

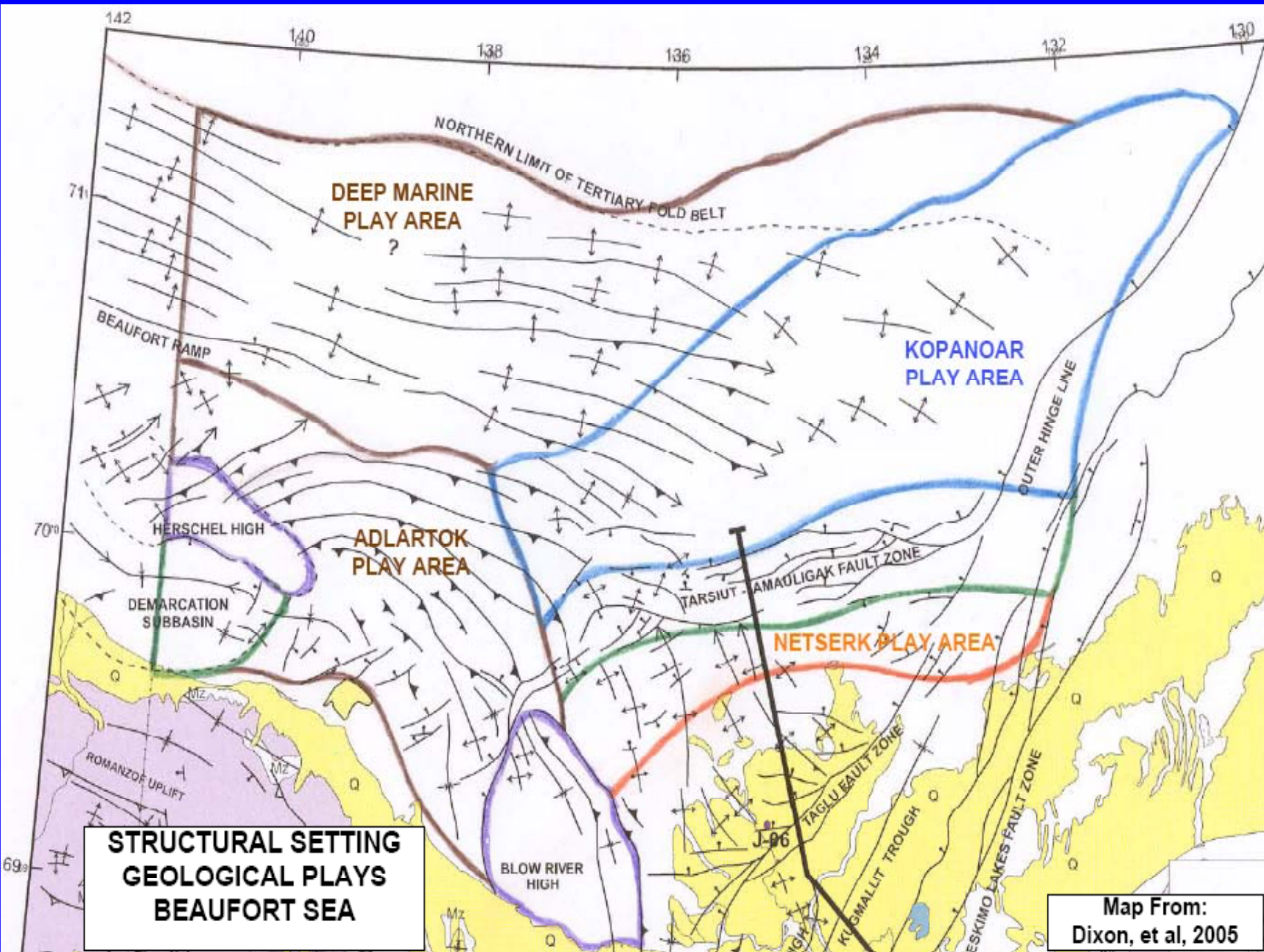
3P ARCTIC 2011

The Polar Petroleum Potential

SEPTEMBER 2, 2011

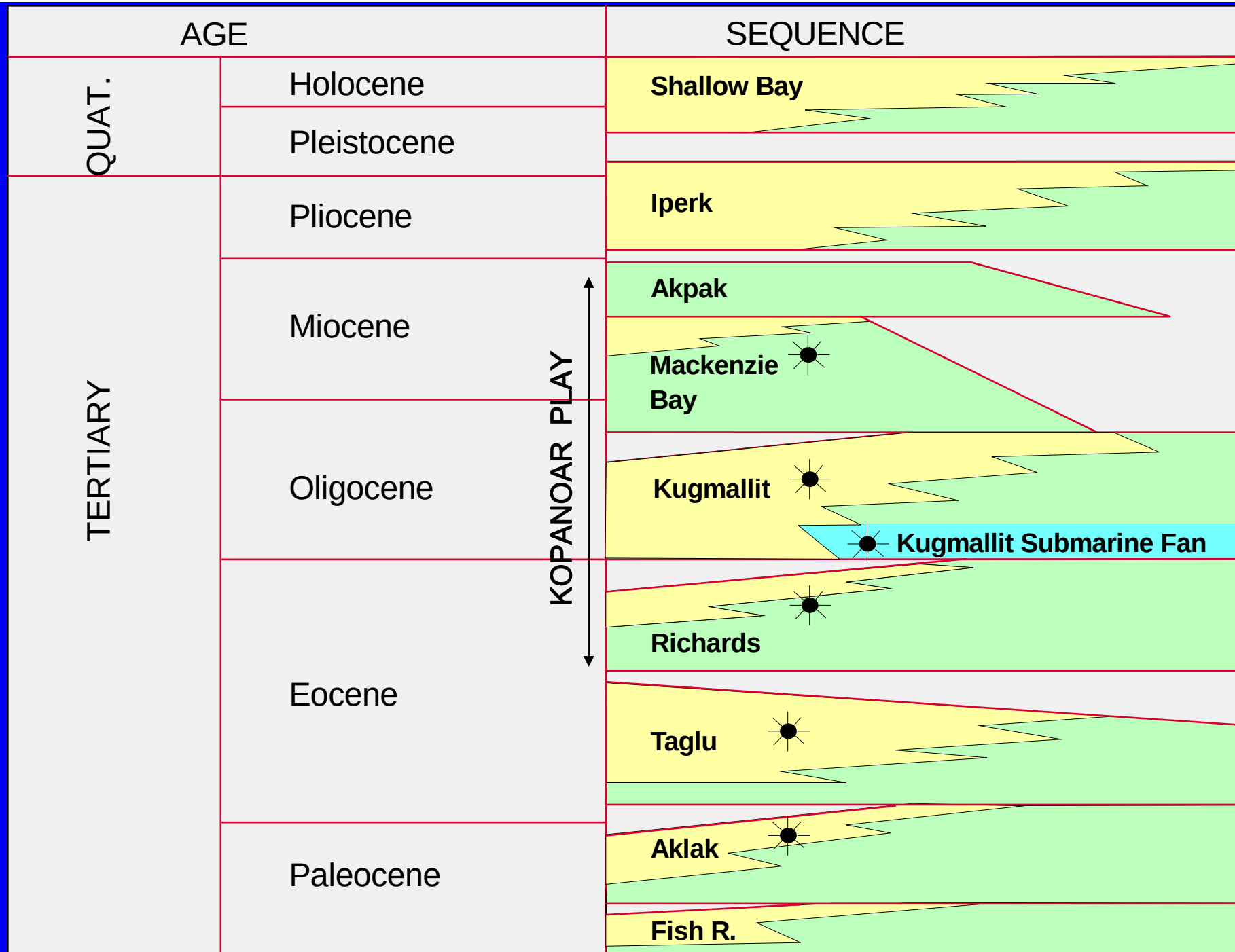
**Oil and Gas Resources
Kopanoar Play
Beaufort Sea**

Kenneth J. Drummond



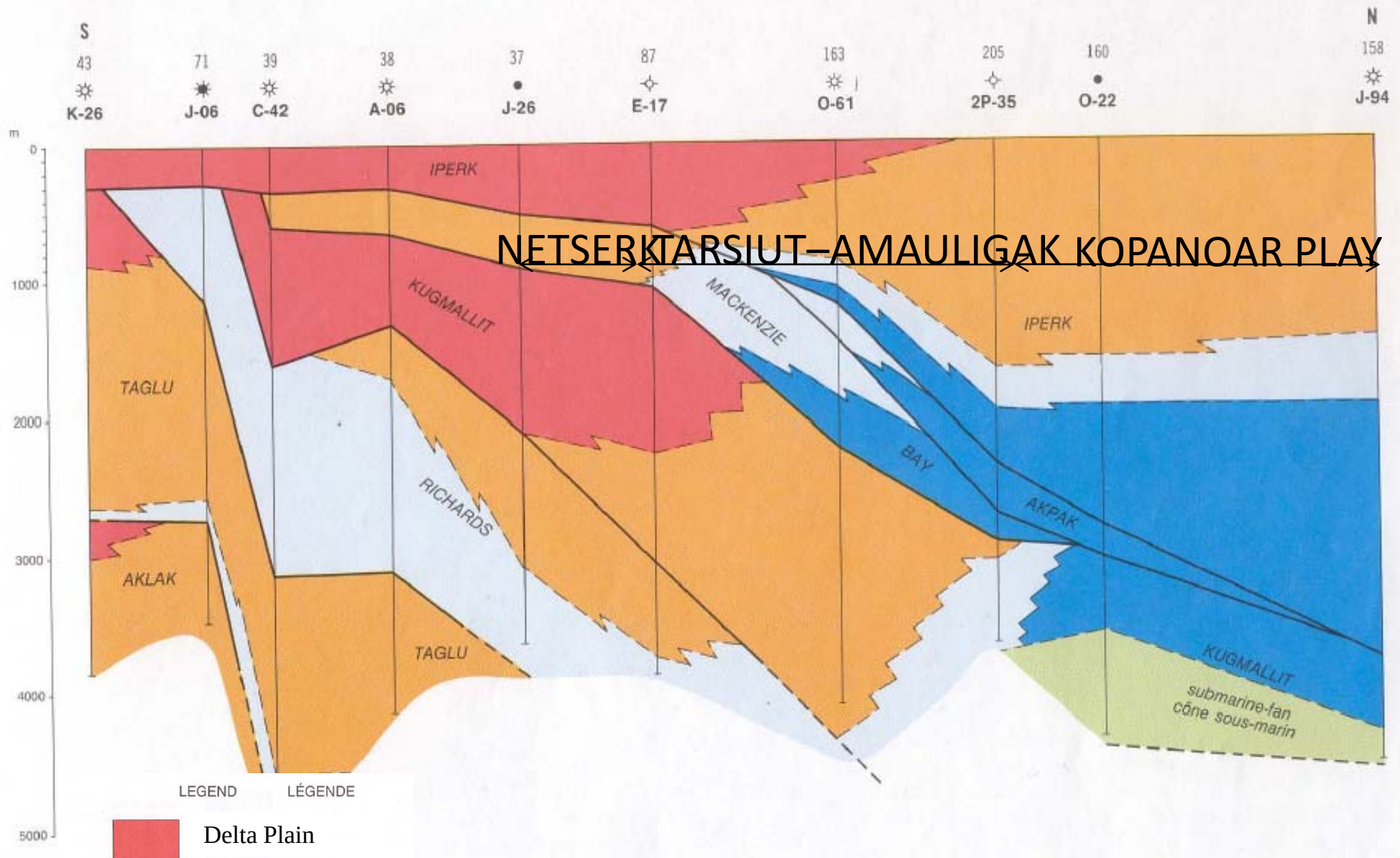
**STRUCTURAL SETTING
GEOLOGICAL PLAYS
BEAUFORT SEA**

Map From:
Dixon, et al, 2005

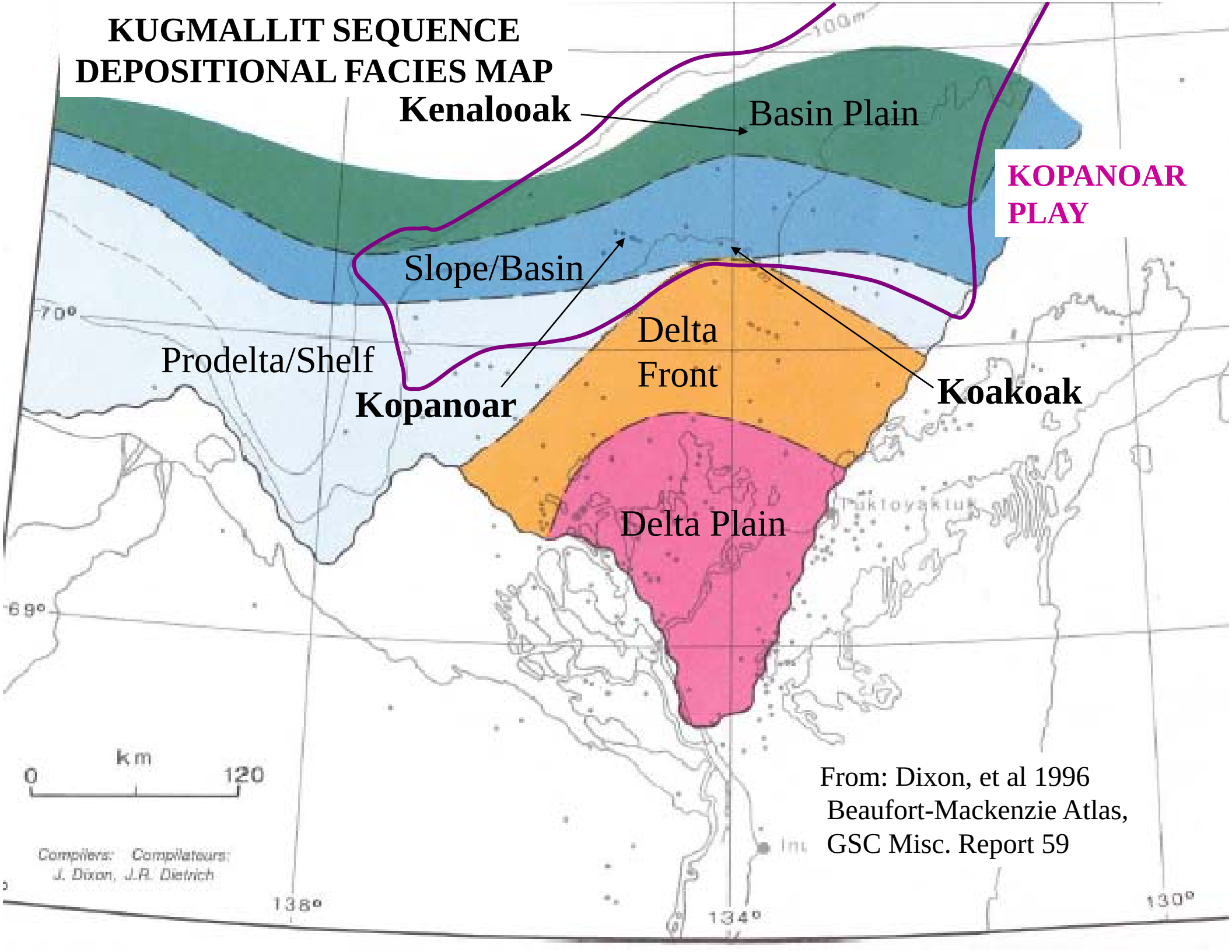


BEAUFORT SEA STRATIGRAPHIC SECTION

Modified from: Dixon, 1995



KUGMALLIT SEQUENCE DEPOSITIONAL FACIES MAP



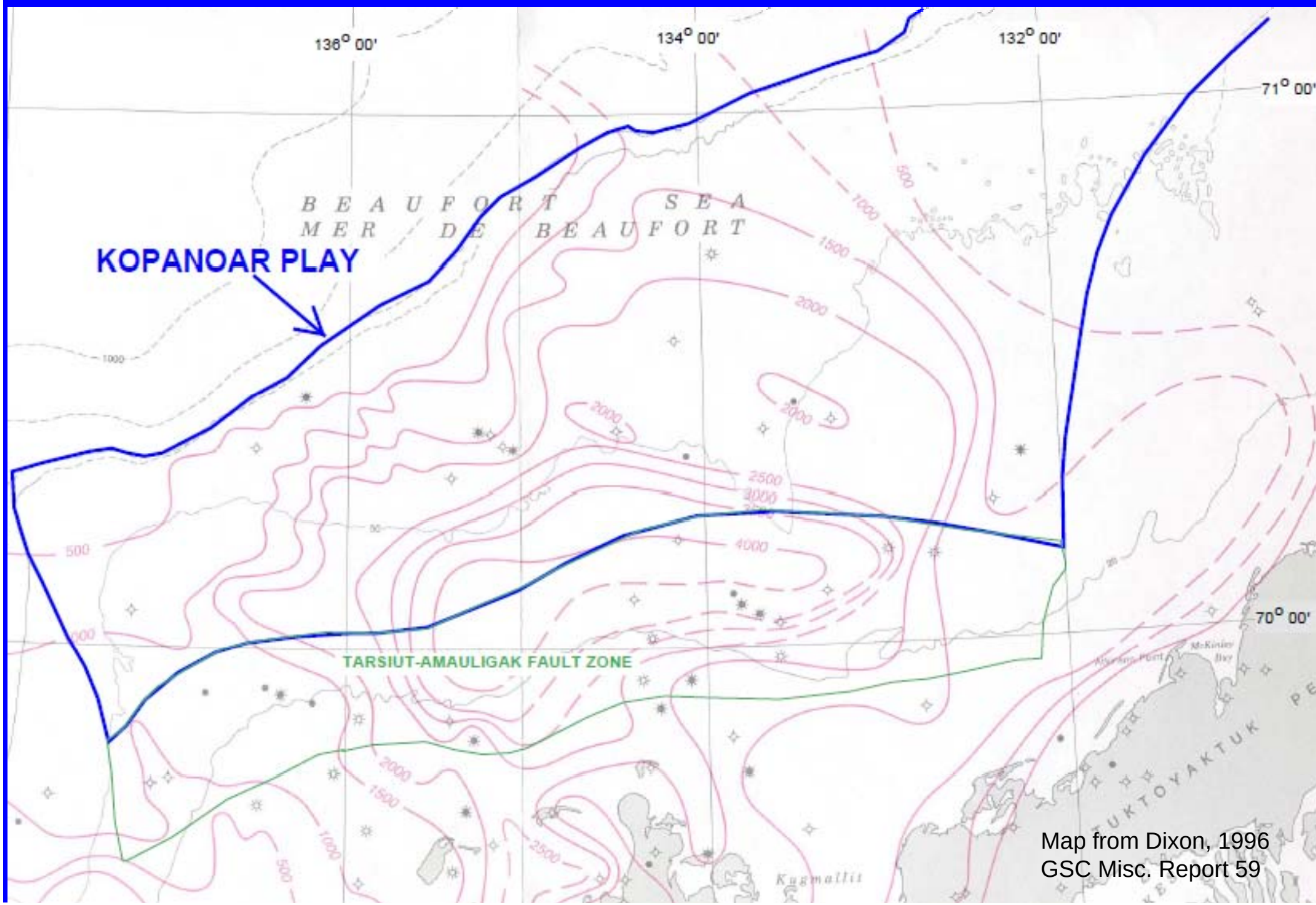
Kopanoar Play

Reservoirs in Kugmallit Distal Delta Front sandstones and Kugmallit Deep Sea Fan Deposits.

Also may include clastics of the Mackenzie Bay and Richards sequences.

East-West Trending Folds of the Beaufort Fold Belt

KUGMALLIT SEQUENCE ISOPACH MAP



KUGMALLIT SUBMARINE FAN ISOPACH MAP

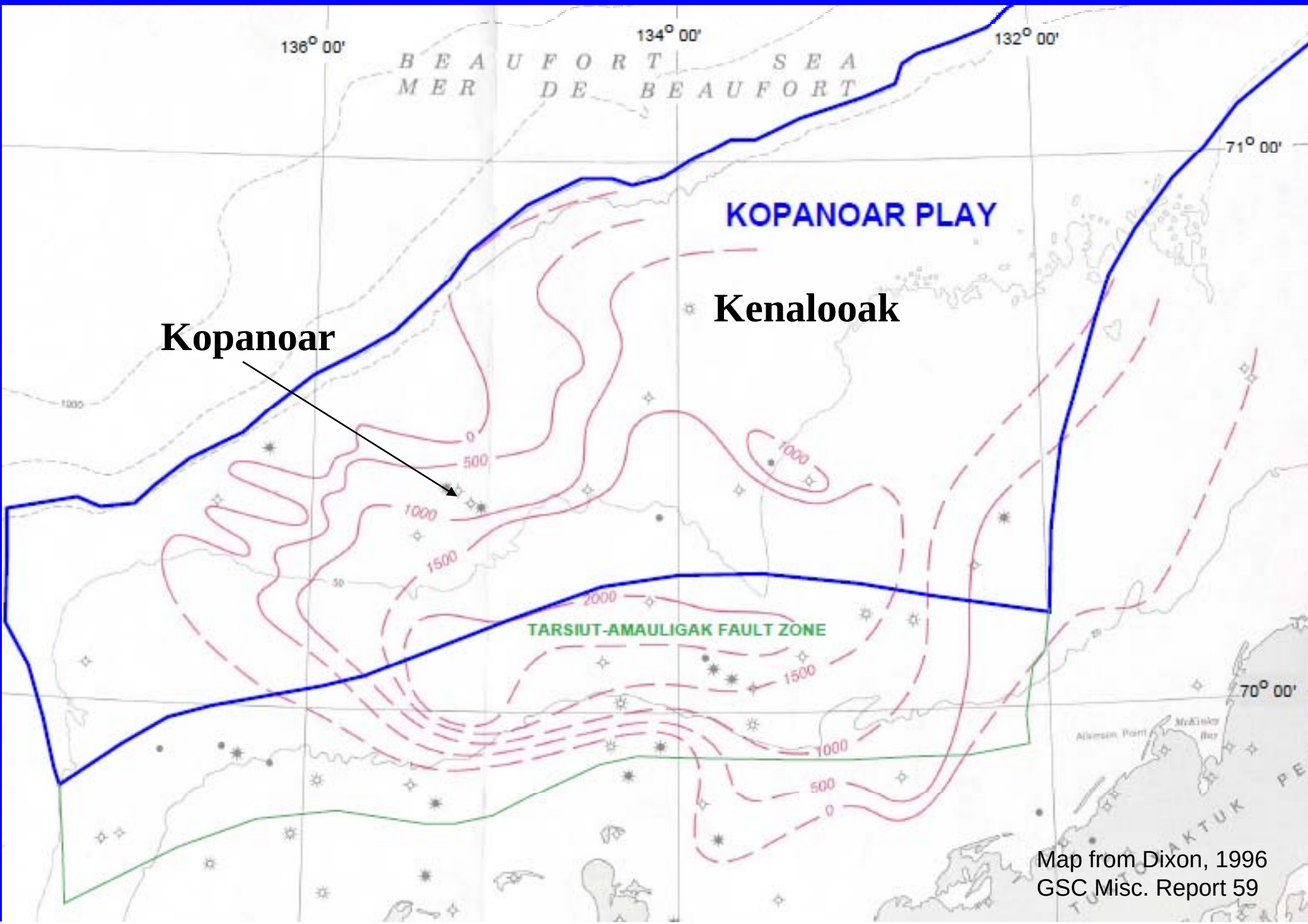
Kopanoar

KOPANOAR PLAY

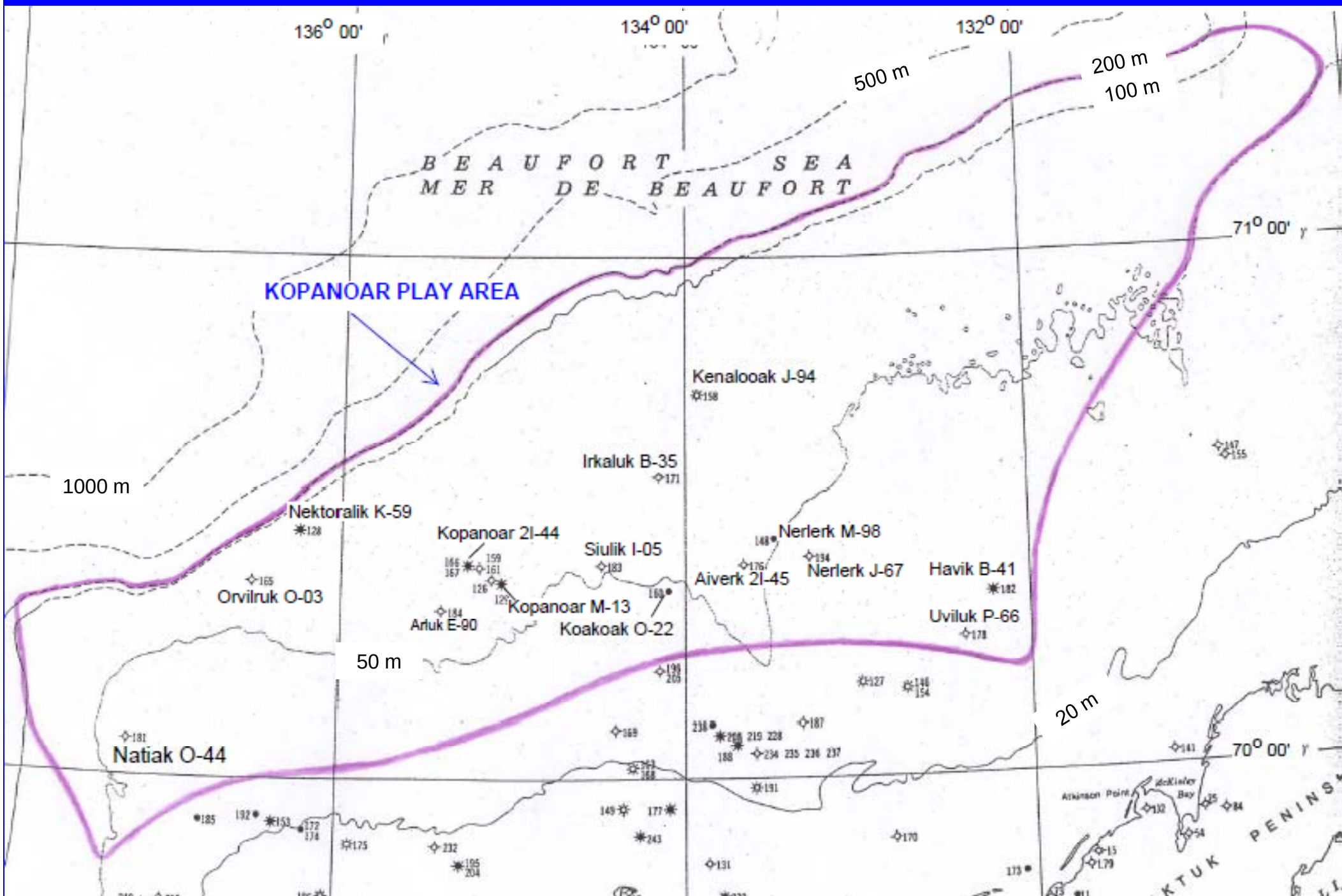
Kenalooak

TARSIUT-AMAILIGAK FAULT ZONE

Map from Dixon, 1996
GSC Misc. Report 59



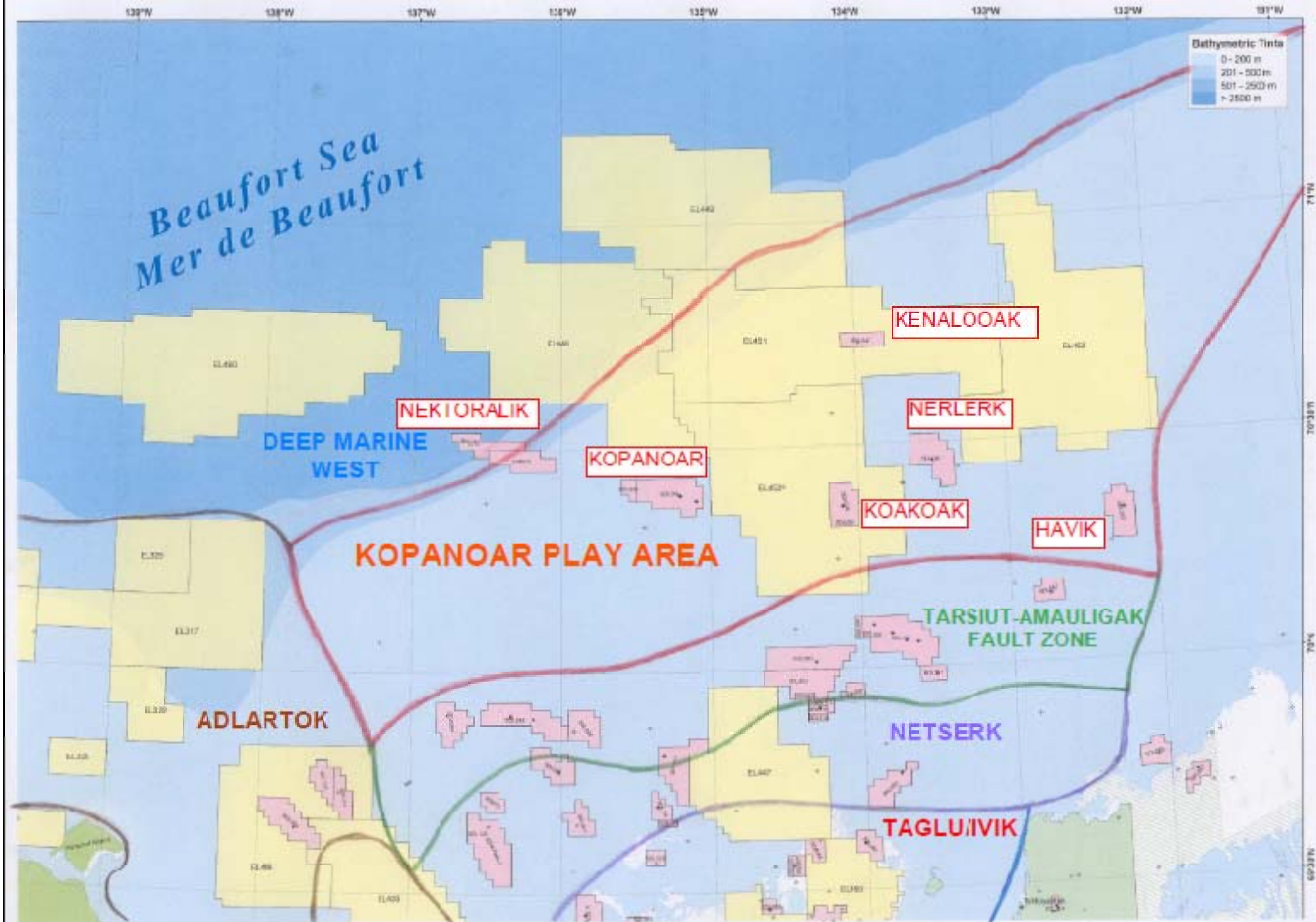
KOPANOAR PLAY AREA and WELLS DRILLED



KOPANOAR PLAY, BEAUFORT SEA - LIST OF WELLS

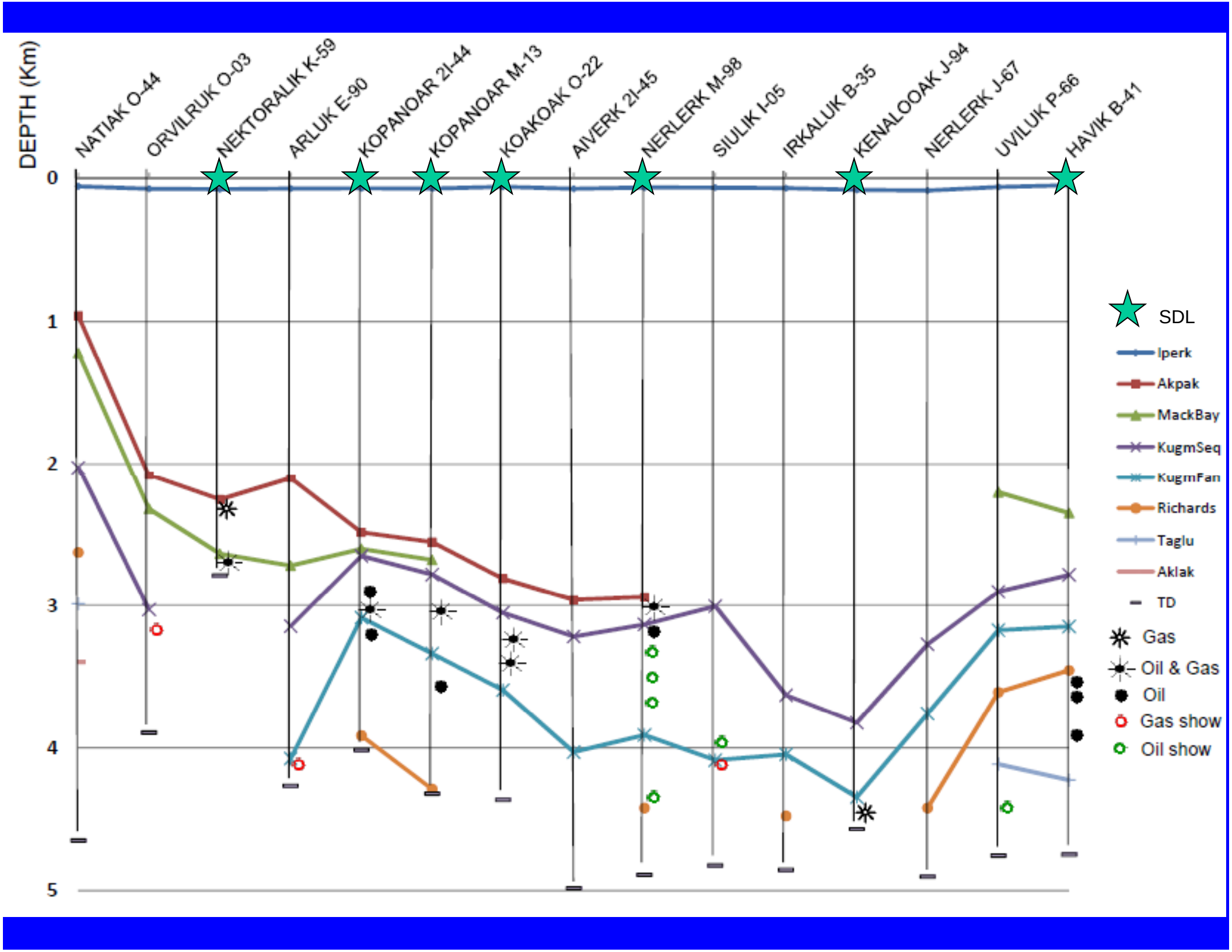
WELL NAME	YEAR	Water Depth metres	Total Depth metres	Drrill Stem Test Gas_mcfpd	Drill Stem Test Oil_bpd
DOME ET AL NATIAK O-44	1983		4,652		
DOME TEXACO ET AL UVILUK P-66	1983	29.7	4,758		338
DOME ET AL ARLUK E-90	1983	58.0	4,300	159	
DOME ET AL HAVIK B-41	1983	30.0	4,753	788	635
DOME HUNT GULF KOAKOAK O-22	1979	47.2	4,365	19308	2580
DOME ET AL ORVILRUK O-03	1980	59.9	4,572	15	
HUNT DOME KOPANOAR M-13	1976	57.3	4,282	4,500	6,048
DOME GULF HUNT KOPANOAR 2/I-44	1980	58.7	4,010	4792	1126
DOME ET AL SIULIK I-05	1983	52.0	4,824	355	64
DOME AIVERK 2 I-45	1982	60.6	5,034	TSTM	
DOME NERLERK J-67	1984	45.0	4,904		
DOME NERLERK M-98	1977	52.0	4,940		403
DOME ET AL NEKTORALIK K-59	1976	64.0	2,790	5500	1150
DOME HUNT IRKALUK B-35	1981	56.4	2,211	TSTM	
DOME HUNT KENALOOAK J-94	1979	67.7	4,568	4010	

KOPANOAR PLAY – SIGNIFICANT DISCOVERY LICENCES

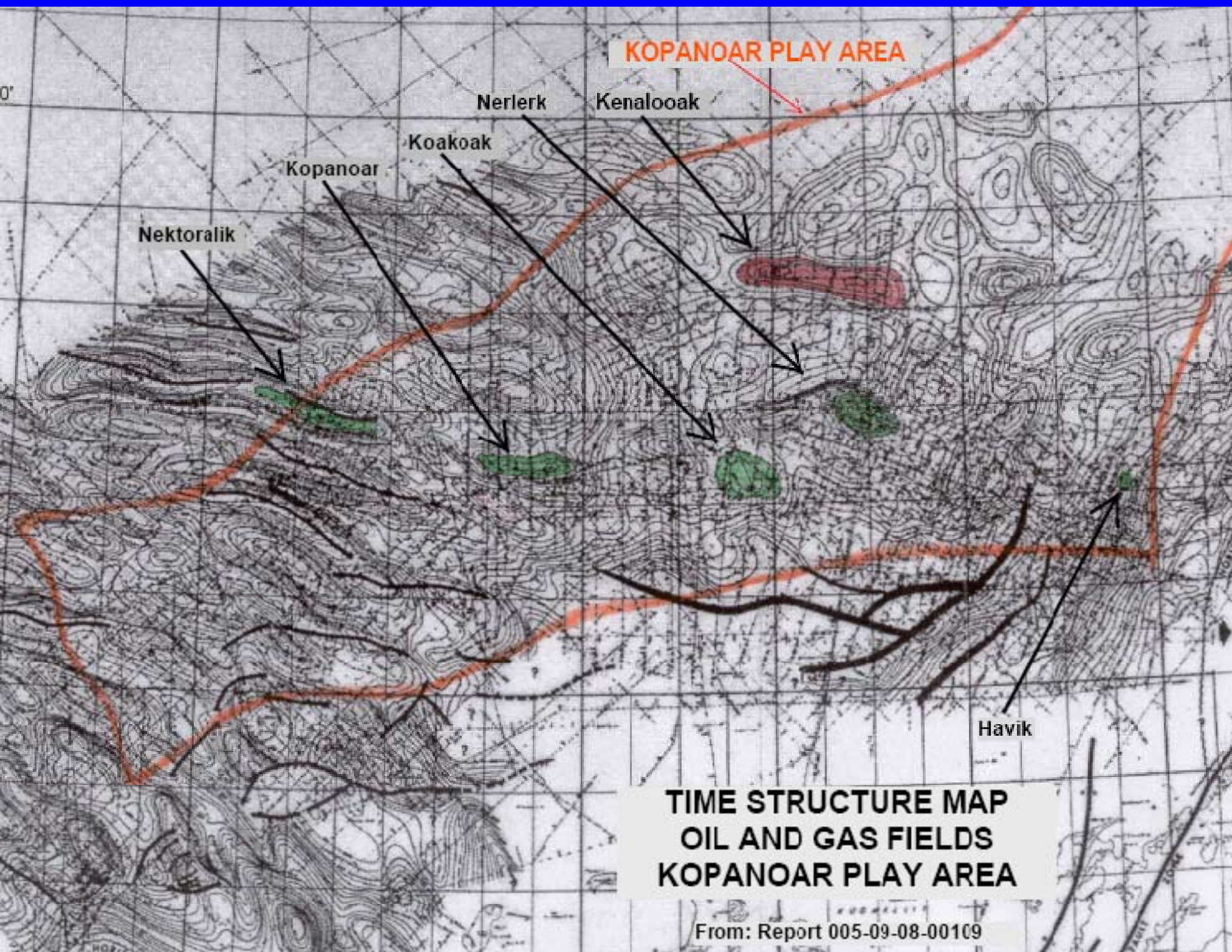


KOPANOAR PLAY – DISCOVERED FIELD RESOURCES

	RECOVERABLE RESOURCES		
FIELD	GAS (BCF)	OIL (MMB)	MMBOE
KOAKOAK	339.7	81.4	141.2
KOPANOAR	94.6	65.6	82.1
HAVIK	39.7	37.1	43.7
NERLERK	52.5	31.5	40.5
KENALOOAK	211.7	0	35.4
NEKTORALIK	84.3	18.5	33.8
TOTAL	822.5	234.1	376.7



KOPANOAR PLAY AREA



Nerlerk

Kenalooak

Koakoak

Kopanoar

Nektoralik

Havik

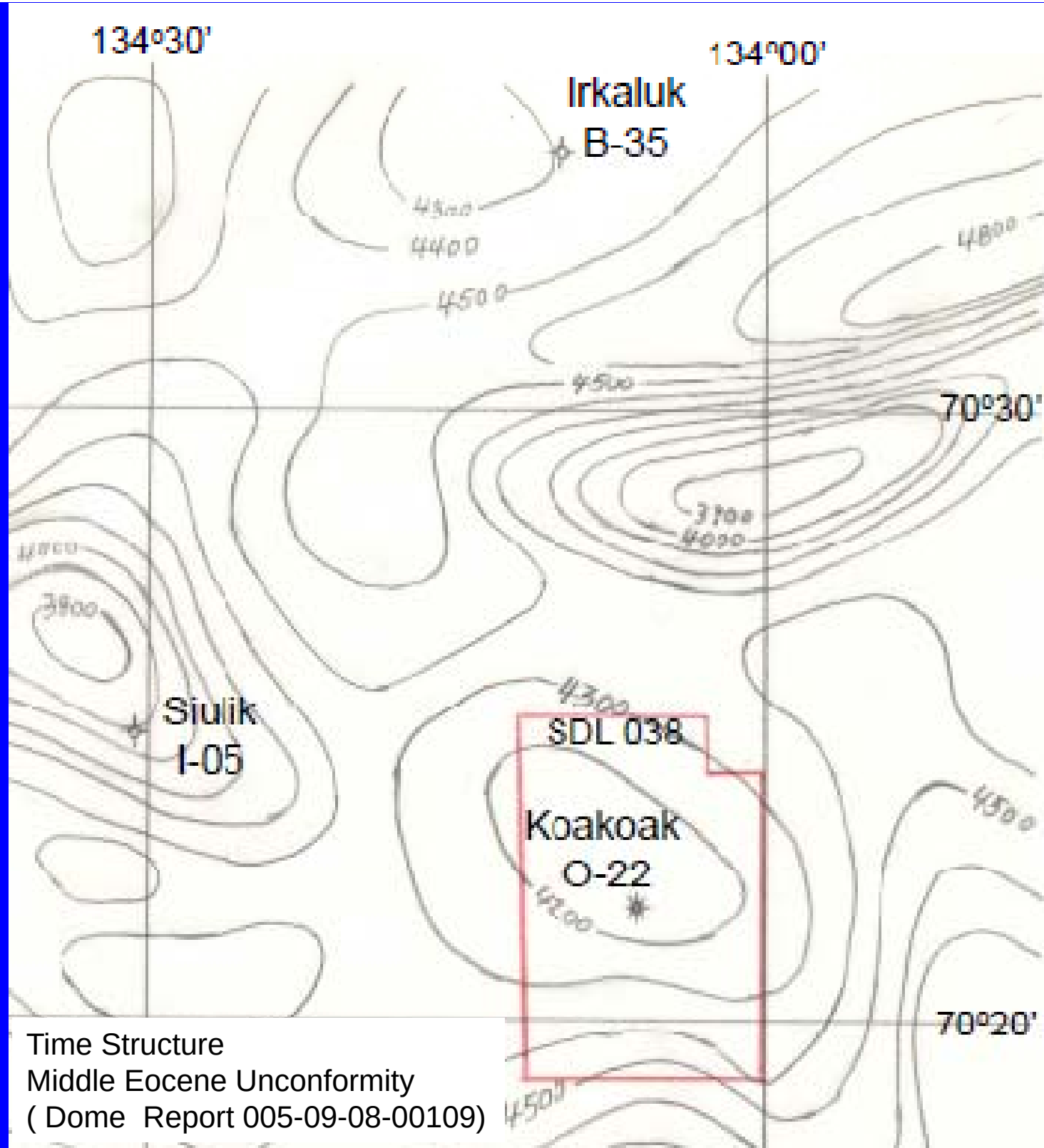
**TIME STRUCTURE MAP
OIL AND GAS FIELDS
KOPANOAR PLAY AREA**

From: Report 005-09-08-00109

**KOAKOAK O-22
SIGNIFICANT
DISCOVERY
LICENCE**

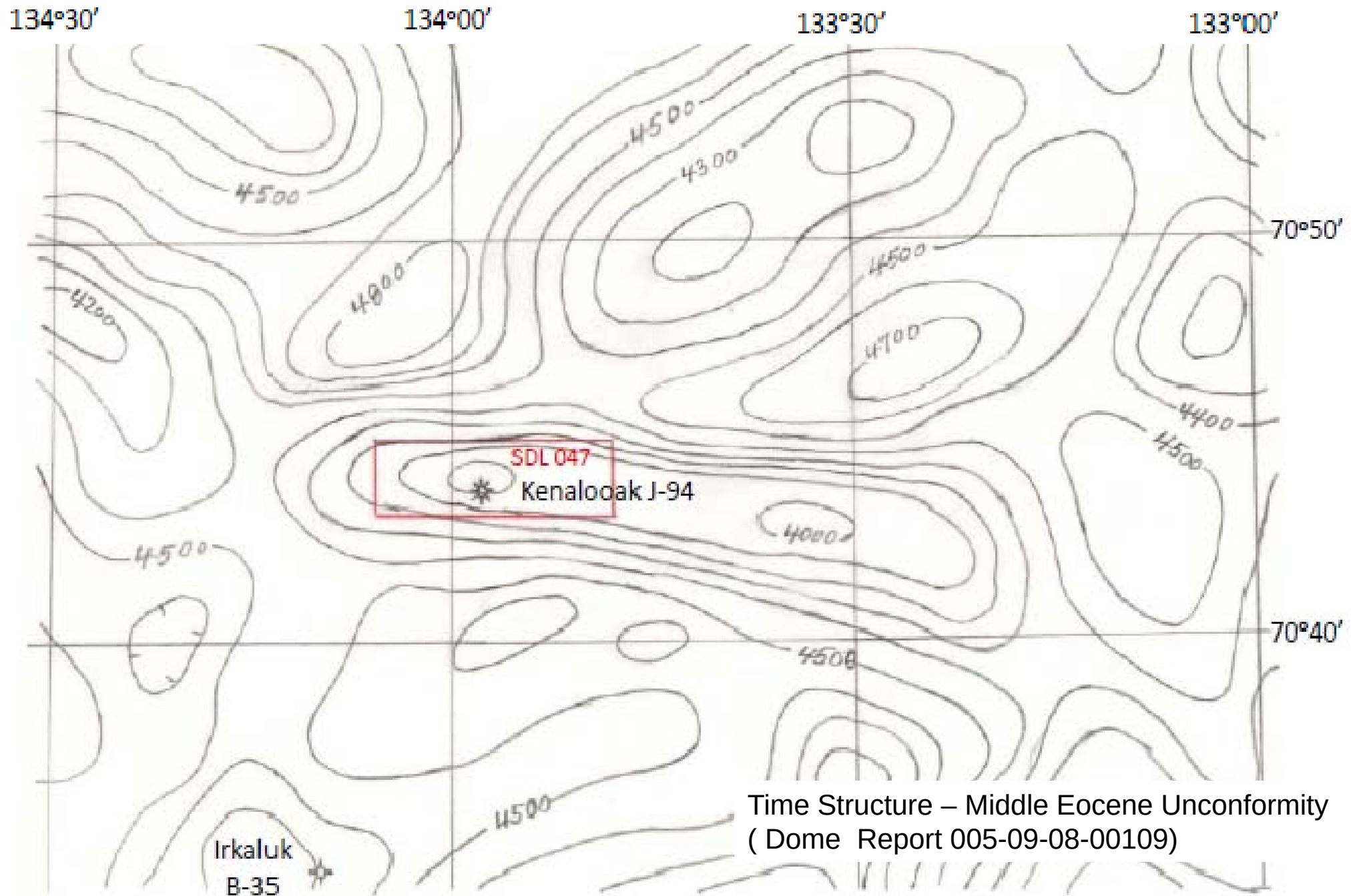
6,620 Ha

**81.4 MMB
339.7 BCF**



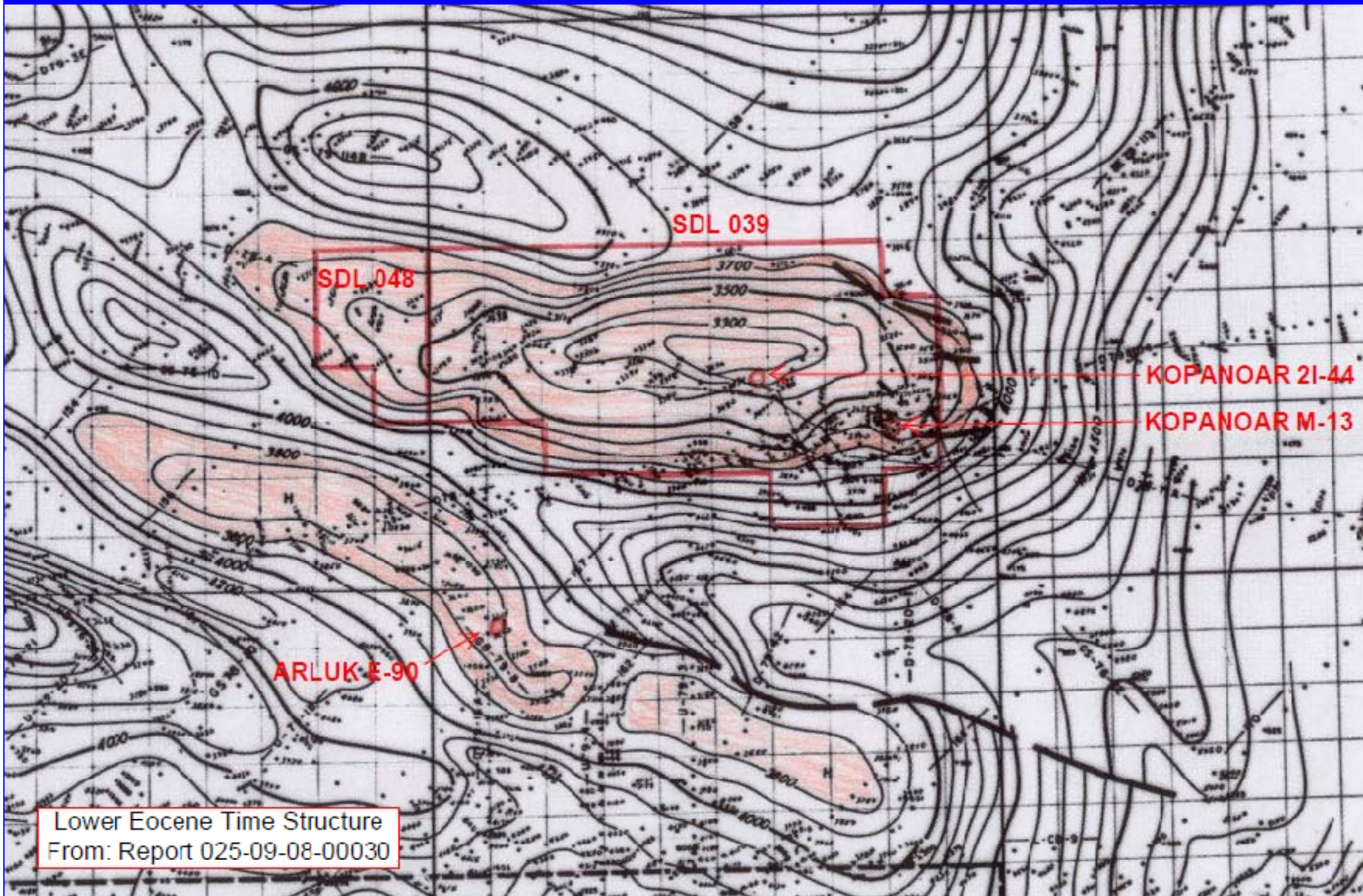
KENALOOKAK J-94 SIGNIFICANT DISCOVERY LICENCE

4,104 Hectares, 211.7 BCF



KOPANOAR SIGNIFICANT DISCOVERY LICENCE

13,922 Hectares, 65.6 MMB, 94.6 BCF



KOPANOAR M-13

SÉQ. D'IPERK SEQ.

TIME/TEMPS (SECONDS/SECONDES)

2.0

3.0

4.0

SÉQ. DE MACKENZIE BAY/AKPAK SEQ.

SÉQ. DE KUGMALLIT SEQ.

KUGMALLIT SUBMARINE FAN
CÔNE SOUS-MARINE DE KUGMALLIT

CLINOFORMS
CLINOFORMES

?SÉQ. DE RICHARDS SEQ.?

?SÉQ. DE REINDEER SEQ.?

KOPANOAR ANTICLINE
ANTICLINAL DE KOPANOAR

PRODUCING ZONES DST 4, 5, 6
INTERVAL PRODUCTIF : ESSAIS
AUX TIGES 4,5 ET 6.

TD/PT -4306.8 m

EOCENE
ÉOCÈNE

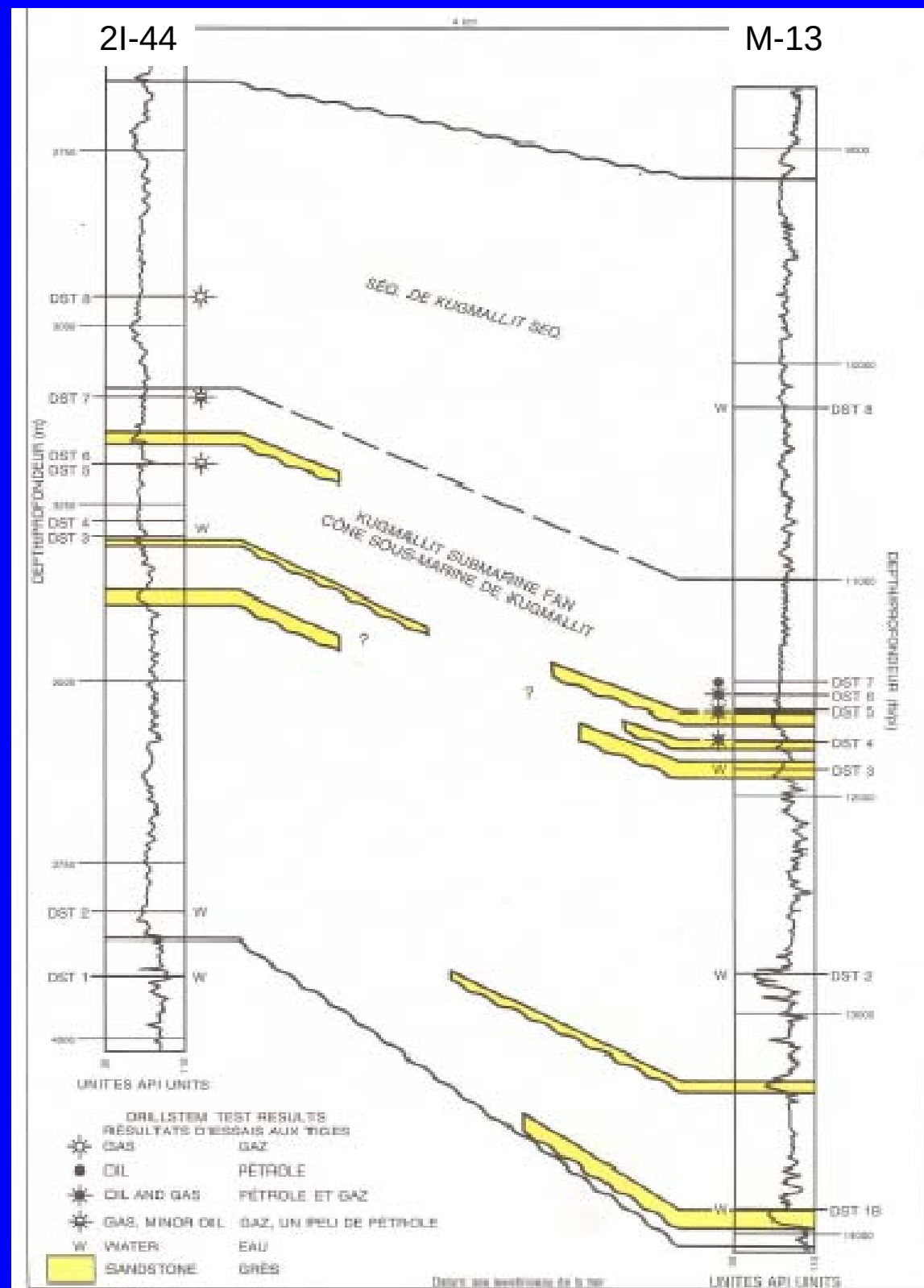
FAULT/FAILLE DE CHEVAUCHEMENT

Dome Line D3D-80-33

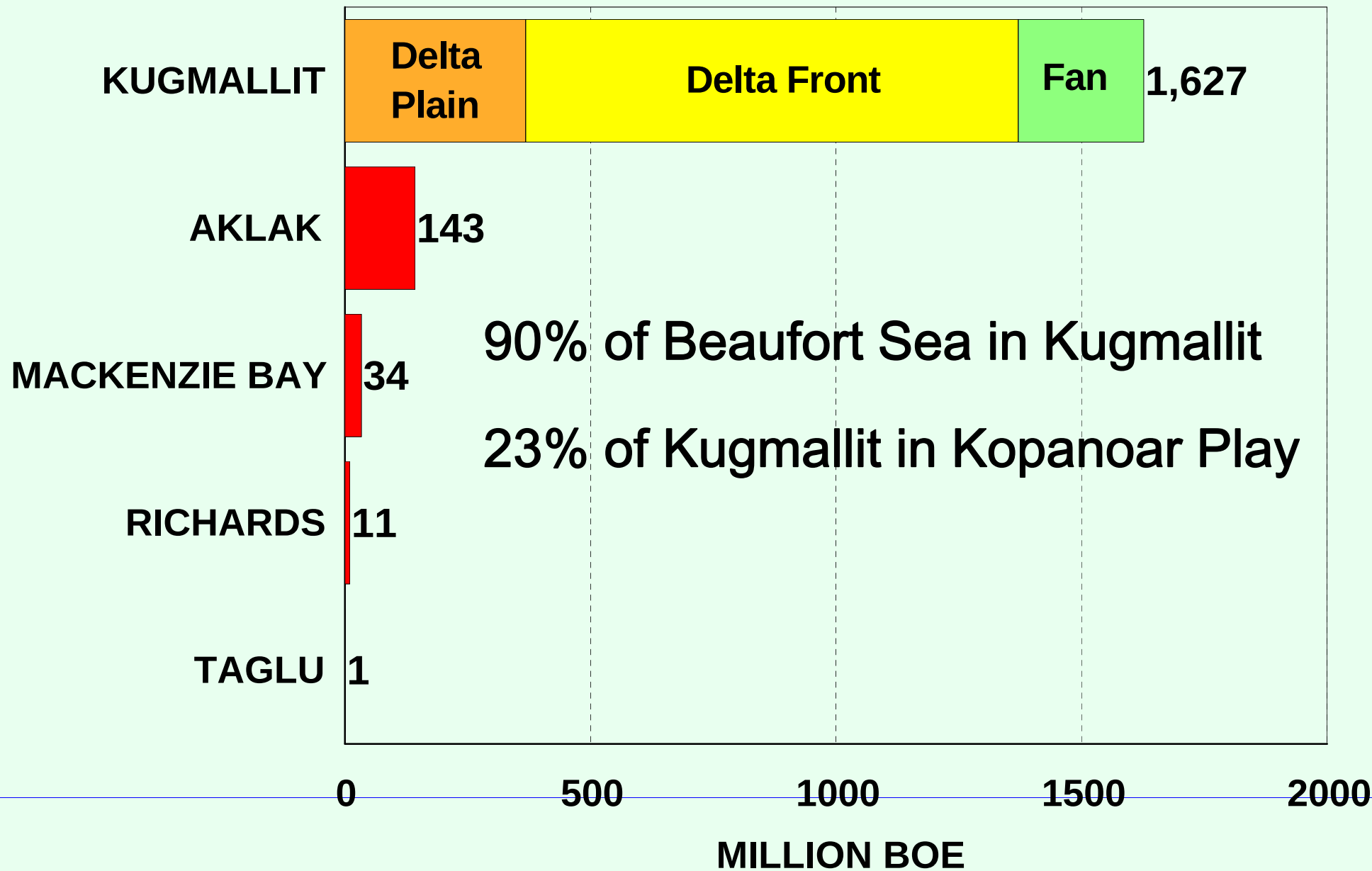
From Morrell, 1996,
Beaufort-Mackenzie Atlas,
GSC Misc Report 59

CORRELATION SECTION KOPANOAR 21-44 AND KOPANOAR M-13

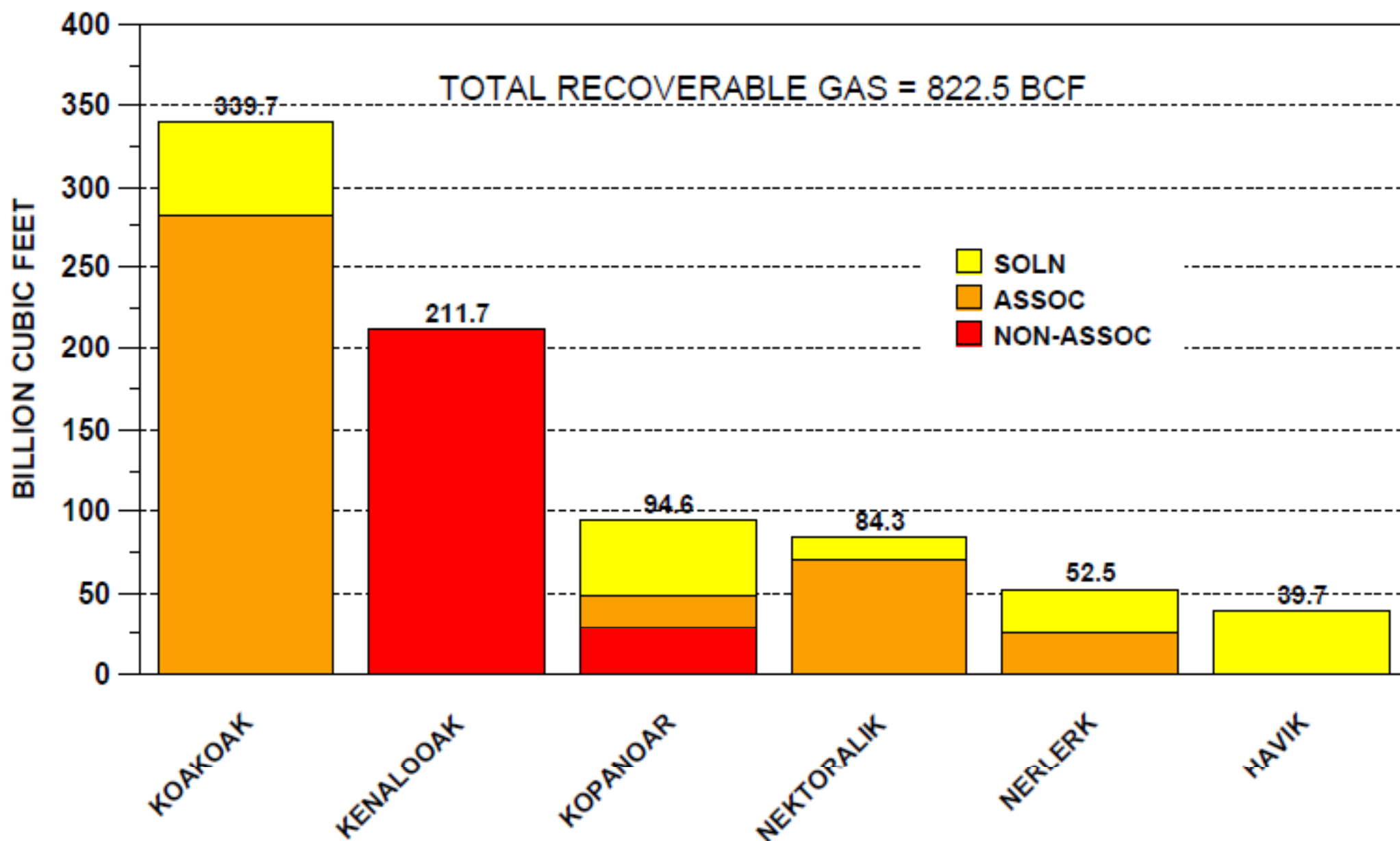
From: Morrell, 1996



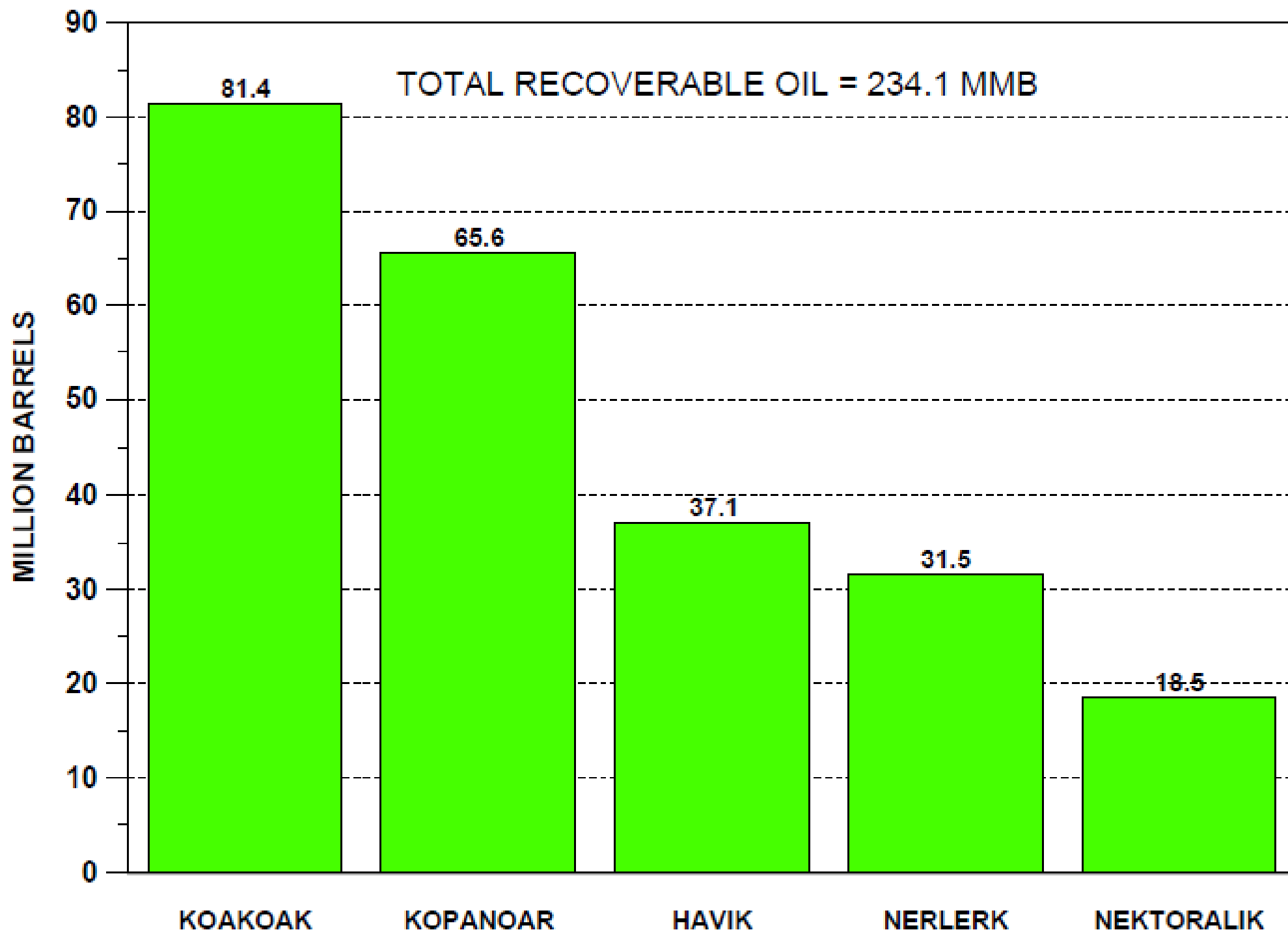
BEAUFORT SEA - STRATIRAPHIC DISTRIBUTION DISCOVERED RECOVERABLE OIL EQUIVALENT



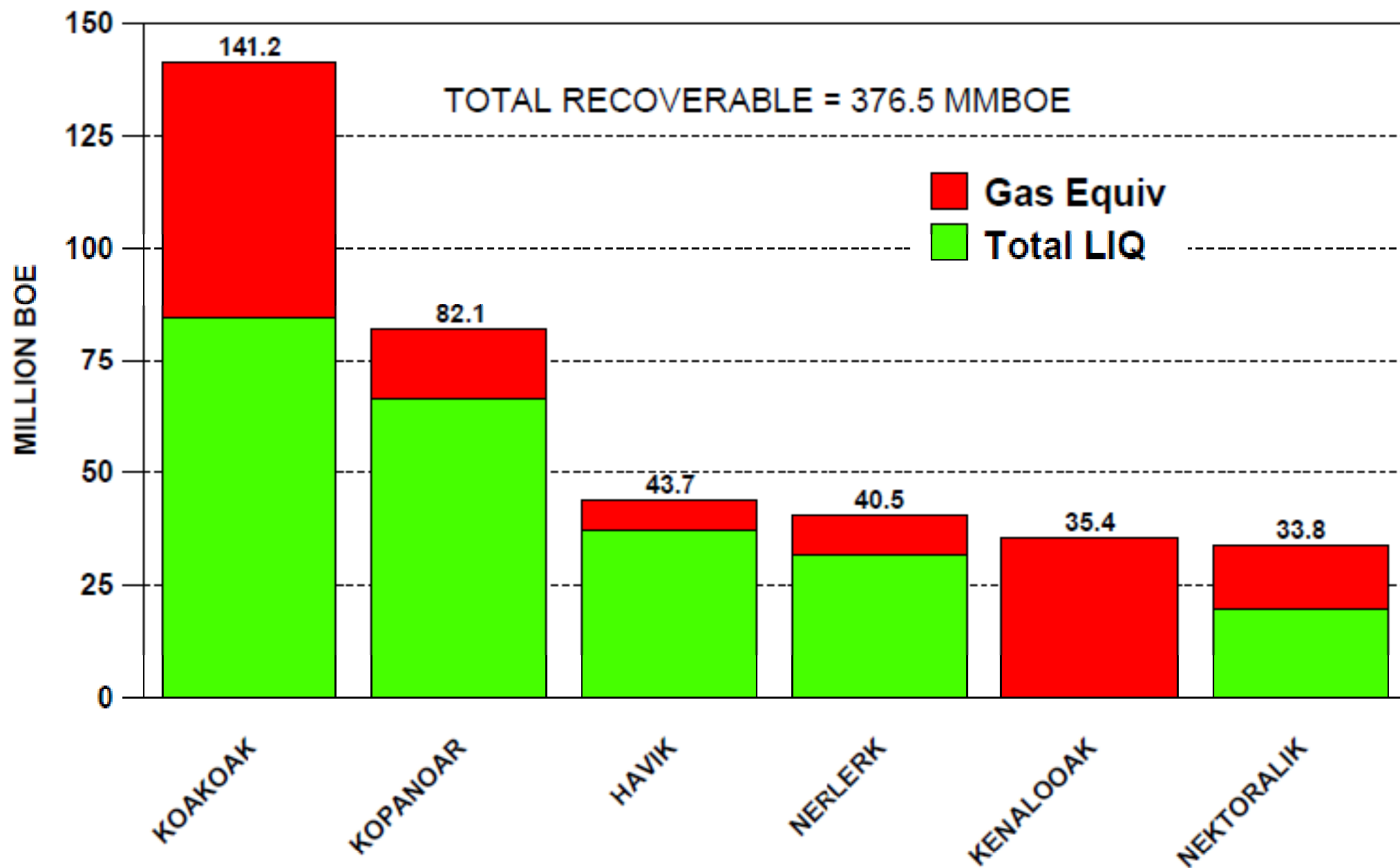
OIL/GAS FIELDS - KOPANOAR PLAY, BEAUFORT SEA RECOVERABLE GAS



OIL FIELDS - KOPANOAR PLAY, BEAUFORT SEA

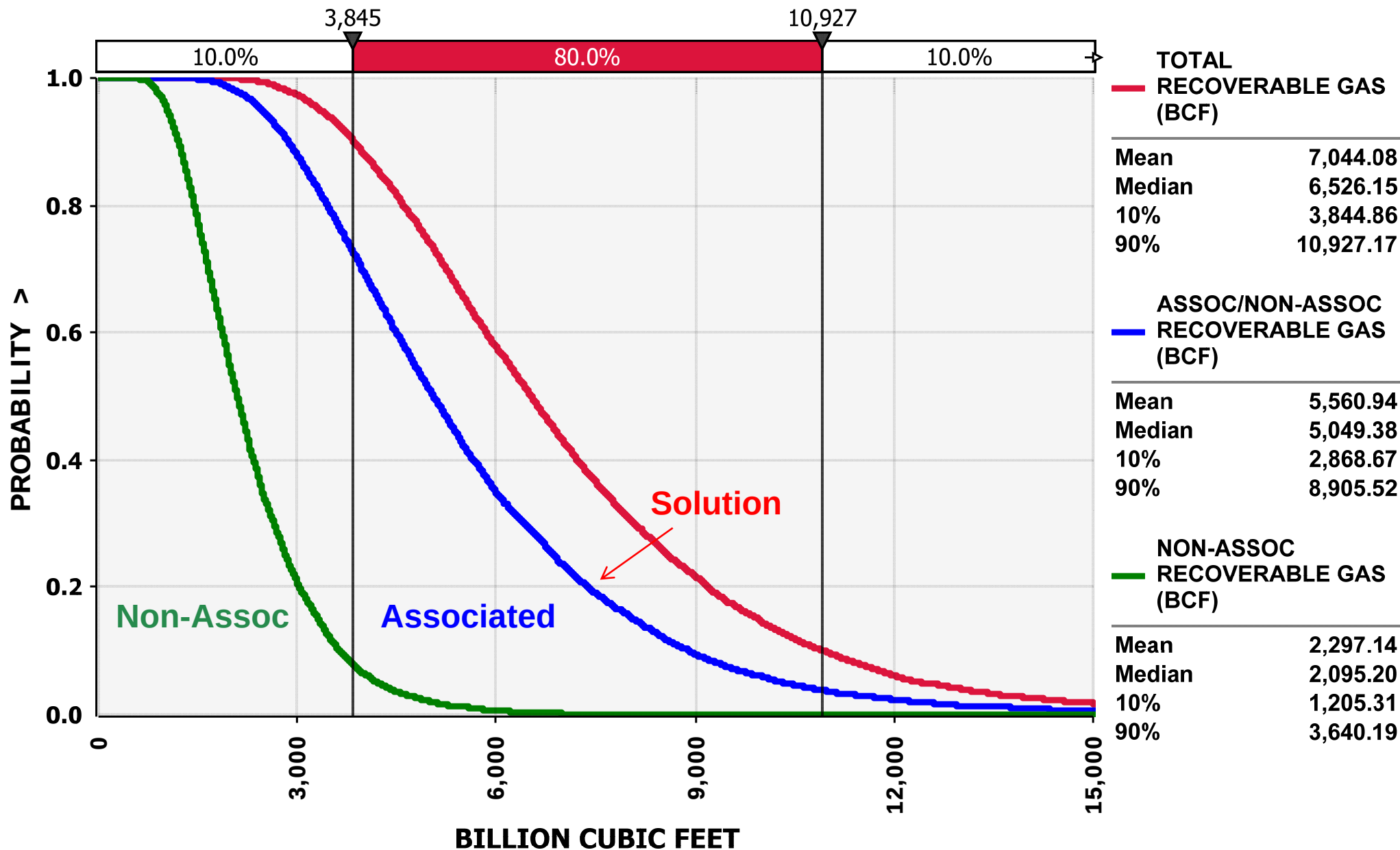


OIL/GAS FIELDS - OIL EQUIVALENT KOPANOAR PLAY, BEAUFORT SEA



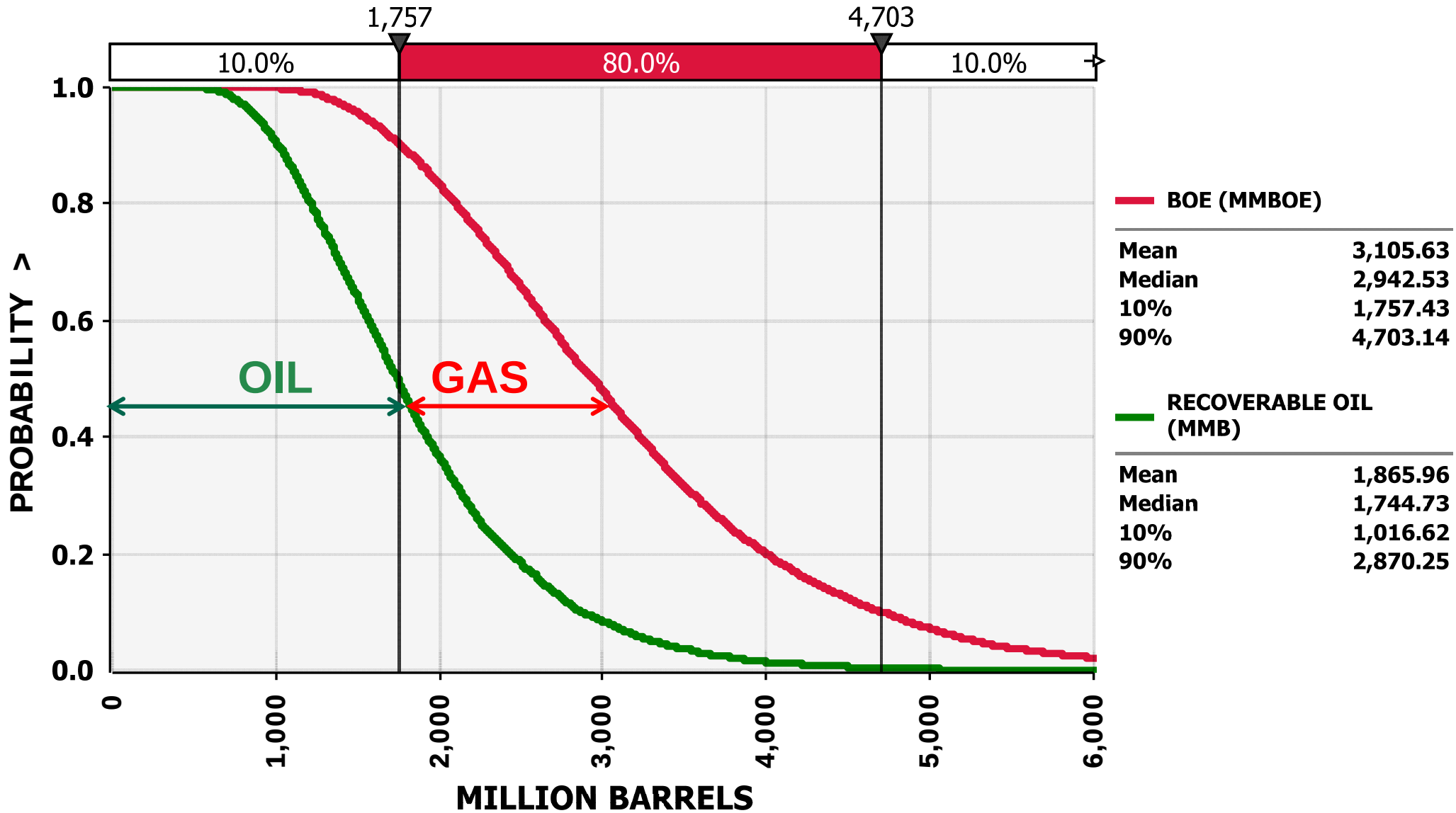
KOPANOAR PLAY, BEAUFORT SEA

DISTRIBUTION OF UNDISCOVERED RECOVERABLE GAS

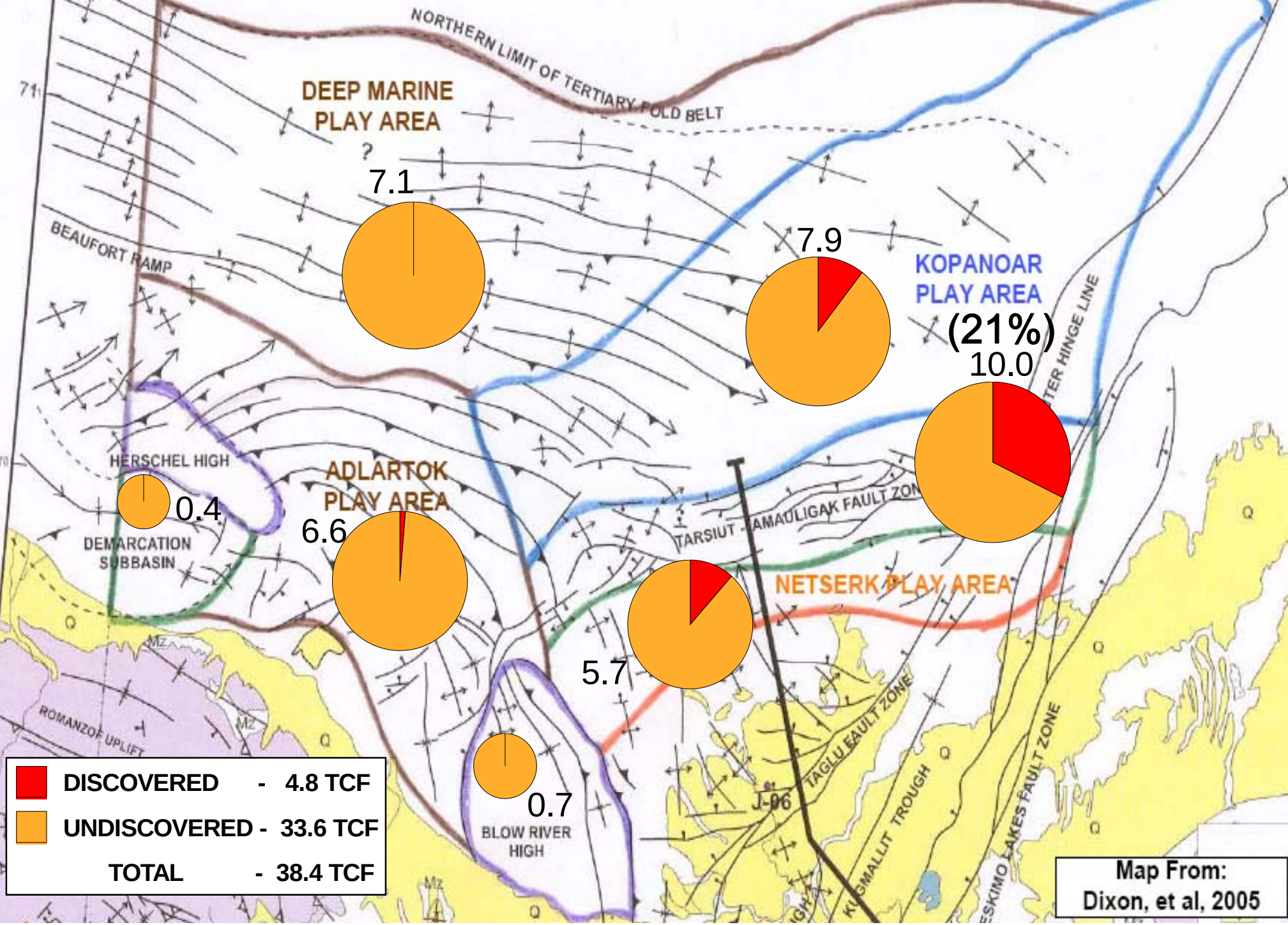


KOPANOAR PLAY, BEAUFORT SEA

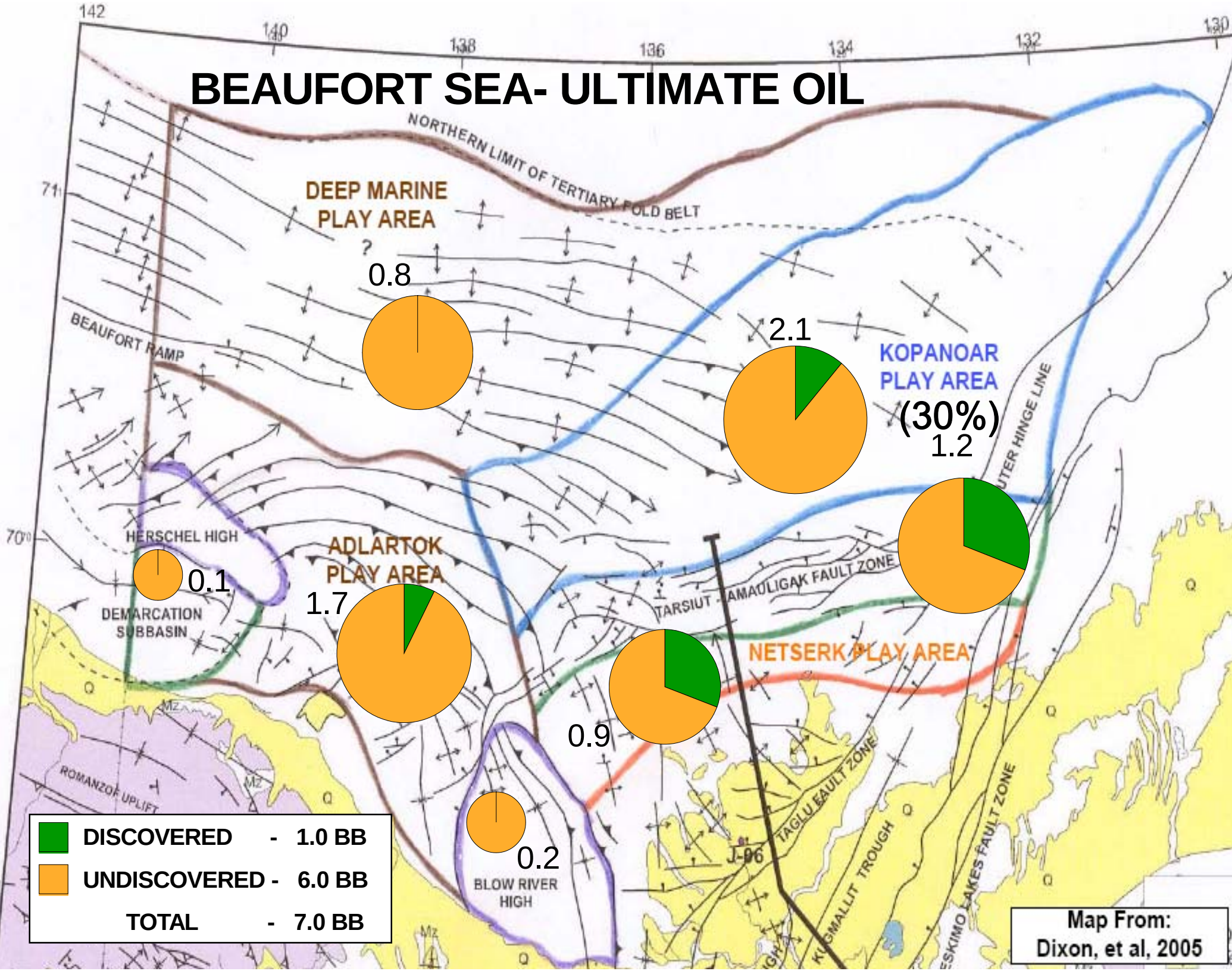
DISTRIBUTION OF UNDISCOVERED BOE RECOVERABLE



BEAUFORT SEA- ULTIMATE GAS



BEAUFORT SEA- ULTIMATE OIL



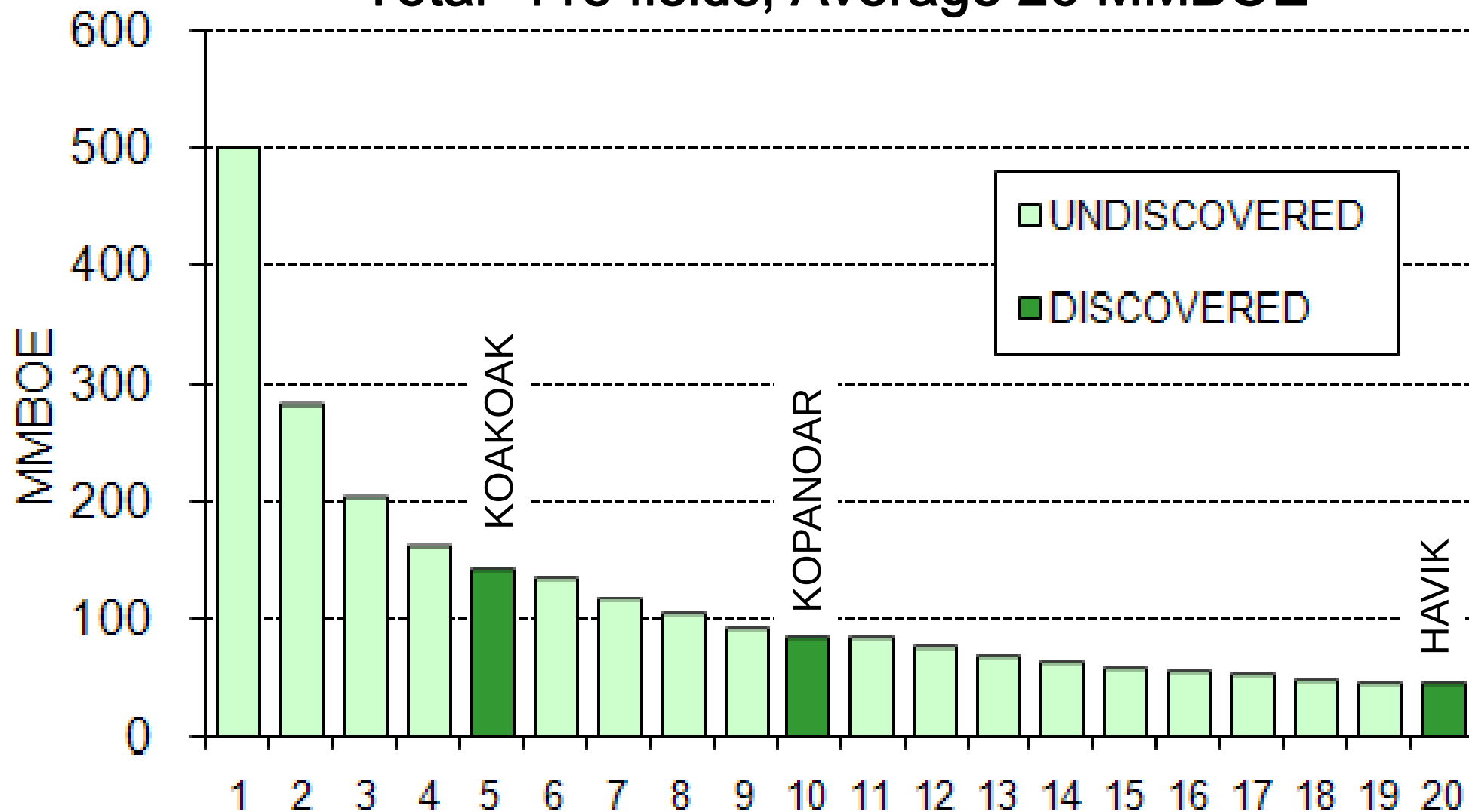
Map From:
Dixon, et al, 2005

KOPANOAR PLAY – BEAUFORT SEA

OIL EQUIVALENT ULTIMATE FIELD SIZE DISTRIBUTION

TOP 20

Total 118 fields, Average 26 MMBOE



CONCLUSIONS

**THE KOPANOAR PLAY IN THE BEAUFORT
SEA HAS A LARGE DISCOVERED OIL AND
GAS RESOURCE**

**SUCCESS RATE IS HIGH WITH SIX
SIGNIFICANT DISCOVERIES FROM 15
WELLS DRILLED**

**THERE IS EXCELLENT POTENTIAL FOR
SIGNIFICANT VOLUMES OF UNDISCOVERED
OIL AND GAS IN THE KOPANOAR PLAY IN
THE BEAUFORT SEA**