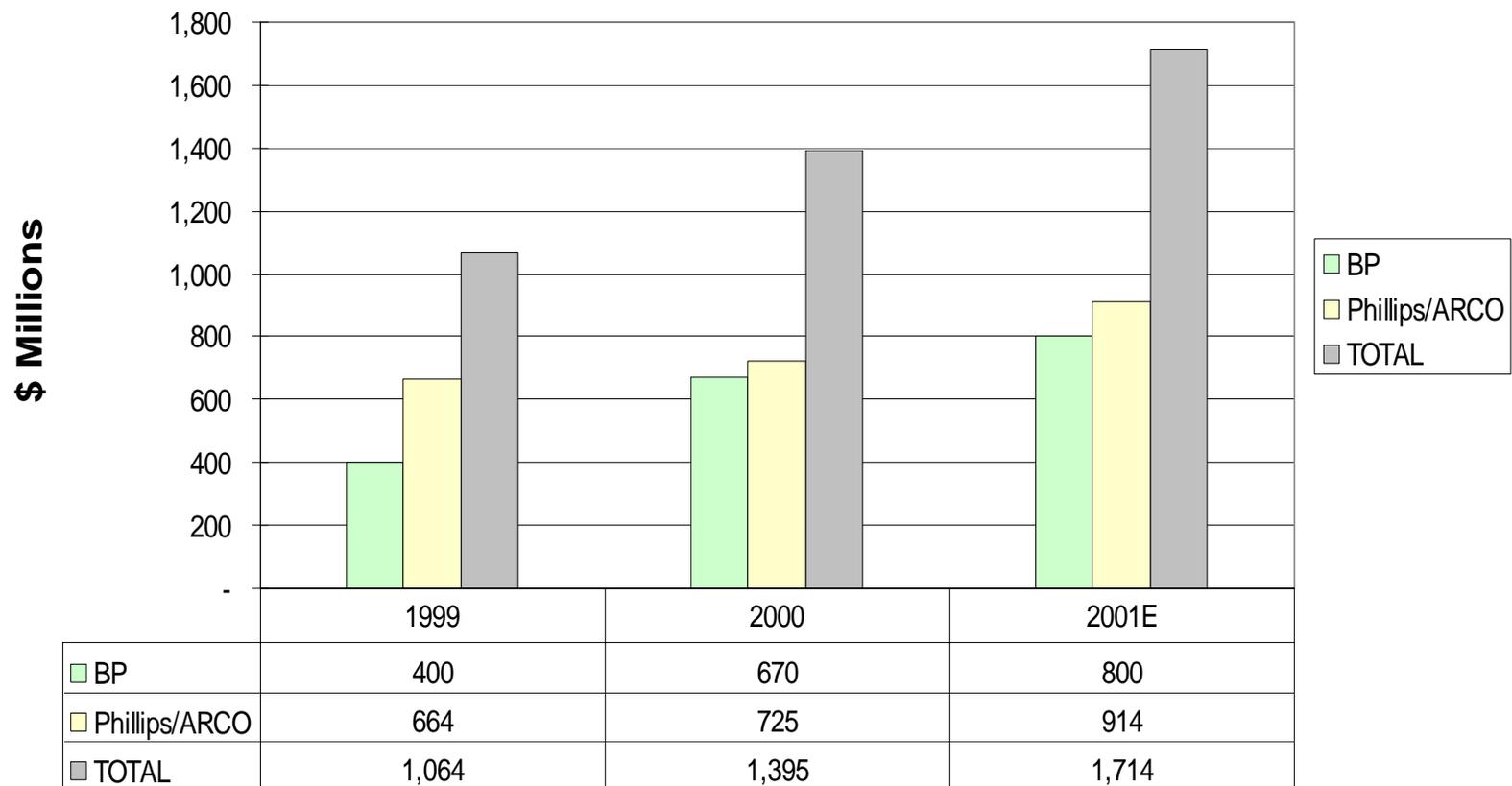


# North Slope Exploration Wells Permitted



# Oil Industry Capital Spending In Alaska

BP and Phillips/ARCO Net Capital Spending in Alaska, 1999-2001

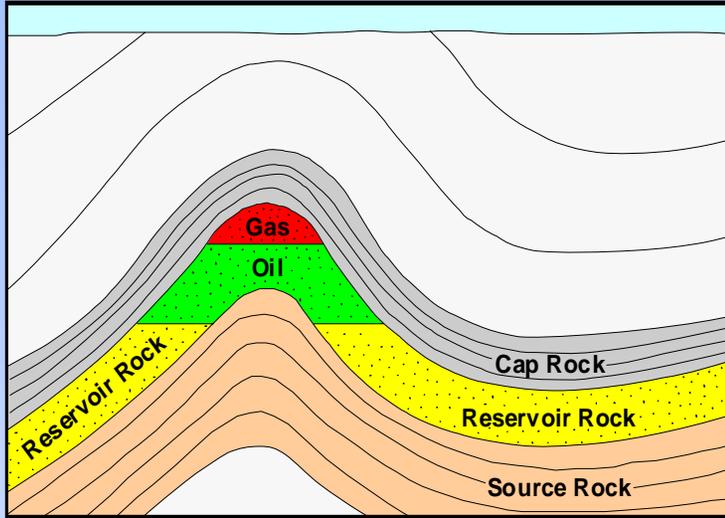


# Elements of Successful Exploration

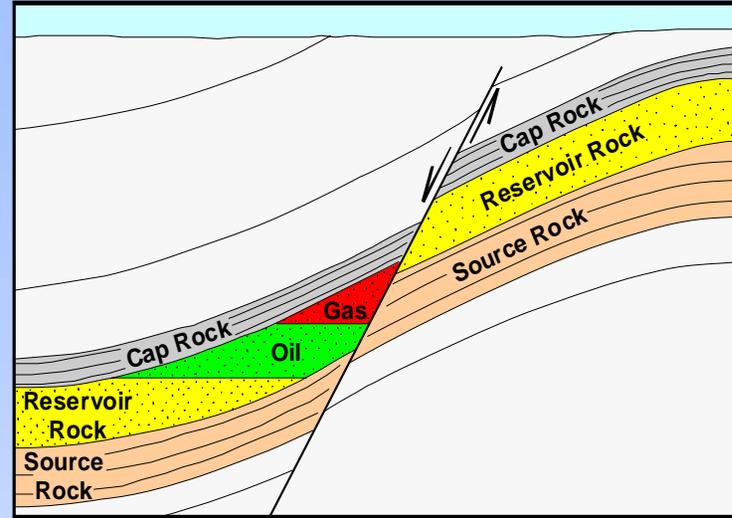
- Source Rock
- Generation
- Migration
- Reservoir Rock
- Trap
- Seal

# Oil and Gas Trapping Mechanisms

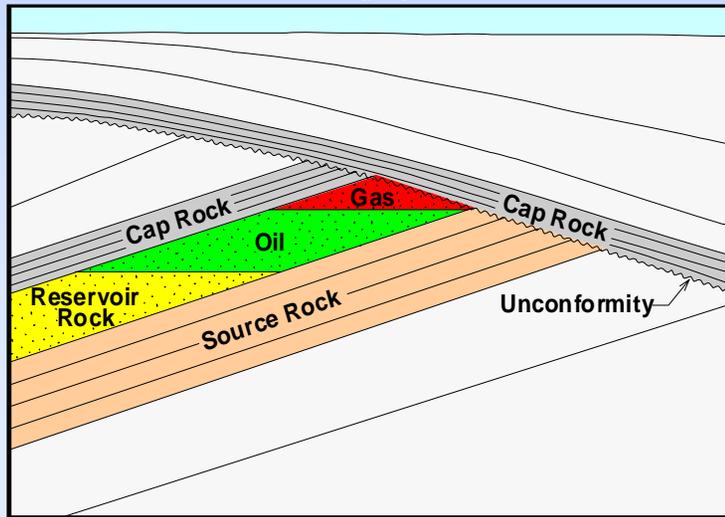
Anticline



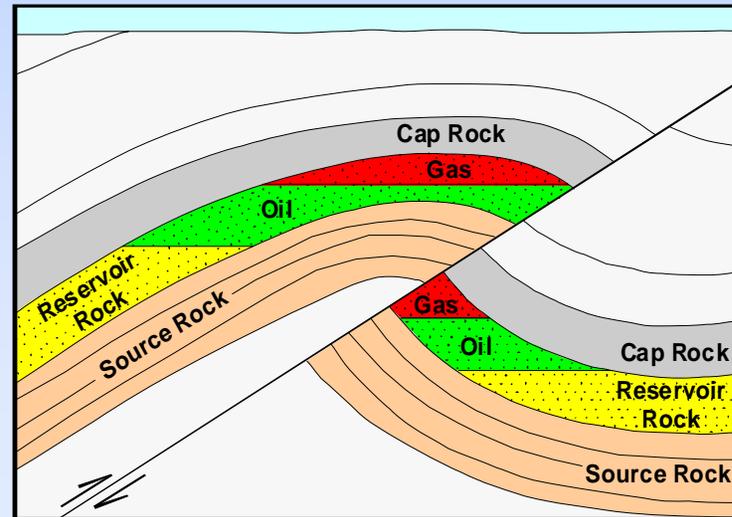
Normal Fault



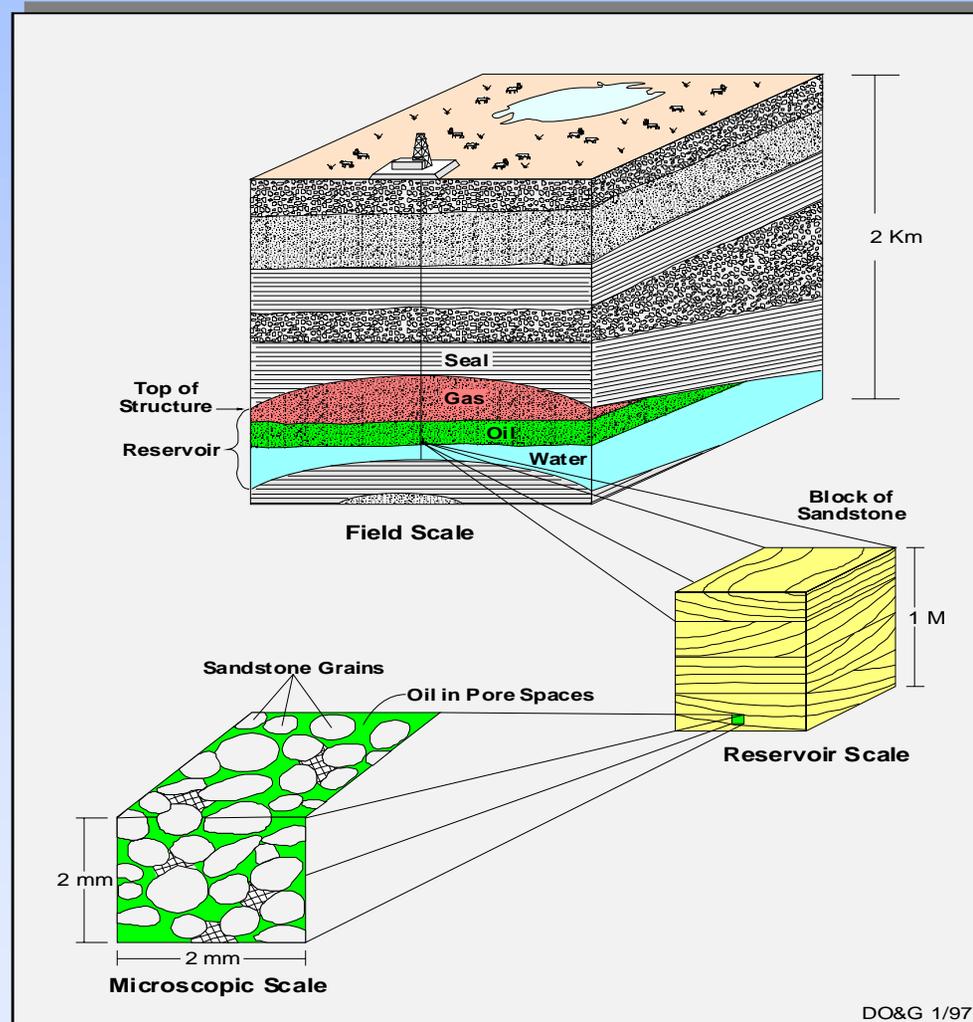
Stratigraphic



Thrust Fault

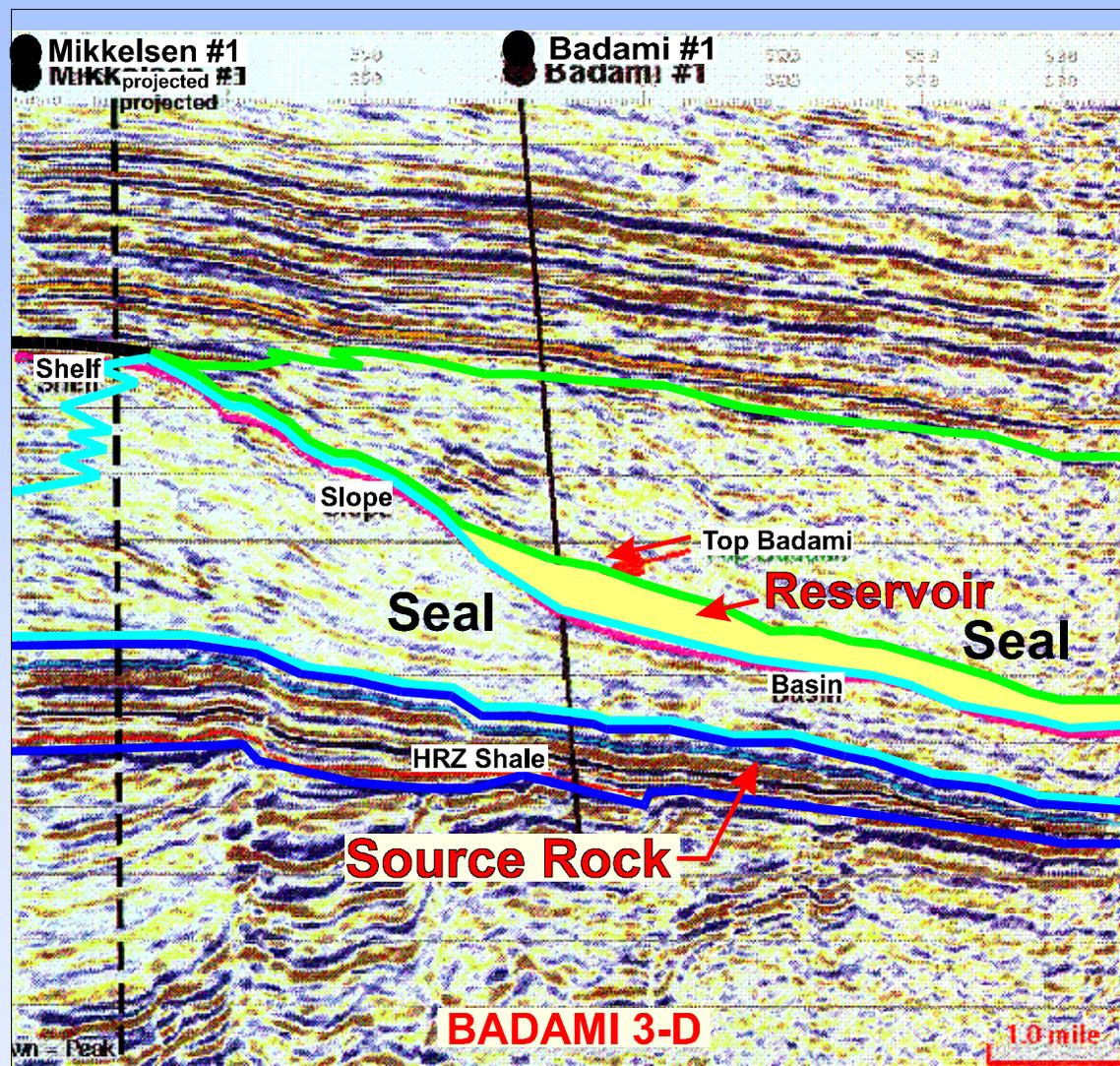


# Oil & Gas Accumulation Viewed at Different Scales

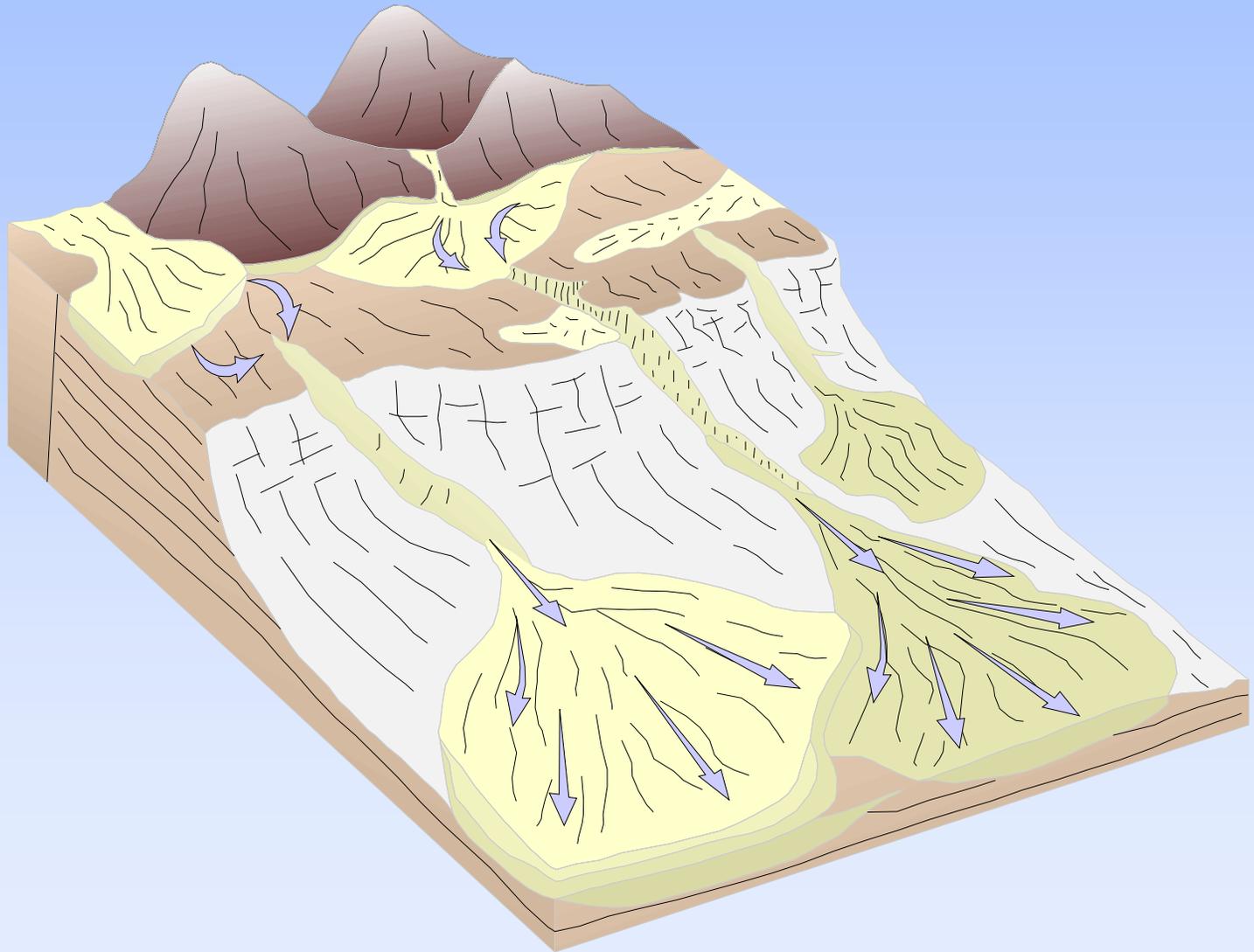


# Badami Seismic Cross-Section

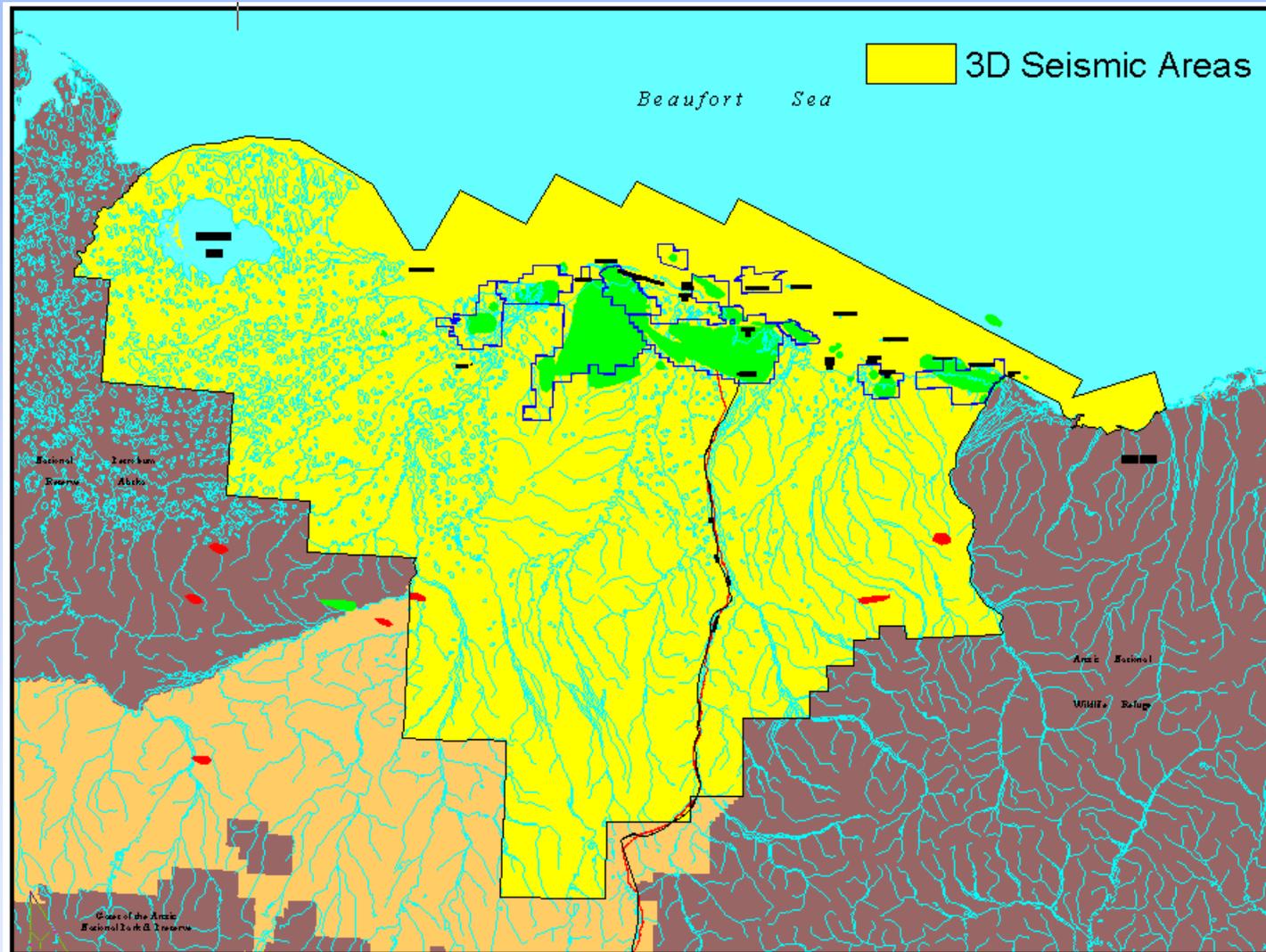
(Example of a Stratigraphic Trap)



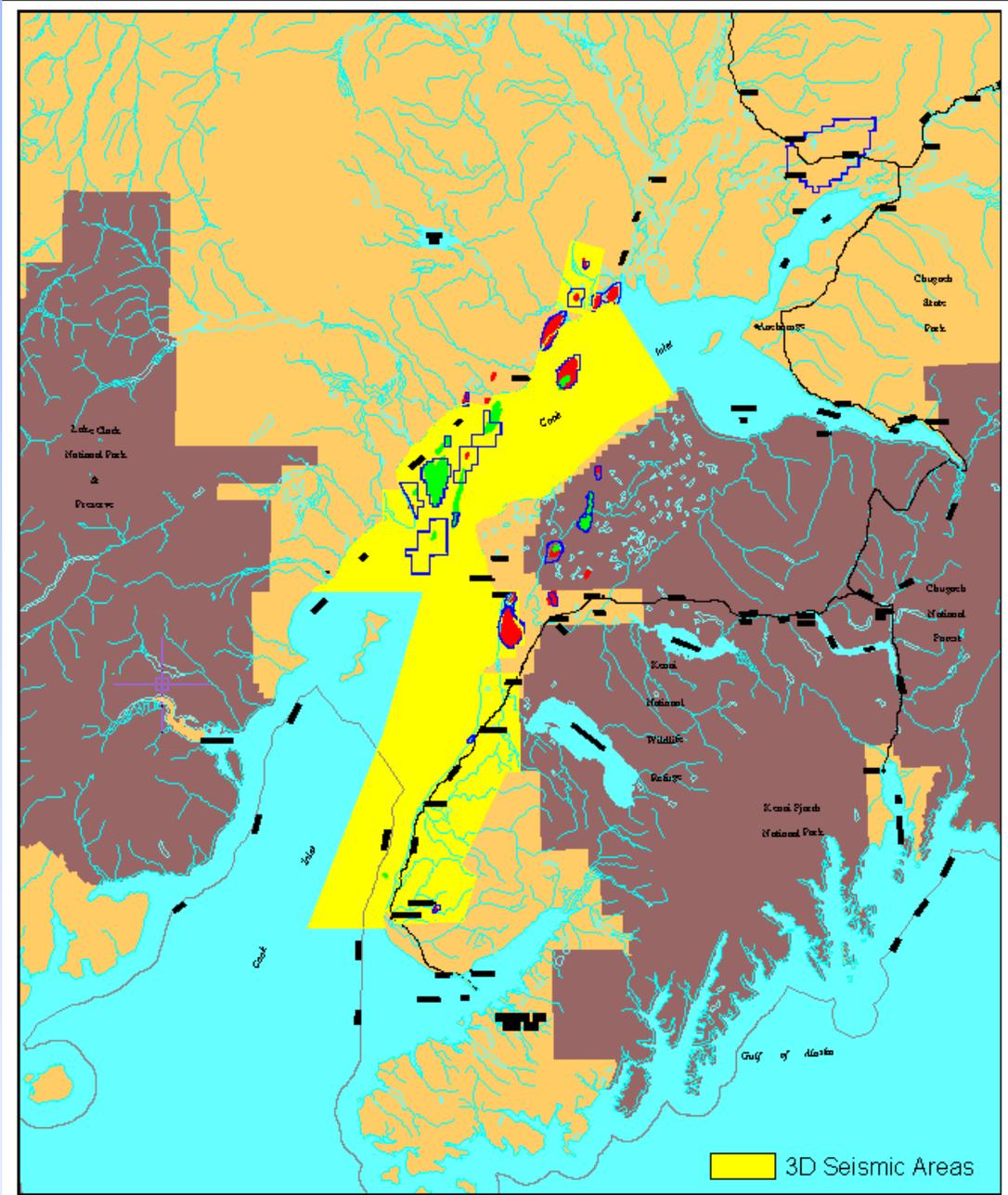
# Submarine Fan Badami Depositional Model



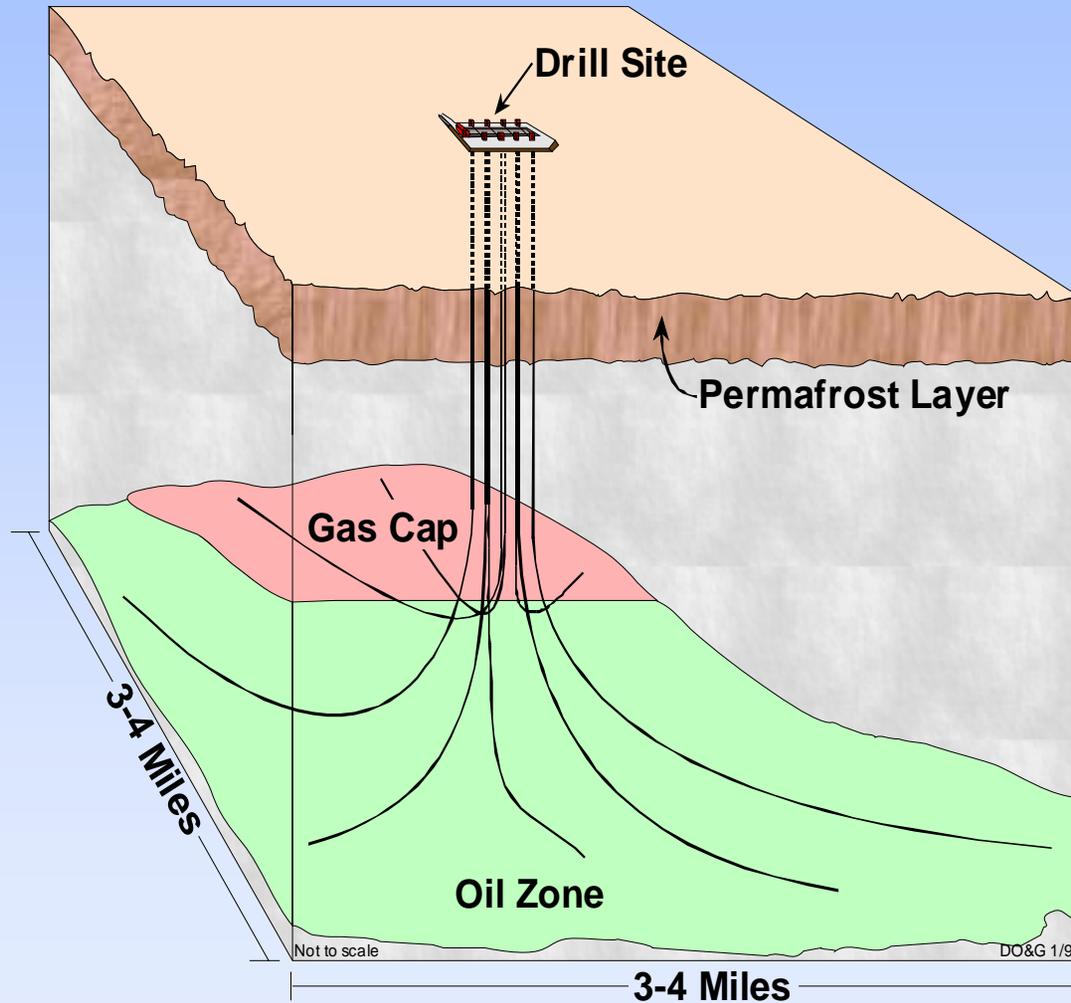
# North Slope 3-D Seismic Survey Areas



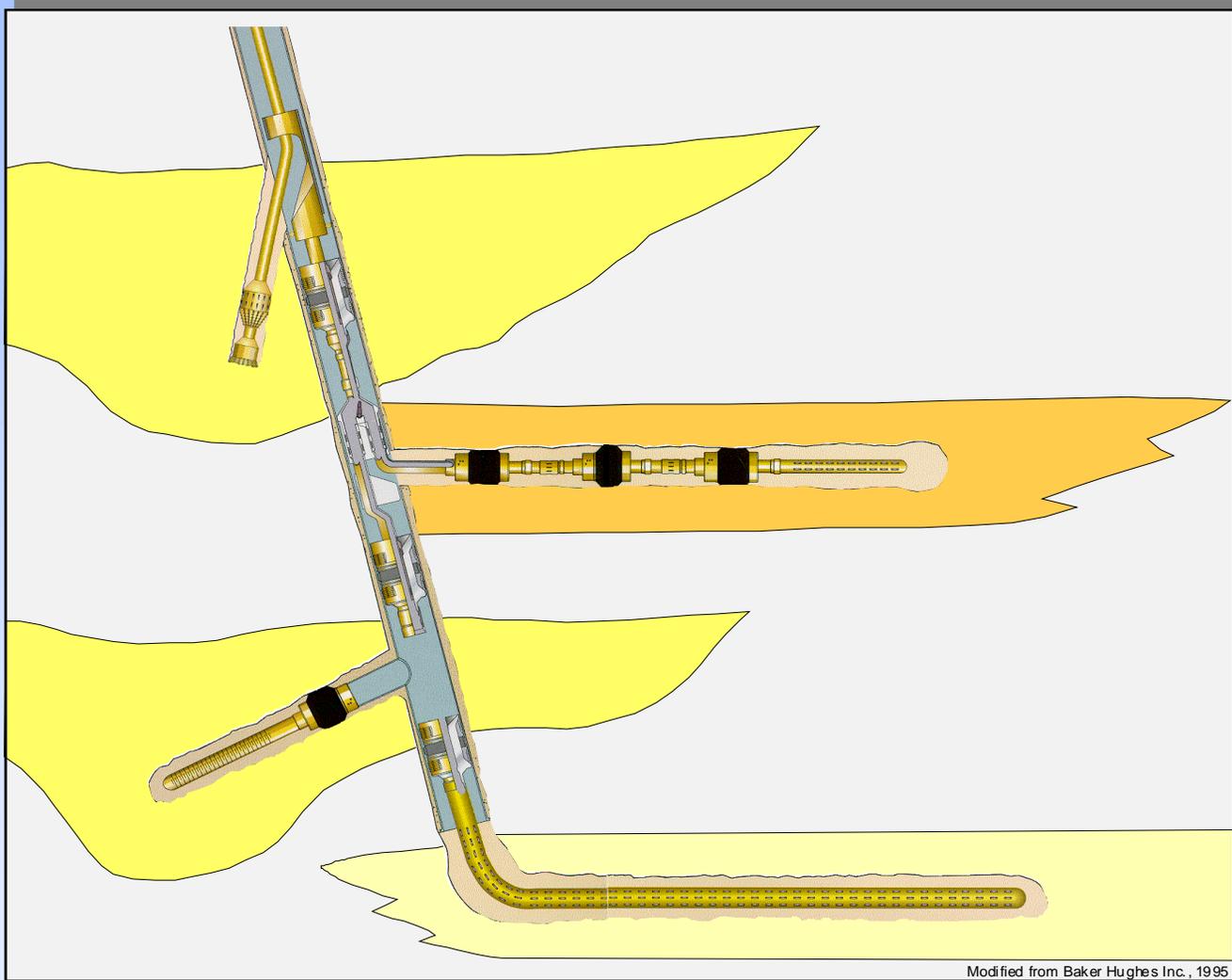
# Cook Inlet 3-D Seismic Survey Areas



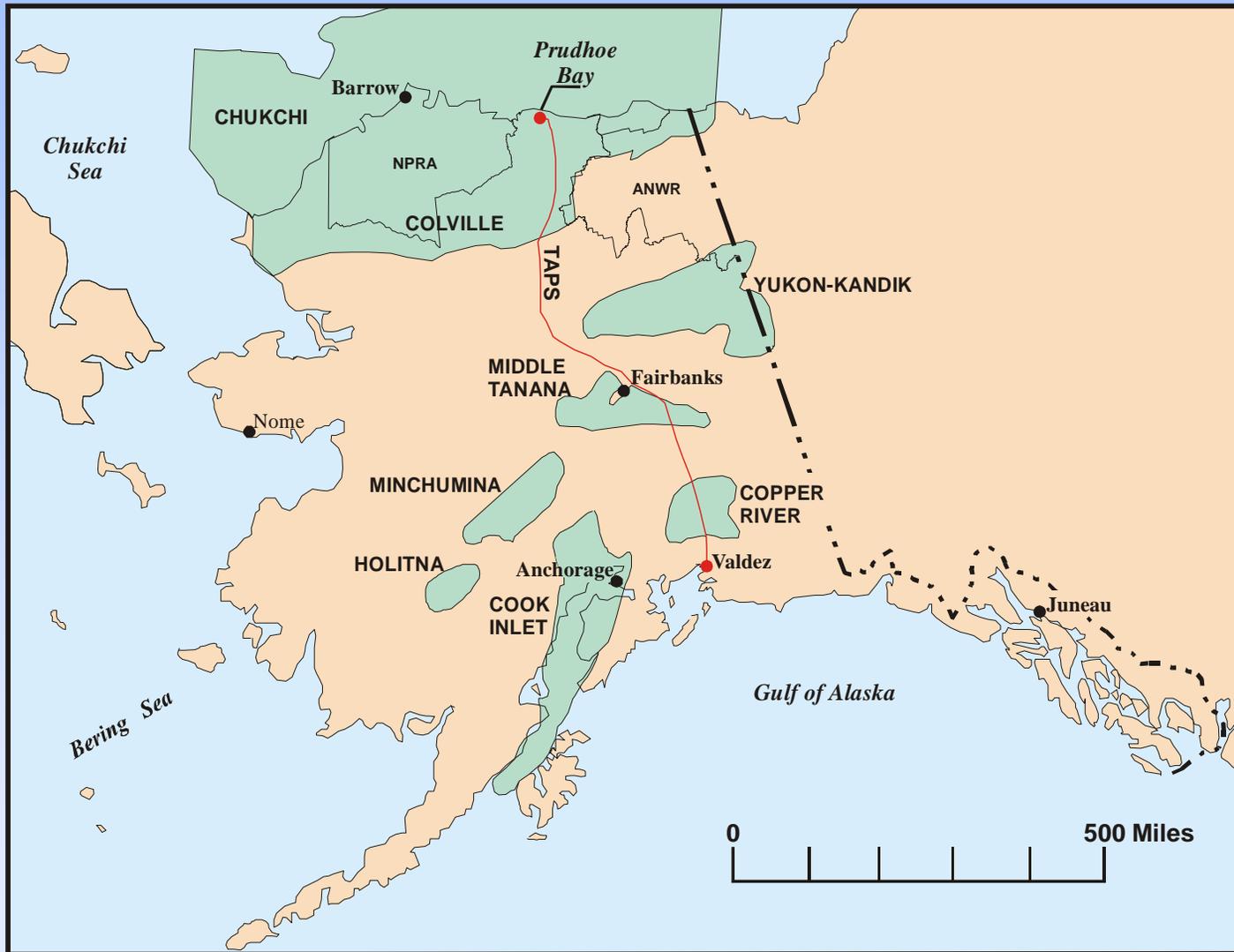
# 3-D View of North Slope Development Pad



# Multi-Lateral Wellbore Completions



# Alaska's Onshore Basins



# Copper River Basin Petroleum Geology

- Area – 13,200 km<sup>2</sup>
- Basin fill – 2,700 m of Middle Jurassic through early Cretaceous sediments, 4,300 m of Early and Late Cretaceous flysch, and 1,200 m of Tertiary sediment
- Basin structural style – Intermontane lowland
- No. of exploration wells drilled – Eleven
- Identified plays – Anticlines in Jurassic through Cretaceous clastics and carbonates, Tertiary coalbed gas
- Reservoirs – Naknek, Nelchina, and lower Matanuska formations
- Source – Mid-Jurassic marine shales, marine McCarthy Fm. shale and limestone, lower Matanuska Fm. shales
- Reported oil and gas shows – Minor oil and gas shows, more significant gas shows from Cretaceous in two wells
- Comments – Thick Cretaceous flysch, thin Tertiary cover

# Areawide Lease Sales

## North Slope

- **3 Sales Held: 1998, 1999 & 2000**
- **1.4 Million Acres Leased**
- **\$65 Million in Bonus Bids**
- **1.9 Million Acres Under Lease**
- **6 Sales Proposed Over Next 5 Years**

## Cook Inlet

- **2 Sales Held: 1999 & 2000**
- **215,000 Acres Leased**
- **\$2.3 Million in Bonus Bids**
- **716,000 Acres Under Lease**
- **5 Sales Proposed Over Next 5 years**

## Beaufort Sea

- **1 Sale Held: 2000**
- **33,900 Acres Leased**
- **\$440,000 in Bonus Bids**
- **839,000 Acres Under Lease**
- **5 Sales Proposed Over Next 5 Years**

# **Oil and Gas Lease Sales: Major Issues**

## **Cook Inlet**

- **Beluga Whale Habitat**
  - Leasing deferred on 136 tracts
  - Cannot lease deferred tracts without court approval
  - Waiting for NMFS to develop a conservation plan

## **Beaufort Sea**

- **Bowhead Whales**
  - Leasing deferred on 57 tracts
- **Oil & Gas Transportation -- ANWR & portions of NPRA off limits**
- **Oil Spill Cleanup during periods of broken ice**

# Shallow Natural Gas Leasing

## Statewide Program

- **Allows drilling down to a depth of 3000 ft.**
- **Excludes areas included in Oil & Gas Leasing Program**
- **Purpose**
  - Provide energy supply to rural areas
  - Encourage exploration in remote areas
  - Supplement declining Cook Inlet reserves

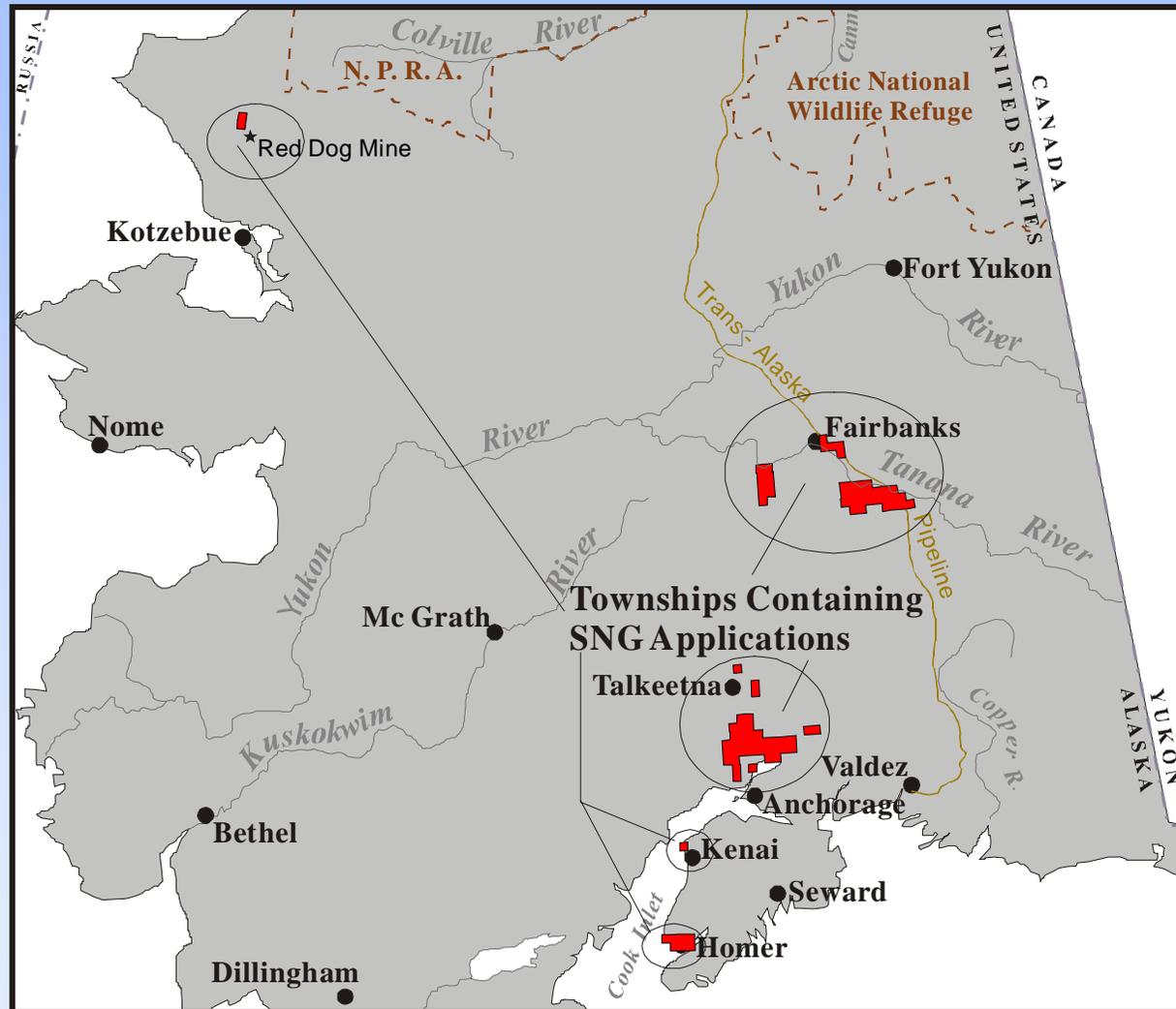
## Incentives

- **Reduced rents -- 50 cents/acre**
- **Reduced royalty -- 6.25%**
- **First-come, first-served**
- **No bonus bid, \$500 application fee only**
- **Exempt from c-plan**
- **Exempt from Best Interest Finding**
- **Reduced financial responsibility requirement**
- **Exempt from waste discharge permit during drilling**

## Applications to Date -- 302

- **Northwest Arctic - 8 (Red Dog Mine)**
- **Interior - 100 (Nenana, Fairbanks, Big Delta)**
- **Railbelt - 194 (Talkeetna to Homer)**

# Shallow Natural Gas Lease Applications



# Exploration Licensing

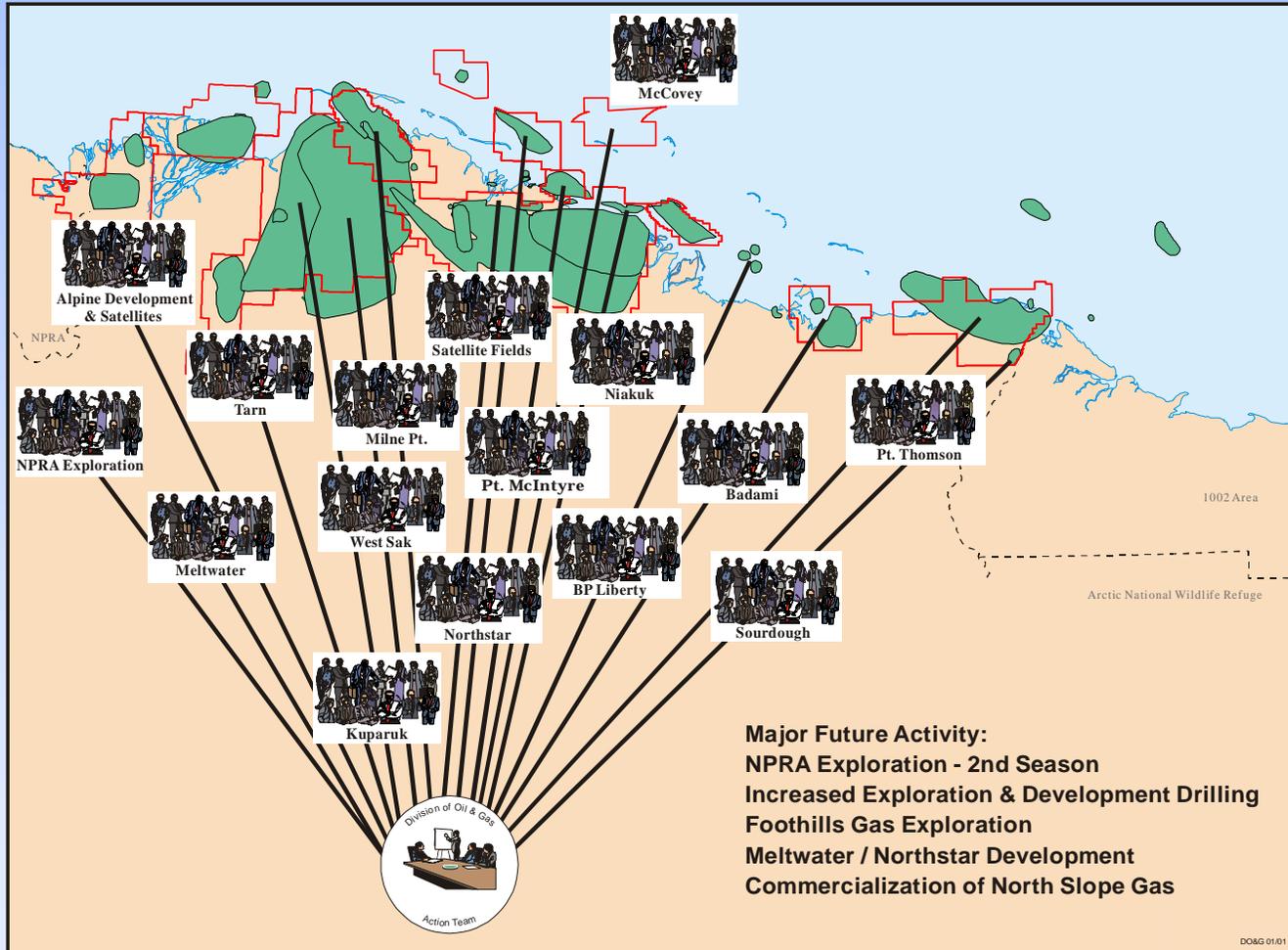
## Issued -- Copper River Basin

- **State's first license: Issued October 1, 2000**
- **Anschutz Exploration Corp**
- **318,756 Acres**
- **Exploration commitment: \$1.42 million**
- **Term of license: 5 years**

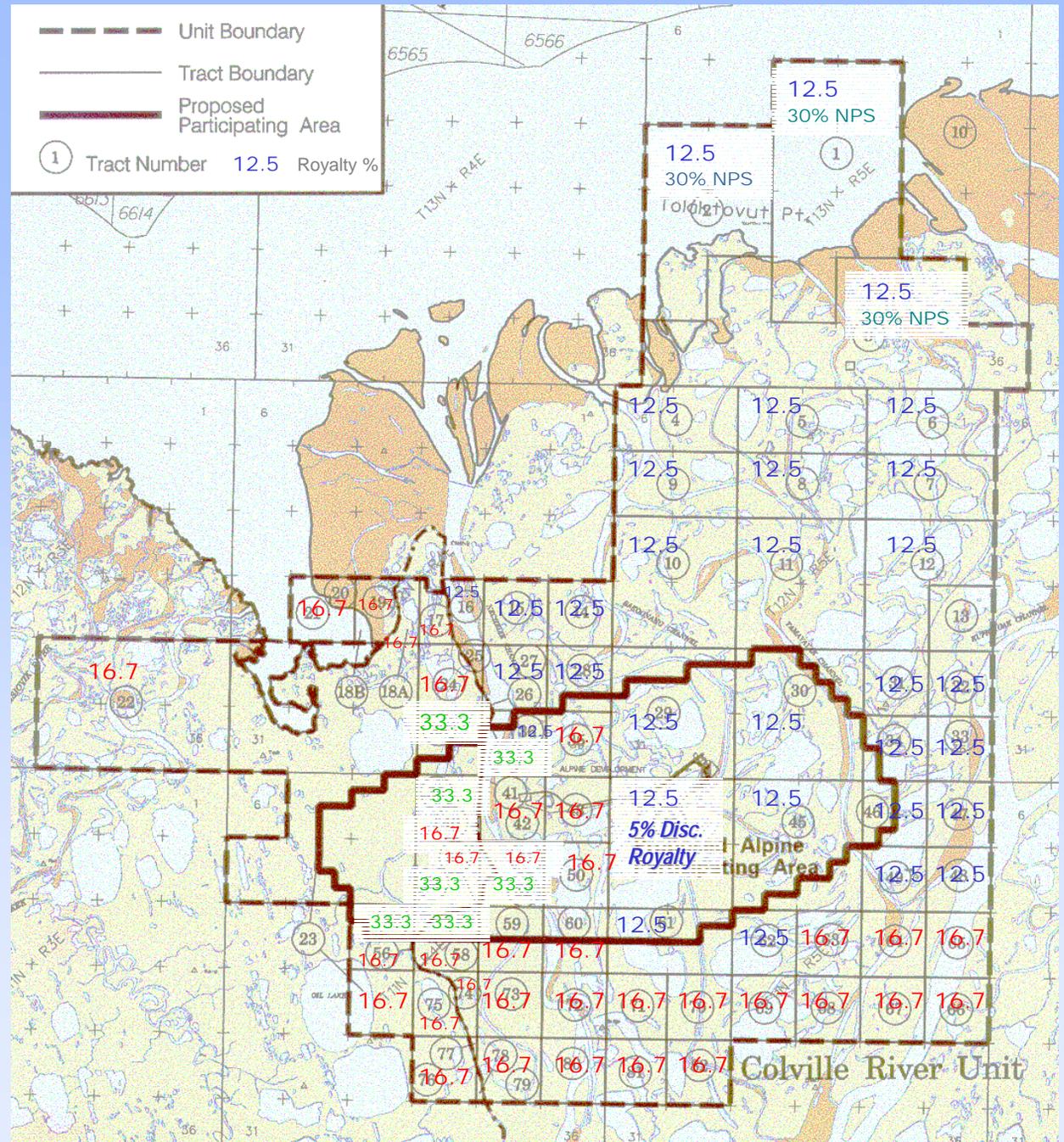
## Proposed -- Susitna Valley

- **Forest Oil Corp (Forcenergy Inc.) submitted two proposals**
- **474,240 Acres each, located west of the Susitna River**
- **Exploration commitment for each: \$3 million**
- **DNR will determine terms of licenses & final configurations**
- **Preliminary Best Interest Finding (BIF) to be issued in April**
- **Final BIF and Decision to be issued in October**

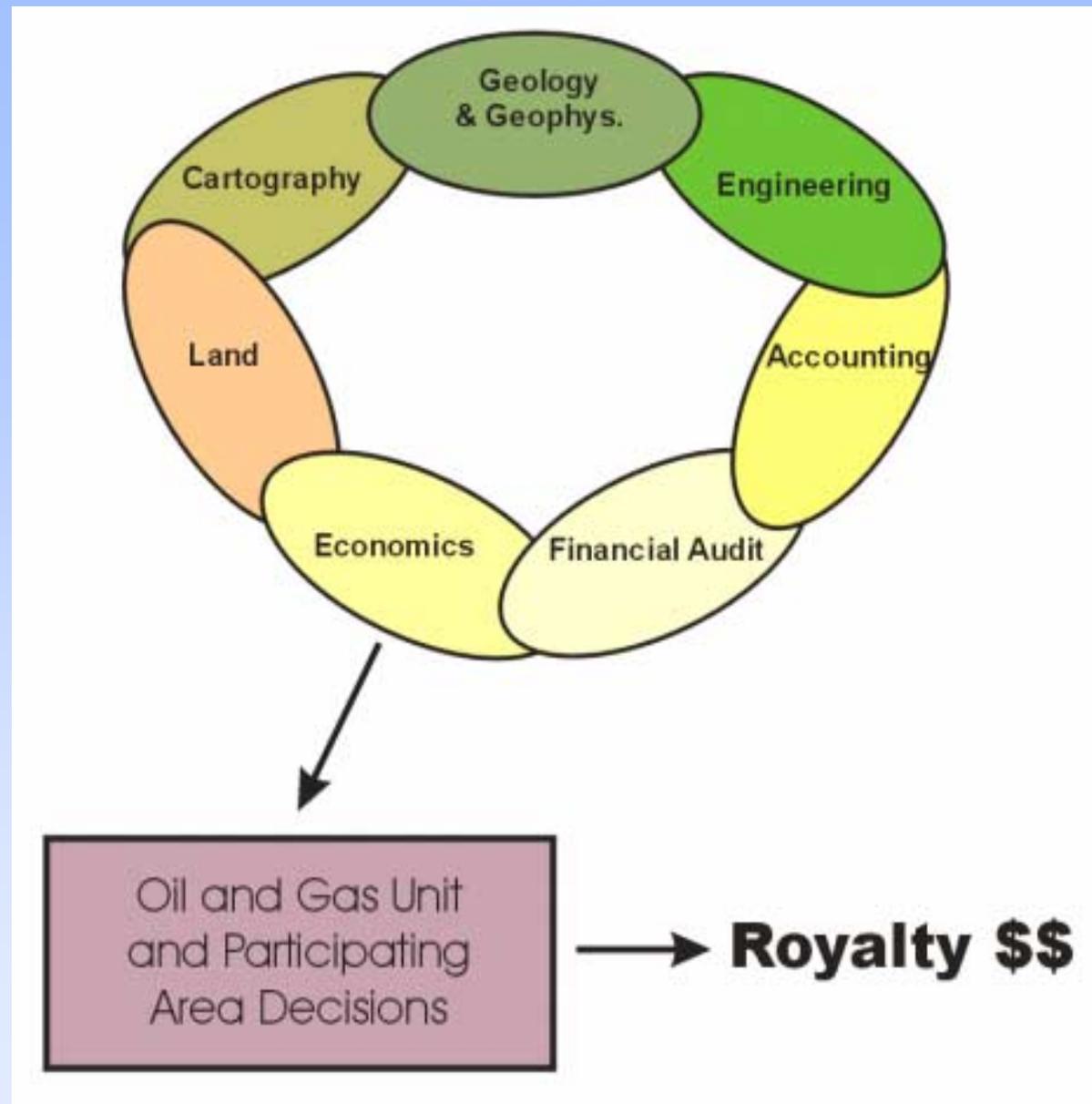
# Invigorated Oil & Gas Industry Company Asset Teams Inundate Division



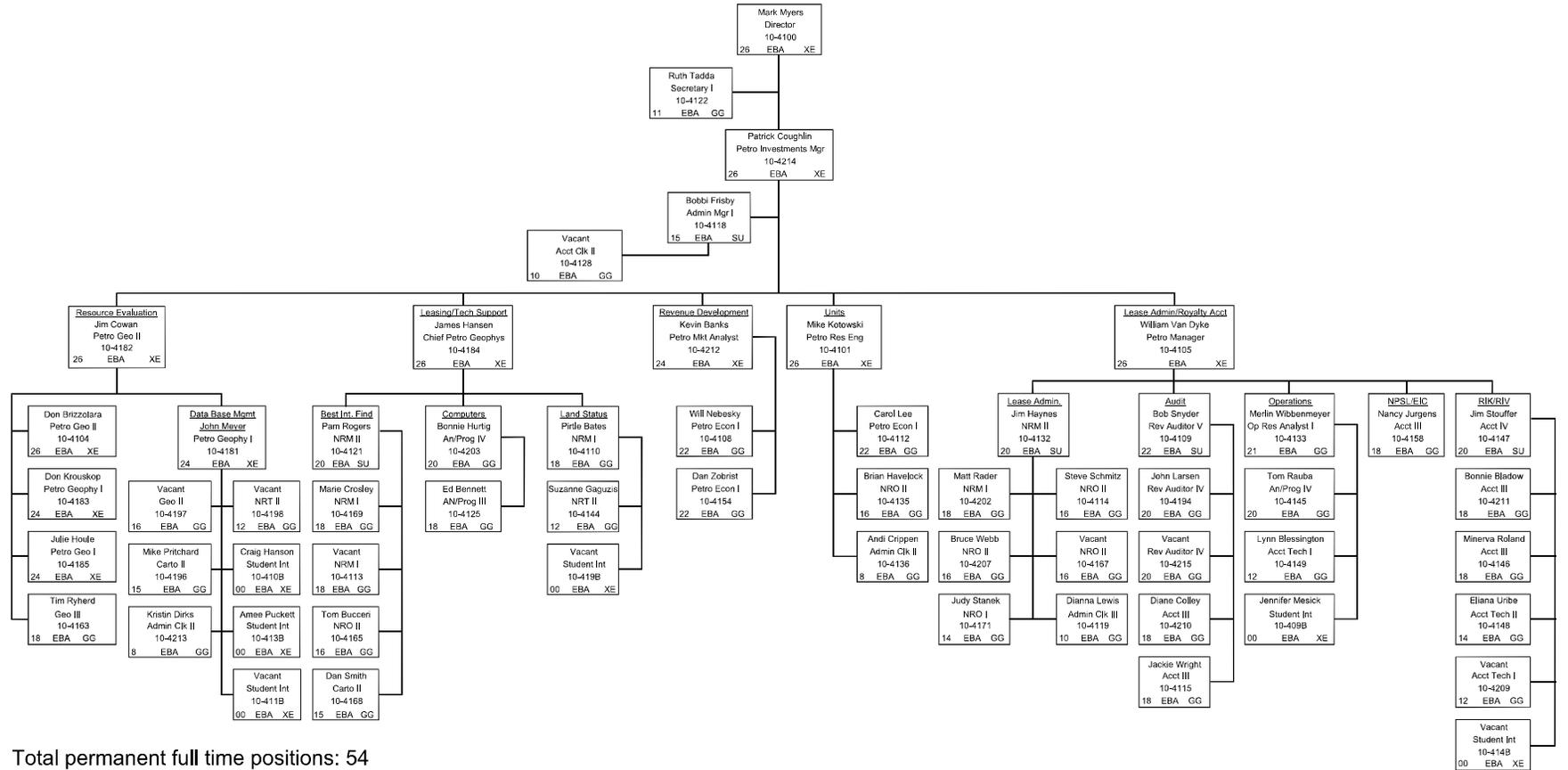
# Colville River Unit Royalty Rates and Lease Terms



Division of Oil and Gas Organization Links Affect the Bottom Line



# Division of Oil & Gas Organization Chart



Total permanent full time positions: 54

Total Intern positions: 6

Total permanent full time positions filled: 47

Total Intern positions filled: 3

# State-Federal Comparison Activity, Staffing and Budgets for Oil and Gas Agencies<sup>(1)</sup>

	<u>State DO&amp;G</u>	<u>Federal<sup>(2)</sup></u>
Active Leases . . . . .	1,202	171
Active Units . . . . .	30	11
Producing Leases . . . . .	320	38 <sup>(3)</sup>
Annual Oil Production . . .	462.6 mmbbls	1.0 mmbbls <sup>(4)</sup>
Number of Employees . . . . .	53	87 <sup>(5)</sup>
Annual Budget . . . . .	\$4.3	\$8.4 million

(1) all figures based on 1999 data

(2) combines MMS and BLM; does not include federal royalty accounting group in Denver

(3) all producing leases are in Cook Inlet, mostly gas production

(4) million barrels

(5) includes 80 MMS employees and 7 BLM employees