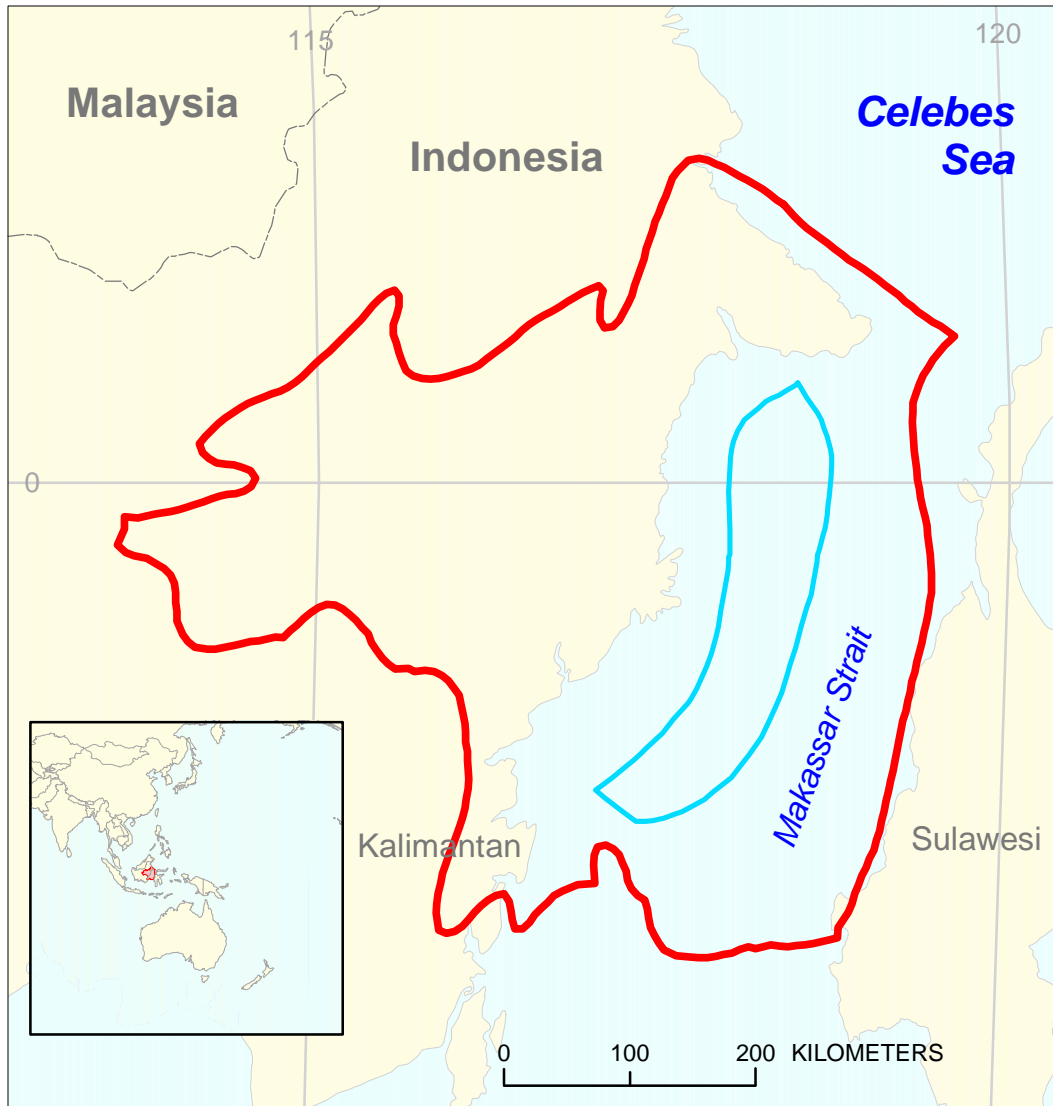


Kutei Basin Turbidites Assessment Unit 38170102



 Kutei Basin Turbidites Assessment Unit 38170102

 Kutei Basin Geologic Province 3817

USGS PROVINCE: Kutei Basin (3817)

GEOLOGIST: P.J. McCabe

TOTAL PETROLEUM SYSTEM: Kutei Basin (381701)

ASSESSMENT UNIT: Kutei Basin Turbidites (38170102)

DESCRIPTION: Middle to Upper Miocene turbidite complexes that accumulated in the deeper parts of the Macassar Straits and that are lowstand deposits of the Mahakam depositional system.

SOURCE ROCKS: Presumably terrestrially derived organic matter concentrated in marine condensed intervals.

MATURATION: Presumably timing of maturation was from the latest Miocene to present. The area is still a region of active sedimentation.

MIGRATION: Probably updip from associated condensed intervals and along rotational thrust faults.

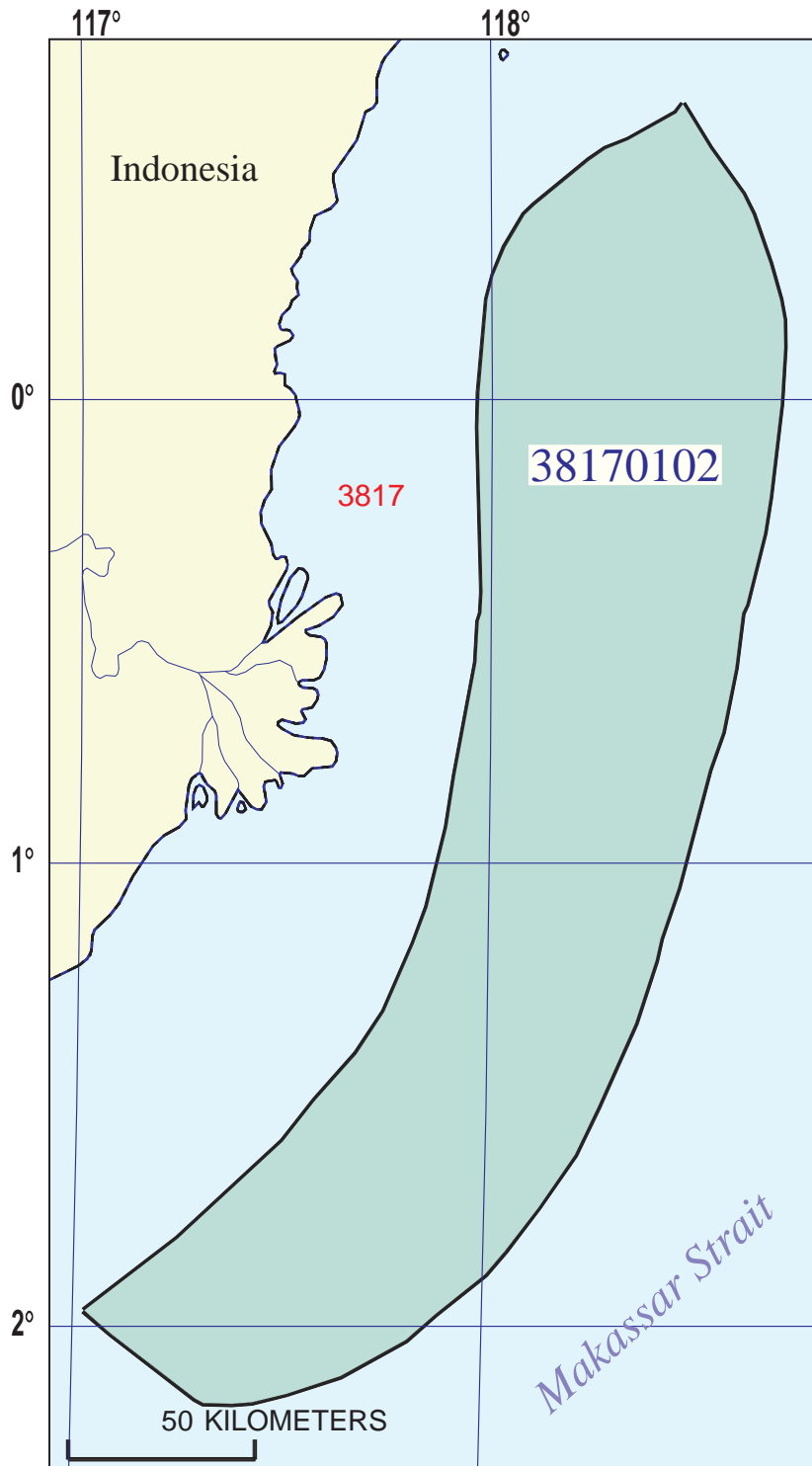
RESERVOIR ROCKS: Turbidite sandstones that accumulated in ponds between thrust-produced anticlinal features. The sandstones are reported to have porosities >35 percent.

TRAPS AND SEALS: Marine condensed intervals.

PETROLEUM INDUSTRY ACTIVITY: Although the onshore deltaics (Kutei Basin Deltaics assessment unit-38170101) is prolific the deepwater strata were discounted as possible exploration targets until recently as older models failed to predict an adequate source rock and kitchen for the turbidite sands. The first discovery in the assessment unit was made in August 1998. A second discovery was made in June 1999. An additional 20 wells are anticipated to be drilled by the end of 2000.

REFERENCES:

- Duval, B.C., Choppin de Janvry, G., and Loiret, B., 1992, The Mahakam Delta province—an ever-changing picture and a bright future: Proceedings Offshore Technology Conference, v. 24, p. 393-404.
- Peters, K.E., Snedden, J.W., Sulaeman, A., Sarg, J.F., and Enrico, R.J., 2000, A new geochemical-sequence stratigraphic model for the Mahakam Delta and Makassar Slope, Kalimantan, Indonesia: American Association of Petroleum Geologists Bulletin, v. 84, p. 12-44.



Kutei Basin Turbidites Assessment Unit - 38170102

EXPLANATION

- Hydrography
- Shoreline
- 3817 — Geologic province code and boundary
- - - Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 38170102 — Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

**SEVENTH APPROXIMATION
NEW MILLENNIUM WORLD PETROLEUM ASSESSMENT
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS**

Date:..... 7/29/99
 Assessment Geologist:..... P.J. McCabe
 Region:..... Asia Pacific Number: 3
 Province:..... Kutei Basin Number: 3817
 Priority or Boutique..... Priority
 Total Petroleum System:..... Kutei Basin Number: 381701
 Assessment Unit:..... Kutei Basin Turbidites Number: 38170102
 * Notes from Assessor Two significant discoveries since 1995 are not in Petroconsultants' database.

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) **or** Gas (≥20,000 cfg/bo overall):... Oil

What is the minimum field size?..... 5 mmboe grown (≥1mmboe)
 (the smallest field that has potential to be added to reserves in the next 30 years)

Number of discovered fields exceeding minimum size:..... Oil: 0 Gas: 0
 Established (>13 fields) _____ Frontier (1-13 fields) _____ Hypothetical (no fields) X

Median size (grown) of discovered oil fields (mmboe):
 1st 3rd _____ 2nd 3rd _____ 3rd 3rd _____
 Median size (grown) of discovered gas fields (bcfg):
 1st 3rd _____ 2nd 3rd _____ 3rd 3rd _____

Assessment-Unit Probabilities:

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. CHARGE: Adequate petroleum charge for an undiscovered field ≥ minimum size.....	<u>1.0</u>
2. ROCKS: Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size.....	<u>1.0</u>
3. TIMING OF GEOLOGIC EVENTS: Favorable timing for an undiscovered field ≥ minimum size	<u>1.0</u>

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):..... 1.0

4. **ACCESSIBILITY:** Adequate location to allow exploration for an undiscovered field
 ≥ minimum size..... 1.0

UNDISCOVERED FIELDS

Number of Undiscovered Fields: How many undiscovered fields exist that are ≥ minimum size?:
 (uncertainty of fixed but unknown values)

Oil fields:.....min. no. (>0)	<u>3</u>	median no.	<u>35</u>	max no.	<u>75</u>
Gas fields:.....min. no. (>0)	<u>1</u>	median no.	<u>25</u>	max no.	<u>60</u>

Size of Undiscovered Fields: What are the anticipated sizes (**grown**) of the above fields?:
 (variations in the sizes of undiscovered fields)

Oil in oil fields (mmbo).....min. size	<u>5</u>	median size	<u>40</u>	max. size	<u>3000</u>
Gas in gas fields (bcfg):.....min. size	<u>30</u>	median size	<u>240</u>	max. size	<u>18000</u>

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

<u>Oil Fields:</u>	minimum	median	maximum
Gas/oil ratio (cfg/bo).....	1400	2800	4200
NGL/gas ratio (bnl/mmcf).....	30	60	90
<u>Gas fields:</u>	minimum	median	maximum
Liquids/gas ratio (bnl/mmcf).....	15	25	35
Oil/gas ratio (bo/mmcf).....			

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

<u>Oil Fields:</u>	minimum	median	maximum
API gravity (degrees).....	20	35	47
Sulfur content of oil (%).....	0.05	0.1	0.15
Drilling Depth (m)	500	1500	5000
Depth (m) of water (if applicable).....	250	1400	2800
<u>Gas Fields:</u>	minimum	median	maximum
Inert gas content (%).....		1	
CO ₂ content (%).....		5	
Hydrogen-sulfide content (%).....		0	
Drilling Depth (m).....	500	1500	5000
Depth (m) of water (if applicable).....	250	1400	2800

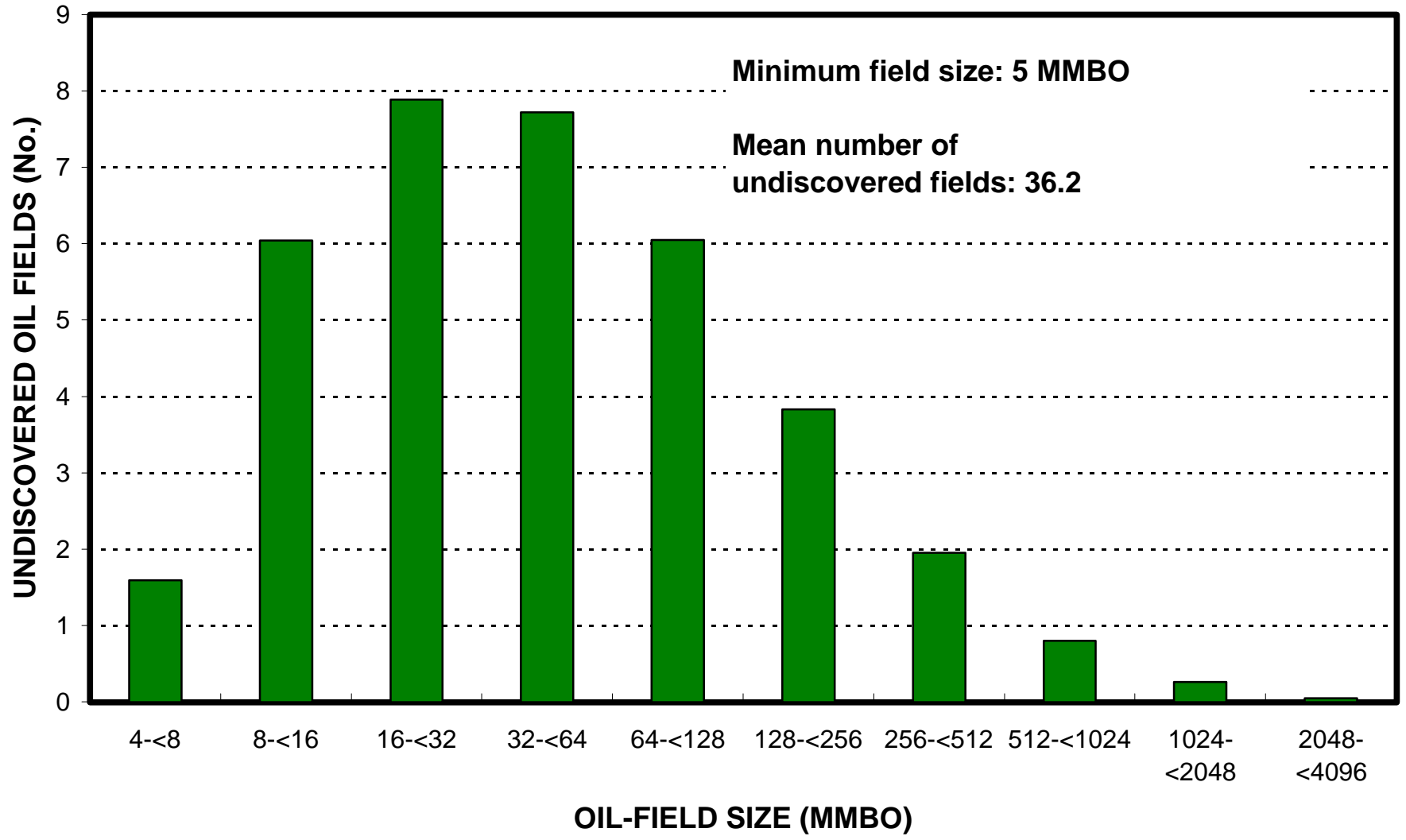
**ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT
 TO COUNTRIES OR OTHER LAND PARCELS** (uncertainty of fixed but unknown values)

1. Indonesia represents 100 areal % of the total assessment unit

<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	100	_____
Portion of volume % that is offshore (0-100%):.....	_____	100	_____
 <u>Gas in Gas Fields:</u>	 minimum	 median	 maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	100	_____
Portion of volume % that is offshore (0-100%):.....	_____	100	_____

Kutei Basin Turbidites, AU 38170102

Undiscovered Field-Size Distribution



Kutei Basin Turbidites, AU 38170102

Undiscovered Field-Size Distribution

