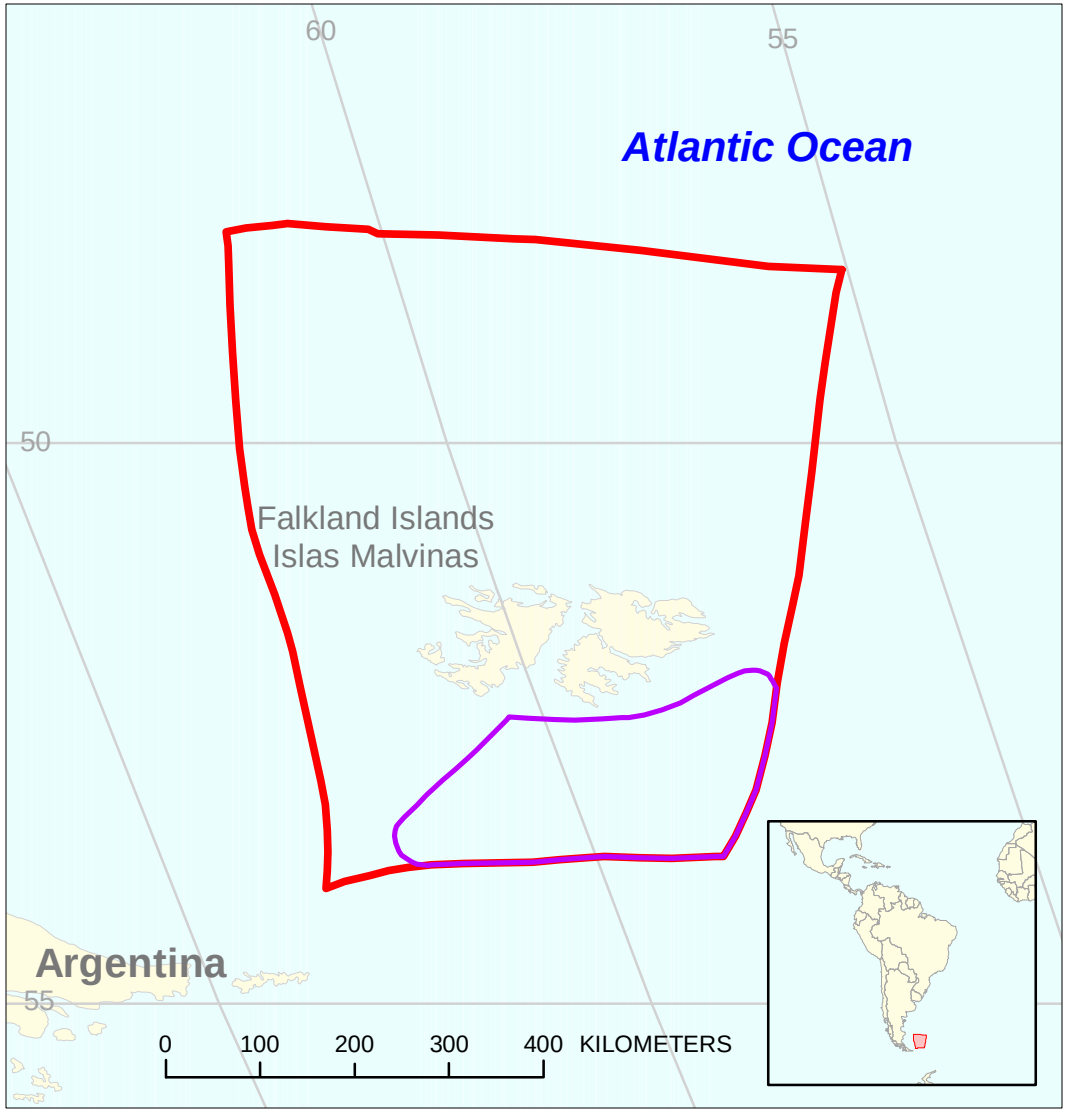
Go to Table of Contents

Go to index map

South Falklands Basin
Assessment Unit 60600201



South Falklands Basin Assessment Unit 60600201
Falklands Plateau Geologic Province 6060

Geologic Summary

Detailed map of this assessment unit

Assessment Input Data

Assessment Results

- Assessment Unit Summary
- Detailed Assessment Results
- Undiscovered Field-Size Distributions

USGS PROVINCE: Falklands Plateau (6060) **GEOLOGIST:** C.J. Schenk

TOTAL PETROLEUM SYSTEM: Lower Cretaceous (606002)

ASSESSMENT UNIT: South Falklands Basin (60600201)

DESCRIPTION: This assessment unit encompasses extensional structures south of the Falkland Islands on the Falkland Plateau.

SOURCE ROCKS: Source rocks are organic-bearing mudstones thought to be equivalent to the Neocomian D-129 source rocks of the San Jorge Basin, or the source may be marine mudstones similar to the "Lower Inoceramus" mudstones of the Magallanes Basin.

MATURATION: Modeling suggests that Lower Cretaceous source rocks reached generation in the Late Cretaceous with peak generation in the Eocene.

MIGRATION: Migration is believed to have been mainly vertical along the numerous normal faults formed during the extensional tectonic event in the Upper Jurassic and Early Cretaceous.

RESERVOIR ROCKS: Reservoirs are sandstones deposited as fluvial, alluvial fan, deltaic, and shallow marine facies during synrift and post rift stages of fill. Possible low-stand wedges may occur in the basin. Sandstones equivalent to the Lower Cretaceous Springhill Formation of the Magallanes Basin may be the best reservoirs.

TRAPS AND SEALS: Traps are related to extensional structures, and to possible stratigraphic traps in the deeper part of the basin. Folds may have formed along west-oriented strike-slip faults and associated flower structures. Seals are mainly intraformational mudstones in the Late Cretaceous and Tertiary marine sedimentary section.

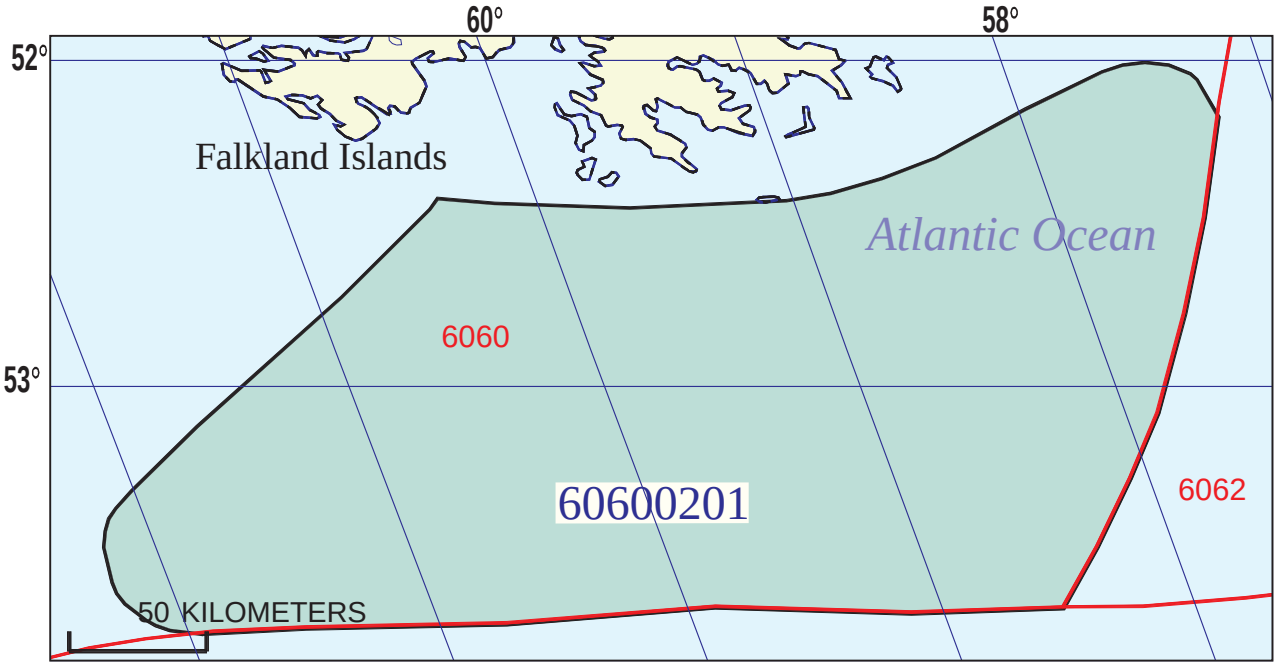
REFERENCES:

Durham, M.J., Burges, P.C., and Bottinga, R., 1999, Geology of the North Falklands Graben and implications for future hydrocarbon exploration: American Association of Petroleum Geologists, International Conference and Exhibition Extended Abstracts Volume, Birmingham, England, p. 159-162.

Marshall, J.E.A., 1994, The Falkland Islands–a key element in Gondwana paleogeography: Tectonics, v. 13, p. 499-514.

Richards, P.C., 1997, An introduction to the Falkland Islands for the oil industry: British Geological Survey for the Falkland Islands Government, 26 p.

Thomson, K., 1998, When did the Falklands rotate?: Marine and Petroleum Geology, v. 15, no. 8, p. 723-736.



South Falklands Basin
Assessment Unit - 60600201

EXPLANATION

- Hydrography
- Shoreline
- 6060 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 60600201 Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

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

Date:……..	10/6/99		
Assessment Geologist:……..	C.J. Schenk		
Region:……..	Central and South America	Number:	6
Province:……..	Falklands Plateau	Number:	6060
Priority or Boutique……	Boutique		
Total Petroleum System:……	Lower Cretaceous	Number:	606002
Assessment Unit:……..	South Falklands Basin	Number:	60600201
* Notes from Assessor	Hypothetical; San Jorge Extensional Structures (60580101) is partial analog.		
	Magallanes Extensional Structures (60590101) is also partial analog.		

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. 10 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:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an undiscovered field ≥ minimum size……	0.8
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	0.7
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	1.0

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):…….. 0.6

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)	1	median no.	40	max no.	120
Gas fields:……min. no. (>0)	1	median no.	20	max no.	60

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	10	median size	30	max. size	4000
Gas in gas fields (bcfg):……min. size	60	median size	130	max. size	7000

Assessment Unit (name, no.)
South Falklands Basin, 60600201

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……	1000	2000	3000
NGL/gas ratio (bngl/mmcfg)……	15	25	35

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	15	25	35
Oil/gas ratio (bo/mmcfg)……			

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

Oil Fields:	minimum	median	maximum
API gravity (degrees)……	20	30	40
Sulfur content of oil (%)……			
Drilling Depth (m) ……	500	2000	4500
Depth (m) of water (if applicable)……	100	400	1000

Gas Fields:	minimum	median	maximum
Inert gas content (%)……			
CO_2 content (%)……			
Hydrogen-sulfide content (%)……			
Drilling Depth (m)……	500	2500	5000
Depth (m) of water (if applicable)……	100	400	1000

Assessment Unit (name, no.)
South Falklands Basin, 60600201

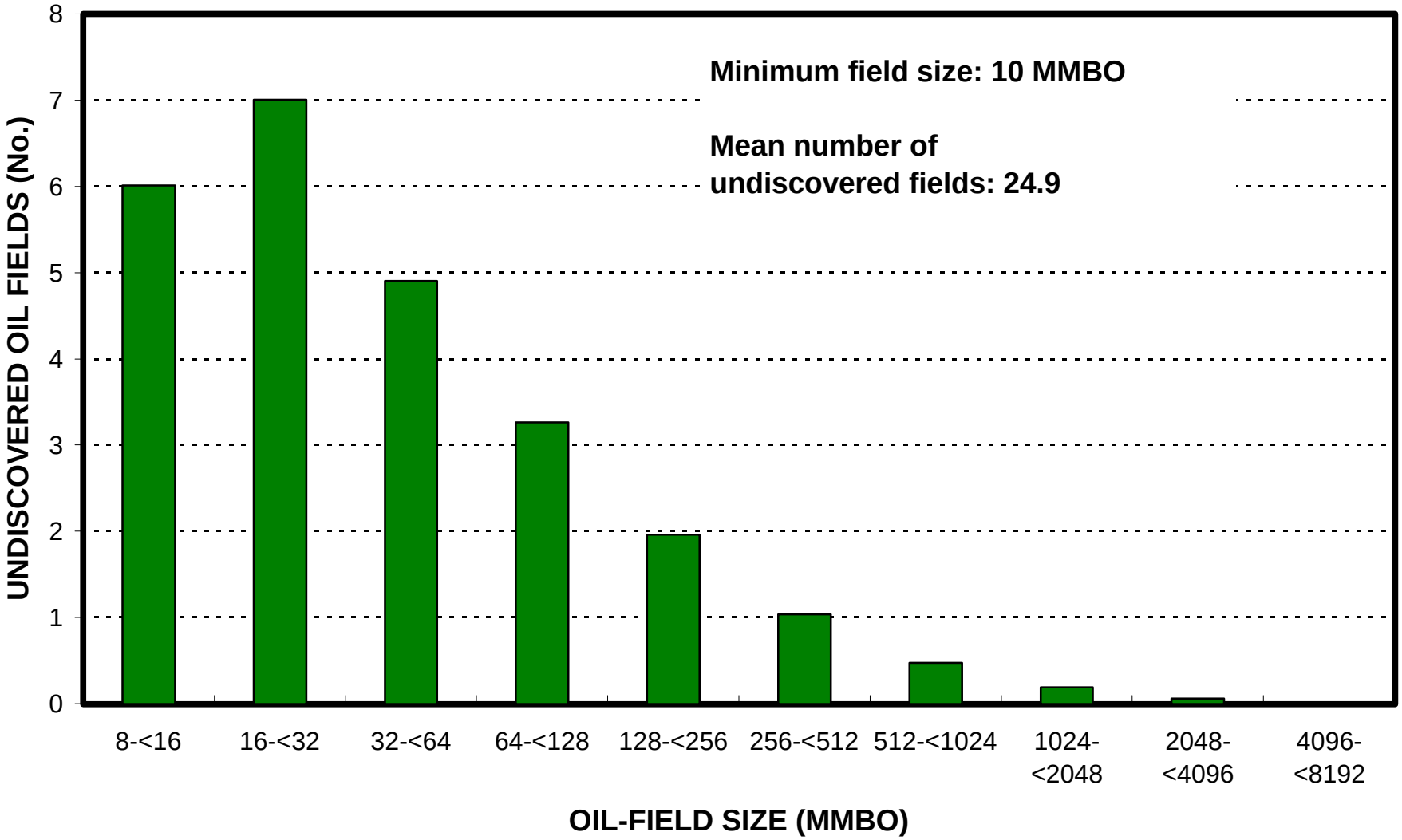
ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT TO COUNTRIES OR OTHER LAND PARCELS (uncertainty of fixed but unknown values)

1. Falkland Islands (Islas Malvinas) represents 100 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		100	
Portion of volume % that is offshore (0-100%)……		100	

Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		100	
Portion of volume % that is offshore (0-100%)……		100	

South Falklands Basin, AU 60600201
Undiscovered Field-Size Distribution



South Falklands Basin, AU 60600201
Undiscovered Field-Size Distribution