

**YELLOWKNIFE
GEOSCIENCE FORUM
NOVEMBER 16, 2011**

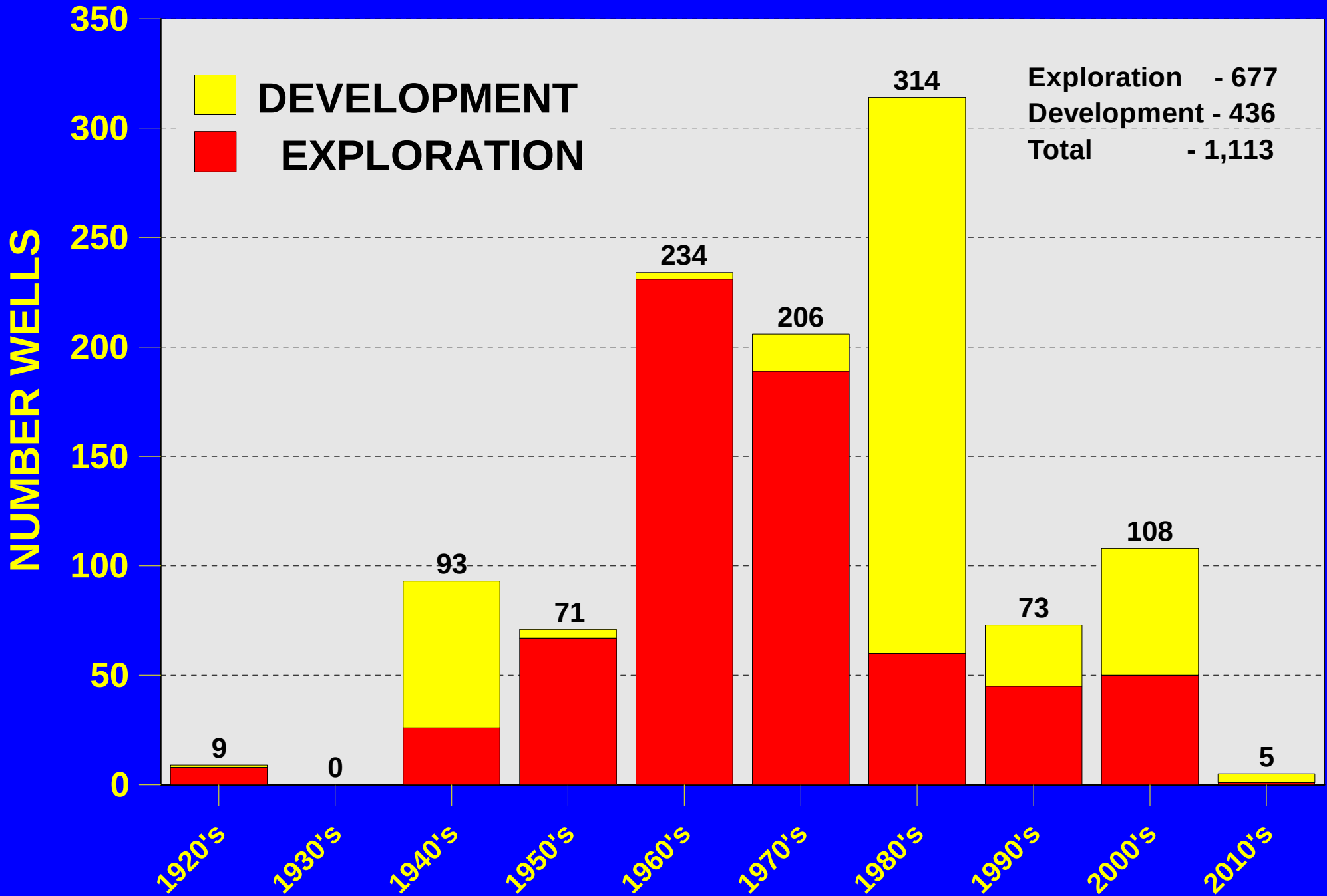
**Discovered Oil and Gas
Resources of the
Mackenzie Valley
Kenneth J. Drummond**

MACKENZIE VALLEY BASIN AREAS

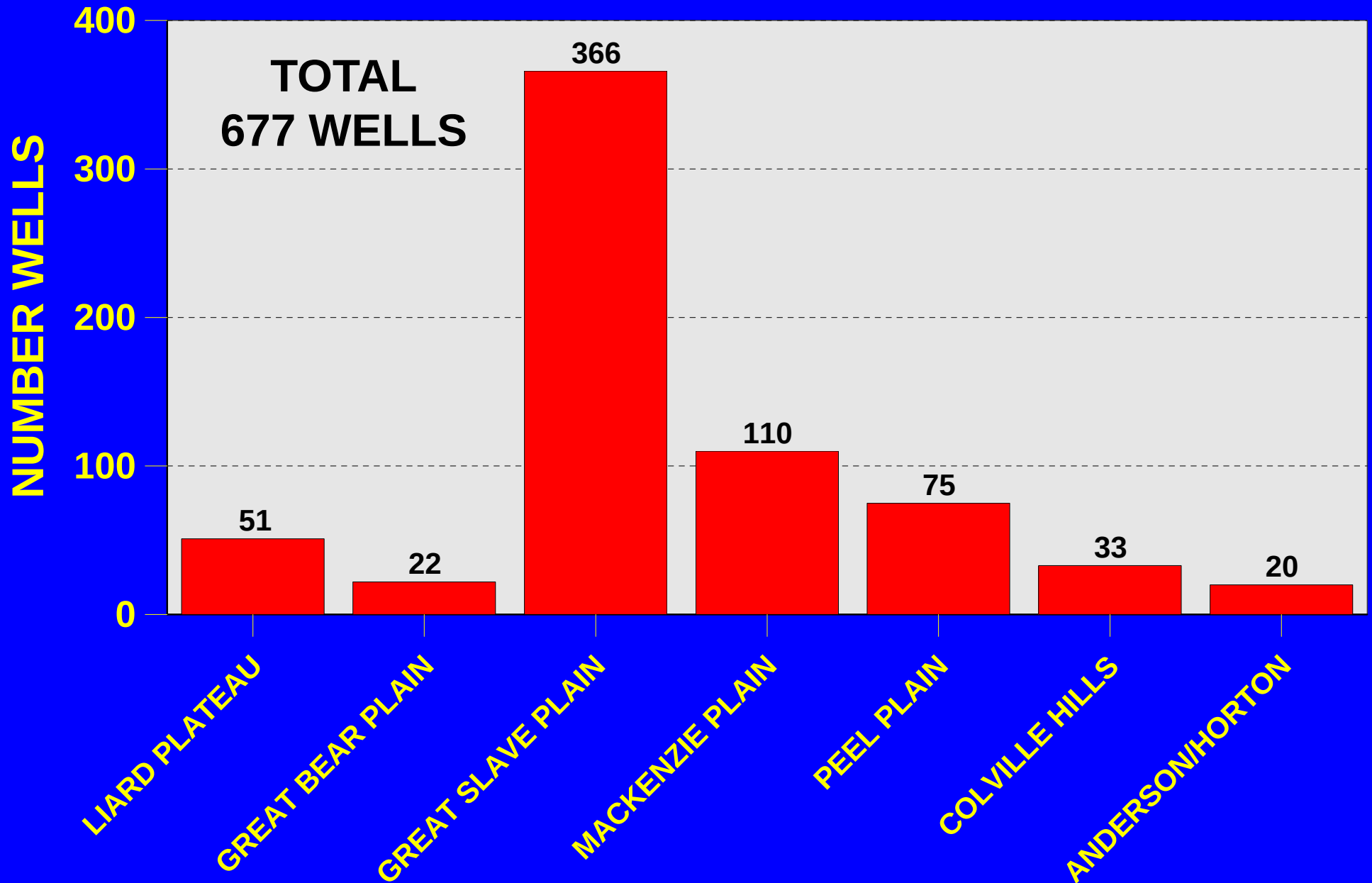


MACKENZIE VALLEY

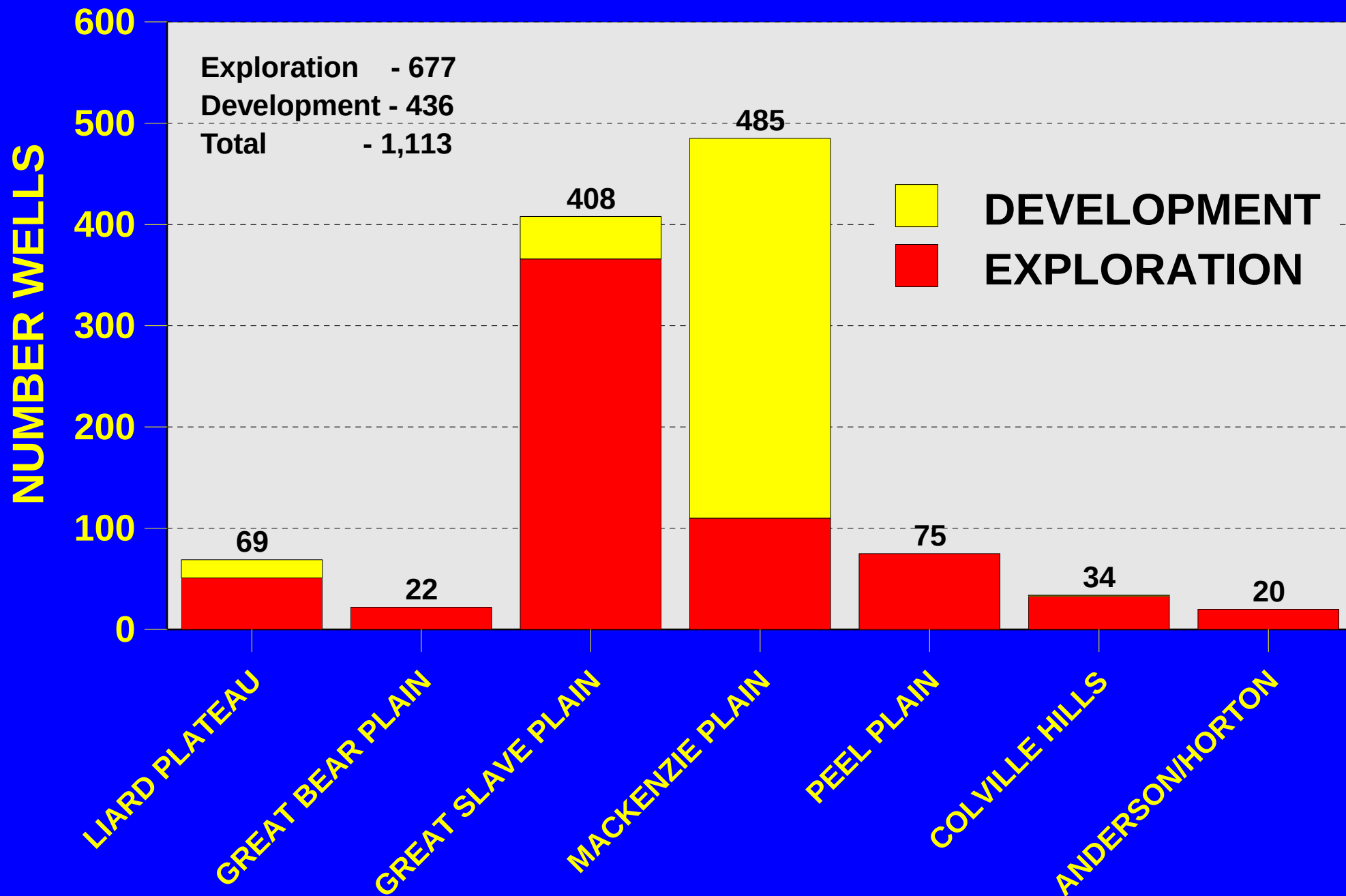
TOTAL WELLS DRILLED



MACKENZIE VALLEY EXPLORATION WELLS DRILLED

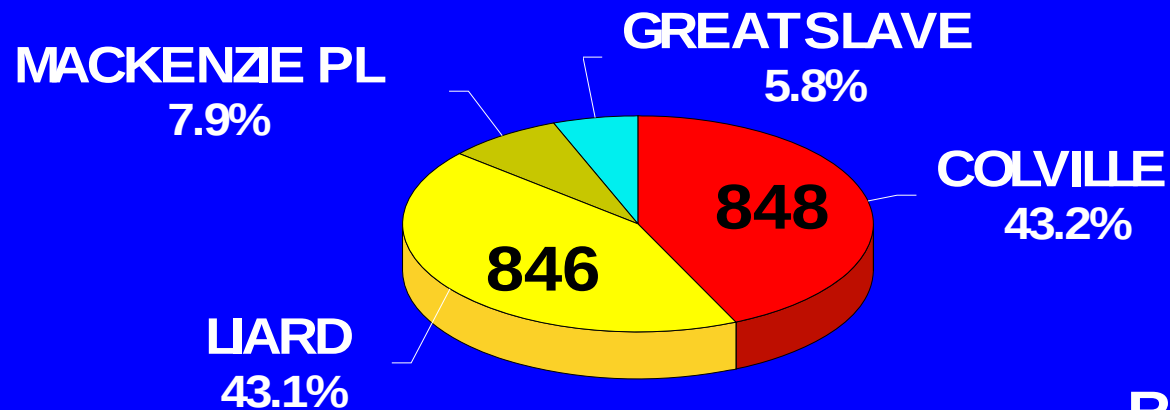


MACKENZIE VALLEY WELLS DRILLED

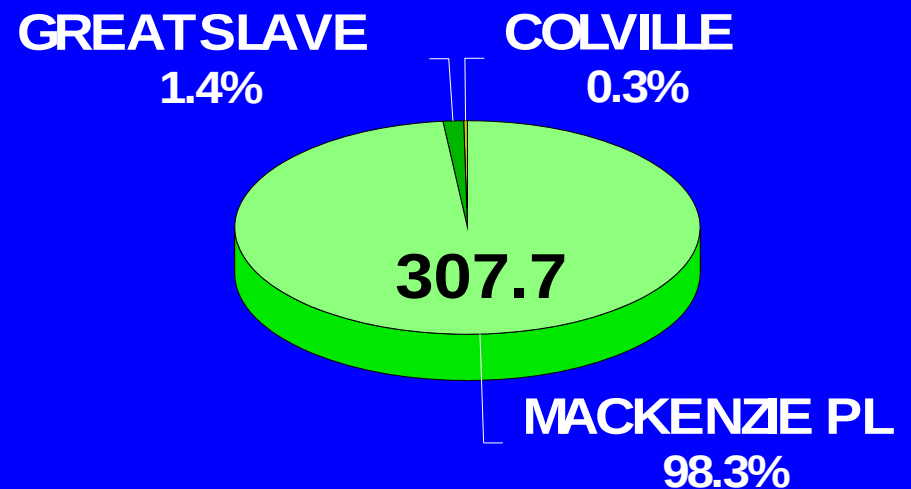


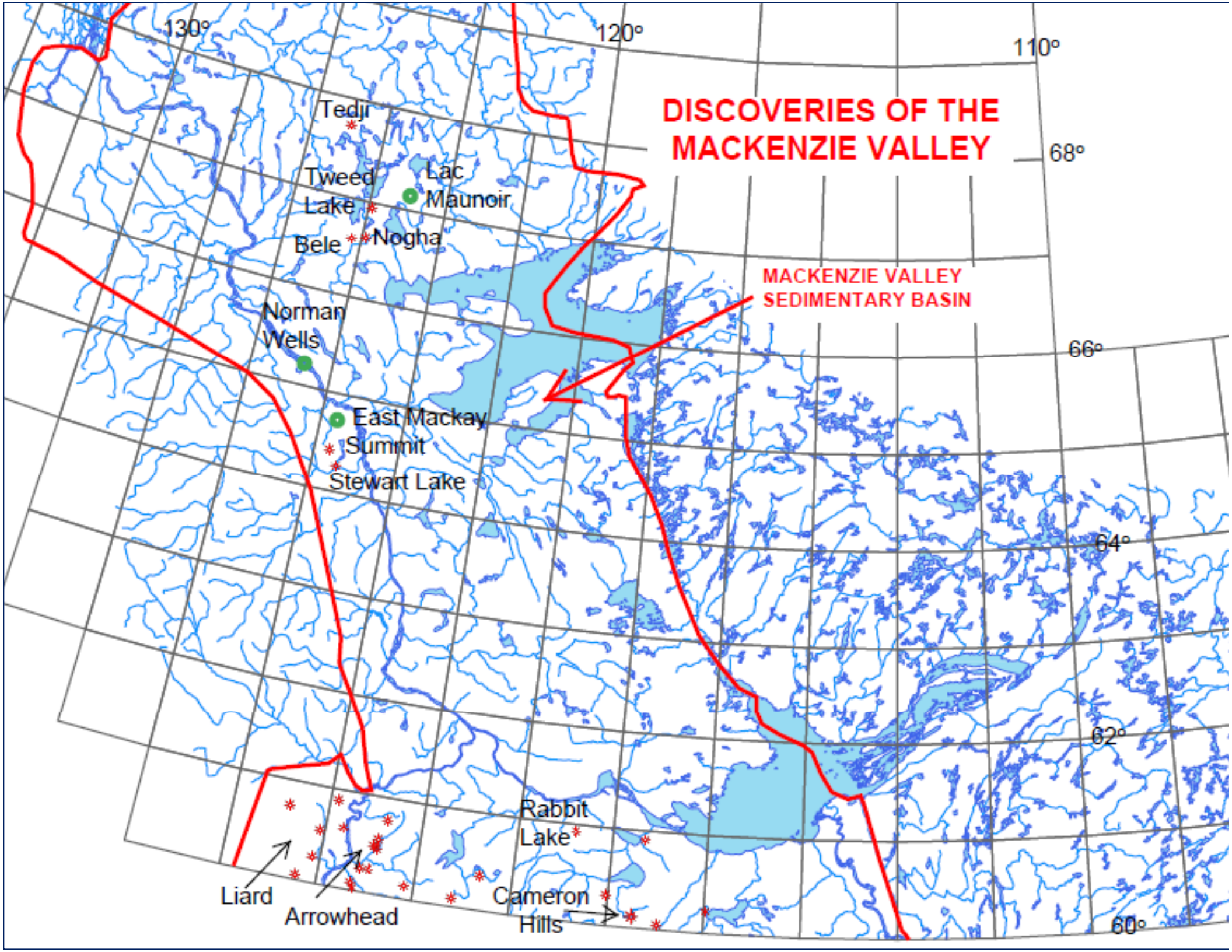
MACKENZIE VALLEY DISCOVERED OIL AND GAS BY BASIN

RECOVERABLE GAS (BCF)

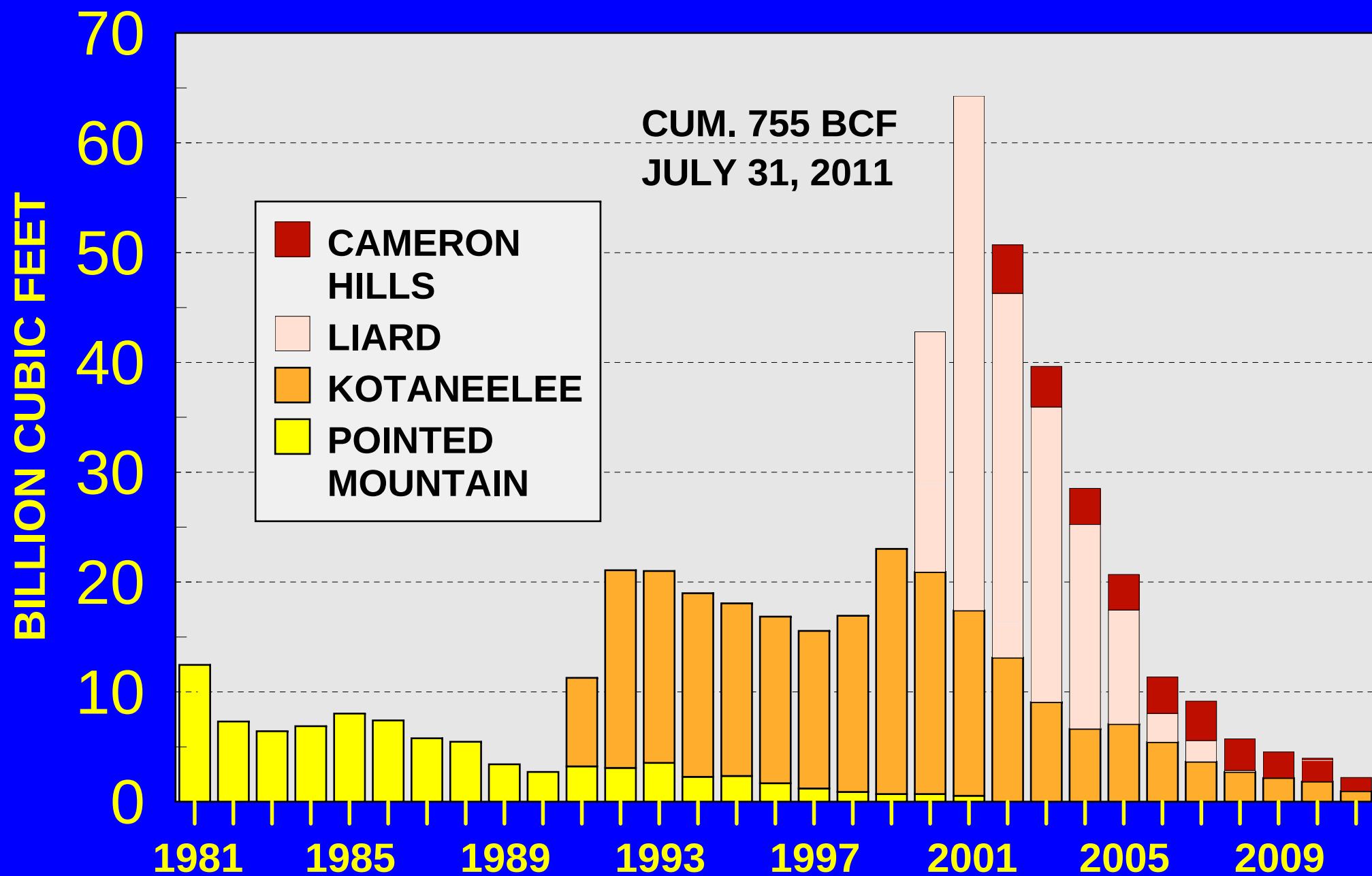


RECOVERABLE OIL (MMB)

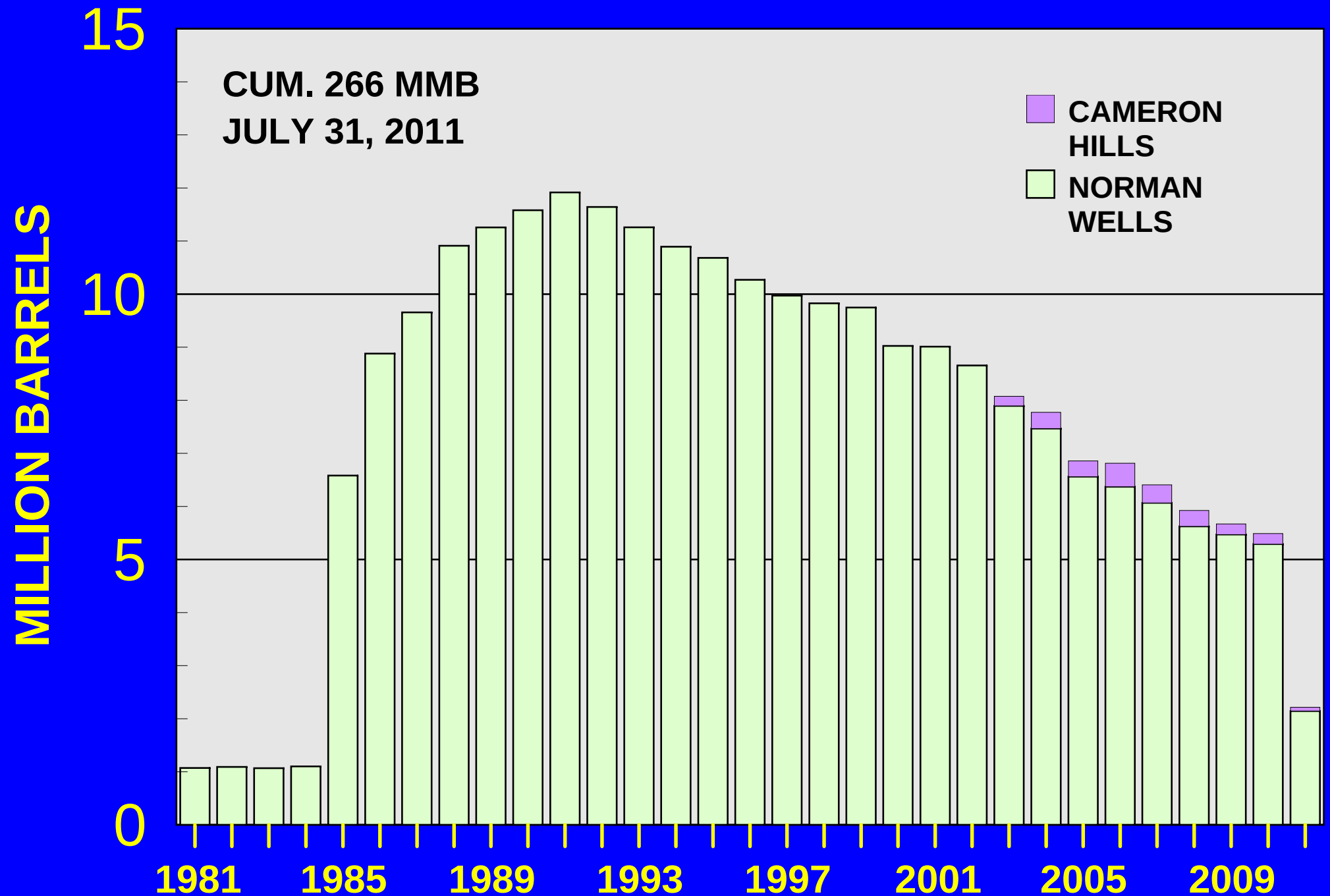




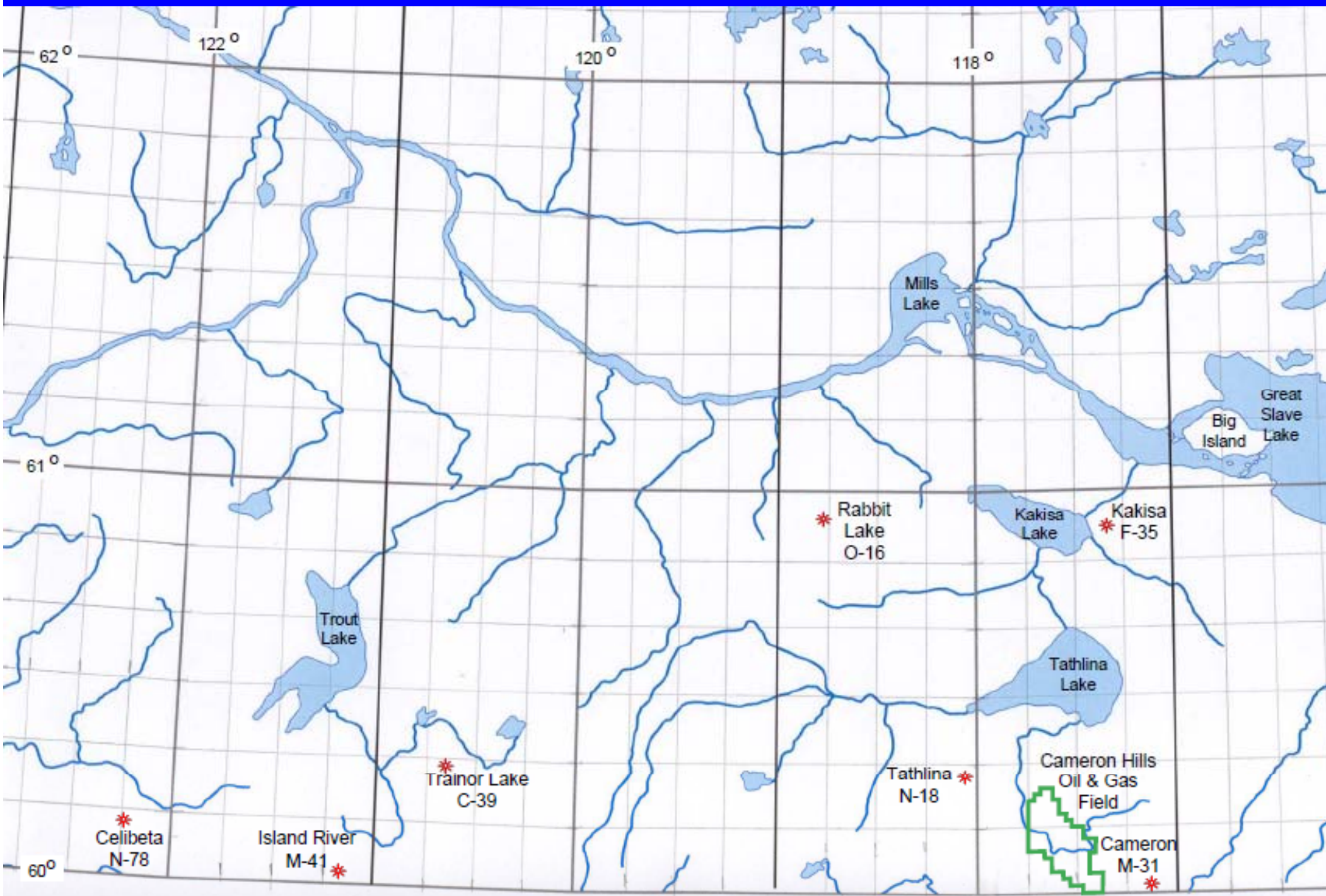
MACKENZIE VALLEY ANNUAL GAS PRODUCTION



MACKENZIE VALLEY ANNUAL OIL PRODUCTION



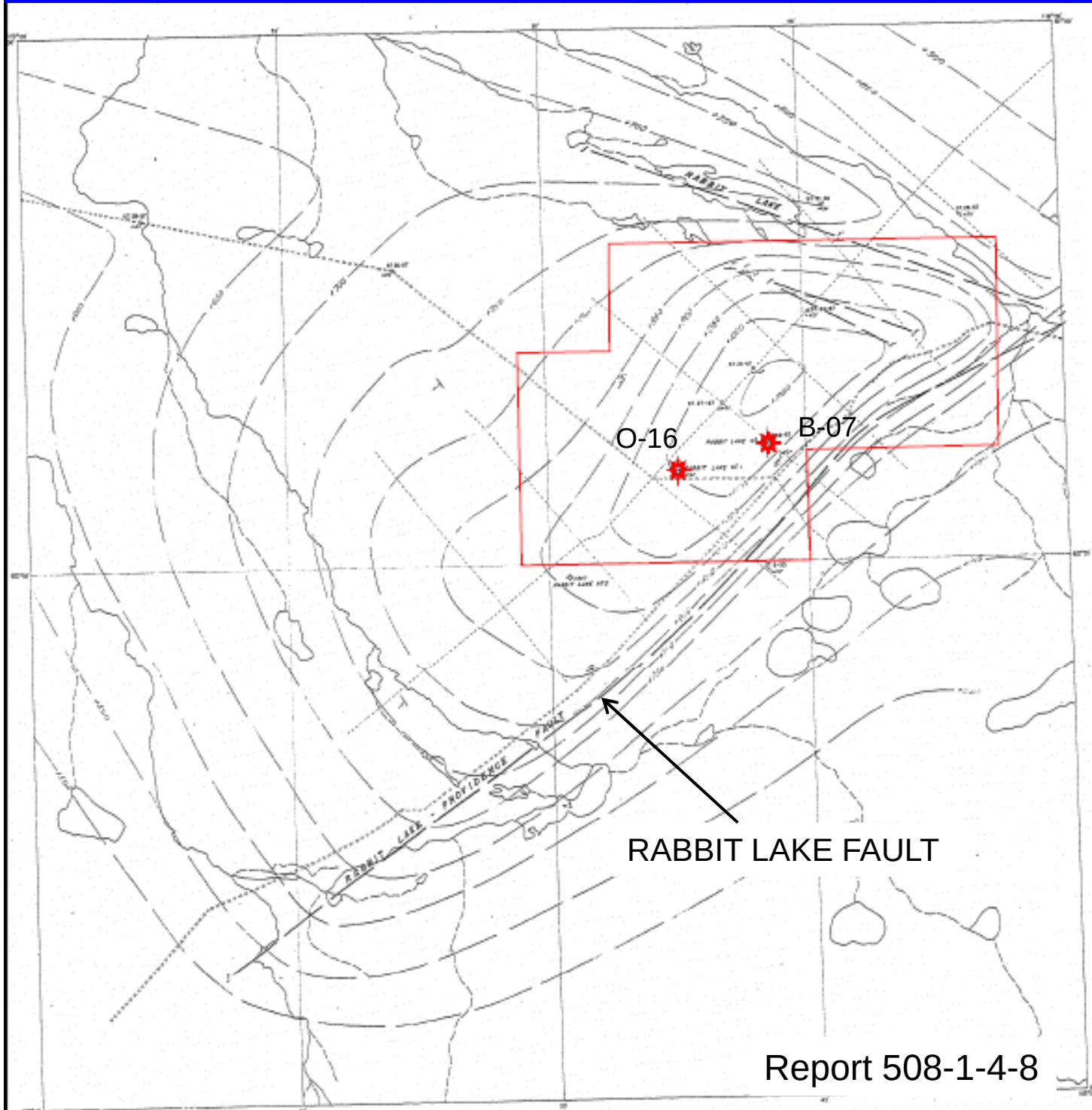
DISCOVERIES OF THE GREAT SLAVE PLAIN



RABBIT LAKE STRUCTURE

**RABBIT LAKE
SDL 011
11.6 BCF GAS**

**CONTOURS FROM
SURFACE GEOLOGY
& TEST HOLES**



Report 508-1-4-8

[illegible]

CUM. GAS - 30.2 BCF
CUM. OIL - 2,344 MB

A horizontal scale bar with vertical end caps, labeled "50 KM" in the center.

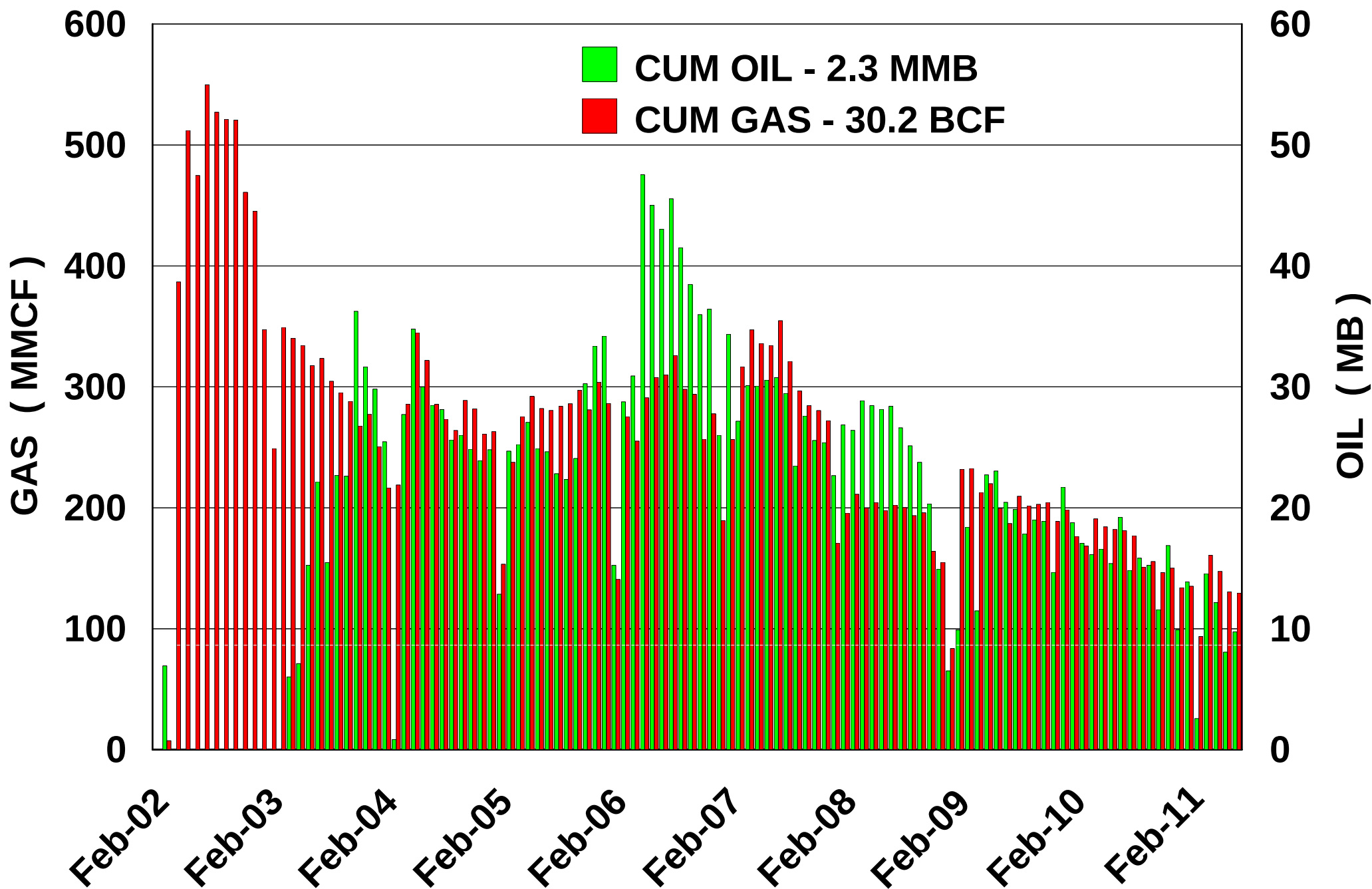
$-60^{\circ}10'$

60°00' -117°45'

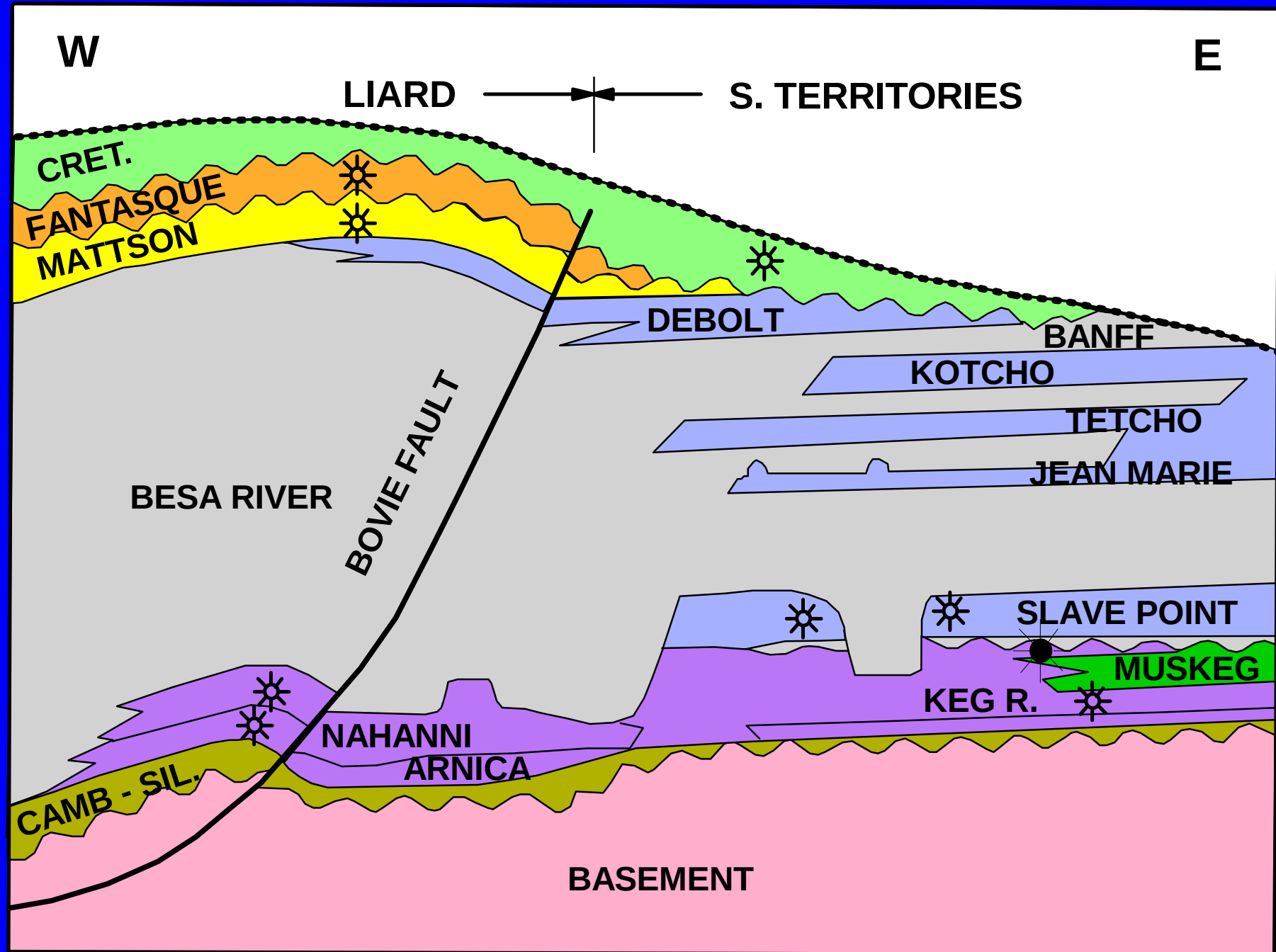
117⁻⁰30'

HB CAMERON HILLS F-51

CAMERON HILLS - OIL & GAS PRODUCTION



LIARD - S. TERRITORIES SCHEMATIC SECTION



Modified from NOGD, 1995

ARROWHEAD AREA – TOP SLAVE POINT

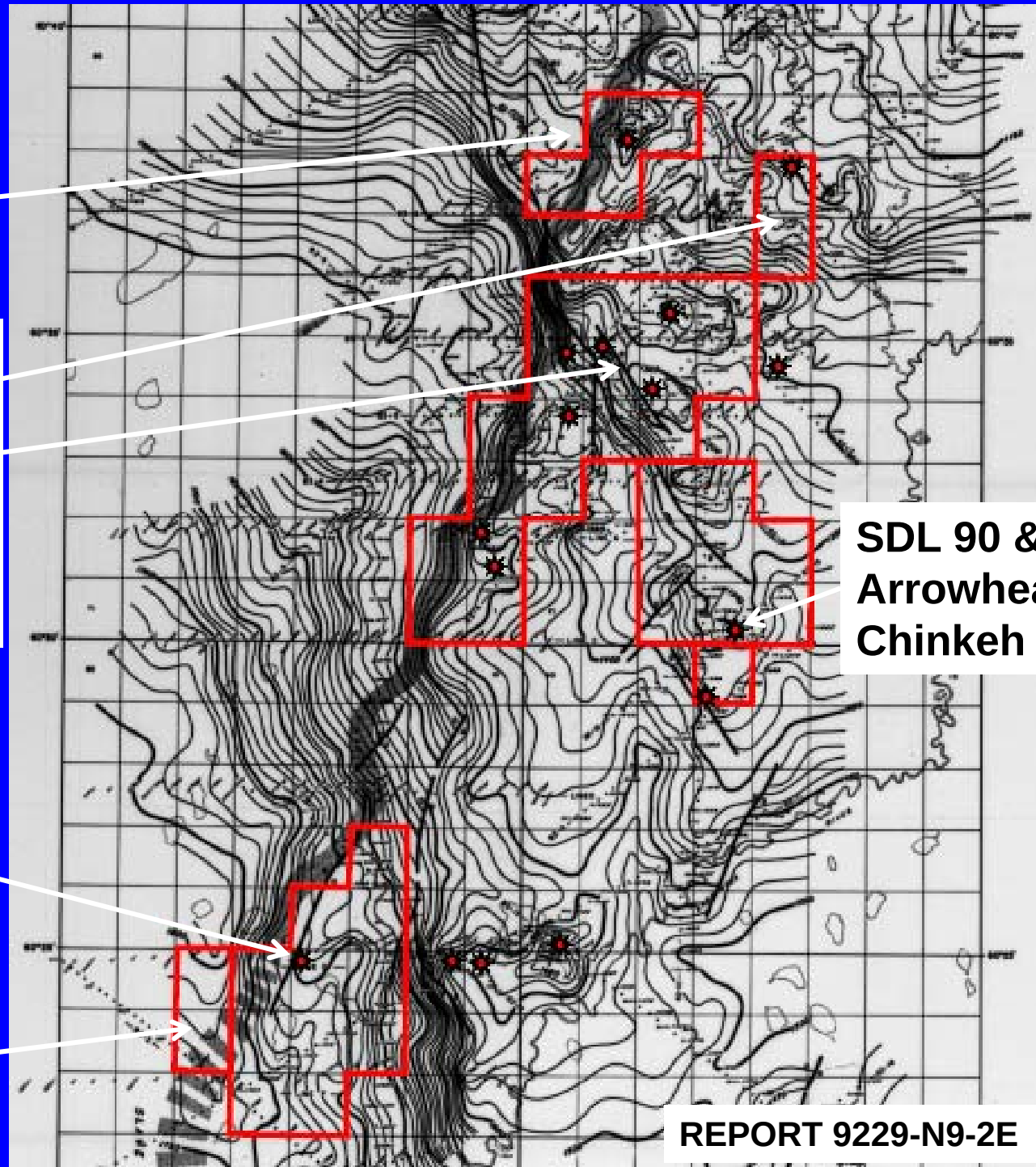
SDL 121
Arrowhead G-69
Nahanni - 3.8 BCF

SDL 129
8 wells – tested
gas from several
zones, rates from
0.16 to 13 mmcf/d
(some water)

SDL 128
Arrowhead M-35
Chinkeh
408 mcf/d

SDL 127

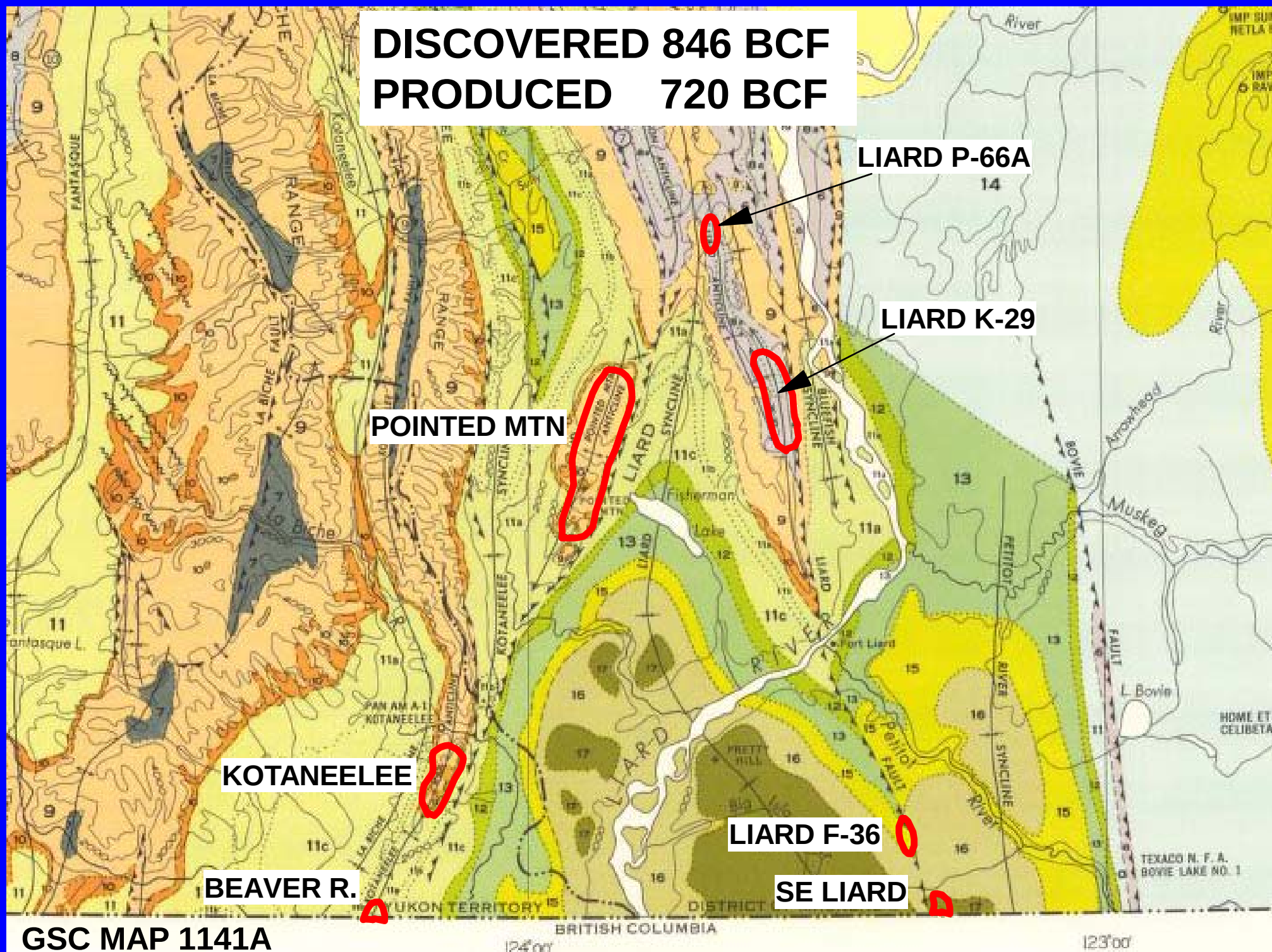
SDL 90 & 98
Arrowhead B-41
Chinkeh - 8.8 BCF



REPORT 9229-N9-2E

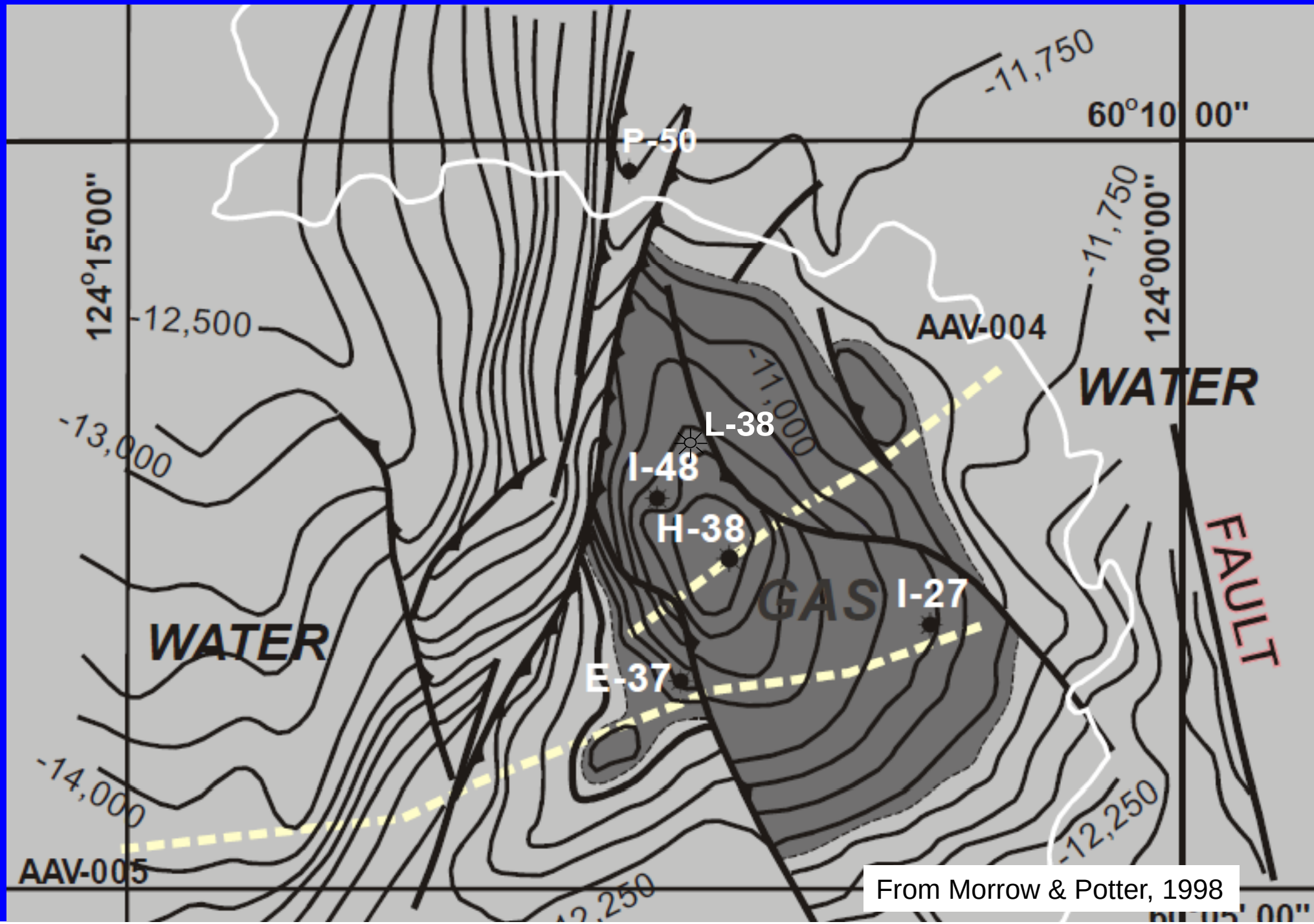
GAS FIELDS OF THE LIARD FOLD BELT

DISCOVERED 846 BCF
PRODUCED 720 BCF



KOTANEELEE GAS FIELD

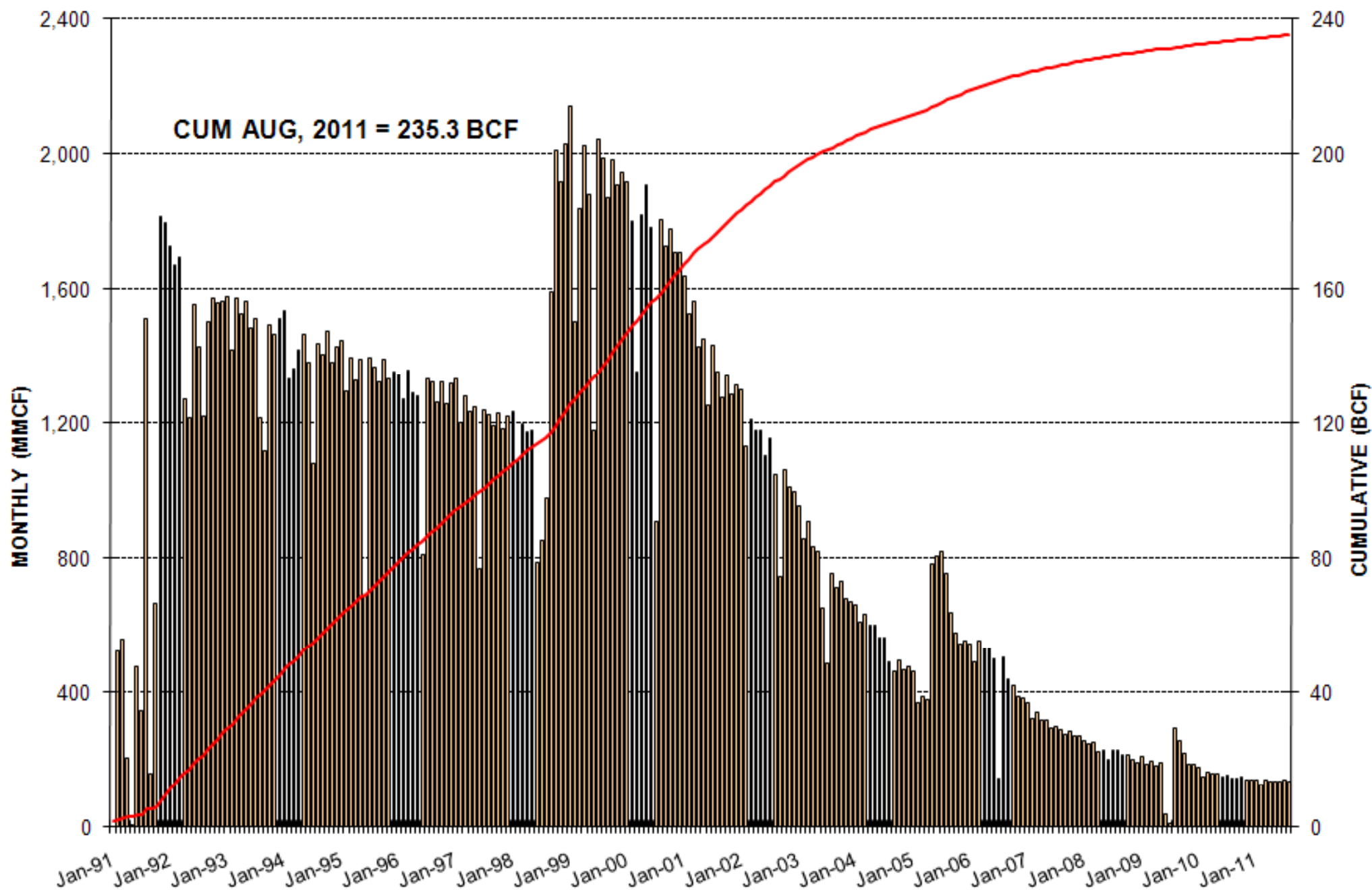
SEISMIC DEPTH MAP -TOP NAHANNI



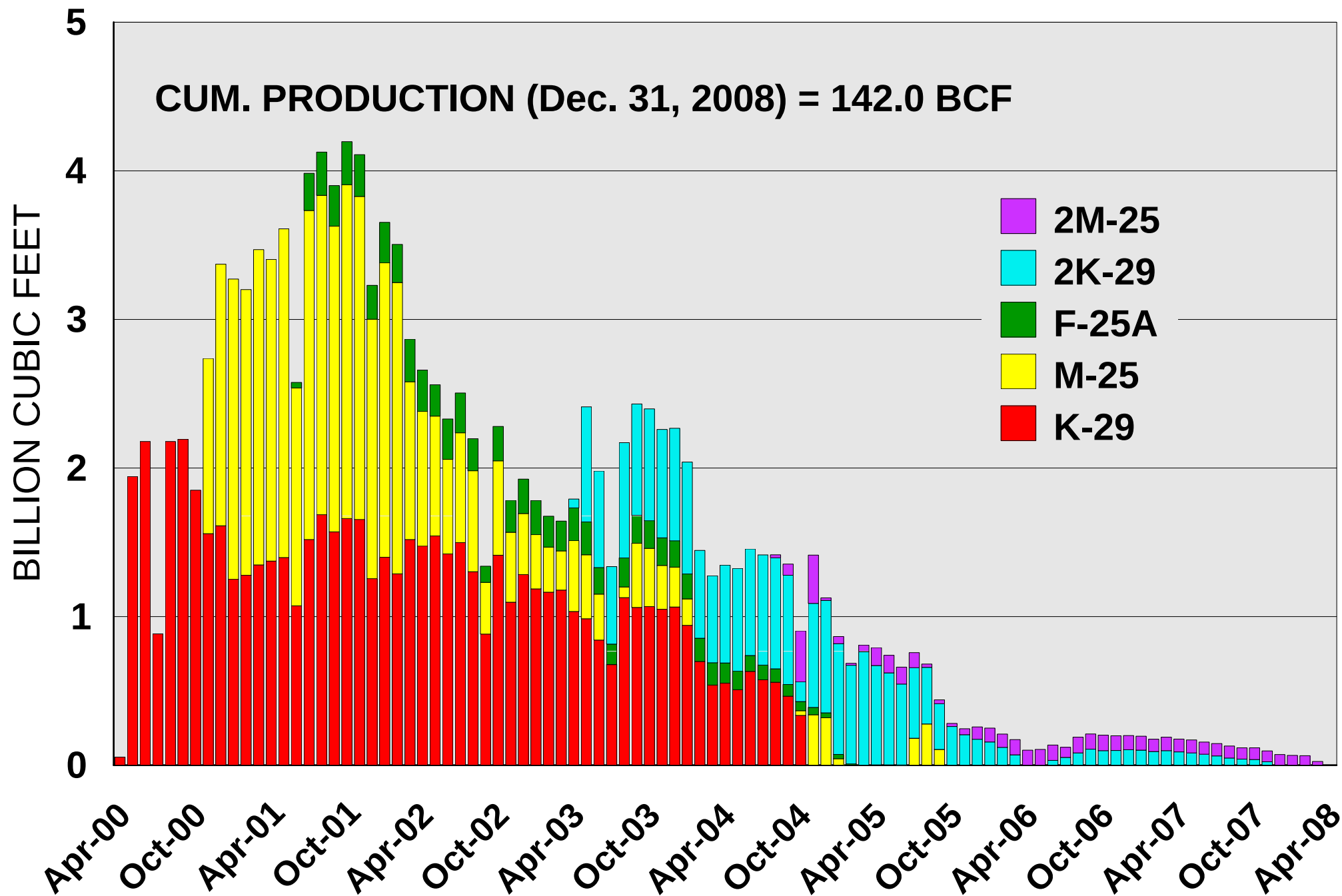
From Morrow & Potter, 1998

KOTANEELEE GAS FIELD

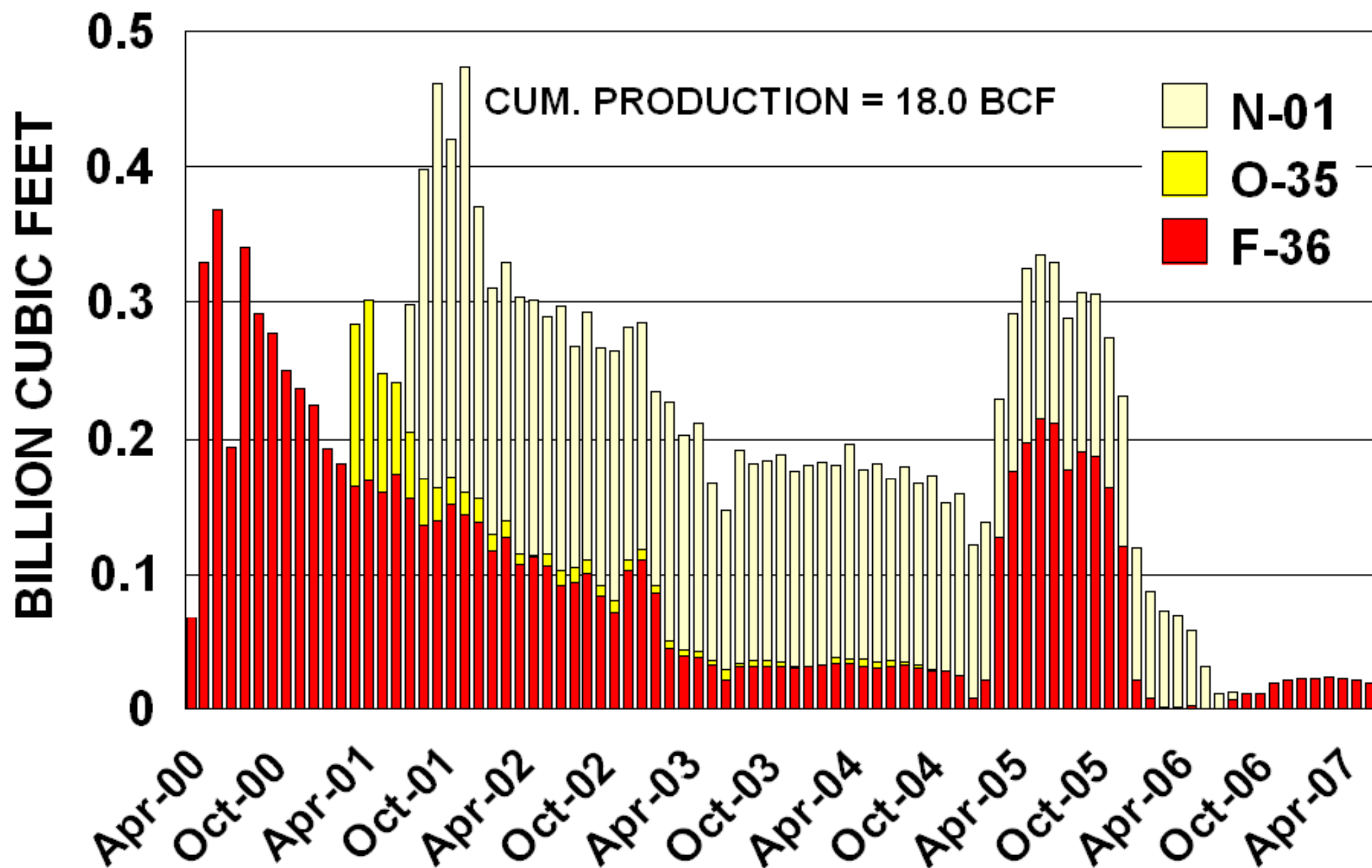
MONTHLY PRODUCTION



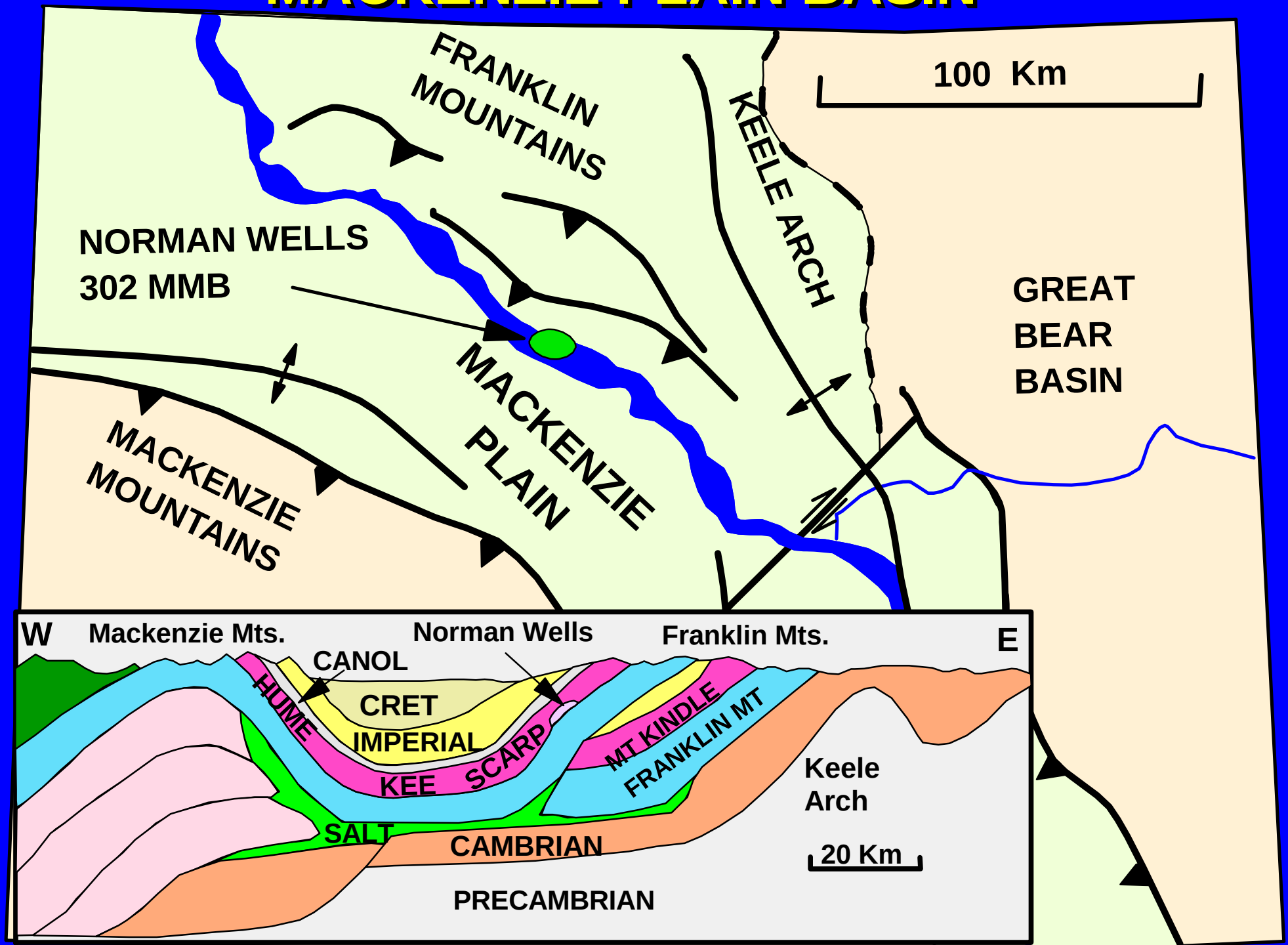
PARAMOUNT LIARD GAS FIELD PRODUCTION



PARAMOUNT FT LIARD & FT LIARD S.E. GAS FIELD PRODUCTION



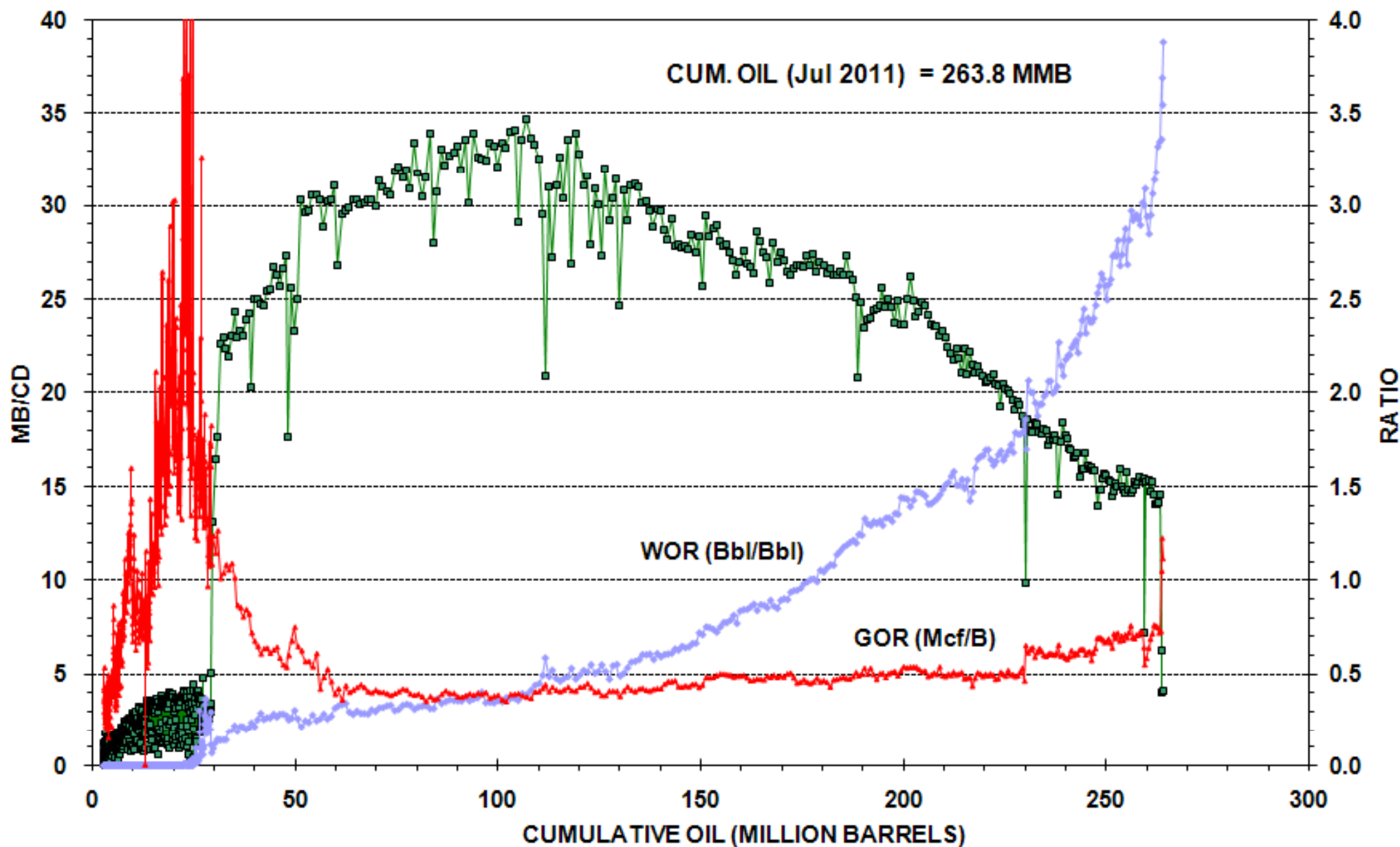
MACKENZIE PLAIN BASIN



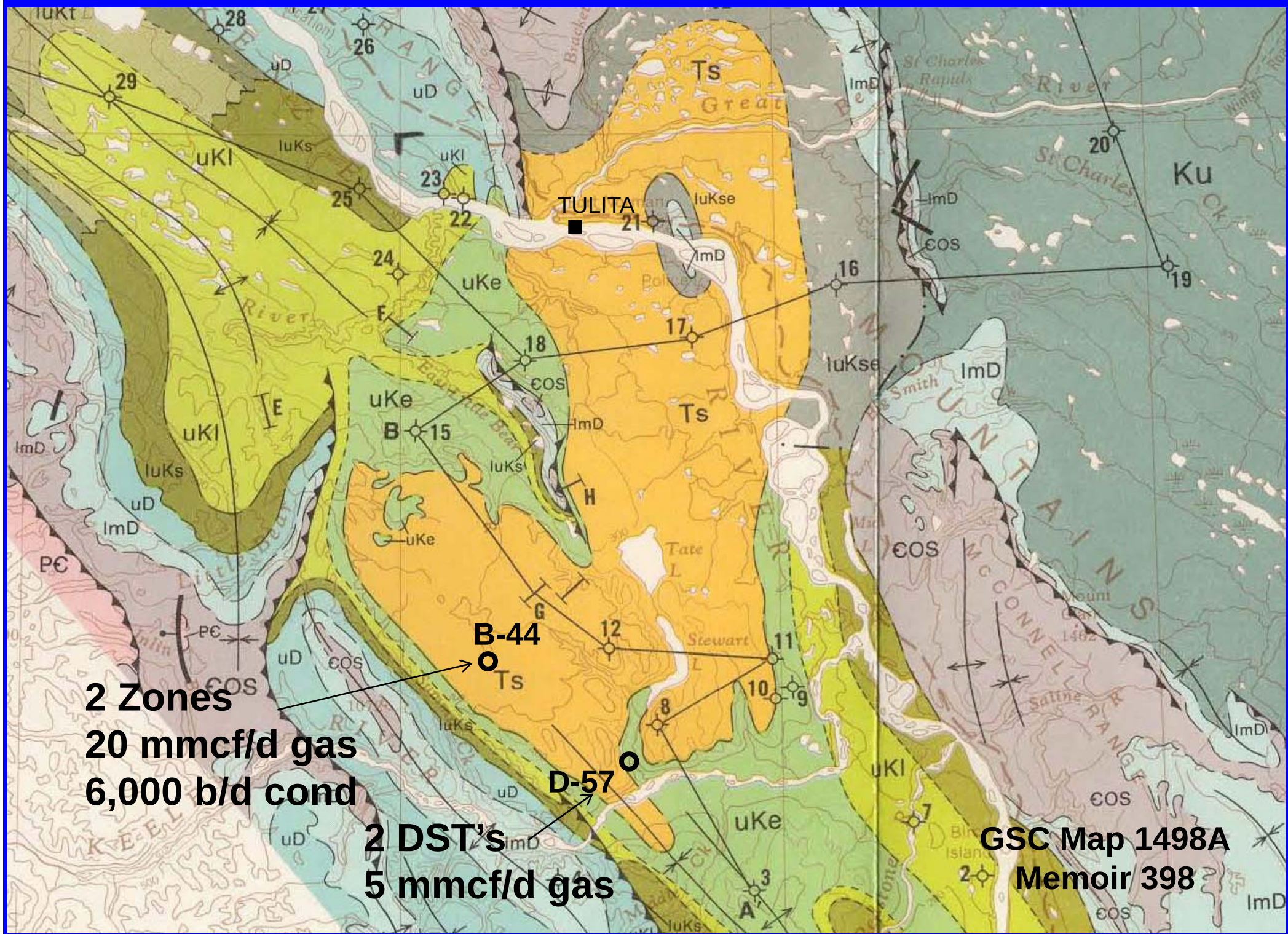
Modified from NOGD, 1995

NORMAN WELLS OIL PRODUCTION

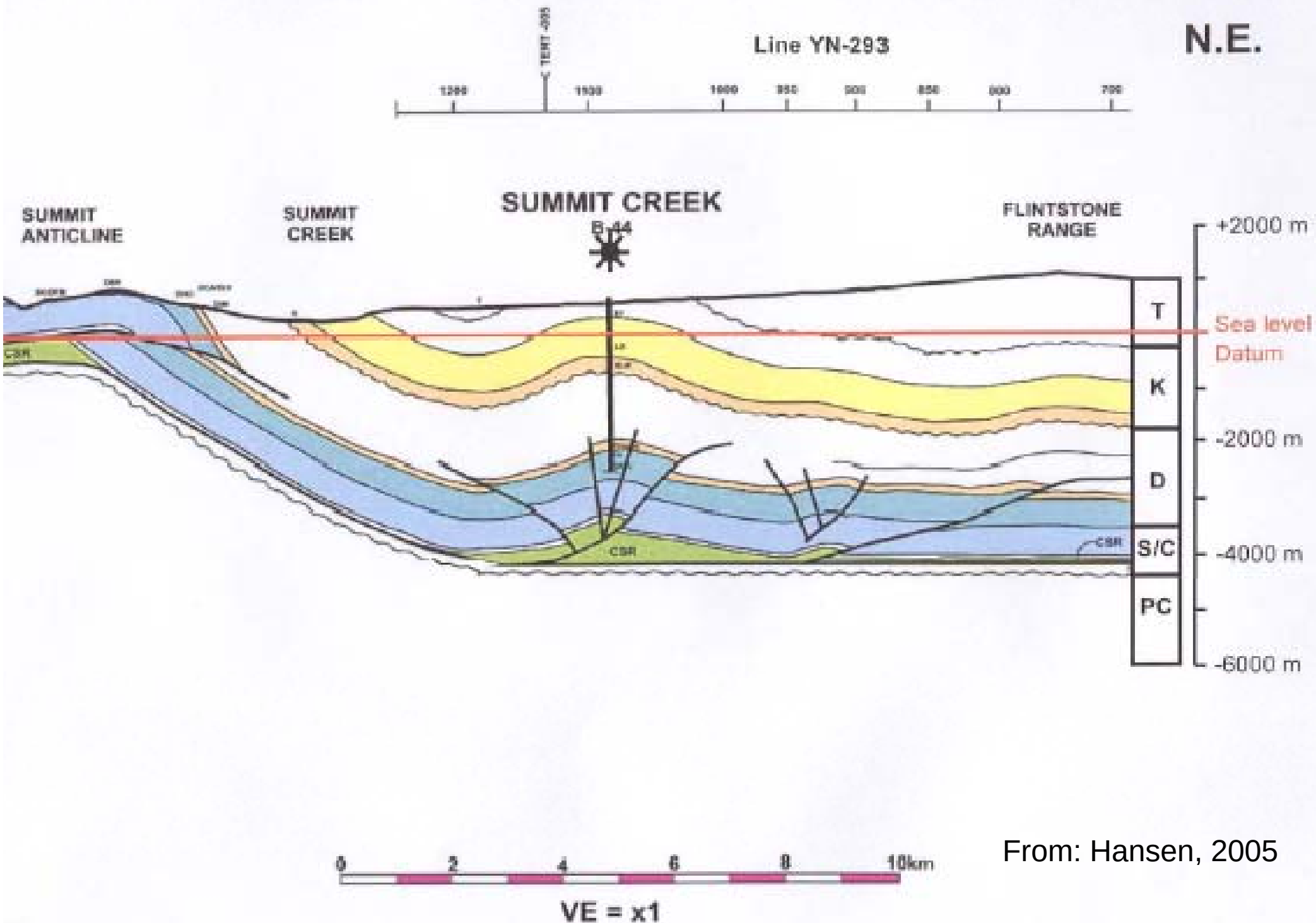
NORMAN WELLS OIL PRODUCTION
FIELD CUM - RATE PLOT



SUMMIT CREEK B-44 and STEWART D-57



SUMMIT CREEK B-44 DISCOVERY



From: Hansen, 2005

SUMMIT CREEK B-44 and STEWART D-57 CONTINGENT RESOURCES

SUMMIT CREEK B-44

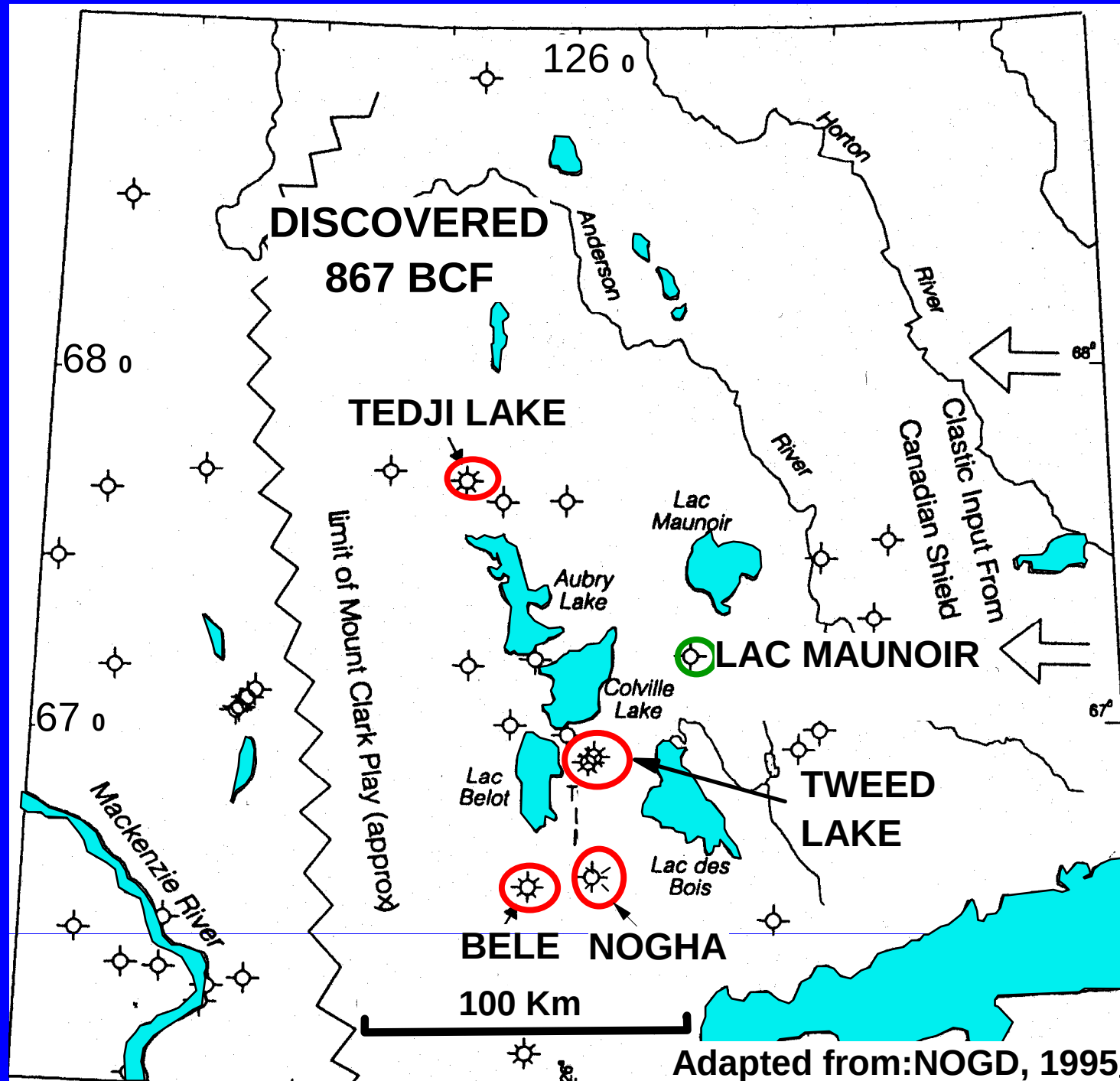
	LOW	BEST ESTIMATE	HIGH
GAS (BCF)	9.0	38.7	267.5
COND (MB)	1,416	6,077	27,033

STEWART D-57

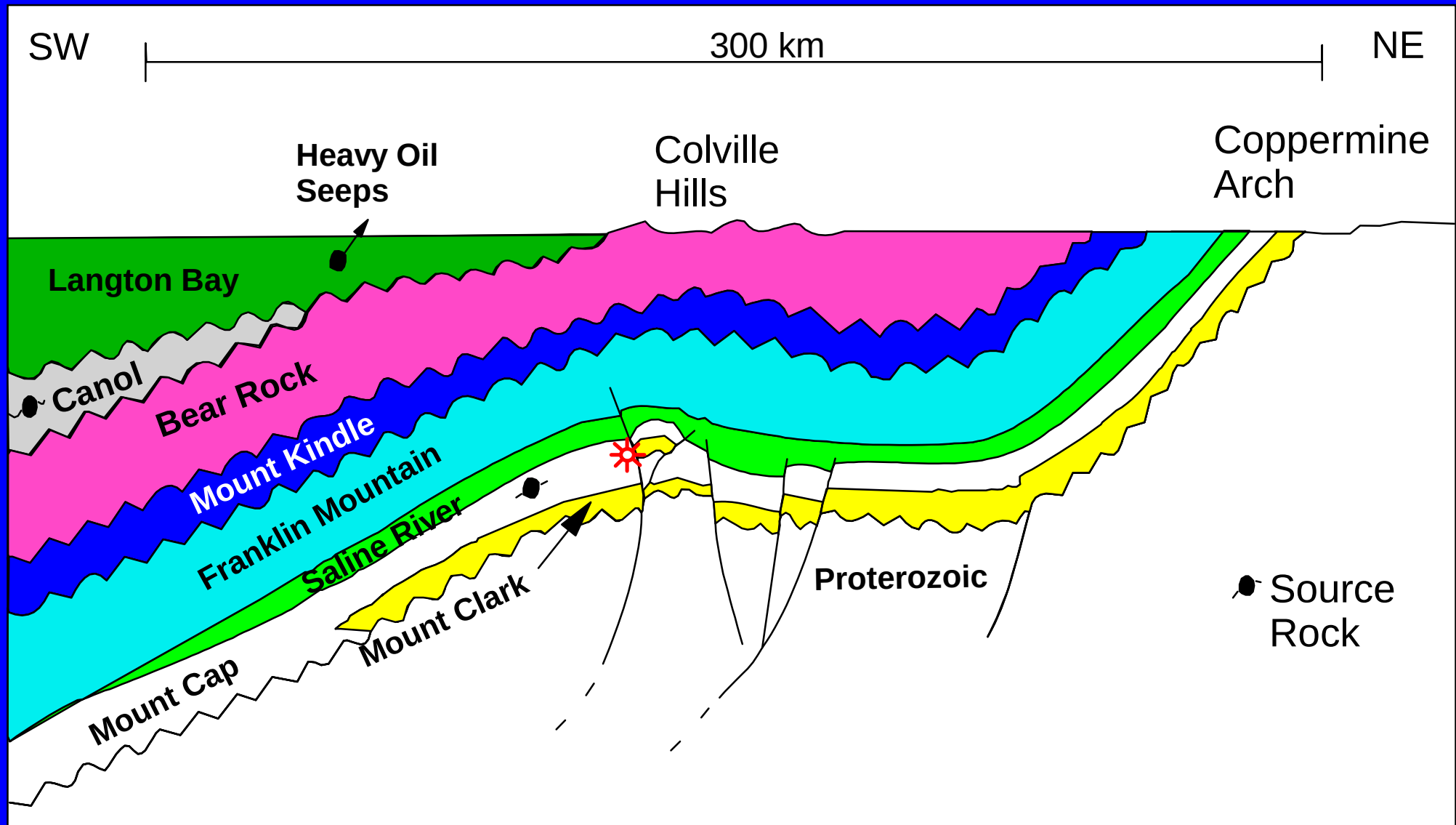
	LOW	BEST ESTIMATE	HIGH
GAS (BCF)	6.2	20.8	63.2

Information from IFR Website, 2010

COLVILLE HILLS, NWT SHOWING LOCATION OF CAMBRIAN SANDSTONE GAS DISCOVERIES



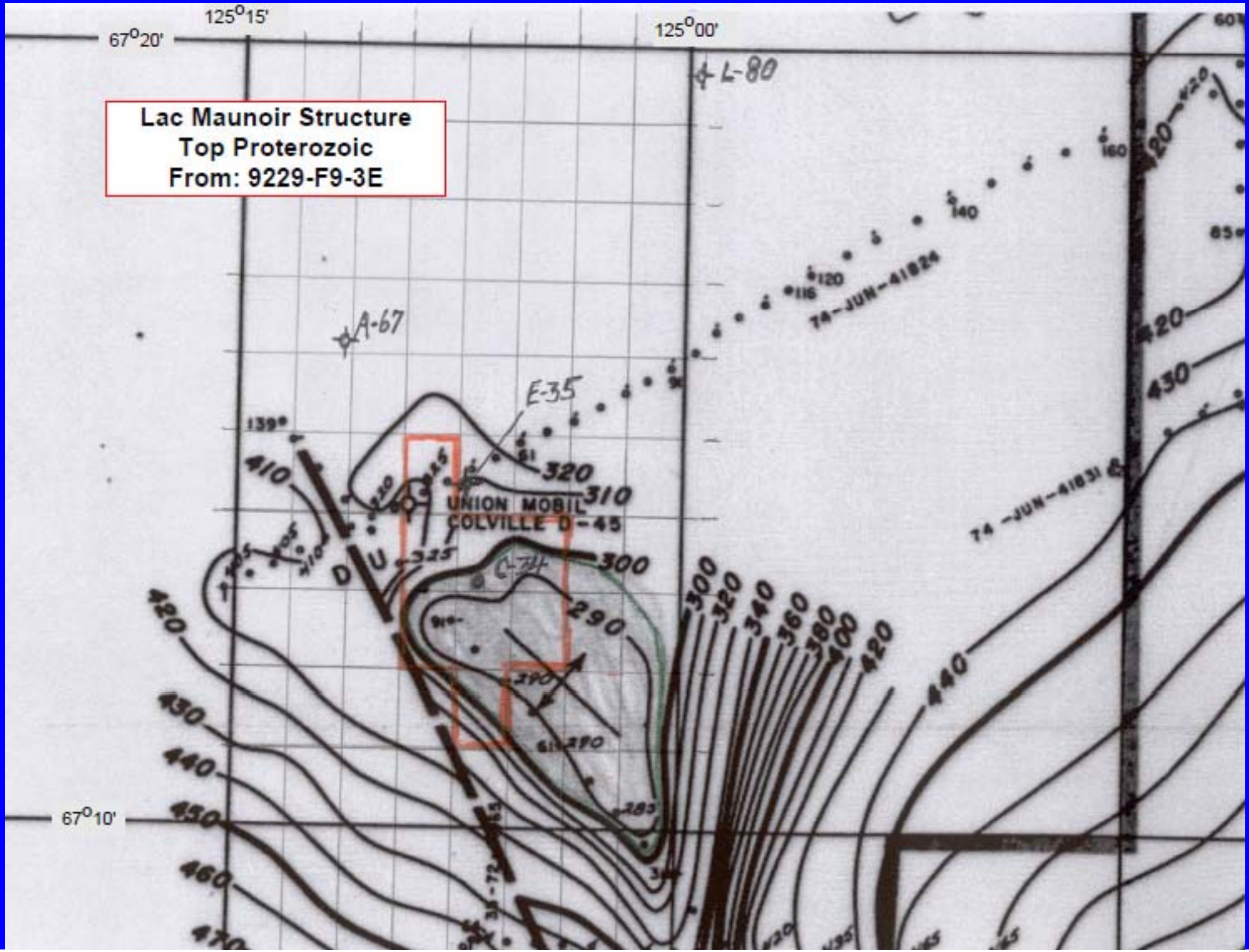
SCHEMATIC SECTION, COLVILLE HILLS AREA



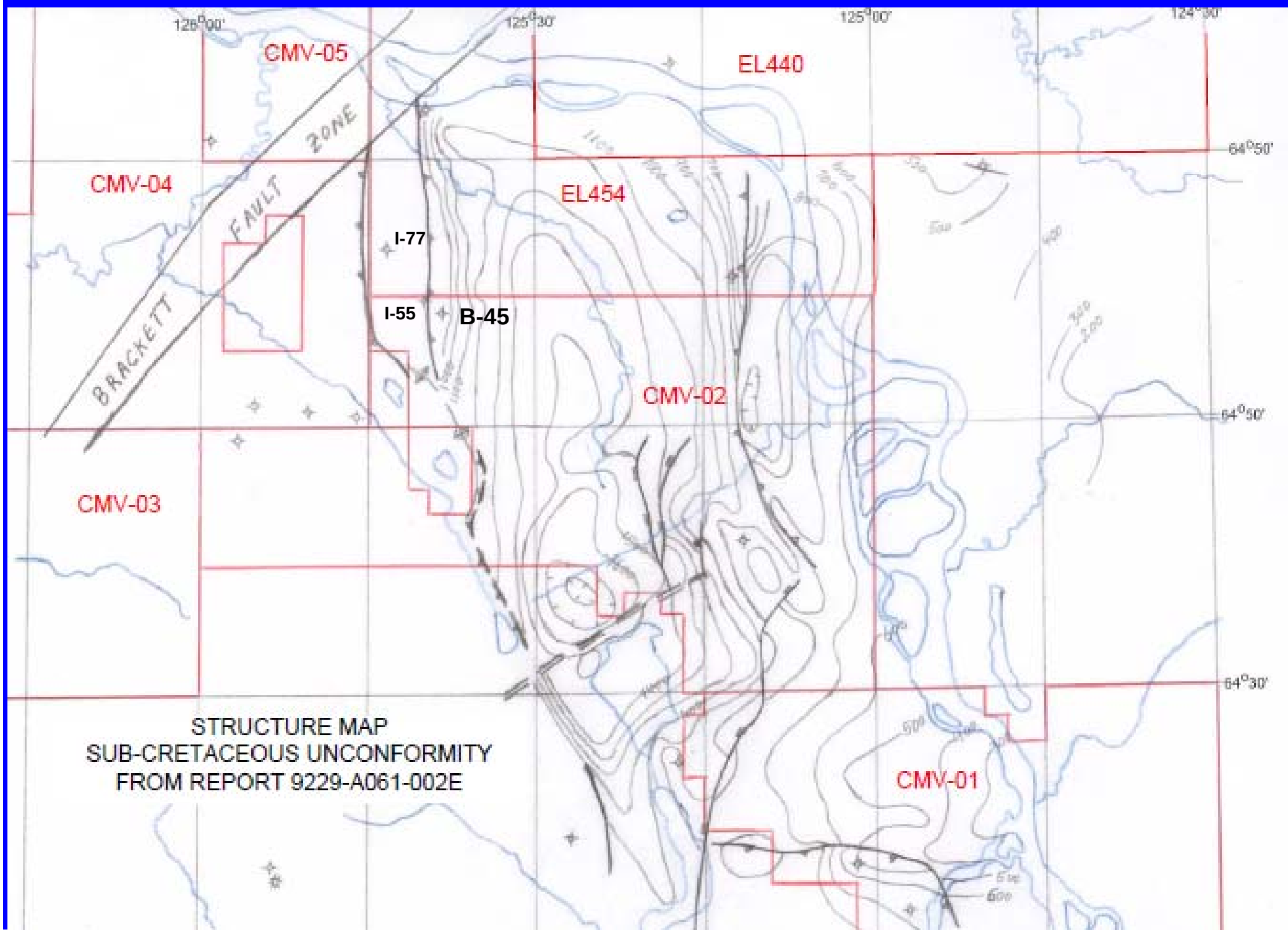
Modified from NOGD, 1995

LAC MAUNOIR STRUCTURE MAP

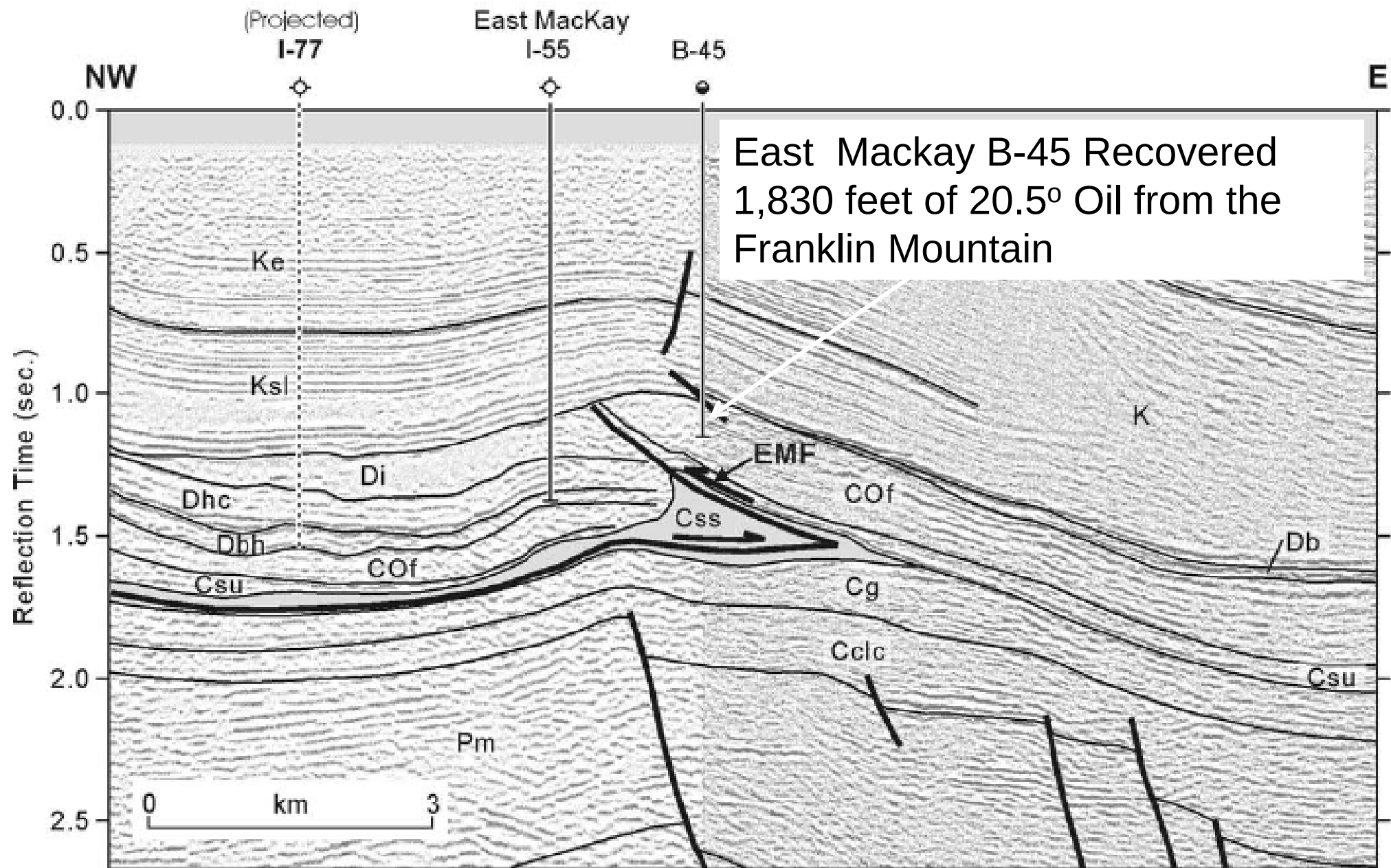
Lac Maunoir Structure
Top Proterozoic
From: 9229-F9-3E



EAST MACKAY B-45 STRUCTURE MAP



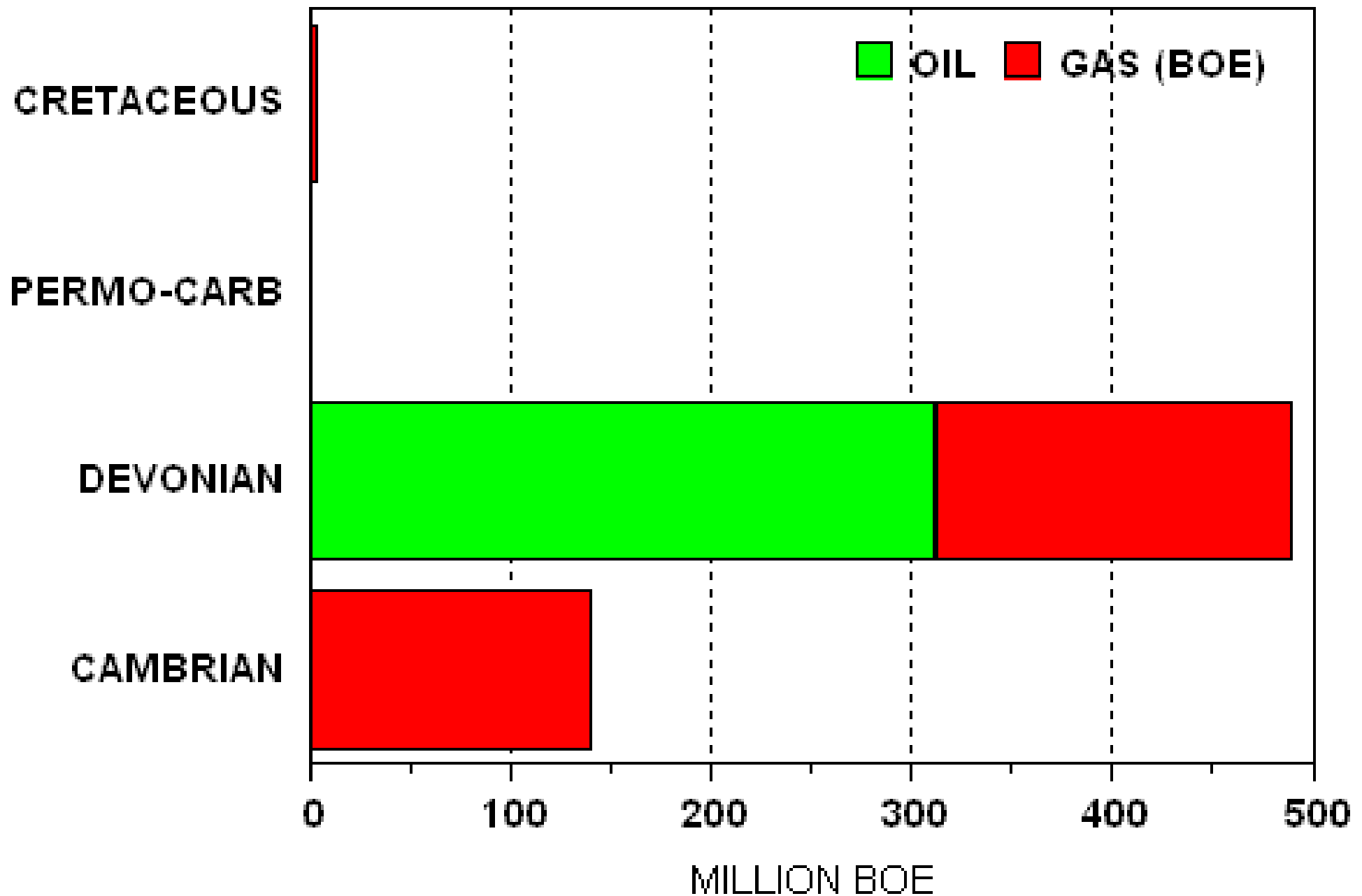
EAST MACKAY STRUCTURE



From: Issler, et al, 2005

MACKENZIE VALLEY

DISCOVERED RESOURCES BY STRATIGRAPHIC SYSTEM



MACKENZIE VALLEY

RECOVERABLE OIL & GAS

	DISCOVERED OIL (MMB)	DISCOVERED GAS (BCF)
LIARD PLATEAU	0	846
GREAT SLAVE PLAIN	4.5	114
MACKENZIE PLAIN	307.7	155
COLVILLE HILLS	0.8	848
TOTAL	313	1,963

CONCLUSIONS

- **THE MACKENZIE VALLEY HAS DISCOVERED RESOURCES OF OIL AND GAS RANGING IN AGE FROM CAMBRIAN TO CRETACEOUS**
 - **DISCOVERED - 313 MMB OF OIL & 1,963 BCF OF NATURAL GAS**
 - **A TOTAL OF 677 EXPLORATORY WELLS IN AN AREA OF 173,042 SQUARE MILES
- 1 WELL / 256 SQUARE MILES**
 - **THE MACKENZIE VALLEY BASINS ARE IMMATURE AND HAVE SIGNIFICANT POTENTIAL FOR FUTURE DISCOVERIES**