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Main Basin Platform
Assessment Unit 10080102

Main Basin Platform Assessment Unit 10080102

Timan-Pechora Basin Geologic Province 1008

Geologic Summary

Detailed map of this assessment unit

Exploration/Discovery-History Data

- Plots of Known Field Sizes
- Plots of Grown Resources
- Tables

Assessment Input Data

Assessment Results

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

USGS PROVINCE: Timan-Pechora Basin (1008) **GEOLOGIST:** S.J. Lindquist

TOTAL PETROLEUM SYSTEM: Domanik-Paleozoic (100801)

ASSESSMENT UNIT: Main Basin Platform (10080102) (established)

DESCRIPTION: Assessment unit incorporates the major portion of the province with the bulk of known production. It includes numerous stratigraphic trends (such as shelf-edge reefs), unconformity trends, and aulocogens with complex structural history. The onshore area has not yet been targeted for stratigraphic traps and the offshore area is sparsely explored.

SOURCE ROCKS: Main source rocks are oil-prone Upper Devonian (Frasnian) basinal siliceous shales, limestones, and marls (age equivalents of shelf edge reef reservoirs). Of lesser importance are Ordovician to Lower Devonian shales in the northeastern onshore part of the province and offshore Triassic source rocks to the north within the South Barents Basin.

MATURATION: Most Domanik maturation is probably Permo-Triassic in age, but local or regional generation as early as Early Carboniferous(?) and as late as Middle Jurassic also has been proposed.

MIGRATION: The source rock is present in close proximity to all known production. Early structural traps associated with Ordovician rifting underwent inversion and modification during later Paleozoic and Mesozoic orogenies (Hercynian and Early Cimmerian). Remigration and loss of hydrocarbons likely occurred.

RESERVOIR ROCKS: Most known Timan-Pechora reserves are in Middle Devonian siliciclastics, Upper Devonian to Carboniferous (Tournaisian) reefs, and Lower Permian reefs and carbonates. However, the entire stratigraphic section, from Ordovician to Triassic, has production.

TRAPS AND SEALS: Most known traps are anticlines formed by normal, reverse, and thrust faulting; simple fault traps also occur. Structural inversion has been important. The overprint of Hercynian and Early Cimmerian compression is more pronounced on the eastern side of the assessment unit. Stratigraphic traps are underexplored. Seals are regional and local Paleozoic and Mesozoic shales (many associated with source rock intervals) and limited Paleozoic evaporites.

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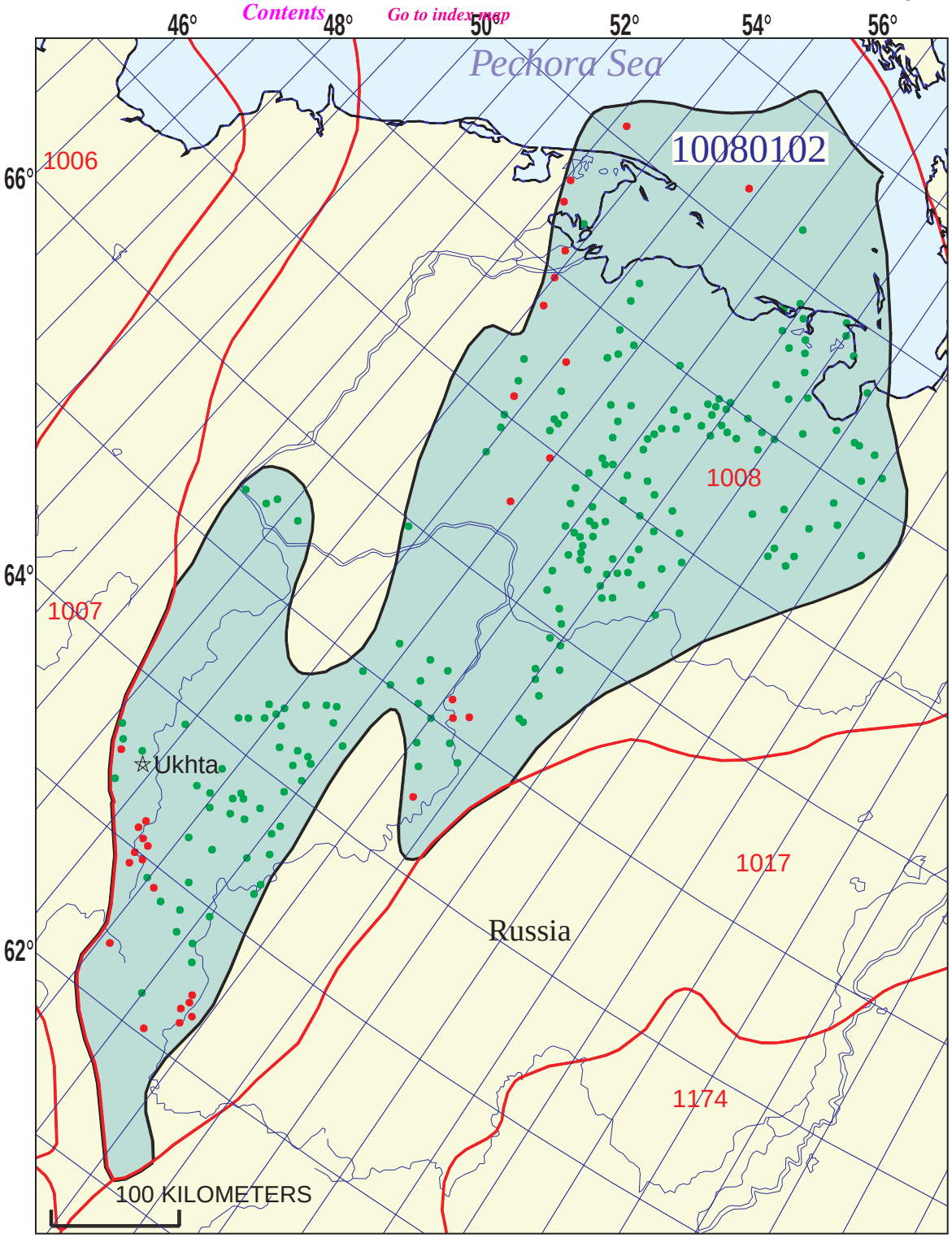

Main Basin Platform
Assessment Unit - 10080102

EXPLANATION

- Hydrography
- Shoreline
- 1008 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 10080102 Assessment unit code and boundary

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

USGS science for a changing world

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

Date:……..	3/30/99		
Assessment Geologist:……..	G.F. Ulmishek		
Region:……..	Former Soviet Union	Number:	1
Province:……..	Timan-Pechora Basin	Number:	1008
Priority or Boutique……	Priority		
Total Petroleum System:……	Domanik-Paleozoic	Number:	100801
Assessment Unit:……	Main Basin Platform	Number:	10080102
* Notes from Assessor	No growth factor used. May be additional fields exceeding minimum size.		

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?……. 5 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: 152 Gas: 16
Established (>13 fields) X Frontier (1-13 fields) _____ Hypothetical (no fields) _____

Median size (grown) of discovered oil fields (mmboe):
1st 3rd 32.4 2nd 3rd 20.5 3rd 3rd 15.1
Median size (grown) of discovered gas fields (bcfg):
1st 3rd 108 2nd 3rd 2820 3rd 3rd 200

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)	50	median no.	100	max no.	200
Gas fields:……min. no. (>0)	10	median no.	30	max no.	70

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	5	median size	20	max. size	1400
Gas in gas fields (bcfg):……	min. size	30	median size	180	max. size	7000

Assessment Unit (name, no.)
Main Basin Platform, 10080102

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……	400	700	1000
NGL/gas ratio (bngl/mmcfg)……	30	60	90

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	20	40	60
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)……	22	35	50
Sulfur content of oil (%)……	0.1	0.7	2
Drilling Depth (m) ……	1200	2500	4000
Depth (m) of water (if applicable)……	0	10	30

Gas Fields:	minimum	median	maximum
Inert gas content (%)……	0.5	3	8
CO_2 content (%)……	0.1	0.6	4
Hydrogen-sulfide content (%)……	0	0.05	0.2
Drilling Depth (m)……	1200	3000	4000
Depth (m) of water (if applicable)……	0	10	30

Assessment Unit (name, no.)
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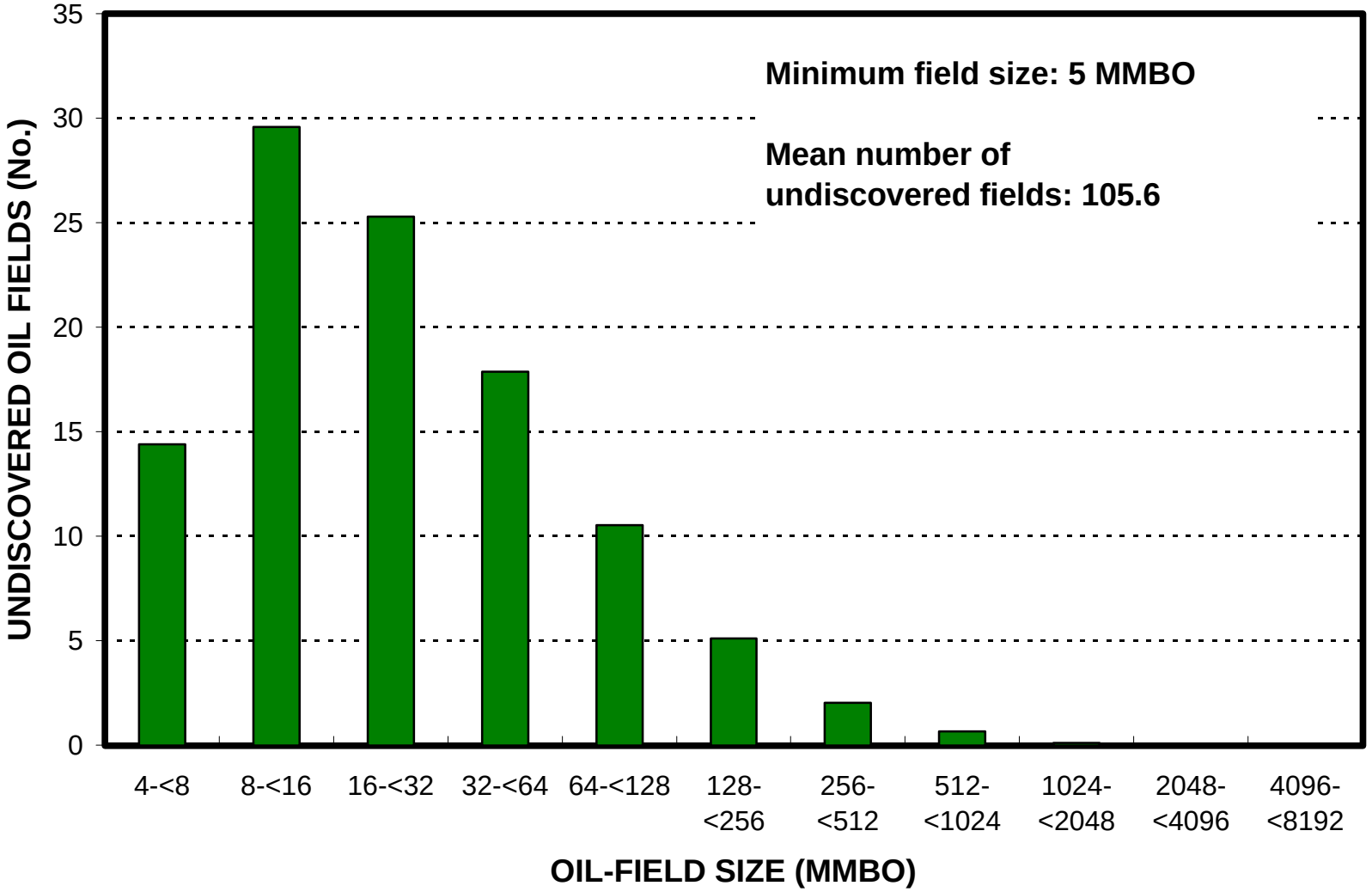
ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT TO COUNTRIES OR OTHER LAND PARCELS (uncertainty of fixed but unknown values)

1. Russia 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%)……		20	

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%)……		40	

Main Basin Plaform, AU 10080102
Undiscovered Field-Size Distribution



Main Basin Plaform, AU 10080102
Undiscovered Field-Size Distribution