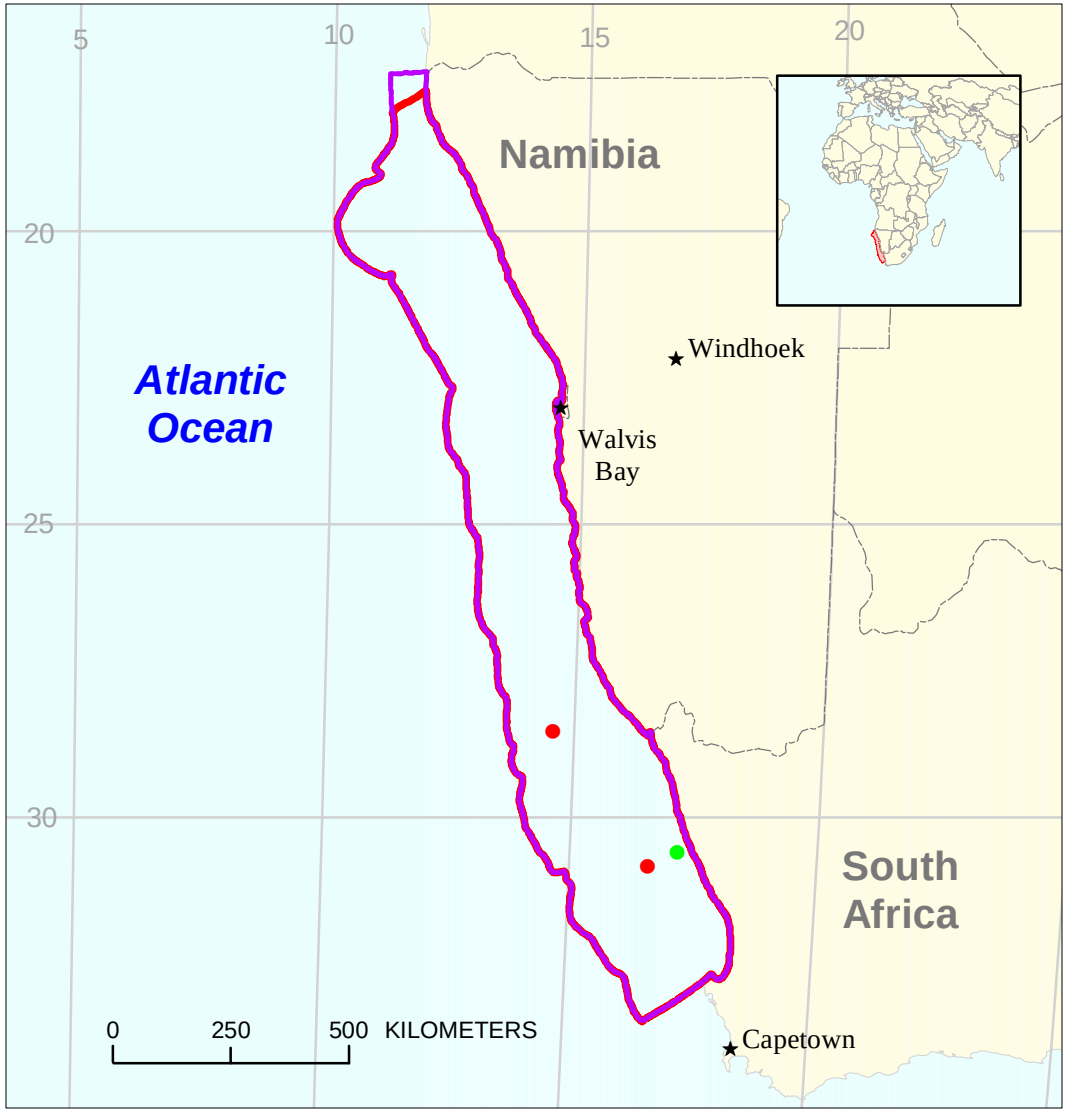
Go to Table of Contents

Go to index map

Offshore
Assessment Unit 73030101



Offshore Assessment Unit 73030101

Orange River Coastal Geologic Province 7303

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: Orange River Coastal (7303)

GEOLOGISTS: R.R. Charpentier and M.E. Brownfield

TOTAL PETROLEUM SYSTEM: Cretaceous Composite (730301)

ASSESSMENT UNIT: Offshore (73030101)

DESCRIPTION: Sand and sandstone reservoirs from the Cretaceous and Tertiary deltaic deposits of the Orange basin, Luderitz basin, and Walvis basin; some possible pre- or Early Cretaceous reservoirs in structural traps of rift blocks.

SOURCE ROCKS: Expected to be primarily Aptian (Type II kerogen, average 2 percent TOC) and Cenomanian/Turonian (TOC as much as 5 percent) marine shales; possible lacustrine source in Lower Cretaceous syn-rift section.

MATURATION: Probably gas-prone in south part of basin, possibly some oil potential toward northern part of basin.

MIGRATION: Either directly from adjacent source rocks or up faults from deeper sources.

RESERVOIR ROCKS: Mostly Cretaceous sandstones.

TRAPS AND SEALS: Stratigraphic traps related to turbidite geometry and structural traps related to rollovers and growth faults; seals would be enclosing shales.

REFERENCES:

Bray, Richard, Lawrence, Steven, and Swart, Roger, 1998, Source rock, maturity data indicate potential off Namibia: Oil and Gas Journal, v. 96, no. 32, p. 84-89.

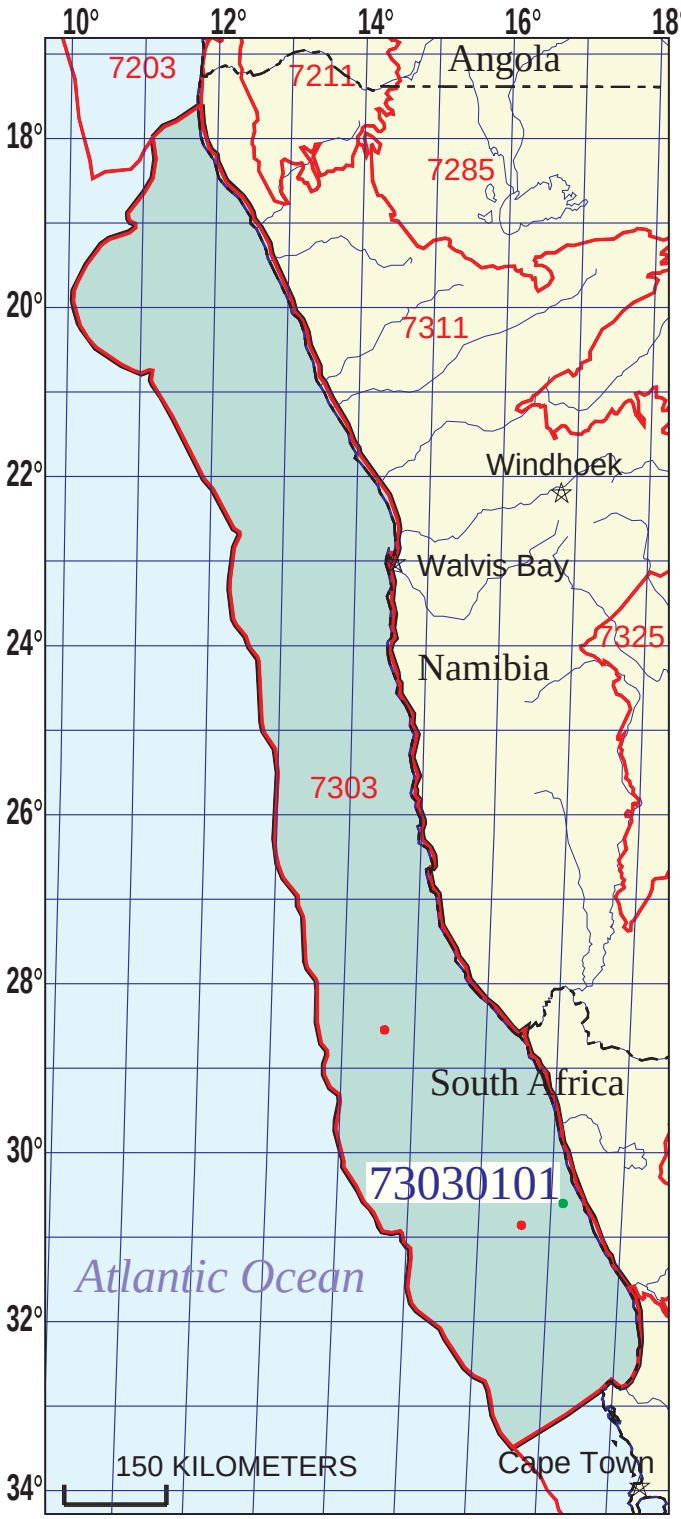
Brown, L.F., Jr., Benson, J.M., Brink, G.J., Doherty, S., Jollands, A., Jungslager, E.H.A., Keenan, J.H.G., Muntingh, A., and van Wyk, N.J.S., 1995, Sequence stratigraphy in offshore South African divergent basins: American Association of Petroleum Geologists Studies in Geology 41, 184 p.

Light, M.P.R., Banks, N.L. Greenwood, Jeff, Maslanyj, Myron, Horn, I.W., Davidson, Kent, and Simon, Philippe, 1992, Sismostratigraphie, stratigraphie séquentielle et tectonique de l'offshore de la Namibie, *in* Curnelle, R., ed., Géologie Africaine, 1er Colloque de Stratigraphie et de Paléogéographie des Bassins Sédimentaires Ouest-Africains, 2e Colloque Africain de Micropaléontologie, Libreville, Gabon, 1991, Recueil des Communications: Boussens, Elf Aquitaine, p.79-98.

Uchupi, Elezar, 1989, The tectonic style of the Atlantic Mesozoic rift system: Journal of African Earth Sciences, v. 8, no. 2/3/4, p. 143-164.

Go to index map

Go to Table of Contents



Offshore
Assessment Unit - 73030101

EXPLANATION

- Hydrography
- Shoreline
- 7303 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 73030101 — Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

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

Date:……..	9/22/99		
Assessment Geologist:……..	R.R. Charpentier and M.E. Brownfield		
Region:……..	Sub-Saharan Africa and Antarctica	Number:	7
Province:……..	Orange River Coastal	Number:	7303
Priority or Boutique……	Boutique		
Total Petroleum System:……	Cretaceous Composite	Number:	730301
Assessment Unit:……..	Offshore	Number:	73030101
* Notes from Assessor	MMS growth function.		

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. 8 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: 1

Established (>13 fields) _____ Frontier (1-13 fields) X Hypothetical (no fields) _____

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

Median size (grown) of discovered gas fields (bcfg):
1st 3rd 6956 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……	1.0
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	1.0
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):…….. 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)	1	median no.	3	max no.	7
Gas fields:……min. no. (>0)	1	median no.	10	max no.	25

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	8	median size	20	max. size	750
Gas in gas fields (bcfg):……min. size	48	median size	150	max. size	8000

Assessment Unit (name, no.)
Offshore, 73030101

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……	1100	2200	3300
NGL/gas ratio (bngl/mmcfg)……	30	60	90

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	22	44	66
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	35	50
Sulfur content of oil (%)……			
Drilling Depth (m) ……	1500	3500	4000
Depth (m) of water (if applicable)……	0	400	2000

Gas Fields:	minimum	median	maximum
Inert gas content (%)……			
CO_2 content (%)……			
Hydrogen-sulfide content (%)……			
Drilling Depth (m)……	1500	4000	5000
Depth (m) of water (if applicable)……	0	400	2000

Assessment Unit (name, no.)
Offshore, 73030101

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

1. Namibia represents 70 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		70	
Portion of volume % that is offshore (0-100%)……		100	

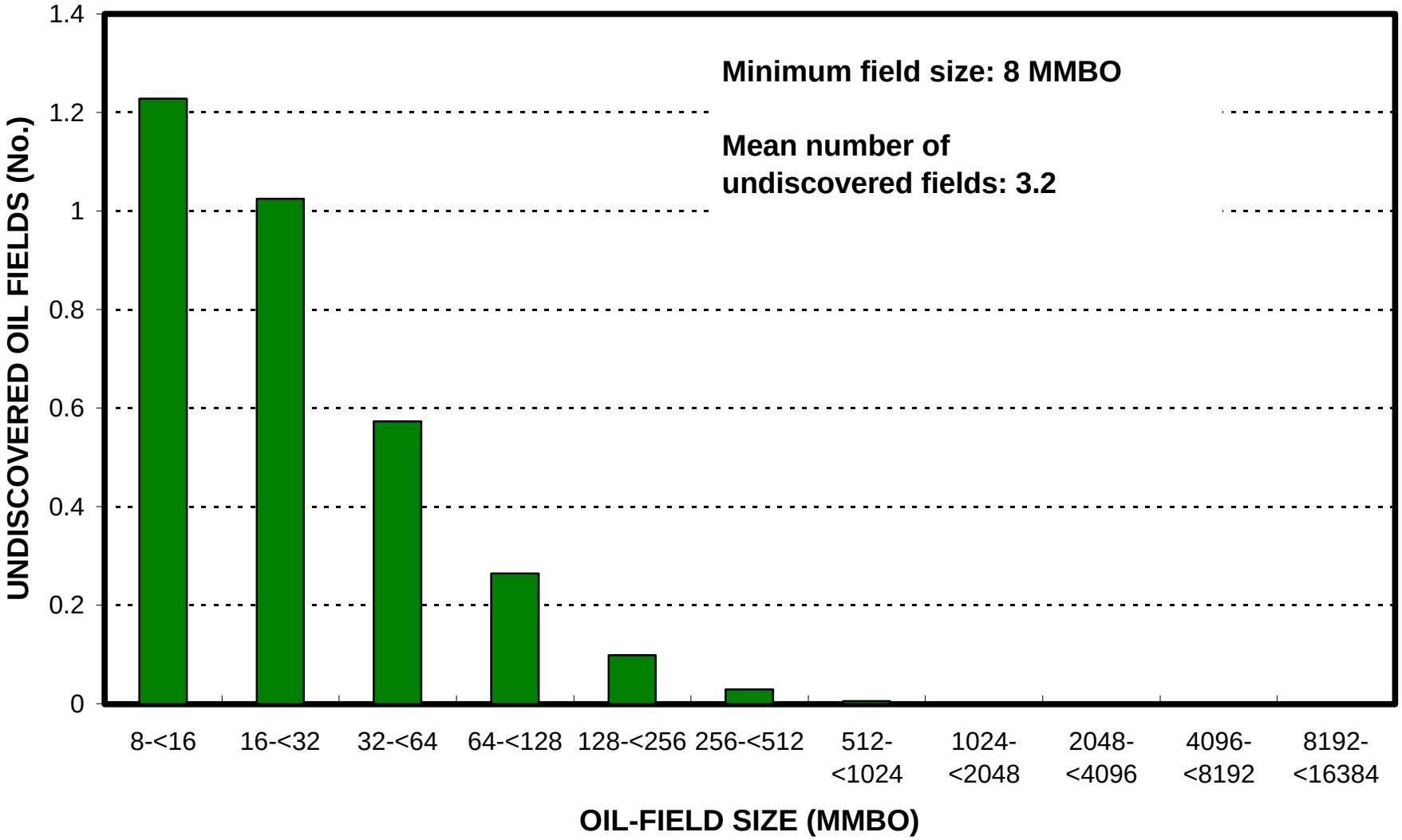
Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		40	
Portion of volume % that is offshore (0-100%)……		100	

2. South Africa represents 30 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		30	
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):…		60	
Portion of volume % that is offshore (0-100%)……		100	

Offshore, AU 73030101
Undiscovered Field-Size Distribution



Offshore, AU 73030101
Undiscovered Field-Size Distribution