Go to Table of Contents

Go to index map

Akata Reservoirs
Assessment Unit 71920102

Akata Reservoirs Assessment Unit 71920102
Niger Delta Geologic Province 7192

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: Niger Delta (7192)

GEOLOGISTS: M.L. Tuttle, M.E. Brownfield, and R.R. Charpentier

TOTAL PETROLEUM SYSTEM: Tertiary Niger Delta (Agbada/Akata) (719201)

ASSESSMENT UNIT: Akata Reservoirs (71920102)

DESCRIPTION: Sandstone reservoirs in the Akata Formation of the Niger Delta, beneath and to seaward of the presently producing Agbada reservoirs.

SOURCE ROCKS: Marine shales of the Akata Formation.

MATURATION: Probably starting about Late Eocene and continuing to the present.

MIGRATION: From adjacent source shales; some possible migration along faults.

RESERVOIR ROCKS: Sands in the primarily shaly Akata section; primarily turbidites, including basin-floor stands and channel-fill deposits.

TRAPS AND SEALS: Stratigraphic traps related to turbidite geometry, some structural enhancement from shale flowage; seals would be enclosing Akata shales.

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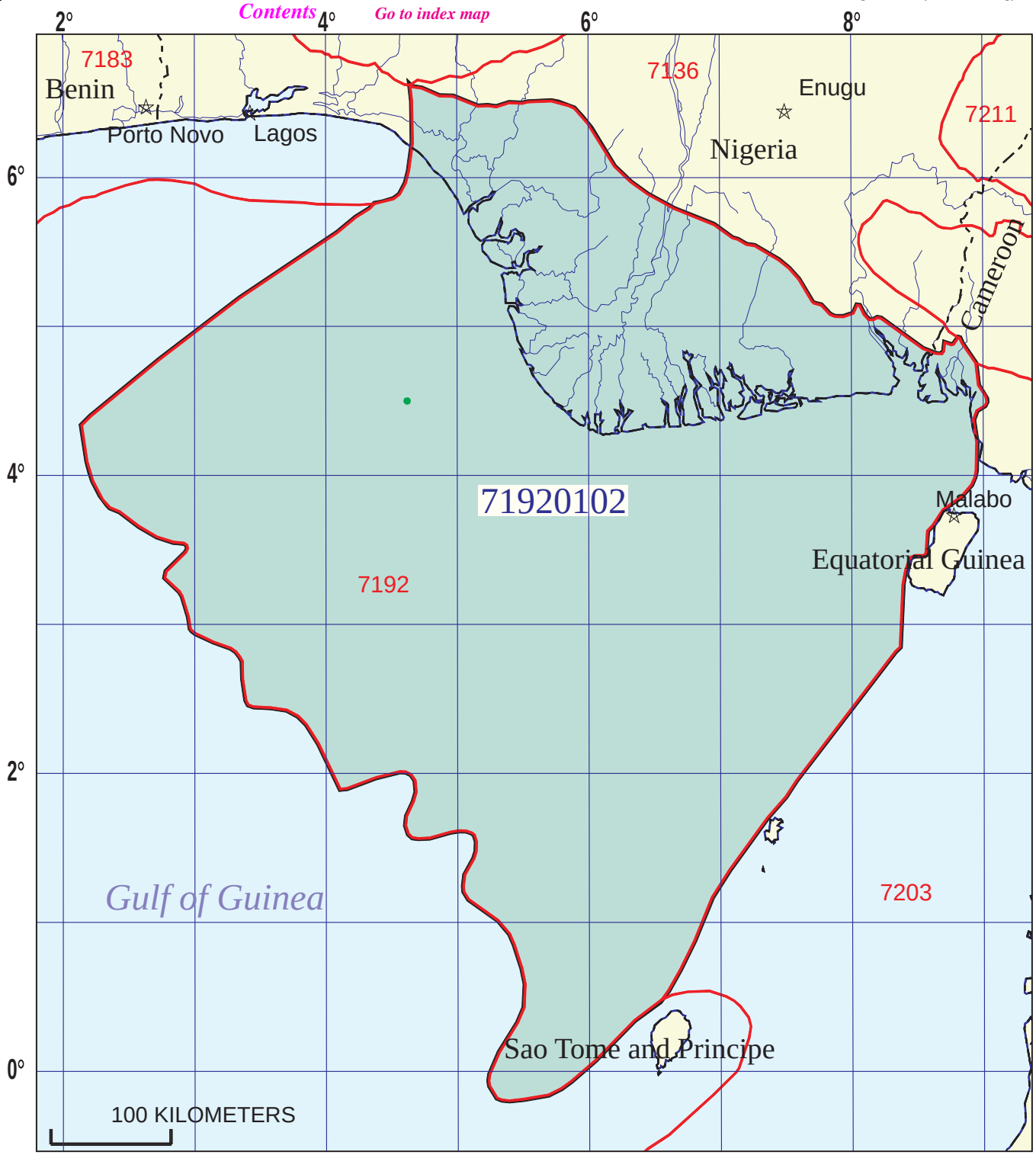
U.S. GEOLOGICAL SURVEY WORLD PETROLEUM ASSESSMENT 2000— DESCRIPTION AND RESULTS
U.S. Geological Survey World Energy Assessment Team



Akata Reservoirs
Assessment Unit - 71920102

EXPLANATION

- Hydrography
- Shoreline
- 7192 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 71920102 Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

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

Date:……..	5/28/98		
Assessment Geologist:……..	M.L. Tuttle, M.E. Brownfield and R.R. Charpentier		
Region:……..	Sub-Saharan Africa and Antarctica	Number:	7
Province:……..	Niger Delta	Number:	7192
Priority or Boutique……	Priority		
Total Petroleum System:……	Tertiary Niger Delta (Agbada/Akata)	Number:	719201
Assessment Unit:……..	Akata Reservoirs	Number:	71920102
* Notes from Assessor			

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. 1 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……	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)	10	median no.	250	max no.	500
Gas fields:……min. no. (>0)	4	median no.	100	max no.	200

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	1	median size	23	max. size	3000
Gas in gas fields (bcfg):…… min. size	6	median size	60	max. size	3500

Assessment Unit (name, no.)
Akata Reservoirs, 71920102

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	1770	3000
NGL/gas ratio (bngl/mmcfg)……	20	33.5	45

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	50	61.3	70
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	45	55
Sulfur content of oil (%)……	0.07	0.15	0.6
Drilling Depth (m) ……	800	3000	6500
Depth (m) of water (if applicable)……	0	1000	4000

Gas Fields:	minimum	median	maximum
Inert gas content (%)……			
CO_2 content (%)……			
Hydrogen-sulfide content(%)……			
Drilling Depth (m)……	800	3500	6500
Depth (m) of water (if applicable)……	0	1000	4000

Assessment Unit (name, no.)
Akata Reservoirs, 71920102

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

1. Nigeria represents 94 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		95.8	
Portion of volume % that is offshore (0-100%).....		80	

Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		95.8	
Portion of volume % that is offshore (0-100%).....		80	

2. Cameroon represents 2 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		1	
Portion of volume % that is offshore (0-100%).....		70	

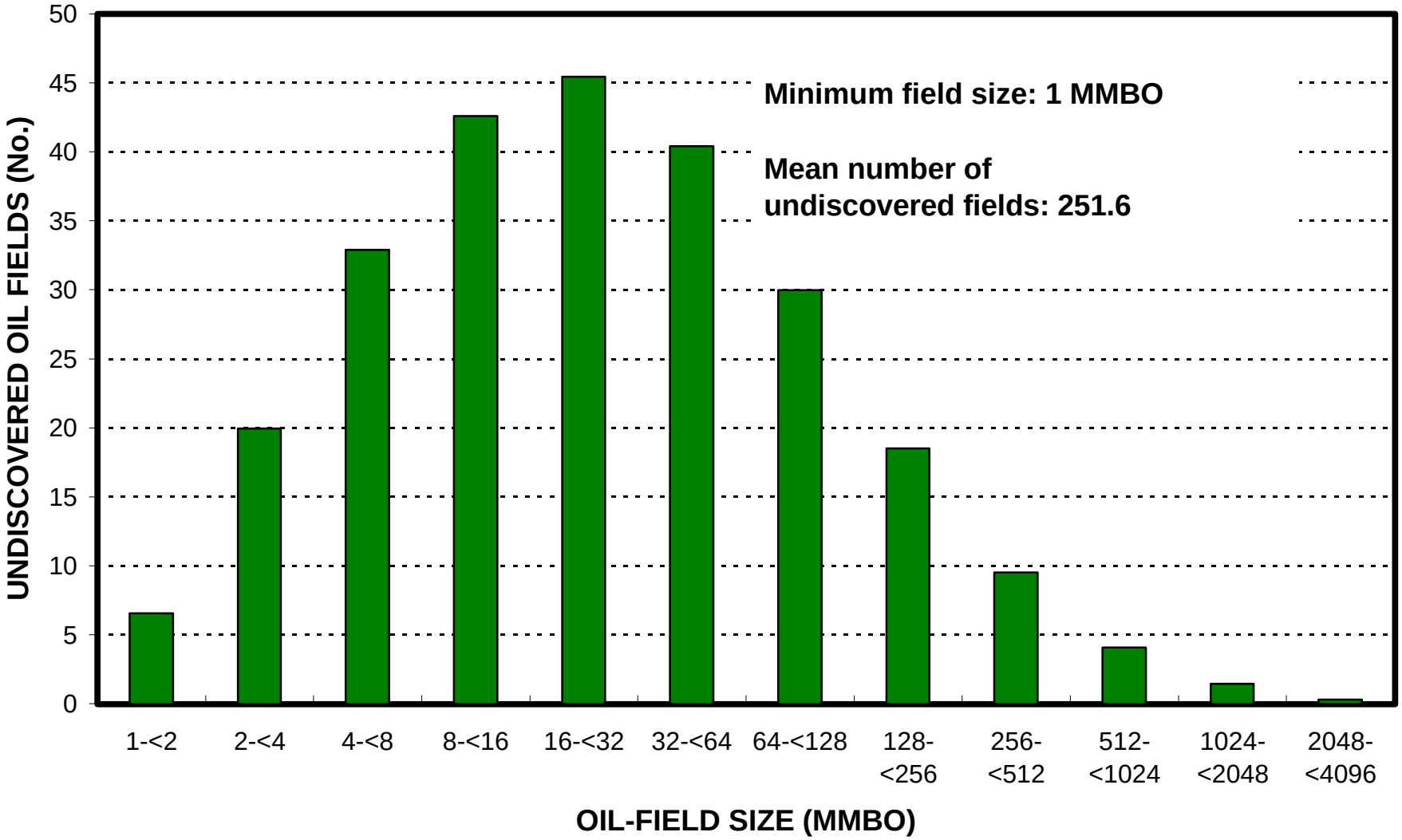
Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		1	
Portion of volume % that is offshore (0-100%).....		70	

3. Equatorial Guinea represents 4 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		3.2	
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):...		3.2	
Portion of volume % that is offshore (0-100%).....		100	

Akata Reservoirs, AU 71920102
Undiscovered Field-Size Distribution



Akata Reservoirs, AU 71920102
Undiscovered Field-Size Distribution