North Slope Development Outlook

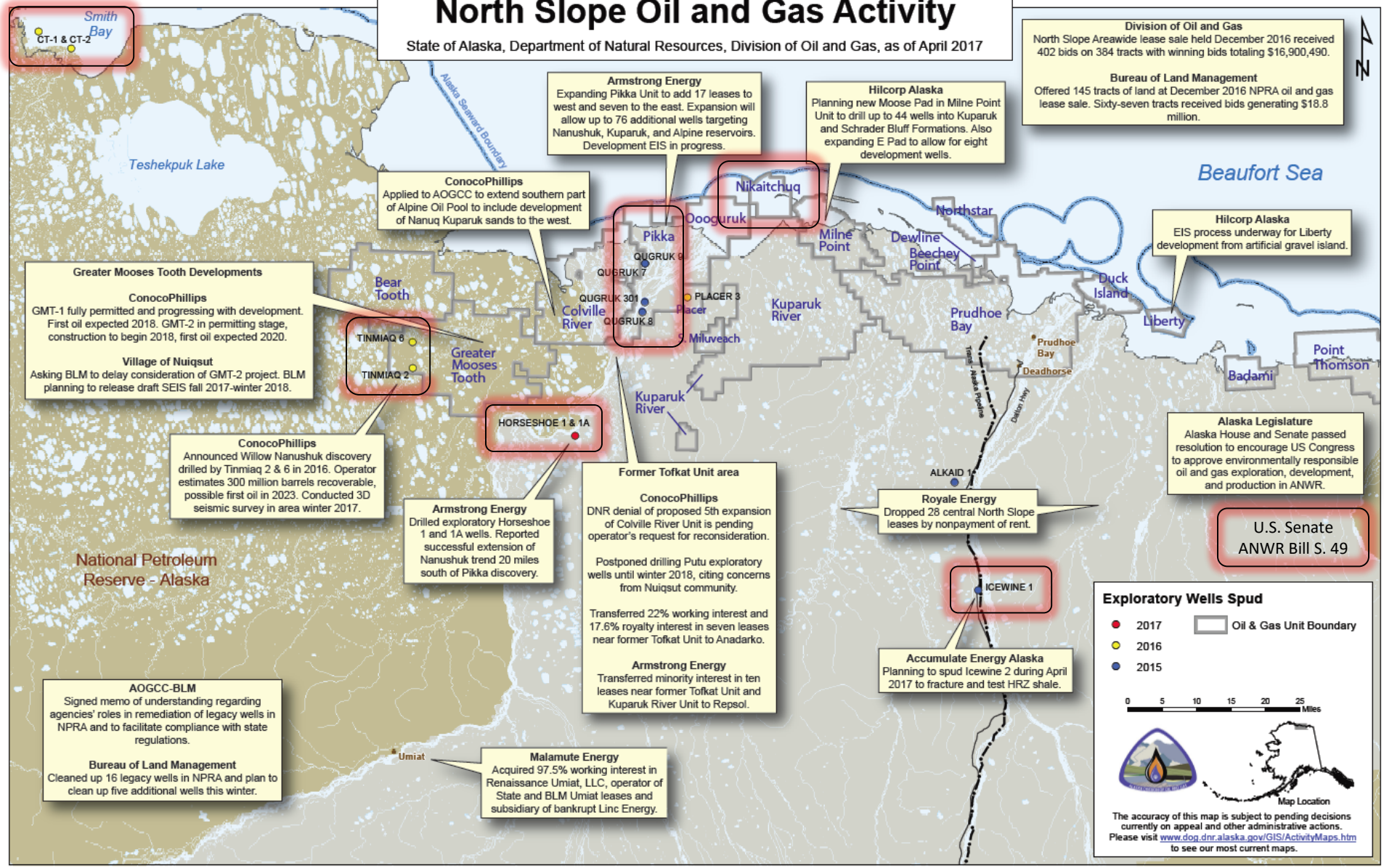
Senate Finance Committee,
April 25, 2017

Paul Decker, Resource Evaluation Manager

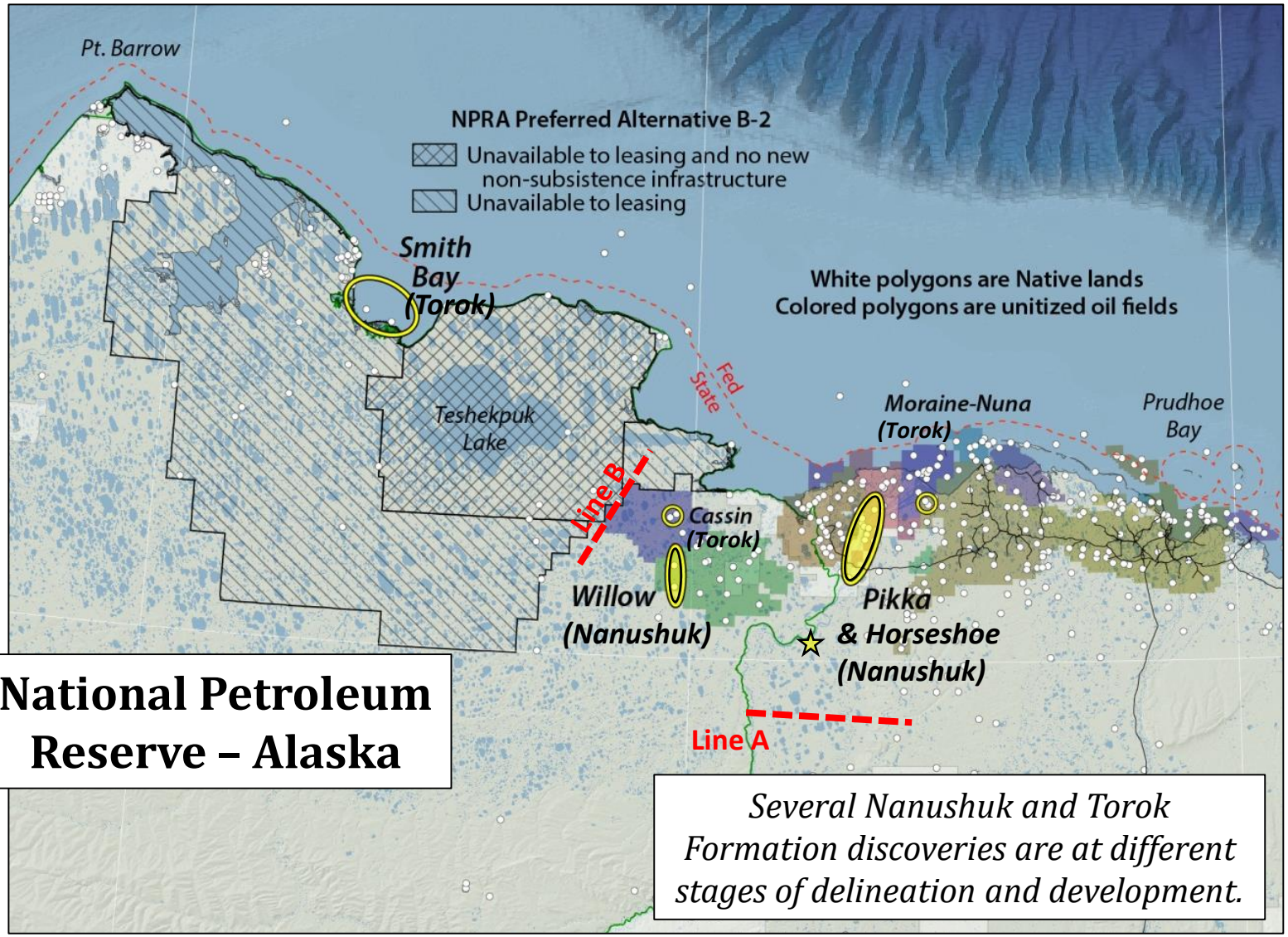
Alaska Department of Natural Resources,
Division of Oil and Gas

North Slope Oil and Gas Activity

State of Alaska, Department of Natural Resources, Division of Oil and Gas, as of April 2017



North Slope Brookian Discoveries



National Petroleum Reserve – Alaska

Several Nanushuk and Torok Formation discoveries are at different stages of delineation and development.

Brookian Play Fairways
- Line A, State Lands -

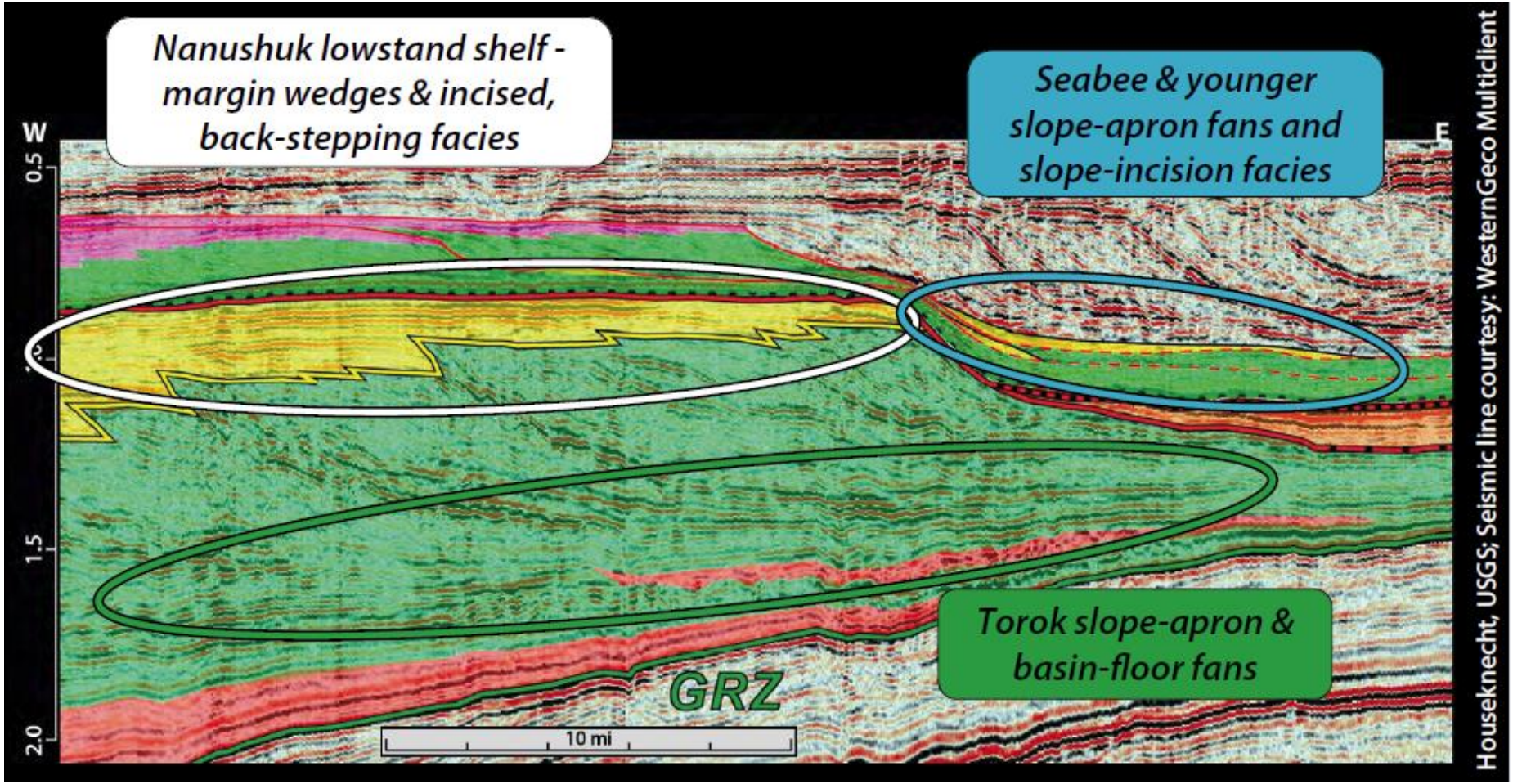
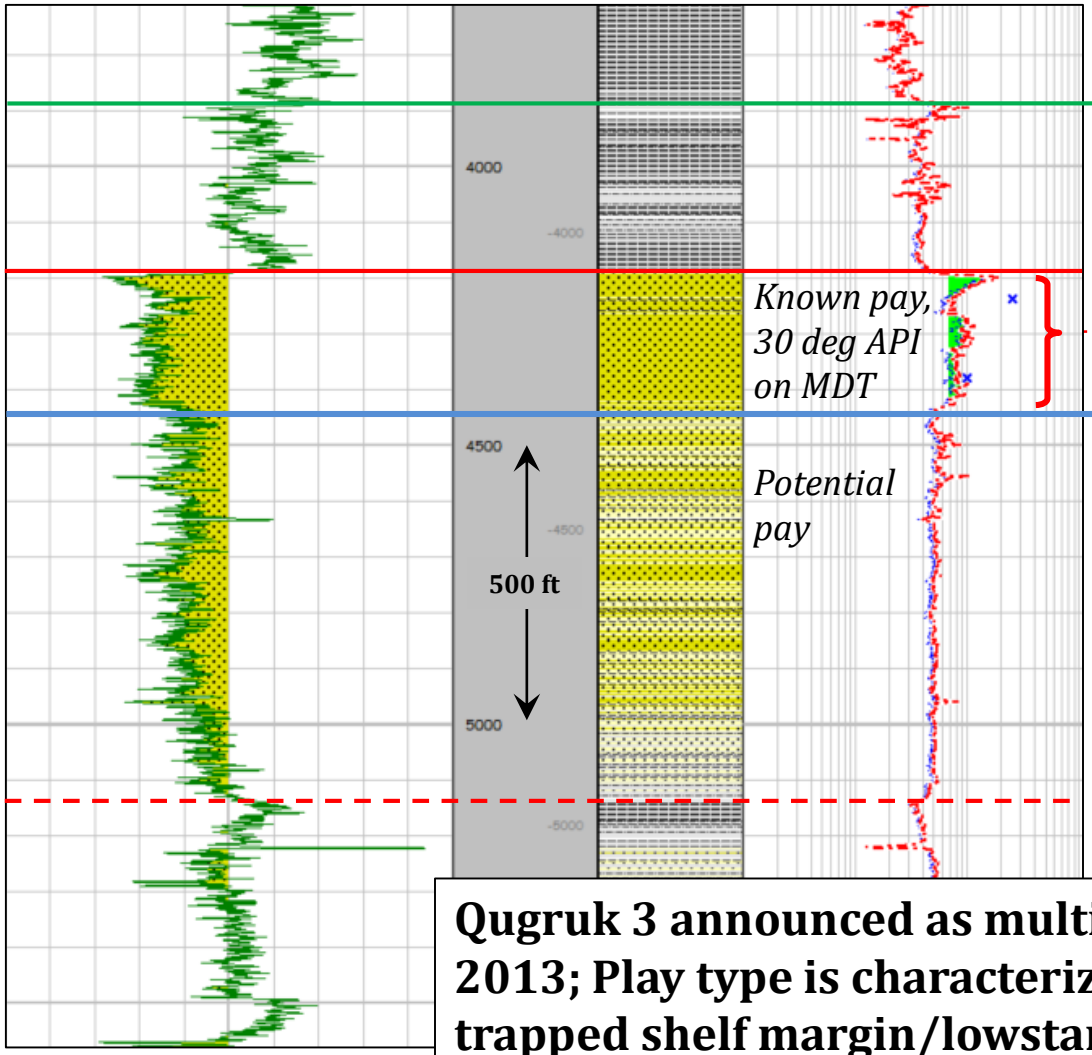


Image from David Houseknecht, USGS; courtesy GeoExpro and Western-Geco Multiclient

Pikka Discovery - Nanushuk Fm



***Repsol* Qugruk 3,** P&A
4/1/2013

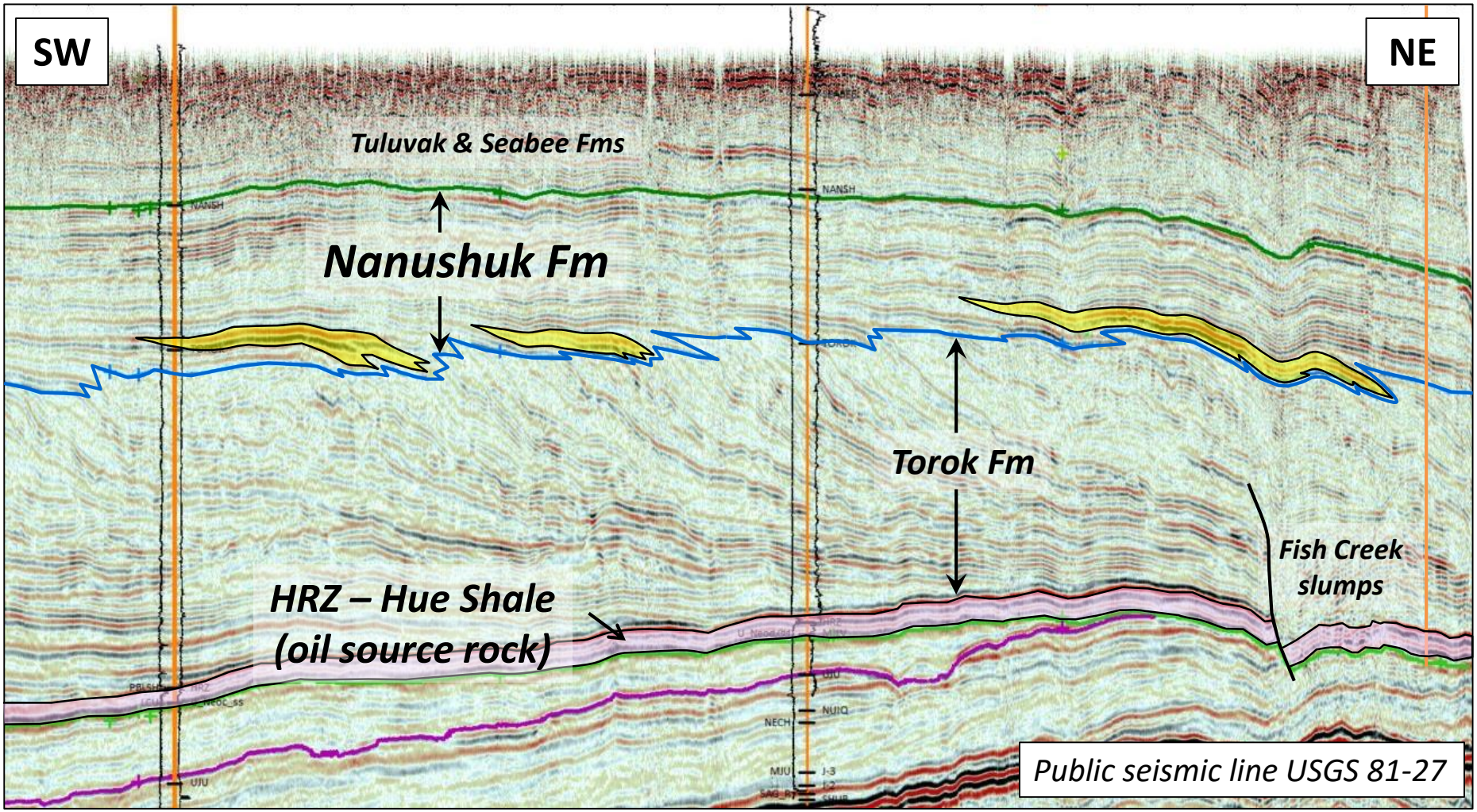
Nanushuk Fm
(seismic topset facies)

upper facies tested 4,600 bopd in horizontal Q8 offset well

Top Torok Fm
(sandy lowstand wedge, seismic upper slope facies)

Qugruk 3 announced as multi-horizon discovery April 2013; Play type is characterized by stratigraphically-trapped shelf margin/lowstand wedge sandstones in lower Nanushuk and underlying sandy slope Torok Formation.

Basal Nanushuk Seismic Anomalies - Line B, Northeast NPRA -



First Oil Estimated in 2018-2021
- Projects in Blue Have Been Postponed -

Project	Reservoir Formation	Peak Rate Est, BOPD (From Public Sources)
Add'l CD5 wells, Colville River Unit	Alpine sands, Kuparuk Fm	n/a
Greater Mooses Tooth 1	Alpine sands (Lookout)	30,000
Greater Mooses Tooth 2	Alpine sands (Spark-Rendezvous)	25,000 – 30,000
Nuna Project, Oooguruk Unit (postponed)	Torok Fm (same horizon as Moraine)	20,000 – 25,000
Nuiqsut Expansion, Oooguruk Unit (postponed)	Nuiqsut sand	n/a
Mustang Project, S Miluveach Unit (postponed)	Kuparuk Fm	12,000 – 15,000
Add'l wells, Nikaitchuq Unit (postponed)	Schrader Bluff Fm	n/a
Moose Pad, Milne Point Unit	Schrader Bluff Fm	10,000
Moraine Project, Kuparuk Unit	Torok Fm (same horizon as Nuna)	n/a
1H NEWS, Kuparuk Unit (postponed)	Schrader Bluff Fm (West Sak sands)	8,000

First Oil Potentially 2022 or Later
- Some Projects May Not Occur -

Project	Reservoir Formation	Peak Rate Est, BOPD (From Public Sources)
Fiord West Project	Kuparuk Fm and Nechelik sand	n/a
Placer Project	Kuparuk Fm	n/a
Pikka Nanushuk Project	Nanushuk Fm & Alpine sands	Up to 120,000
Tofkat Kuparuk C Project	Kuparuk Fm	n/a
Willow Project	Nanushuk Fm	40,000 – 100,000
Liberty Project	Kekiktuk Fm	60,000
PTU Major Gas Sales Project	Thomson sands	Up to 70,000
Smith Bay Project	Torok Fm	Up to 200,000 (?)
Ugnu	Prince Creek Fm (Ugnu sands)	n/a