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Central Caspian Offshore Assessment Unit 11090303

Central Caspian Offshore Assessment Unit 11090303

Middle Caspian Basin Geologic Province 1109

Geologic Summary

Detailed map of this assessment unit

Assessment Input Data

Assessment Results

- Assessment Unit Summary
- Detailed Assessment Results

USGS PROVINCE: Middle Caspian Basin (1109) **GEOLOGIST:** G.F. Ulmishek

PETROLEUM SYSTEM: Stavropol-Prikumsk (110903)

ASSESSMENT UNIT: Central Caspian Offshore (11090303)

DESCRIPTION: The assessment unit encompasses the Central Caspian monocline and its inclusion in this petroleum system is conditional. The unit also shares common traits with the Foreland Slope and Foredeep assessment unit (11090103) of the Terek-Caspian petroleum system. No wells have been drilled and the resource assessment is risked.

SOURCE ROCKS: Triassic source rocks are probably absent and Lower-Middle Jurassic rocks are more continental in this area and their source quality is uncertain. Best source rocks of the assessment unit are probably in the lower part of the Oligocene-lower Miocene Maykop series.

MATURATION: Jurassic source rocks, if present, should be in the oil window over most of the unit and in gas window in the southwestern area. Maykop source rocks are mature on the southwest and immature on the slope of the Karabogaz high.

MIGRATION: Both vertical and updip lateral migration may be supposed.

RESERVOIR ROCKS: Middle Jurassic and Lower Cretaceous sandstones have better potential in the assessment unit.

TRAPS: Because of monoclinal tilt, many local uplifts may be open updip and only larger structures will have a closure. The number of such structures is probably limited. Potential for stratigraphic traps is good, but profitability of their exploration at present is doubtful.

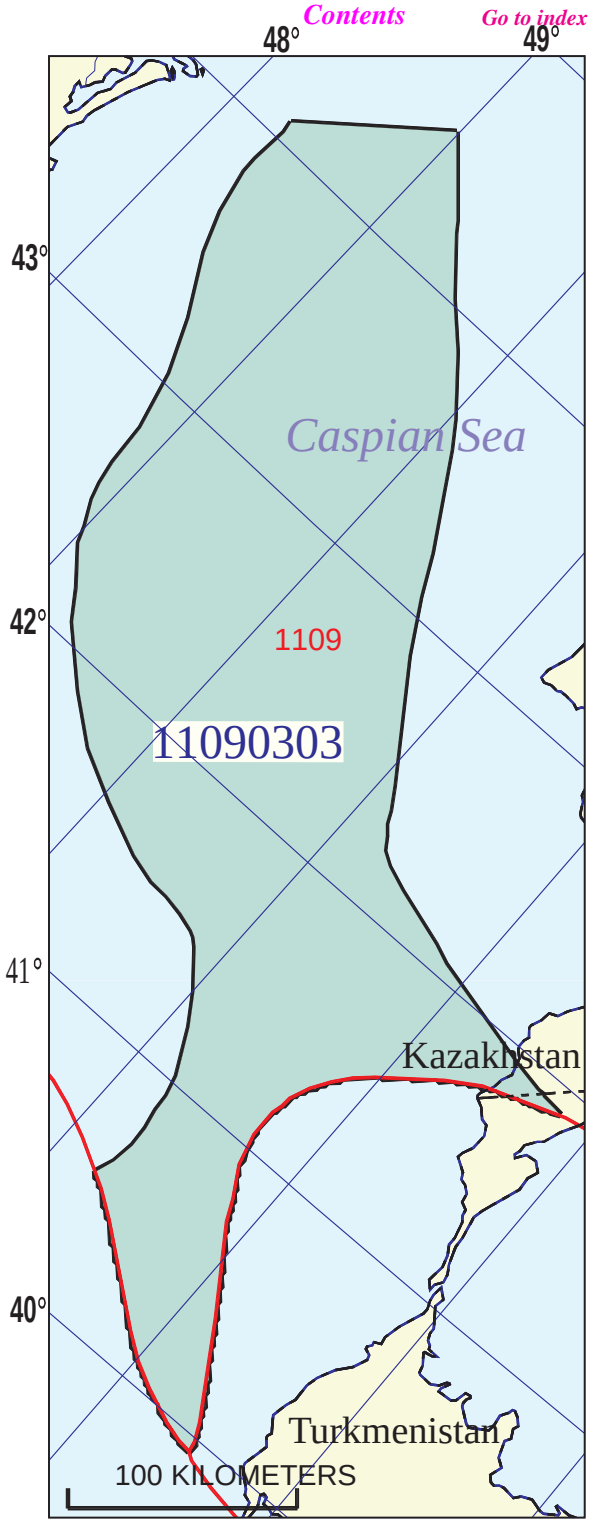
SEALS: Thick plastic shales of the Maykop series provide an excellent regional seal.

REFERENCES:

Lebedev, L.I., Aleksina, I.A., Kulakova, L.S., and Bars, E.A., 1987, Kaspiyskoye more–geologiya I neftegazonosnost (Caspian Sea: Geology and petroleum potential): Moscow, Nauka, 296 p.

Ulmishek, G.F., 1999, Petroleum geology and resources of the Middle Caspian basin (South Mangyshlak, Terek-Caspian, and Stavropol-Prikumsk petroleum systems): U.S. Geological Survey Open-File Report 99-50-B, 37 pages, 19 figures.

Ulmishek, G., and Harrison, W., 1981, Petroleum geology and resource assessment of the Middle Caspian basin, USSR, with special emphasis on the Uzen field: Argonne National Laboratory Report ANL/ES-116, 147 p.



Central Caspian Offshore Assessment Unit - 11090303

EXPLANATION

- Hydrography
- Shoreline
- 1109 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 11090303 — Assessment unit code and boundary

Projection: Equidistant Conic. Central meridian: 100. Standard Parallel: 58 30

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

Date:……..	7/14/98		
Assessment Geologist:……..	G.F. Ulmishek		
Region:……..	Former Soviet Union	Number:	1
Province:……..	Middle Caspian Basin	Number:	1109
Priority or Boutique……	Priority		
Total Petroleum System:……	Stavropol-Prikumsk	Number:	110903
Assessment Unit:……	Central Caspian Offshore	Number:	11090303
* 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?……. 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……	1.0
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	0.9

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):…….. 0.72

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.	18	max no.	35
Gas fields:……min. no. (>0)	15	median no.	25	max no.	45

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	20	max. size	150
Gas in gas fields (bcfg):……	min. size	60	median size	180	max. size	1000

Assessment Unit (name, no.)
Central Caspian Offshore, 11090303

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)……	50	60	70

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	2	7	15
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)……	32	37	44
Sulfur content of oil (%)……	0.05	0.1	0.2
Drilling Depth (m) ……	1500	2500	4000
Depth (m) of water (if applicable)……	20	150	500

Gas Fields:	minimum	median	maximum
Inert gas content (%)……	0.1	2	7
CO_2 content (%)……	0.1	0.3	3
Hydrogen-sulfide content (%)……	0	0	0
Drilling Depth (m)……	1000	2500	4000
Depth (m) of water (if applicable)……	20	100	300

Assessment Unit (name, no.)
Central Caspian Offshore, 11090303

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

1. Turkmenistan represents 10 areal % of the total assessment unit

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

Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		20	
Portion of volume % that is offshore (0-100%).....		100	

2. Kazakhstan represents 35 areal % of the total assessment unit

Oil in Oil 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	

Gas in Gas 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	

3. Azerbaijan represents 20 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):.....			
Volume % in parcel (areal % x richness factor):...		20	
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):...		20	
Portion of volume % that is offshore (0-100%).....		100	

4. Russia represents 35 areal % of the total assessment unit

Oil in Oil 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	

Gas in Gas 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	