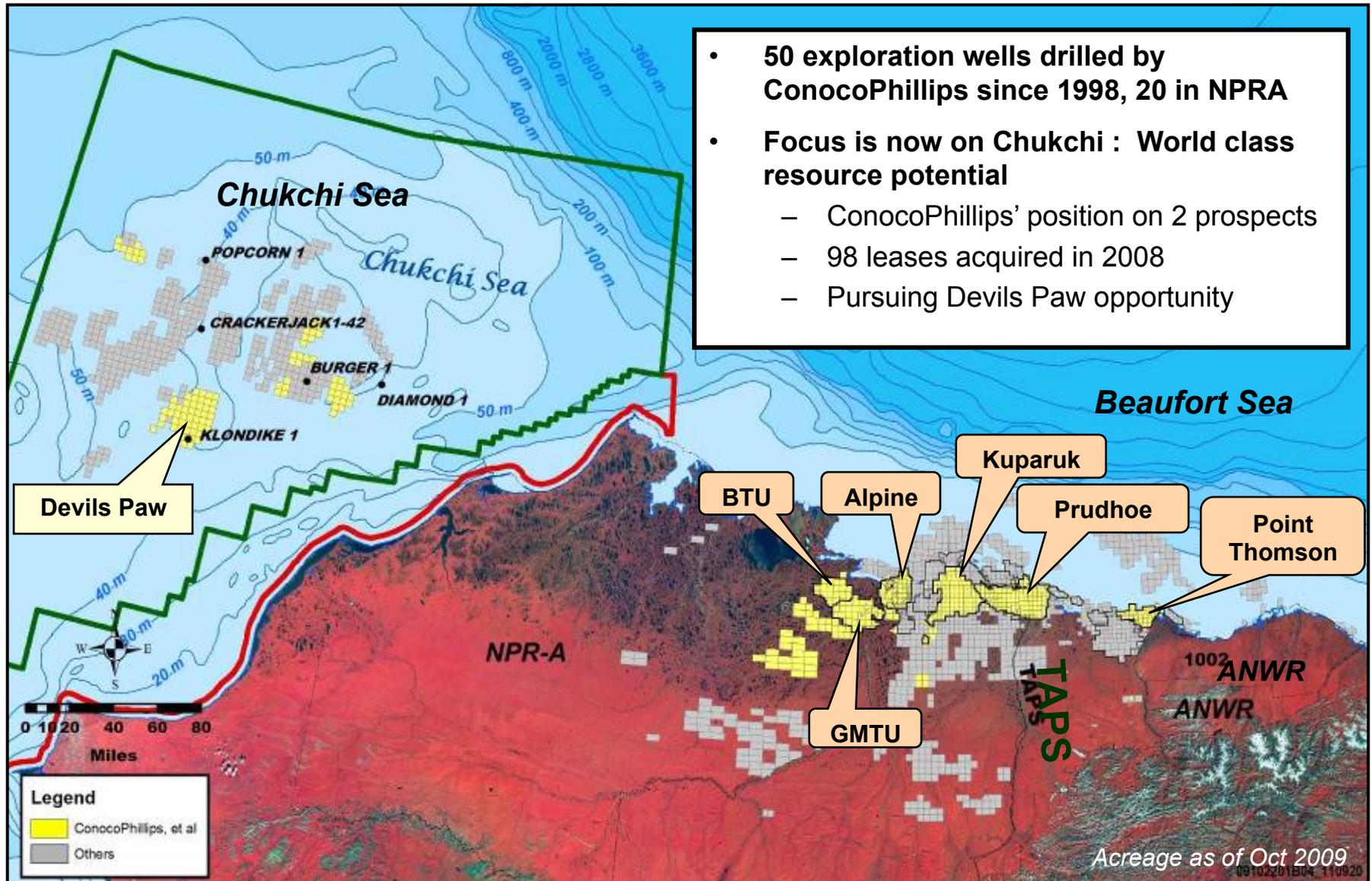


Arctic Open-Water Meeting March 8, 2012

Mike Faust
Chukchi Exploration Project Manager

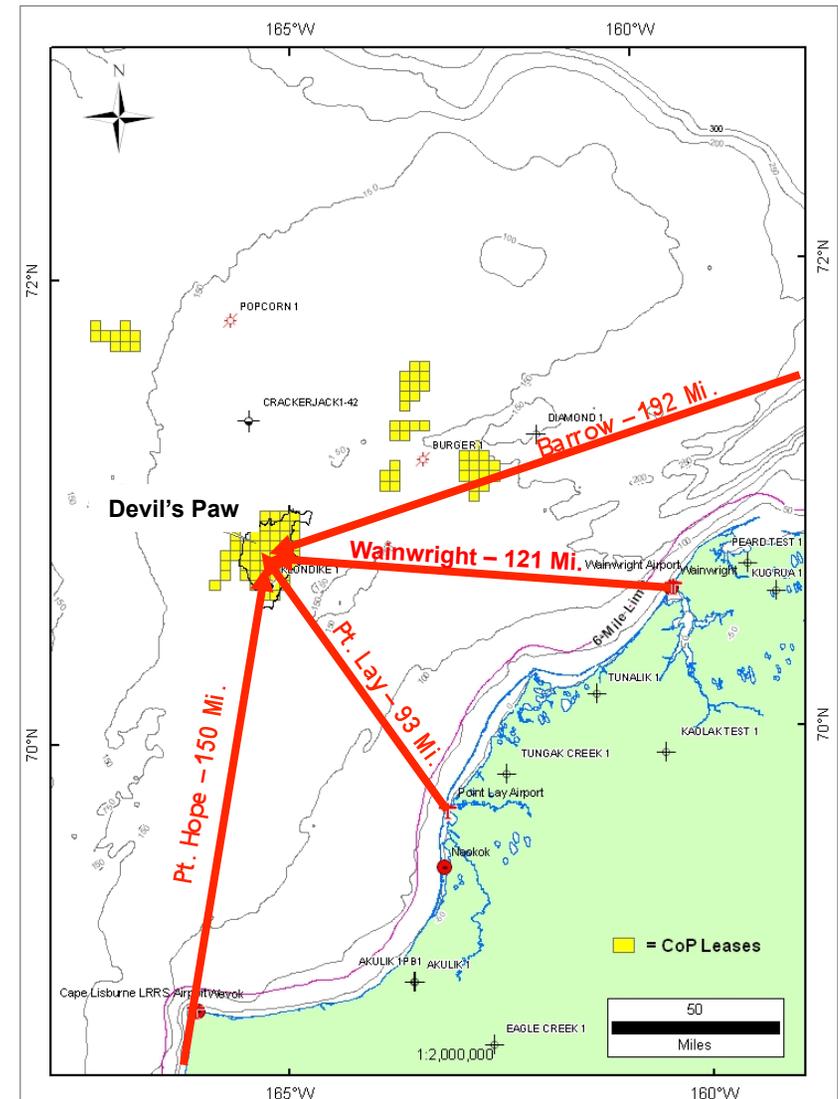


Over 40 Years of Arctic Experience



Chukchi Exploration Drilling Location & Timing

- First well no earlier than 2014
- Located ~ 80 miles offshore
- Plan to drill between July 15 and October 15
 - During period of little or no ice
 - Robust ice alert plan including Synthetic Aperture Radar (SAR) imagery and curtailment plans
- One well drilled in ~ 30 days
 - No more than two wells in one season (most likely one)
- Current focus is planning, procurement of equipment



Chukchi Environmental Studies Program 2008 to 2011

- **Build** on the historical scientific data already collected in the Chukchi Sea
- Use an ecosystem approach to baseline data acquisition
- Use the data to assess potential impacts from oil and gas activities and develop monitoring & mitigation procedures

- **Four years of work to date with zero incidents or injuries**
- **No conflicts with subsistence hunting**
- **Olgoonik Corporation Operated and Managed in 2010 & 2011**
- **Costs shared with Shell & Statoil**



Chukchi Sea Exploration Permitting

- Exploration Plan submitted to Bureau of Ocean Energy Management (BOEM) on March 1, 2012
- Spill Plan submitted to Bureau of Safety and Environmental Enforcement (BSEE) on February 13, 2012
- Applications for Incidental Harassment Authorization and Letters of Authorization submitted concurrently with Exploration Plan
- Received approval under EPA Region 10 NPDES (discharge) general permit

Jack Up Rig Features

Benefits

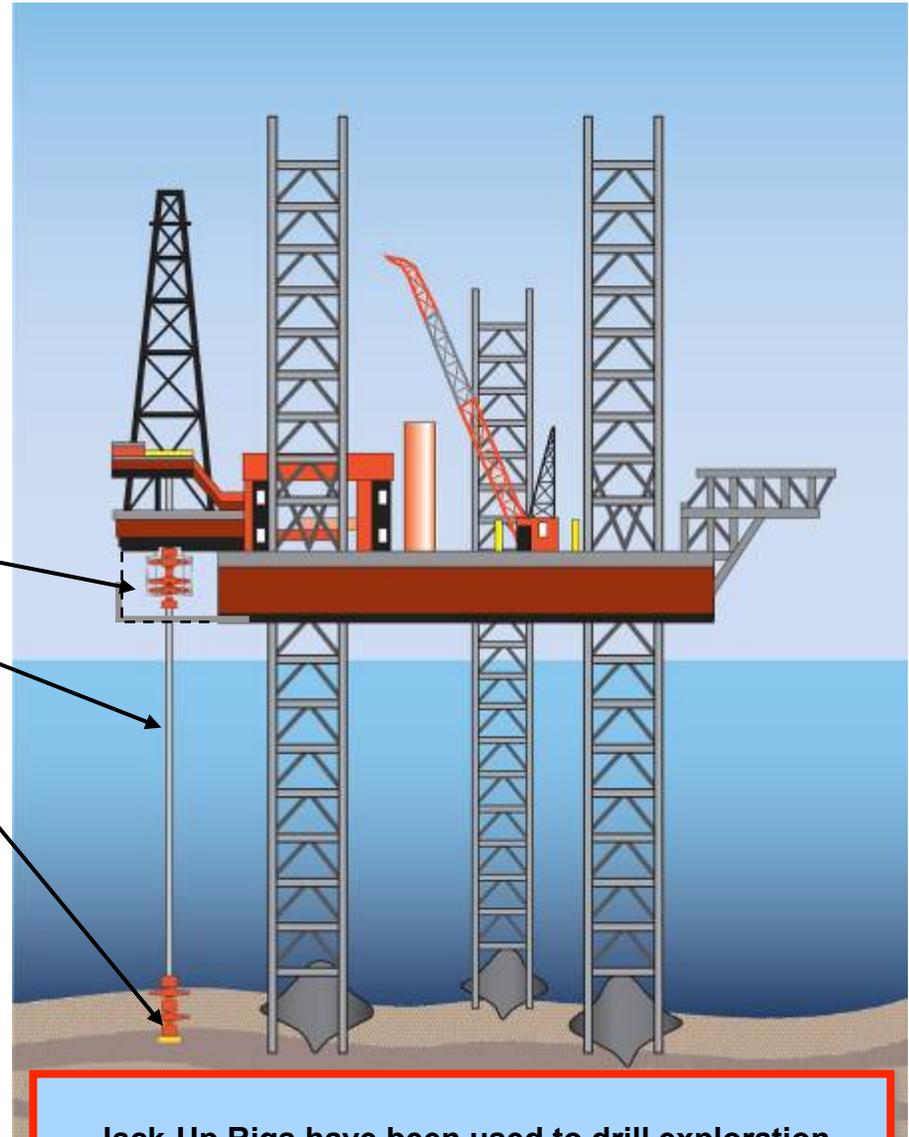
- Ideal water depth (160 feet) and sufficient ice free season
- Engines meet latest emissions requirements
- Less noise in water
- Less weather downtime

Redundant Safety Equipment

- Surface blow out preventer (BOP) located on the rig.
- Thick walled high strength riser
- Pre-Positioned Capping Device on sea floor

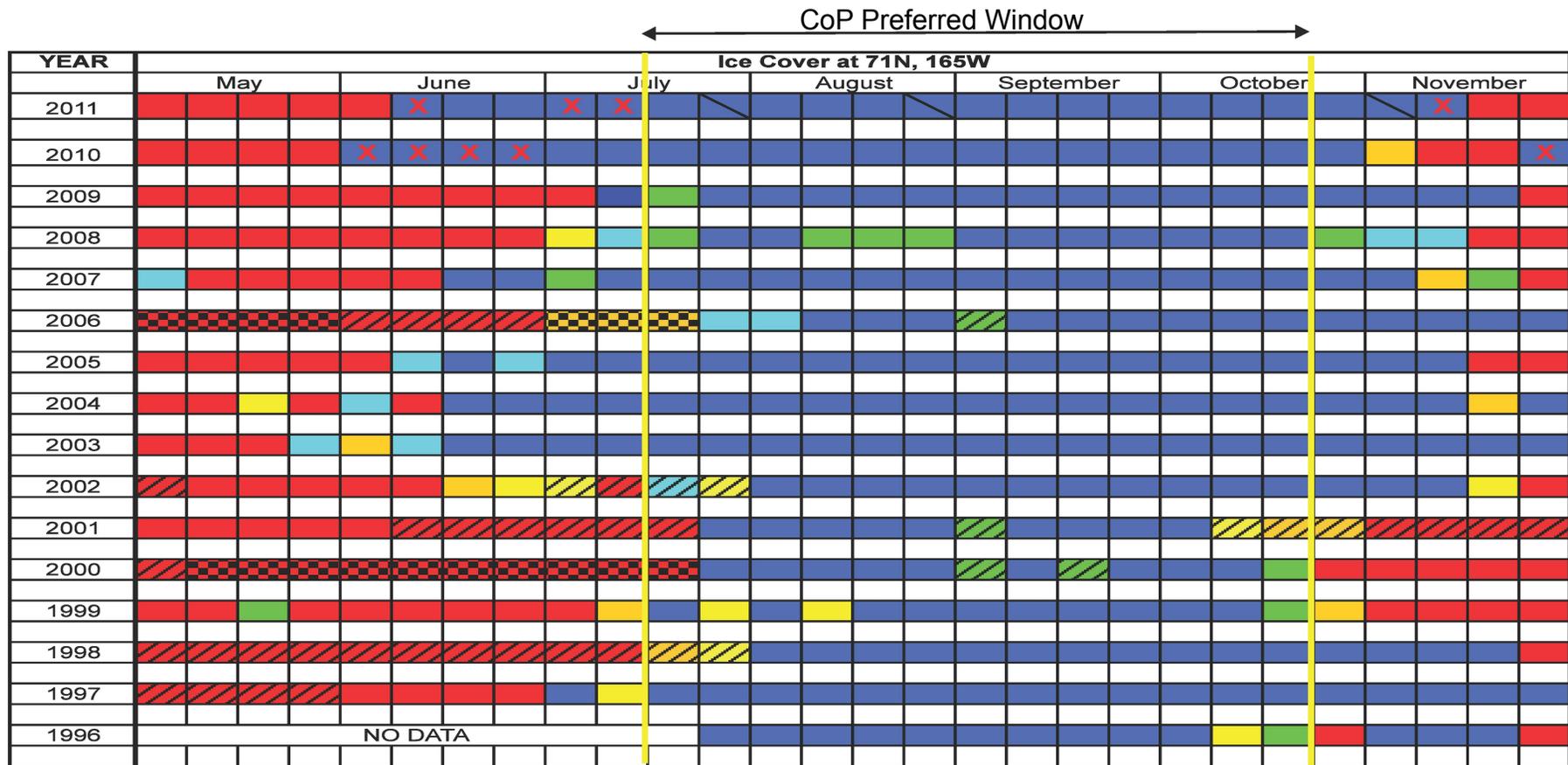
Measures to Prevent Release from Wellbore

- Planning
- Knowledge of Subsurface (Previous Wells)
- Personnel (training, frequent drills)
- Maintain a Minimum of Two Barriers



Jack-Up Rigs have been used to drill exploration wells in the Bering Sea (Norton Sound) and Cook Inlet

Devils Paw Ice Conditions



Total Ice Cover in Tenths		Multi-Year Ice	
		1 to 3/10	>3/10
Ice Free			
Open Water	<1/10 ice		
1 to 3/10			
4 to 6/10			
7 to 8/10			
9 to 9+/10			

Data Source: US National Ice Center Archived Products

Criteria: No ice within 25 n.mile radius of site

X - Open Water But No Access to the Drill site

Drilling Support and Oil Spill Response for Devils Paw Exploration Well



Devils Paw

Drill Site ● 71°N & 165°W



Wainwright



Near / Onshore

Offshore

- Jack up Rig
- Heavy lift dry tow vessel
- 2 Ice Management Vessels
- 1 Ware Vessel
- 2 OSVs
- 1 OSRV
- 4 boom boats
- 1 oil storage tanker
- 1 oil spill response barge/tug
- 4 boom boats 32'
- 4 landing craft 32'
- 1 Landing craft 200'
- 2 helicopters

Remote location requiring major marine and logistics support

Marine Mammal Monitoring

- IHA Application in Appendix C of Exploration Plan
- Modeled potential sources of noise from our operations
 - Drill rig only
 - Drill rig plus ware vessel (dynamic positioning)
 - Vertical Seismic Profile
- Level B criteria for pulsed (VSP) sound is 160 dB and for continuous (rig, vessel) is 120 dB

Distances from Drill Site	120 dB	160 dB (m)
Drill Rig Only	210	<10
Drill Rig plus Ware Vessel (dynamic positioning)	7900	71
Vertical Seismic Profile	>71000	4700

- MMOs on the drill rig, the two ice mgt vessels and research/monitoring vessel
- Three passive acoustic buoys will be deployed at 3 distances from the rig (1 km, 4 km and 10 km)

Discharge Monitoring Plan

- Discharges permitted by EPA under the NPDES program
 - 13 discharge types permitted in Chukchi Sea
 - General permit in process of being reissued
- Discharge Monitoring Plan submitted with Exploration Plan (Appendix I)
- Three phase monitoring program:
 - pre-drilling (establish site specific baseline conditions)
 - during drilling (dispersion and fate of muds and cuttings and distribution of zooplankton at site)
 - post drilling (short and long term effect of muds and cuttings in the water, sediments, marine mammal tissue and benthic biological communities)

Why is Chukchi Exploration Important to Alaska?

- **The potential for large (Kuparuk size) oil fields offshore**
 - BOEM (MMS) estimates 15BBO & 77 TCF technically recoverable resources
 - Drilling to date is not conclusive (1 gas field discovered plus small oil)
 - Need very large oil field for commerciality
- **If successful, Chukchi oil development would lead to:**
 - Workforce Training Opportunities
 - Jobs and careers
 - Increased Community Investment
 - Tax revenue for State and Local Communities
 - Production means Extended Life for Trans Alaska Pipeline System (TAPS) and the benefits that TAPS provide to Alaskans



Thank You

