

OIL AND GAS ACTIVITIES IN THE NWT

An Overview

Johnny Lennie

Oil and Gas Summit
January 12th – 15th, 2015
Iqaluit, Nunavut





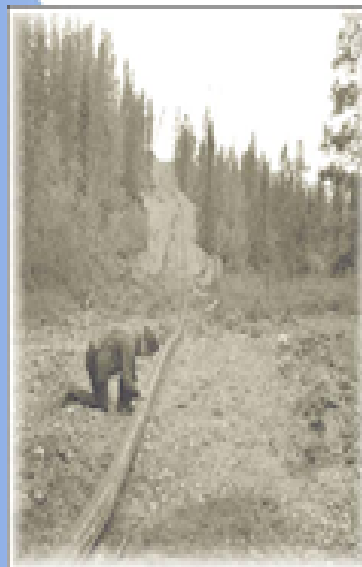
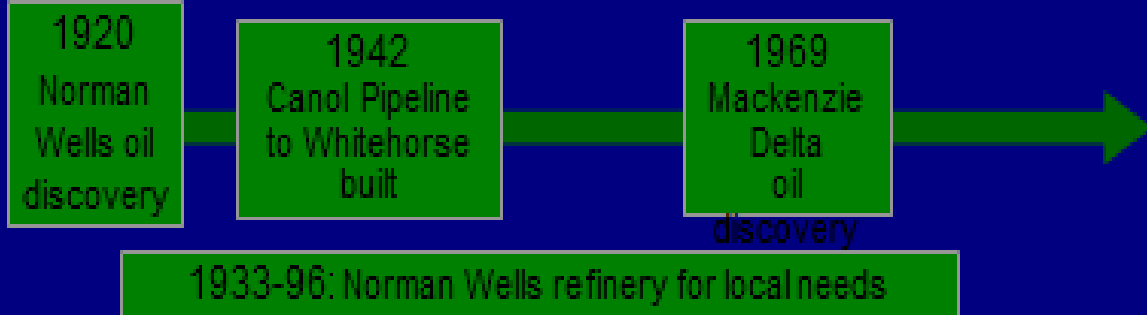
Outline

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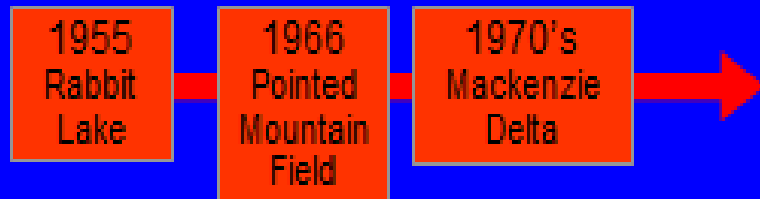


NWT Oil and Gas History

ONSHORE CRUDE OIL DISCOVERY AND DEVELOPMENT



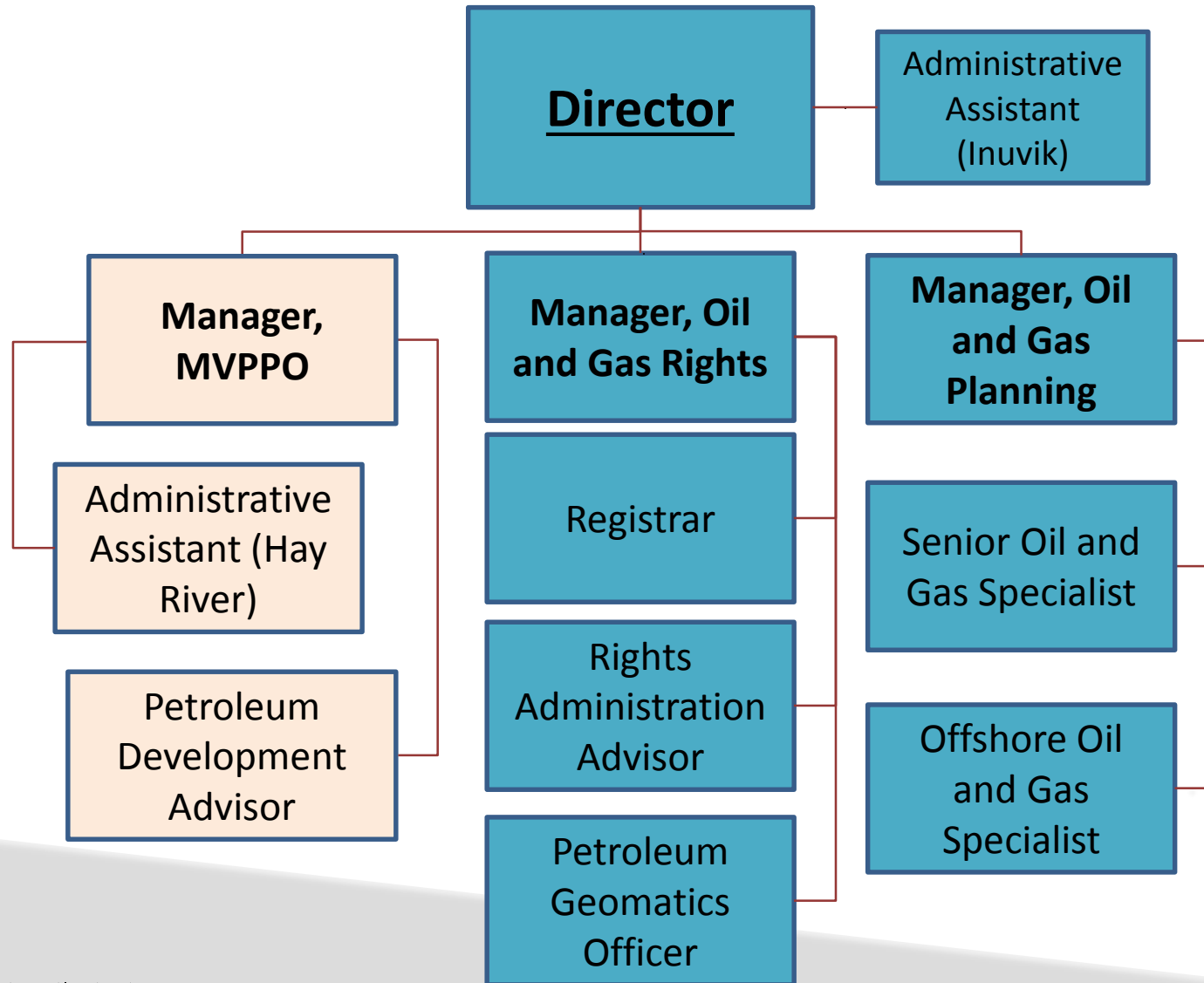
ONSHORE NATURAL GAS DISCOVERY



HIGH ARTIC OIL AND GAS



Petroleum Resources Division





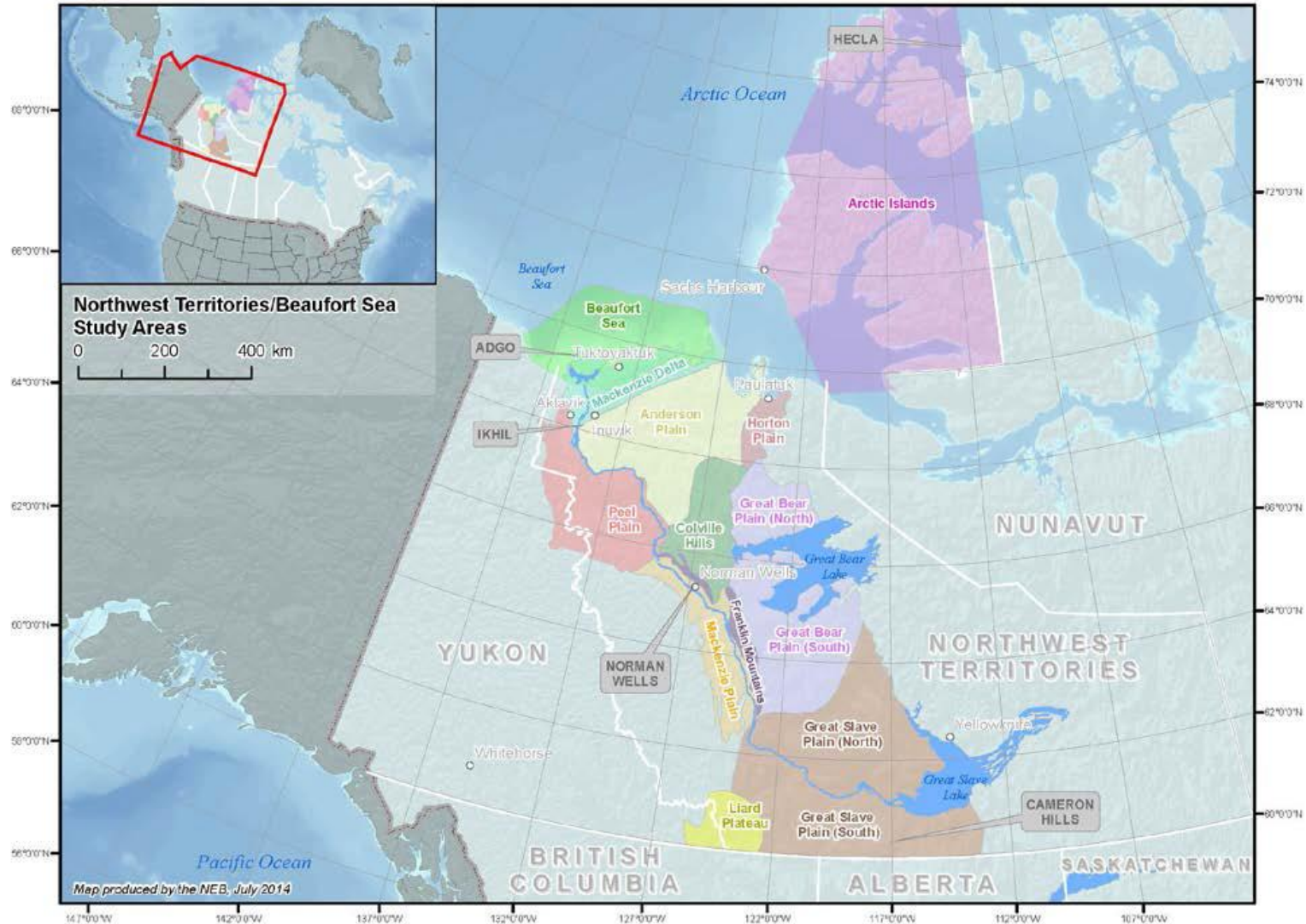
Petroleum Resources Division

Policy and Planning – responsible for developing and delivering policy, programs and services related to petroleum resource exploration and development

Rights Management – responsible for the management of all land tenure associated with petroleum resource development, the registration of petroleum resource rights and the Northwest Territories Environmental Studies Research Fund (NESRF)

Mackenzie Valley Petroleum Planning Office – responsible for outreach and education initiatives, Aboriginal Capacity Building Fund; Linking with Marketing and Promotion; Linking with Petroleum Resource Characterization; Linking with Client Services and Community Relations

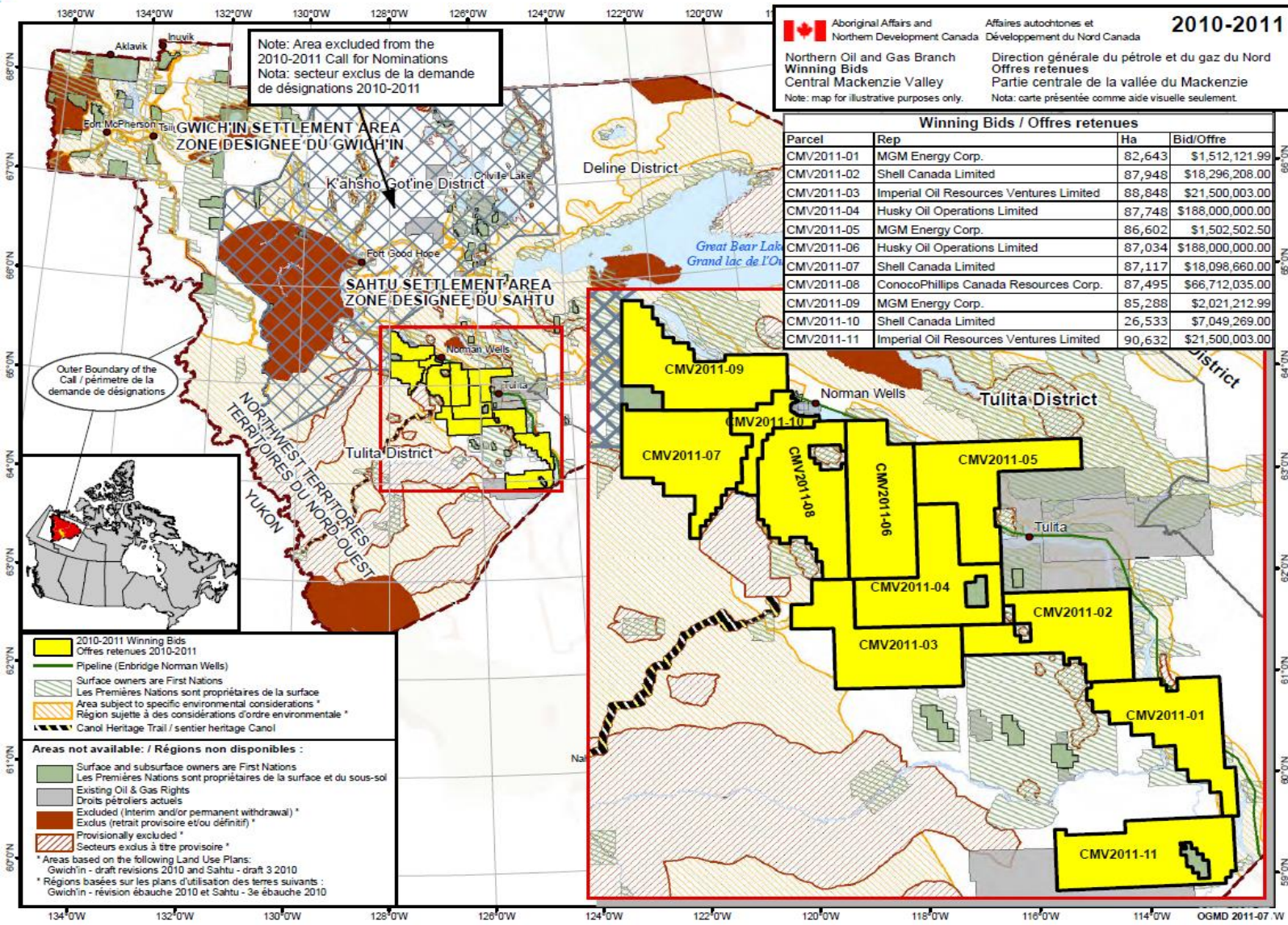
Oil & Gas Areas in the NWT



Discovered Conventional Resource Volumes

Hydrocarbon Type	Expected			TOTAL
	NWT mainland	NWT Arctic Islands	Beaufort Sea	
Natural Gas billion m ³ (trillion cubic feet)	213.8 (7.6)	75.2 (2.6)	178.0 (6.2)	467.0 (16.4)
NGLs – million m ³ (million barrels)	8.3 (52.1)	0.0 (0.0)	0.2 (1.2)	8.5 (53.3)
Oil – million m ³ (million barrels)	84.1 (529.4)	4.9 (31.0)	106.1 (667.4)	195.1 (1227.8)

CMV – Call for Bids 2010 2011



Sahtu Region (Northwest Territories)

- 590 wells drilled from 64 to 67 degrees north, 205 were exploration wells.
- Norman Wells oilfield total cumulative at 250 million bbl to date.

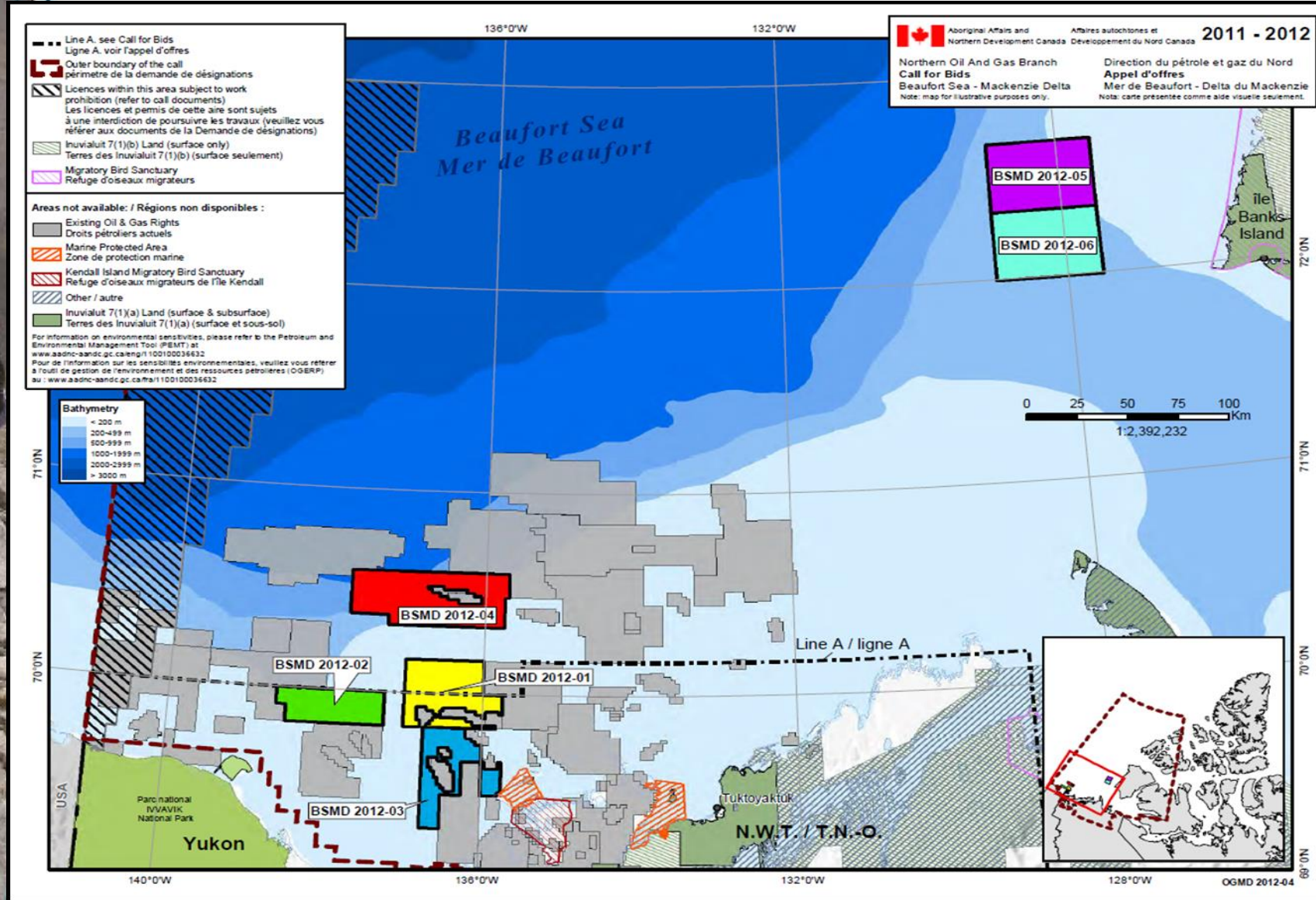
Northern Services: Per Well

Source MGM Energy

Person Hours & Wages by Claimant Status

	Northern		Southern	
	Hours	Wages	Hours	Wages
Tulita Dene & Metis	18759	\$635,200	587	\$48,000
Sahtu Dene & Metis	5596	\$166,600	0	\$0
Non-Sahtu Dene & Metis	9576	\$279,100	3318	\$31,400
No Claimant Status	8602	\$287,400	31880	\$1,445,300
Total	42533	\$1,368,300	35785	\$1,524,700

Beaufort Sea - Call for Bids 2011- 2012

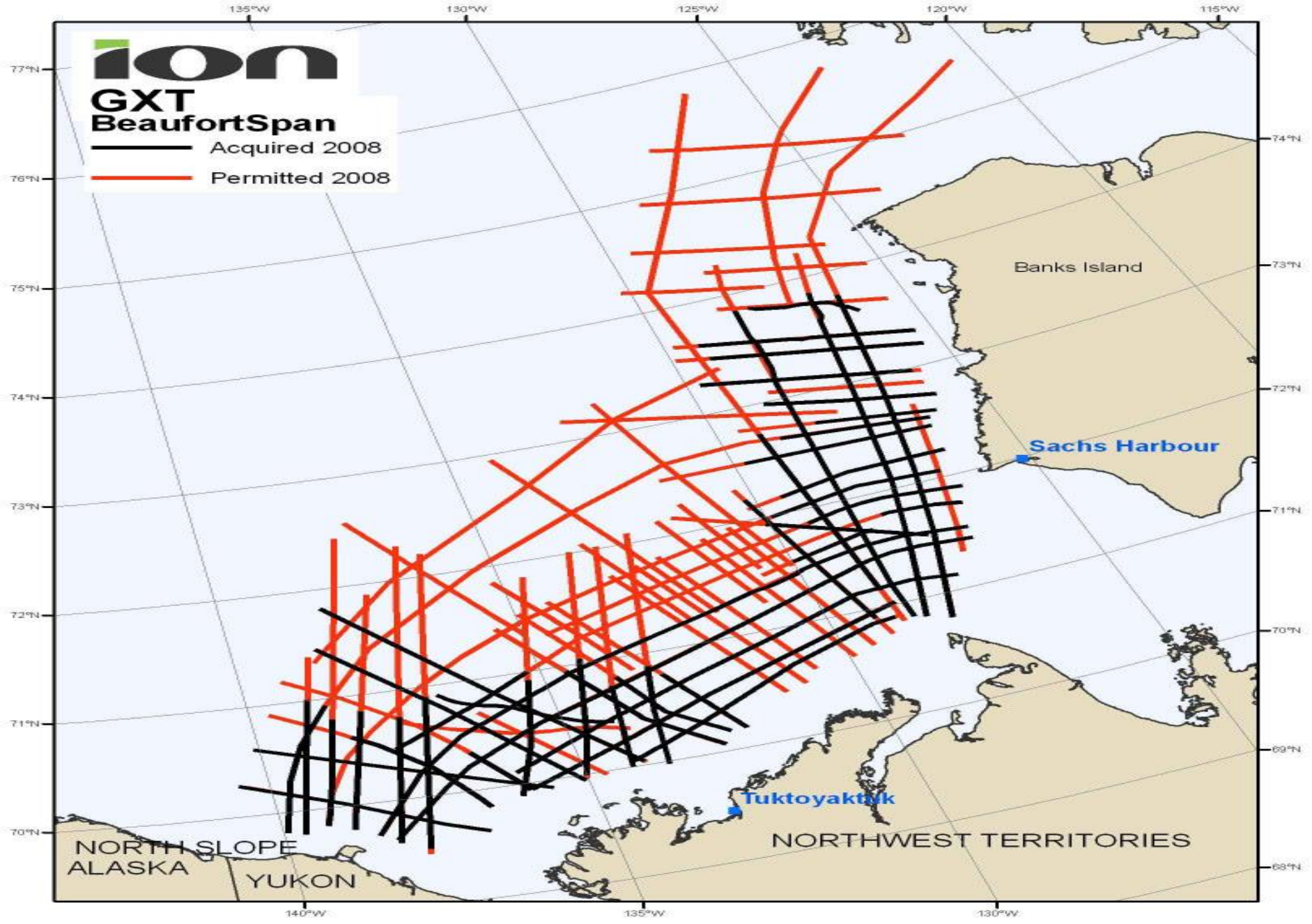


Beaufort Sea Mackenzie Delta

- 37 wells in 0-25 meters water depth
- 48 wells in 25-67 meters water depth
- 22 oil and gas fields discovered offshore
- 187 wells drilled on land
- 31 oil and gas fields discovered onshore

Beaufort Offshore Units





ion
GXT
BeaufortSpan

— Acquired 2008
— Permitted 2008

Banks Island

Sachs Harbour

Tuktoyaktuk

NORTH SLOPE
ALASKA

YUKON

NORTHWEST TERRITORIES

0 50 100 200 Kilometers

BeaufortSPAN
Permitted & Acquired

Types of Offshore Drilling Platforms

RIG ON PILES
(3 METRES)



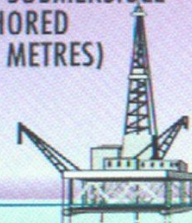
SUBMERSIBLE
(20 METRES)



JACK-UP
(100 METRES)



SEMI-SUBMERSIBLE-
ANCHORED
(200 METRES)



DYNAMICALLY POSITIONED
(2000 METRES)



Typical Seismic Ship



Deep Water Semisubmersible Drilling Rig Harsh Environment



Ice Strengthened Drill Ship



Tiama – Thank you

Stena DrillMAX ICE

Ice strengthened and winterized version of the Stena DrillMAX drillship

Specifications

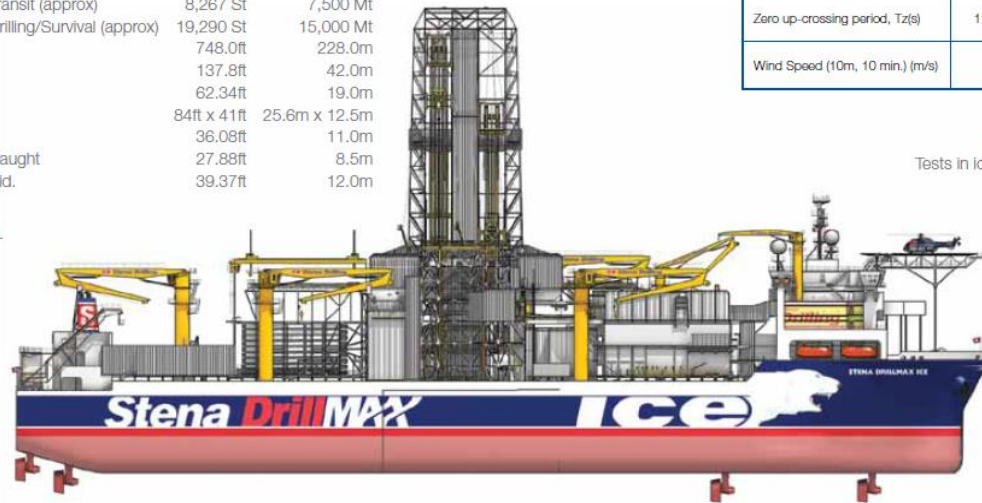
CLASSIFICATION

Det Norske Veritas +1A1, Ship-Shaped Drilling Unit (N), DRILL (N), CRANE (-30°C), HELDK-SH, DYNPOS-AUTRO, F-AM, E0, PC-4, WINTERIZED Cold. PC-4: HULL STRUCTURE according to PC-4, THRUSTERS according to ICE-10.

DIMENSIONS	API	Metric
Displacement (approx)	108,027 St	98,000 Mt
Variable Deck Load Transit (approx)	8,267 St	7,500 Mt
Variable Deck Load Drilling/Survival (approx)	19,290 St	15,000 Mt
Overall length	748.0ft	228.0m
Breadth, mid.	137.8ft	42.0m
Depth, mid.	62.34ft	19.0m
Moonpool	84ft x 41ft	25.6m x 12.5m
Transit ice, draught	36.08ft	11.0m
Transit open water, draught	27.88ft	8.5m
Operation draught, mid.	39.37ft	12.0m

ICE BELT

6.5 - 14.0m above BL



OPERATING CRITERIA (DP Class 3)

PARAMETER	SURVIVAL	STAND-BY CONNECTED	MAXIMUM DRILLING
Significant wave height, Hs (m)	16.0	11.5	6.7
Zero up-crossing period, Tz(s)	11.0-15.0	8.0-11.0	7.0-10.0
Wind Speed (10m, 10 min.) (m/s)	41.0	31.0	27.0

ICE MODEL TESTS

Hull form identical to Stena DrillMAX

Tests in ice thicknesses: 0.5, 1.0, 1.5 and 2.2m

Tests in level ice

Newly broken channel of 1 and 2 Icebreakers

Tests in managed ice with varying ice concentrations

RATED WATER DEPTH

Capable of operating in 10,000ft of water; currently equipped for 7,500ft.

