



Bureau of Land Management  
Subsistence Advisory Panel  
Meeting  
Barrow, Alaska  
November 6, 2012

# Stakeholder Relations and Economic Opportunity

Recap of 2012 Summer Study and Survey Work

Overview of 2012/2013 Winter Delineation

Drilling Project

**LINC ENERGY OPERATIONS, INC.**

**UMIAT DRILLING PROGRAM**

# Stakeholder Relations

Date	Meeting
July 2011	Linc Acquires Renaissance and Umiat Leases
August 22, 2011	Meeting in Anchorage with NSB Chief of Staff and Special Assistant
September 12, 2011	Meeting in Barrow with NSB Mayor's office—Mayor Itta and Staff
September 12, 2011	Meeting in Barrow with NSB Planning Department
November 10, 2011	Nuiqsut Leadership Meetings
November 10, 2011	Nuiqsut Community Meeting
November 3, 2011	Anaktuvuk Pass Leadership Meetings
November 3, 2011	Anaktuvuk Pass Community Meeting
November 15, 2011	SAP meeting in Fairbanks—Introduction of Linc Energy
February 9, 2012	Nuiqsut Community Meeting
March 9, 2012	Meeting with NSB Mayor Brower and Staff
April 18, 2012	Anaktuvuk Pass Community Meeting
April 18, 2012	Meeting in Barrow with NSB Planning Department
June 5, 2012	SAP Meeting in Point Lay
October 1, 2012	Meeting in Anchorage with NSB Planning Department
October 25, 2012	NSB Planning Commission Meeting in Barrow
November 6, 2012	SAP Meeting in Barrow
November 7, 2012	Nuiqsut Leadership Meeting



# Economic Opportunities

- Summer Program:
  - UIC Camp in Umiat
  - Hired Clyde Morry of AKP(through ASRC) as Subsistence Advisor
  - UMIAQ stakeholder relations.
- Winter Program
  - Kuukpik 5 Drill Rig
  - UIC Camp in Umiat
  - AES C-Plan Update
  - AES Subsistence Advisors
  - UMIAQ Stakeholder Relations
  - ARO Spill Response Equipment
  - ASRC Land Use Fee

# 2012 Summer Studies



# 2012 Summer Study/Survey Overview

Summer Study/Survey	Agency	Requirement
Archaeology	NSB/BLM/ADNR	Survey for cultural resources
Hydrology	BLM Lease Stipulation	Study on-lease hydrology.
Fish	BLM Lease Stipulation	Study on-lease fish.
Yellow-billed Loons	BLM Lease Stipulation	Survey birds in the area on lakes greater than 25 acres.
Raptors	BLM Lease Stipulation	Document nesting sites in the area.
Moose Aerial Survey and other Wildlife Survey	Internal decision	Establish baseline
Tundra Damage Survey	ADNR	Linc took on Renaissance obligations regarding tundra damage.

# 2012 Summer Study/Survey Overview

Summer Study/ Survey	Agency	Requirement
Meteorological Monitoring Station	BLM Lease Stipulation/ADEC	Required for lease stipulation and air permits.
Tundra Transportation Study	BLM and ADNR	Approval for Argo use on tundra
Snow Road and Well Staking	BLM, ADNR, ASRC	Stake wells – BLM Stake Snow Road – ASRC, ADNR
Major river crossing evaluation	Internal decision	Survey locations suitable for major river crossings.
Wetlands Delineation and Functional Analysis	Internal decision	Begin on-lease wetland delineation.

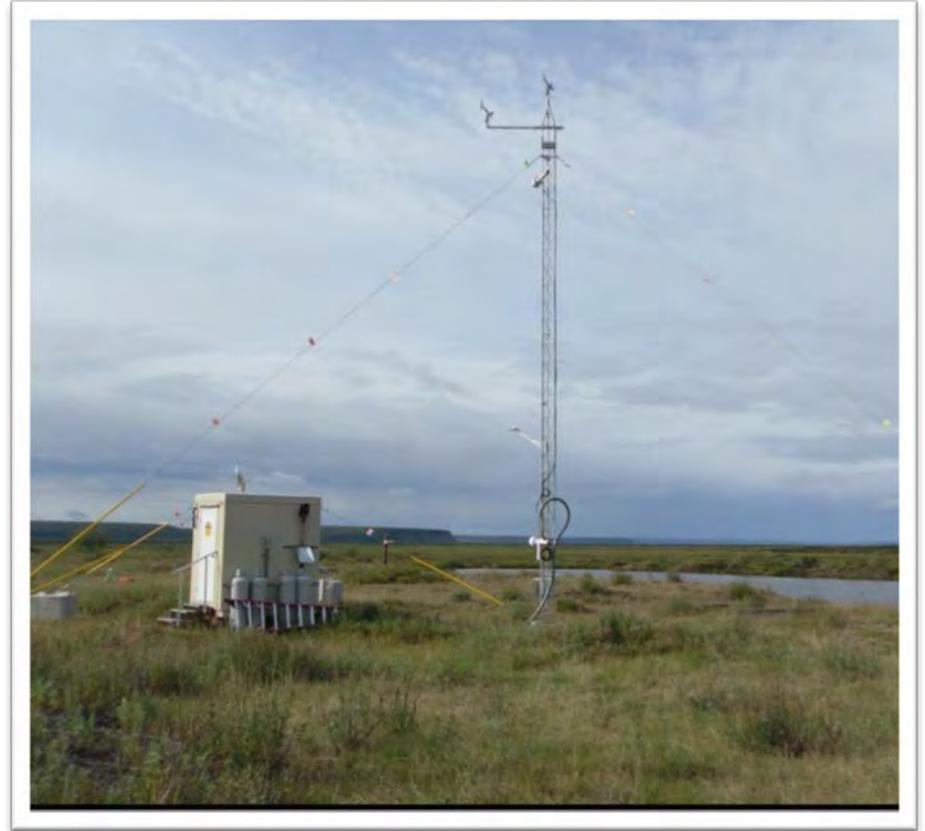
# Archaeological/Cultural Survey



Archaeological assessments have been completed  
on all 2012-13 drilling locations

# Meteorological Station Installed

- Recording:  
Temperature, humidity,  
wind speed & direction,  
barometric pressure &  
solar radiation.
- Ambient air monitor  
planned for installation  
2013.



# TYPICAL WETLANDS DELINEATION TEST PIT



# Summer Tundra Travel Evaluation



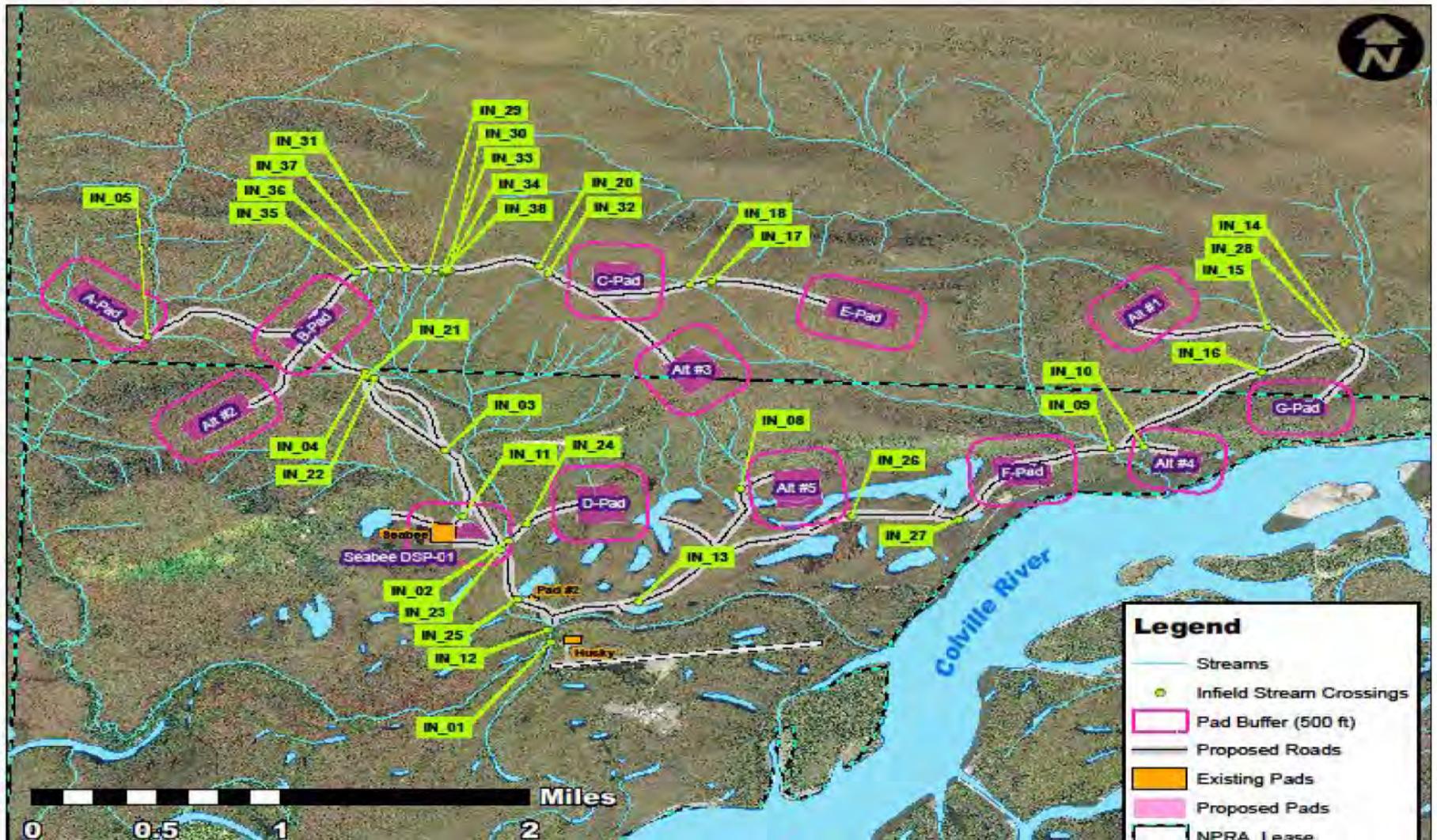
- ARGO 8X8 750 HDI with Smooth Tracks
- Recommendation of BLM's Subsistence Advisory Panel at Meeting in Point Lay
- Approved for Summer Tundra Travel by ADNR
- Approved for use on-lease by BLM
- Clyde Morry of AKP, Subsistence Advisor Operated the Argo

# TUNDRA DAMAGE EVALUATION

- Linc Energy assumed responsibility for tundra recovery and evaluation of tundra damage which occurred under previous ownership.
- In conjunction with ADNR Linc evaluated these sites and will continue to do so in the future.



# Fish Studies





# Hydrology Studies – On Lease



# General Avian Surveys

- Targeted surveys were conducted for Yellow-billed Loons (BLM stipulation). Additionally, other bird species in and around the project area were documented to attain a more complete assessment of bird species utilizing the lease tracts.
- Surveys were conducted in the hills and stream valleys in the northern part of the project area, the flats characterized by Umiat Lake and its adjacent lakes and wetlands, and the Colville River corridor.

Yellow-billed Loon Survey  
Conducted on Umiat Lake as it is 25 acres or  
larger – BLM Lease Stipulation  
Only Pacific Loons Were Observed

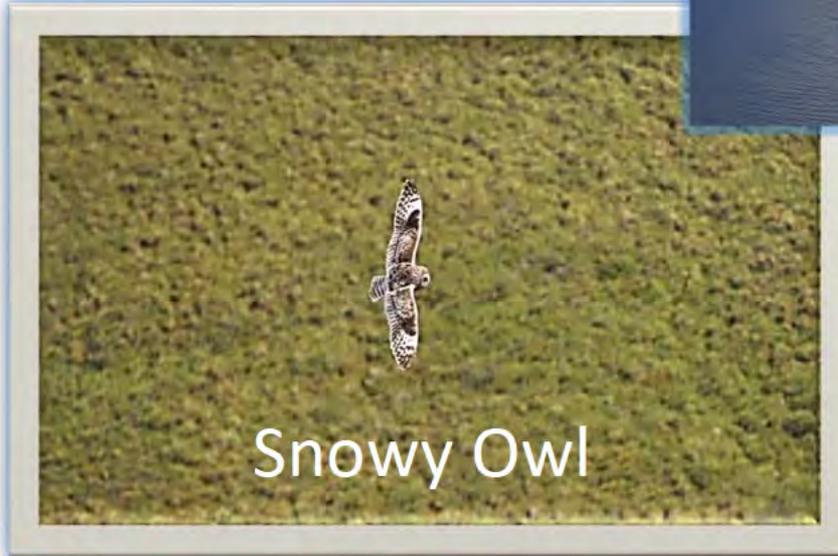




Greater White Front  
Geese



Pacific Loons

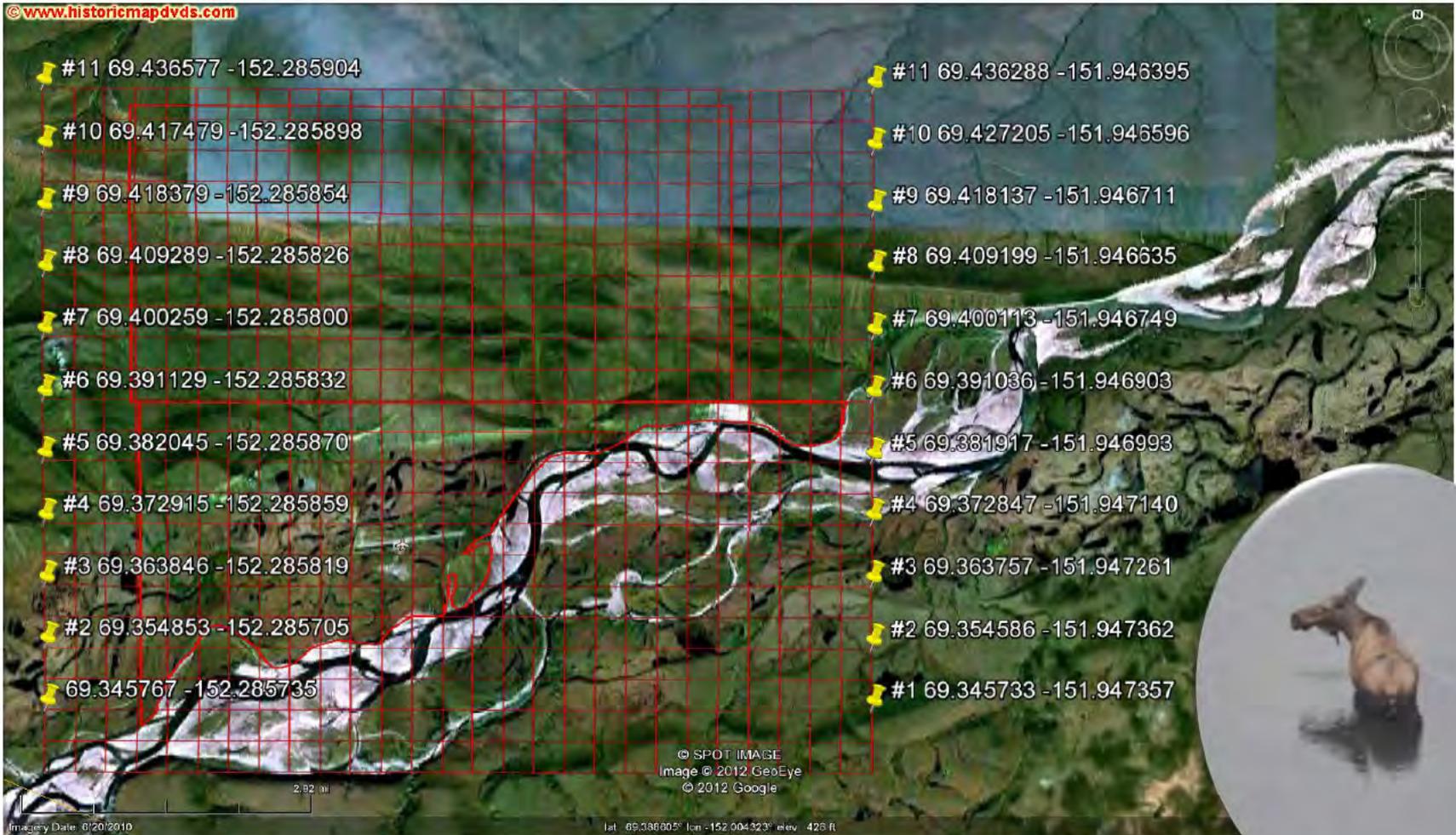


Snowy Owl

Nesting Raptor Survey  
BLM recommendation of  
1 mile setback from  
proposed drill pads  
determined survey area.



# Aerial Moose Survey Grid – 57.4 sq mi





First Partial Survey: Two cow moose along the Colville River floodplain; one sow grizzly with two yearlings; and two bull and two cow caribou.

Second Full Survey: Twenty-six caribou ( 7 bull and 19 unsexed) and one cow moose along the Colville River floodplain.



# Thermistors installed

- 20 thermistors installed along snow route
- Measures ground temp down to 12"
- Transmits temp data via satellite
- Used to ensure ground is sufficiently frozen to prevent tundra damage



# Major River Crossing Survey



07 31 2012

# Snow Road & Well Staking

- All drill sites, pads and winter access sites staked.
- Also surveyed potential stream crossings, drill pads, access routes that would be needed in development scenario



# Complaint

- One complaint received
  - Allegation was that Linc's helicopter had buzzed a commercial hunting guide's camp at 4:00 a.m. disturbing clients. This guide's camp is located at Umiat.
- Investigation by Linc indicated that this was not Linc's helicopter but in fact was a Search and Rescue helicopter that had landed in need of fuel.
- Verified by a BLM video camera.

# 2012-13 Winter Drilling Program

# 2012-13 Project Schedule

- Committed to Cruz Construction Co. for camp services & Kuukpik Drilling Rig #5
- Pre-pack 100-mile snow road early-November.
- Mobilize across snow road mid-December.
- Spud first well mid-January.
- Rig down late-April or early-May.
- Rig and camp on standby until November 2013.

# Proposed Snow Road Route



<ul style="list-style-type: none"> <li>• Proposed Well Locations</li> <li>■ TAPS Pump Station</li> <li>----- Proposed Access Route</li> </ul>	<ul style="list-style-type: none"> <li>— Dalton Highway</li> <li>— Trans-Alaska Pipeline System</li> <li>■ Federal BLM Lease</li> <li>□ National Petroleum Reserve - Alaska</li> </ul>		
<p>AKSP Zone 4 NAD27</p>		<p><b>LINC ENERGY</b></p> <p><b>GROUND TRAVEL DISTANCES</b></p> <p><b>MP359 TO UMIAT</b></p> <p>Northeast NPR-A, North Slope, Alaska</p> <p>Oil Discharge Prevention and Contingency Plan</p>	
			<p><b>Figure A1-1</b></p>

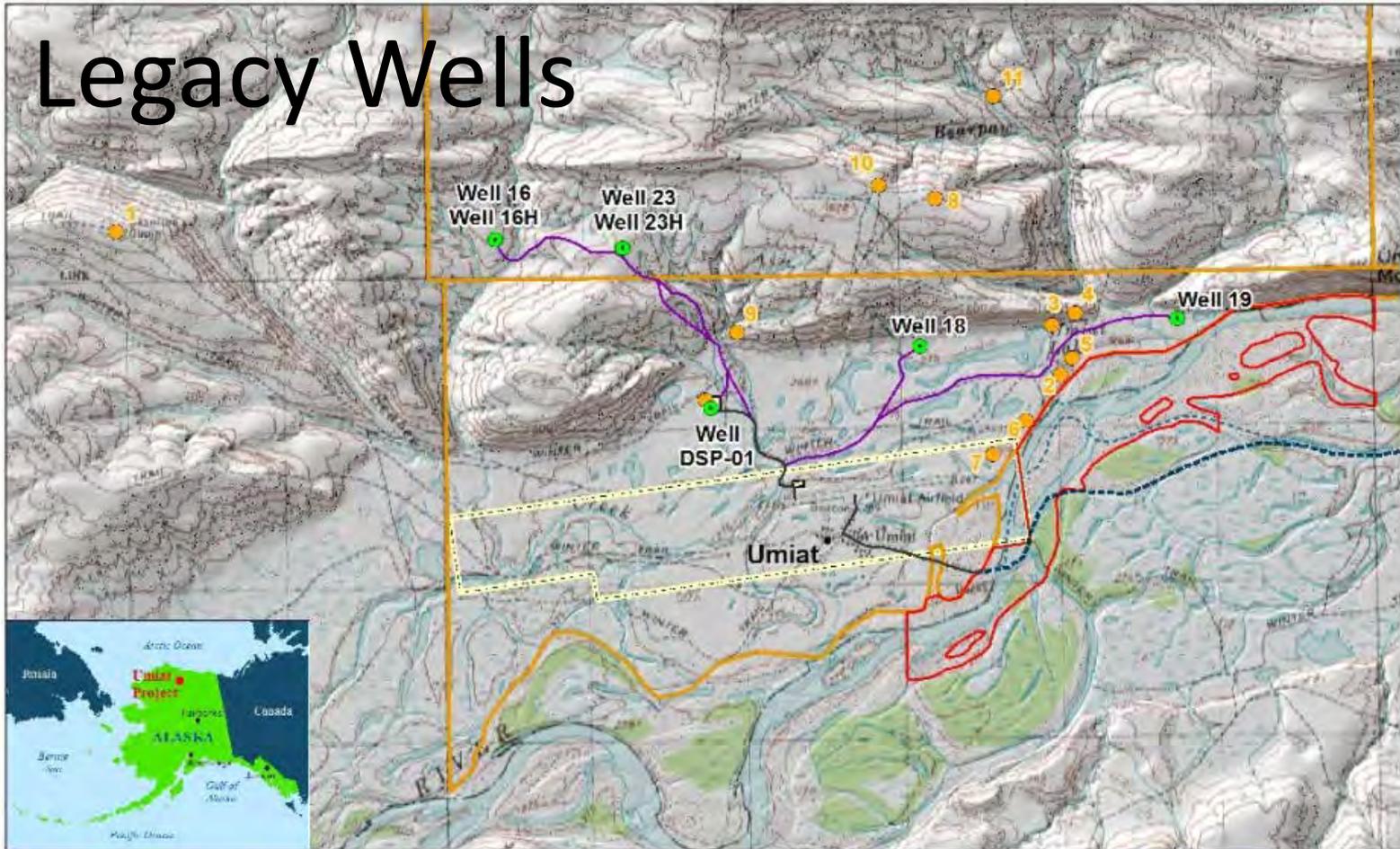
Source: Esri, DeLorme, NAVTEQ, © 2015 Intel



# Umiat Airport, UIC Camp, Seabee and Husky Pads



# Legacy Wells



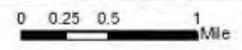
- Proposed Well Locations
- Legacy Wells
- Existing Gravel Pads
- Federal BLM Lease
- State of Alaska Lease
- ADOT&PF Airport Boundary
- Proposed Snow Road
- Optional Colville Crossing\*
- Infield Ice Road
- Gravel Road



NAD83\_UTM Zone 5N  
October 2012



**Legacy Wells**  
2012-2013 Winter Season  
Northeast NPR-A, North Slope, Alaska



**Figure 1**

\* The Colville River crossing location will be determined by field conditions.

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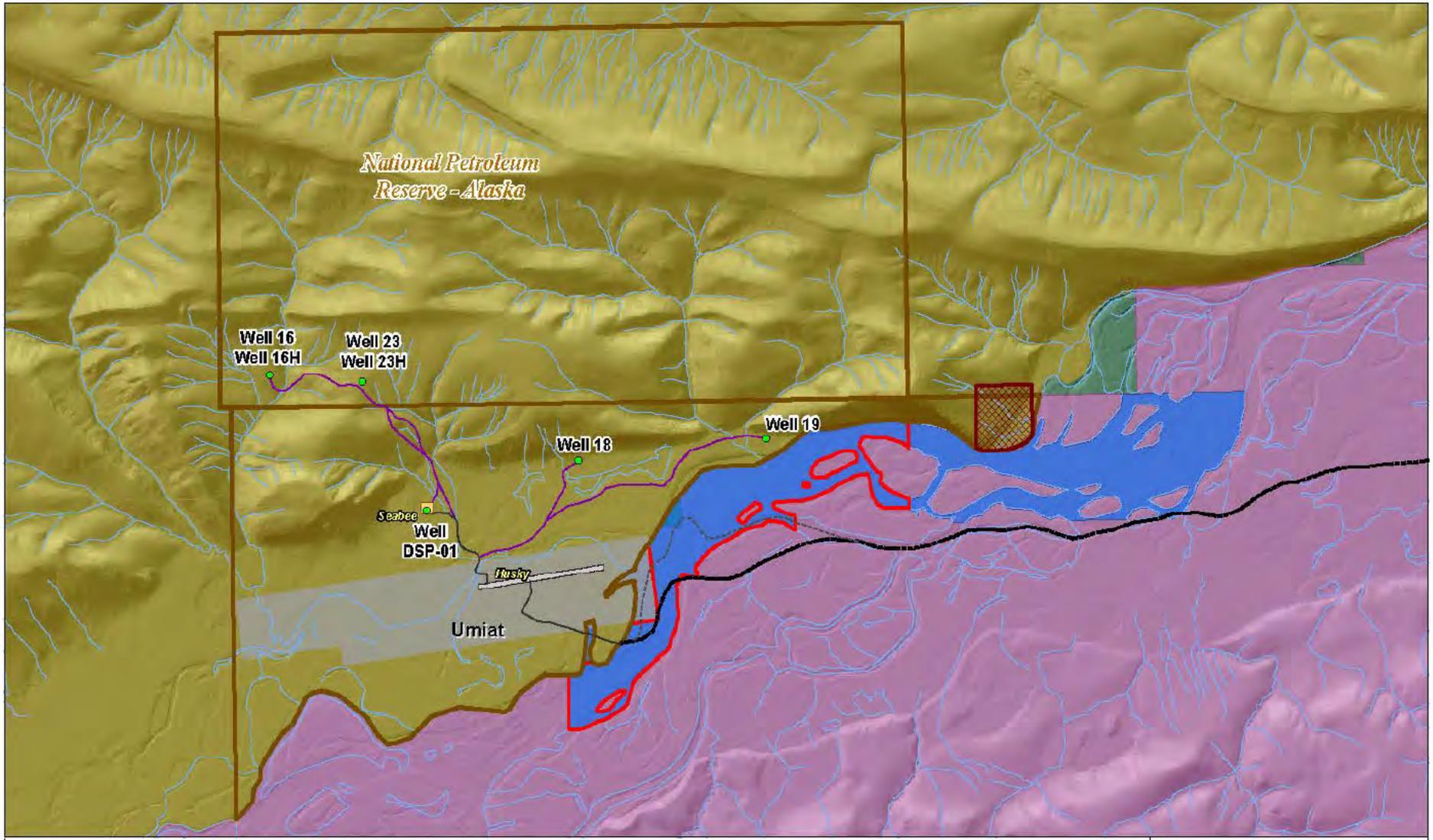
# 2012-13 Drilling Objectives

1. Establish Class 2 disposal well
2. Test Mineral Oil Based Mud (MOBM) system
3. Verify early well test information
4. Compare vertical to horizontal completions
5. Acquire new core data
6. Acquire accurate fluid samples
7. Test/investigate deeper gas reservoirs

# 2012-13 Drilling Plan

- **Drill disposal well on Seabee pad (using existing gravel pad).**
- **Drill 1 shallow vertical well.**
  - Collect 4 each 60' cores
  - Flow test
- **Drill 1 shallow horizontal well**
  - Flow test
- **Drill 1 deep vertical well.**
  - Open-hole logs across deep horizons.
  - Flow test
- **Drill up to 2 more shallow vertical wells**
  - Time permitting
- **Release rig or stack on Seabee pad.**





- Well Locations
- Proposed Snow Road
- Optional Colville Crossing\*
- Existing Gravel Pads
- Infield Ice Road
- Gravel Road
- Federal Lease Boundary
- State of Alaska Lease
- ADOT&PF Airport Boundary
- State Submerged Lands
- Federal Lands
- Native Allotment

\* The Colville River crossing location will be determined by field conditions.

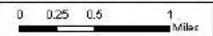


NAD83 UTM Zone 5N



**Infield Routes and Land Ownership**

2012/2013 Winter Drilling Program  
Northeast NPR-A, North Slope, Alaska



**Figure 1.0-2**

Fig 1.0-2\_Infield Routes and Land Ownership.mxd

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