# OIL AND GAS ACTIVITIES IN THE NWT

An Overview

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# **Outline**

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- 5 Offshore Exploration
- 6 Future NT/NU



# NWT Oil and Gas History

#### ONSHORE CRUDE OIL DISCOVERY AND DEVELOPMENT

1920 Norman Wells oil discovery

1942 Canol Pipeline to Whitehorse built

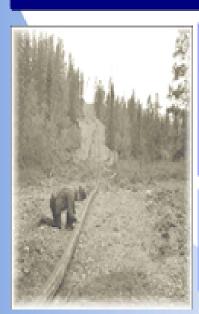
1969 Mackenzie Delta

1933-96: Norman Wells refinery for local needs

1955

Rabbit

Lake



#### ONSHORE NATURAL GAS DISCOVERY

1966 Pointed Mountain Field

1970's Mackenzie Delta

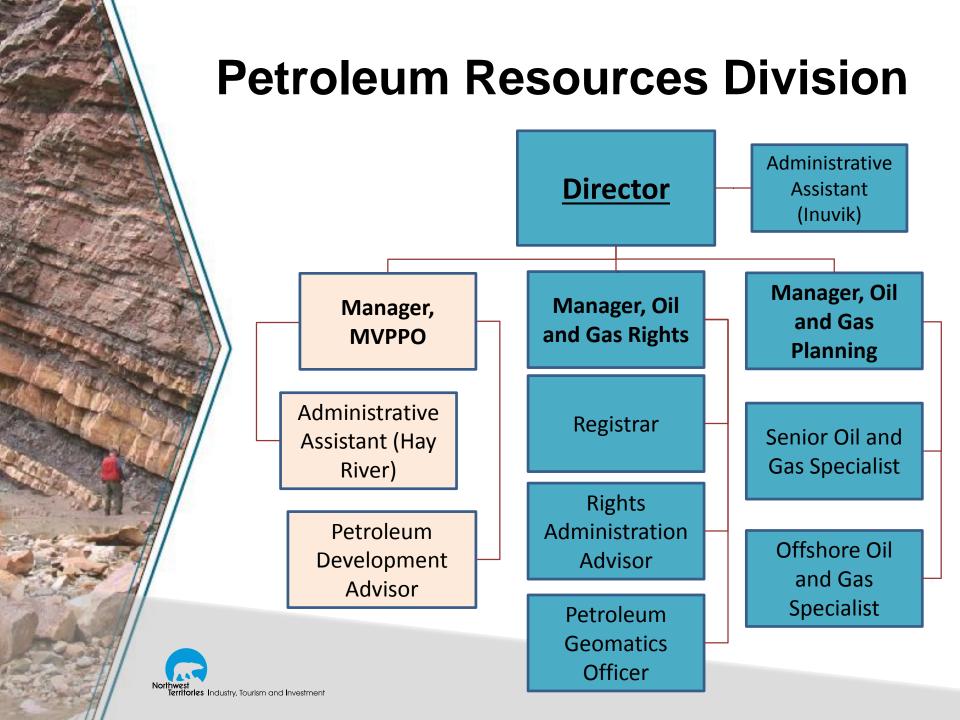
1961First High Arctic drilling

#### HIGH ARTIC OIL AND GAS

2009/10 Far Offshore









## **Petroleum Resources Division**

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

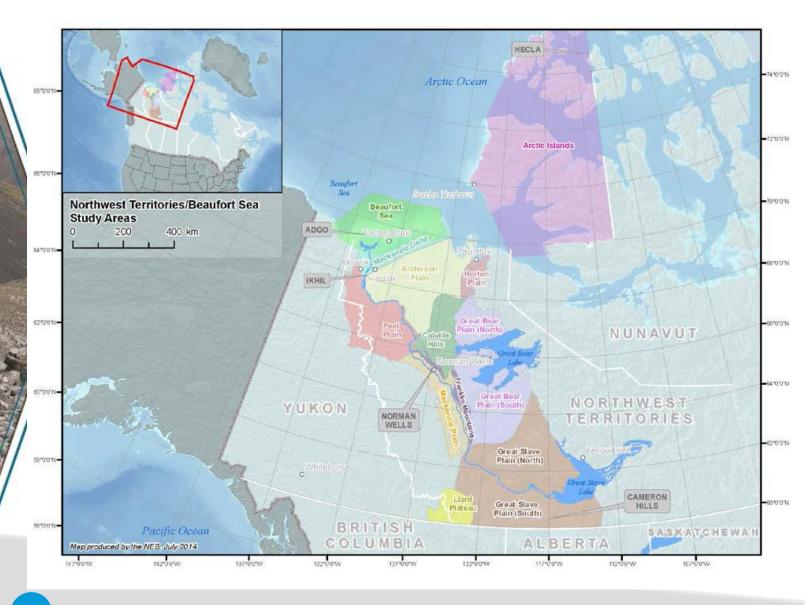
**Rights Management** – responsible for the management of all land tenure associated with petroleum resource development, the registration of petroleum resource rights and the Northwest Territories Environmental Studies Research Fund (NESRF)

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

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# **Discovered Conventional Resource Volumes**

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



#### **CMV – Call for Bids 2010 2011** 2010-2011 Aboriginal Affairs and Affaires autochtones et Northern Development Canada Développement du Nord Canada Note: Area excluded from the 2010-2011 Call for Nominations Northern Oil and Gas Branch Direction générale du pétrole et du gaz du Nord Winning Bids Offres retenues Nota: secteur exclus de la demande Central Mackenzie Valley Partie centrale de la vallée du Mackenzie de désignations 2010-2011 Note: map for illustrative purposes only. Nota: carte présentée comme aide visuelle seulement. Winning Bids / Offres retenues GWICH'IN SETTLEMENT AREA Parcel Bid/Offre ZONE DESIGNEE DU GWICH'IN CMV2011-01 MGM Energy Corp. 82,643 \$1,512,121.99 Deline District K'ahsho Got'ine District CMV2011-02 Shell Canada Limited 87,948 \$18,296,208.00 CMV2011-03 mperial Oil Resources Ventures Limited 88,848 \$21,500,003.00 Husky Oil Operations Limited 87,748 \$188,000,000.00 CMV2011-04 CMV2011-05 MGM Energy Corp. \$1,502,502.50 Great Bear Lo CMV2011-06 Husky Oil Operations Limited 87,034 \$188,000,000.00 \$18,098,660.00 CMV2011-07 Shell Canada Limited 87,117 SAHTU SETTLEMENT AREA CMV2011-08 ConocoPhillips Canada Resources Corp. 87,495 \$66.712.035.00 ZONE DESIGNEE DU SAHTU CMV2011-09 MGM Energy Corp. 85,288 \$2,021,212,99 \$7,049,269,00 CMV2011-10 Shell Canada Limited 26,533 CMV2011-11 Imperial Oil Resources Ventures Limited 90,632 \$21,500,003,00 CMV2011-09 Outer Boundary of the Call / périmetre de la lemande de désignation Norman Wells Tulita District MV20 CMV2011-07 CMV2011-05 Tulita CMV2011-04 CMV2011-02 2010-2011 Winning Bids Offres retenues 2010-2011 CMV2011-03 Pipeline (Enbridge Norman Wells) Surface owners are First Nations Les Premières Nations sont propriétaires de la surface Area subject to specific environmental considerations Région sujette à des considérations d'ordre environmentale \* MV2011-01 LEE Canol Heritage Trail / sentier heritage Canol Areas not available: / Régions non disponibles : Surface and subsurface owners are First Nations Les Premières Nations sont propriétaires de la surface et du sous-sol Existing Oil & Gas Rights Droits pétroliers actuels Excluded (Interim and/or permanent withdrawal) \* Exclus (retrait provisoire et/ou définitif) Provisionally excluded \* Secteurs exclus à titre provisoire Areas based on the following Land Use Plans: Gwich'in - draft revisions 2010 and Sahtu - draft 3 2010 Régions basées sur les plans d'utilisation des terres suivants : Gwich'in - révision ébauche 2010 et Sahtu - 3e ébauche 2010

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## 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

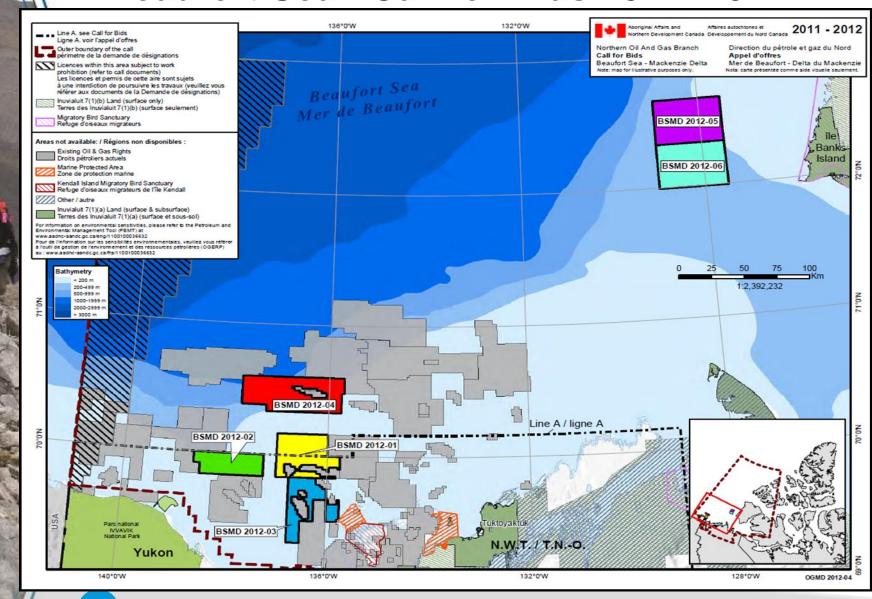
**Source MGM Energy** 

#### **Person Hours & Wages by Claimant Status**

		Northern		Southern	
		Hours	Wages	Hours	Wages
	Tulita Dene & Metis	18759	\$635,200	587	\$48,000
(10)	Sahtu Dene & Metis	5596	\$166,600	0	\$0
191	Non-Sahtu Dene & Metis	9576	\$279,100	3318	\$31,400
1	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

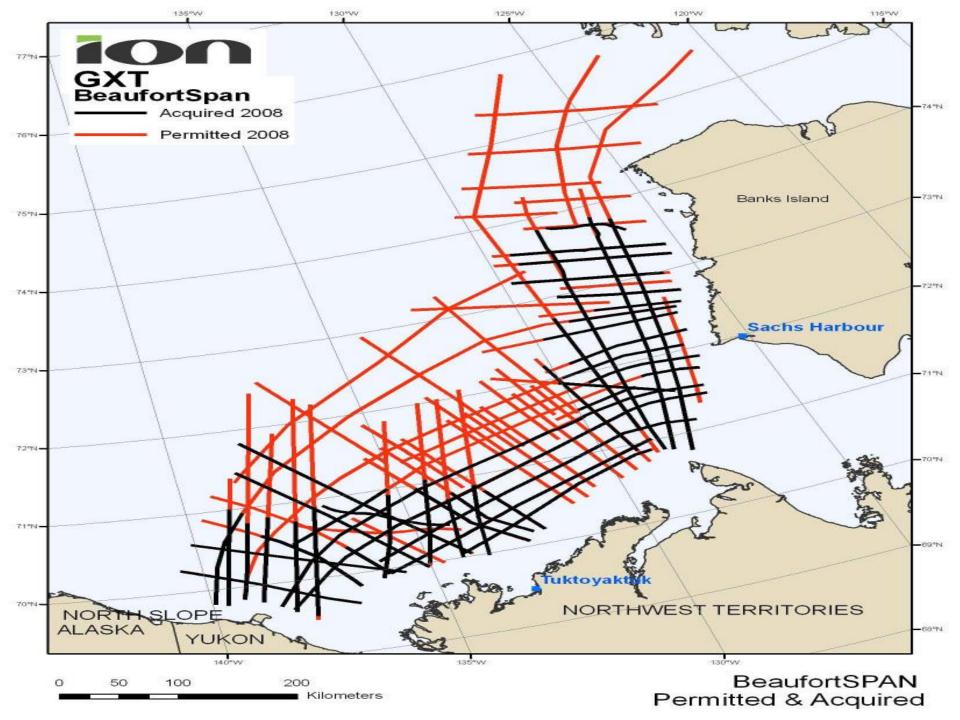




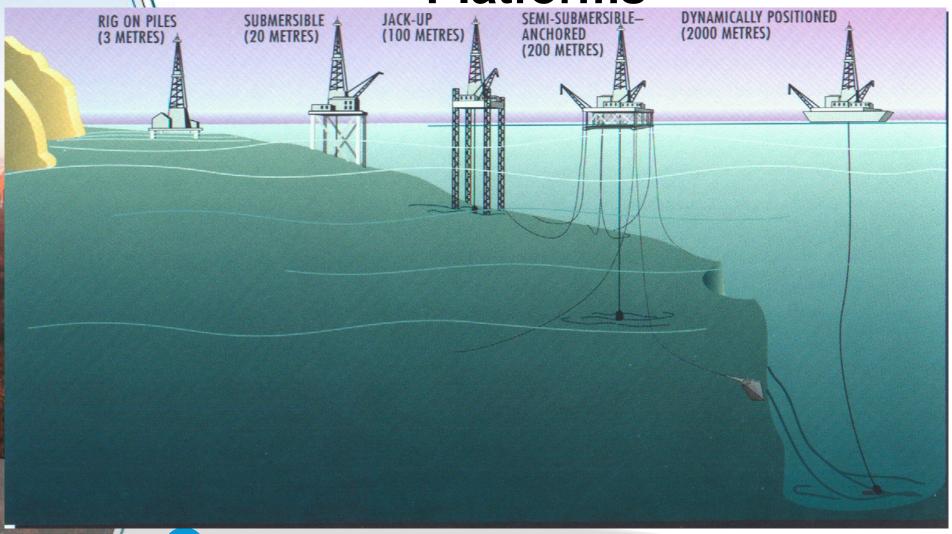
- 37 wells in 0-25 meters water depth
- 48 wells in 25-67 meters water depth
- 22 oil and gas fields discovered offshore
- 187 wells drilled on land
- 31 oil and gas fields discovered onshore







# Types of Offshore Drilling Platforms



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## **Typical Seisimic Ship**



# Deep Water Semisubmersible Drilling Rig Harsh Environment





## Ice Strengthened Drill Ship



# Tiama – Thank you

### Stena DrillMXX ICE

Ice strengthed 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.



