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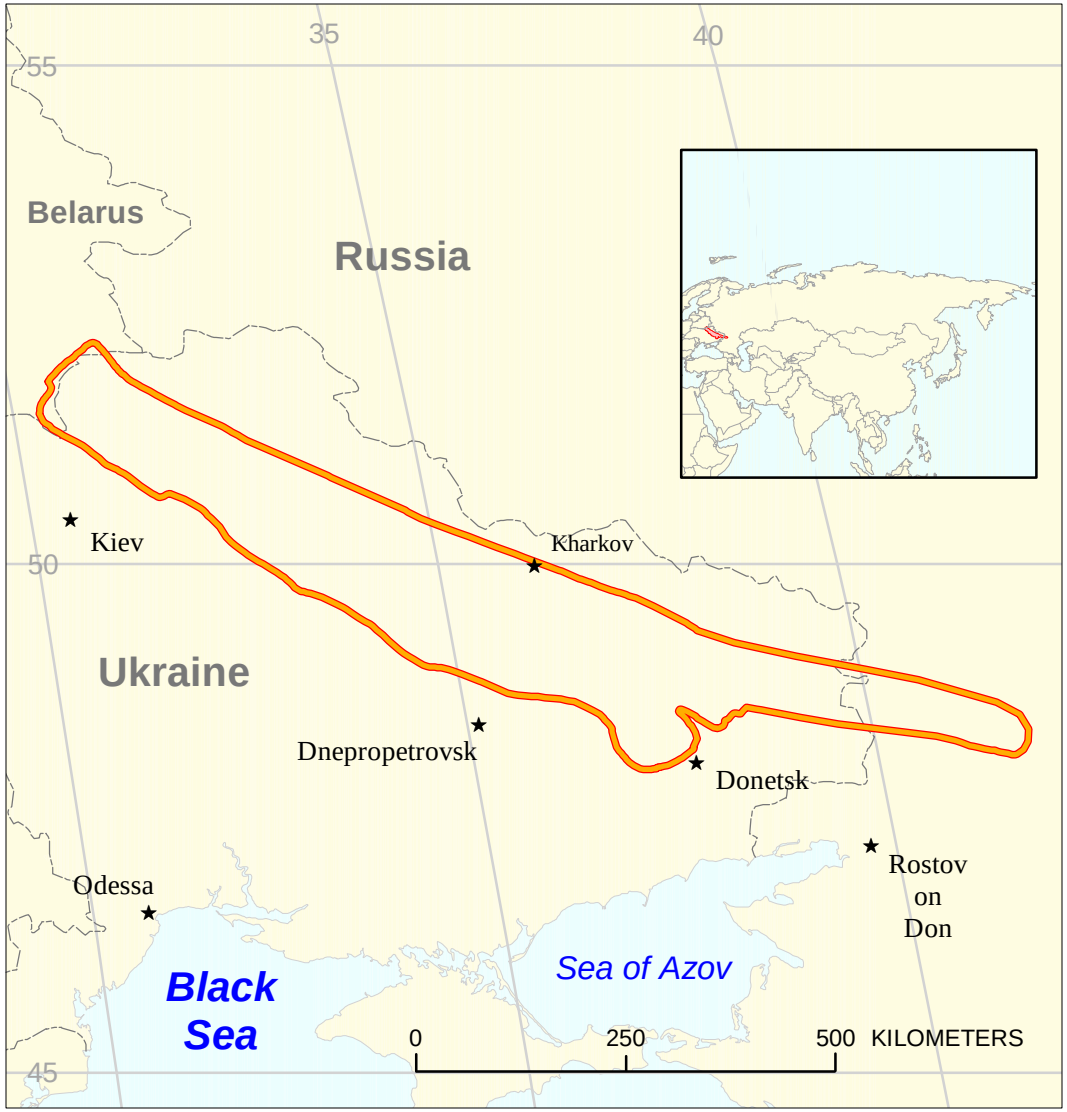
Continuous Basin-Centered Gas Accumulation Assessment Unit 11090103



Continuous Basin-Centered Gas Accumulation Assessment Unit 10090103
Dnieper-Donets Basin Geologic Province 1009

Geologic Summary

Detailed map of this assessment unit

Assessment Input Data

Assessment Results

☐ This assessment unit was not
☐ assessed quantitatively.

USGS PROVINCE: Dnieper-Donets Basin (1009) **GEOLOGIST:** G.F. Ulmishek

TOTAL PETROLEUM SYSTEM: Dnieper-Donets Paleozoic (100901)

ASSESSMENT UNIT: Continuous Basin-Centered Gas Accumulation (10090103)

DESCRIPTION: Continuous gas accumulation has been identified in Carboniferous clastic rocks at depths of 3.5 to 5 km over most of the central basin area. The accumulation extends into the adjacent Donbas foldbelt (USGS province 1014) where it occurs at a depth of 600 to 800 m. No quantitative assessment of this unit is provided in this report.

SOURCE ROCKS: Devonian and Carboniferous anoxic black shales and Carboniferous coaly clastics and coal seams (in the southeast) could have sourced the gas.

MATURATION: The entire gas accumulation occurs deeper than vitrinite reflectance surface of R_o=0.9.

RESERVOIR ROCKS: Reservoir rocks are low-permeable sandstones and siltstones. Loss of permeability was caused by deep maximum subsidence.

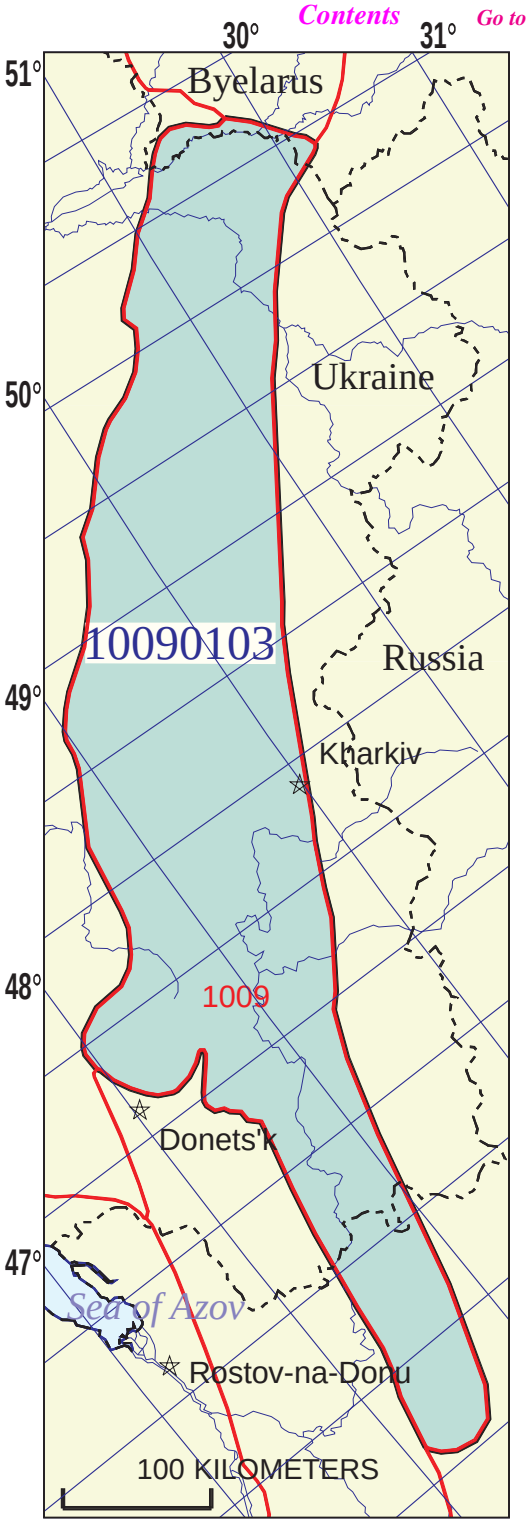
TRAPS: Capillary forces provide the trapping mechanism.

SEALS: No regional seal exists above the gas accumulation.

REFERENCES:

Law, B.E., Ulmishek, G.F., Clayton, J.L., Kabyshev, B.P., Pashova, N.T., and Krivosheya, V.A., 1998, Basin-centered gas evaluated in Dnieper-Donets basin, Donbas foldbelt, Ukraine: Oil and Gas Journal, November 23, p. 74-78.

Ulmishek, G.F., Bogino, V.A., Keller, M.B., and Poznyakevich, Z.L., 1994, Structure, stratigraphy, and petroleum geology of the Pripyat and Dnieper-Donets basins, Byelarus and Ukraine, *in* Landon, S.M., ed., Interior rift basins: American Association of Petroleum Geologists Memoir 59, p. 125-156.



Continuous Basin-Centered Gas Accumulation Assessment Unit - 10090103

EXPLANATION

- Hydrography
- Shoreline
- 1009 — Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 10090103 — 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:…….. 5/6/99
Assessment Geologist:…….. G.F. Ulmishek
Region:…….. Former Soviet Union Number: 1
Province:…….. Dnieper-Donets Basin Number: 1009
Priority or Boutique…… Priority
Total Petroleum System:…… Dnieper-Donets Paleozoic Number: 100901
Assessment Unit:…… Continuous Basin-Centered Gas Accumulation Number: 10090103
* Notes from Assessor

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. _____ 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: _____ Gas: _____
Established (>13 fields) _____ Frontier (1-13 fields) _____ 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 _____ 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……	
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	

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

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

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) _____ median no. _____ max no. _____
Gas fields:……min. no. (>0) _____ median no. _____ max no. _____

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 _____ median size _____ max. size _____
Gas in gas fields (bcfg):……min. size _____ median size _____ max. size _____

Assessment Unit (name, no.)

_____

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……			
NGL/gas ratio (bngl/mmcfg)……			

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……			
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)……			
Sulfur content of oil (%)……			
Drilling Depth (m) ……			
Depth (m) of water (if applicable)……			

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

Assessment Unit (name, no.)

_____

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

1. _____ represents _____ areal % of the total assessment unit

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

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