

OIL & GAS UKRAINE

2ND
ROUND



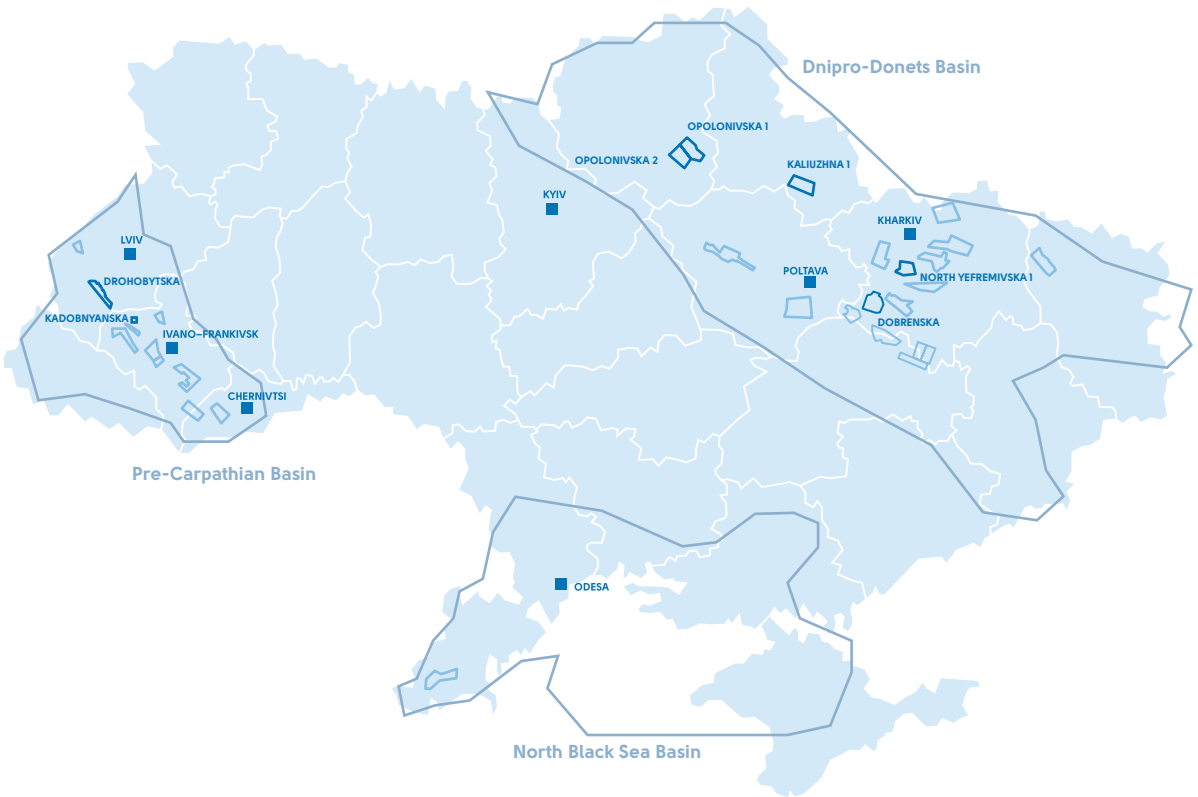
30

AUCTION BLOCKS




LICENSING ROUNDS
INFORMATION AND
OPPORTUNITIES
2019

30

AUCTION BLOCKS FOR LICENSING ROUNDS



Round 2 (January - April 2019)

-  Blocks for round 2
-  Blocks for further rounds
-  Main oil and gas basins

Auction Blocks Release

No.	Block	Region	Area km ²	Application opening date	Auction date
1	Vatazhkivska	Poltava	181,80	December 2018	March 2019
2	Dubrivsko-Radchenkivska	Poltava	65,35	December 2018	March 2019
3	Svitankovo-Lohivska	Kharkiv	197,49	December 2018	March 2019
4	Pechenizko-Kochetkivska	Kharkiv	262,73	December 2018	March 2019
5	Saltivska	Kharkiv	26,16	December 2018	March 2019
6	Kniazhynska	Kharkiv	75,32	December 2018	March 2019
7	Pivdenno-Kobzivska	Kharkiv	368,08	December 2018	March 2019
8	Dykhtynetska	Chernivtsi/Ivano-Frankivsk	74,06	December 2018	March 2019
9	Zakhidnotokarsko-Krasnianska	Luhansk	91,06	December 2018	March 2019
10	Suvorivska	Odesa	462,95	December 2018	March 2019
11	North Yefremivska	Kharkiv	99,50	January 2019	April 2019
12	Dobrenska	Kharkiv	122,23	January 2019	April 2019
13	Opolonivska 1	Chernihiv	247,87	January 2019	April 2019
14	Opolonivska 2	Chernihiv	230,51	January 2019	April 2019
15	Kaliuzhna 1	Sumy	162,36	January 2019	April 2019
16	Drohobytka	Lviv	140,90	January 2019	April 2019
17	Kadobnyanska	Ivano-Frankivsk	21,17	January 2019	April 2019
	Kokhivska	Dnipropetrovsk/Kharkiv	346,17	In preparation	
	Rozdolivsko-Uspenivska 1	Dnipropetrovsk/Kharkiv	271,14	In preparation	
	Rozdolivsko-Uspenivska 2	Dnipropetrovsk/Kharkiv	296,40	In preparation	
	Orilsko-Brusivska	Dnipropetrovsk/Kharkiv	234,60	In preparation	
	Yefremivsko-Oleksiiivska	Kharkiv	237,35	In preparation	
	Novopokrovska	Kharkiv	181,43	In preparation	
	Tatalivska	Chernivtsi	24,10	In preparation	
	Luchkivsko-Berezivska	Ivano-Frankivsk	73,17	In preparation	
	Yasenska	Ivano-Frankivsk	35,35	In preparation	
	Pivdenno-Slyvkynska	Ivano-Frankivsk	11,69	In preparation	
	Skhidno-Kosmatska	Ivano-Frankivsk	6,91	In preparation	
	Bolehivsko-Smolianska	Ivano-Frankivsk	10,39	In preparation	
	Hoshivska	Ivano-Frankivsk	49,00	In preparation	
	Yavorivska	Lviv	43,95	In preparation	

INTRODUCTION

2ND INTERNATIONAL OIL AND GAS LICENSING ROUND IN UKRAINE

In December, 2018 the State Geological Service of Ukraine released 30 onshore petroleum blocks for sale in online auctions at the public trading platform Prozorro. Sale. The total acreage of blocks is 4 630 sq. km.

The concession blocks are auctioning in a series of licensing rounds. All parcels are located in proven petroleum provinces with well-developed midstream infrastructure and widely covered by geophysical surveys.

In the second round, announced on January, 29, 2019, seven blocks were offered in five regions of Ukraine, covering over 1 000 sq. km. All licenses are proposed for exploration and production of hydrocarbons for a period of 20 years.

The undiscovered oil and gas resources of all blocks are officially estimated as inferred. The company which submits the highest bid in terms of cash bonus will be awarded lease rights for a specific parcel.

There are also minimum exploration program requirements for each license, for instance: processing of legacy seismic data, conducting new seismic surveys and exploration drilling.

Bidders will have ninety calendar days to decide and submit their applications. The second online auction will take place in May, 2019.

The background image shows an industrial facility with a complex network of yellow pipes, blue valves, and metal walkways. A large yellow rectangular box is overlaid on the center of the image, containing text. In the top right corner of this box is a blue circular icon with a white flame. The sky is blue with scattered white clouds.

**Ukraine
NOW**

ROUND 2

BLOCK 11

NORTH EFREMOVSKA LICENSE

LOCATION

North-Efremivska block is located at the intersection of Zmiyiv, Pervomaysk and Nova Vodolaha districts of Kharkiv region. Acreage of the block is 99.51 sq.km.

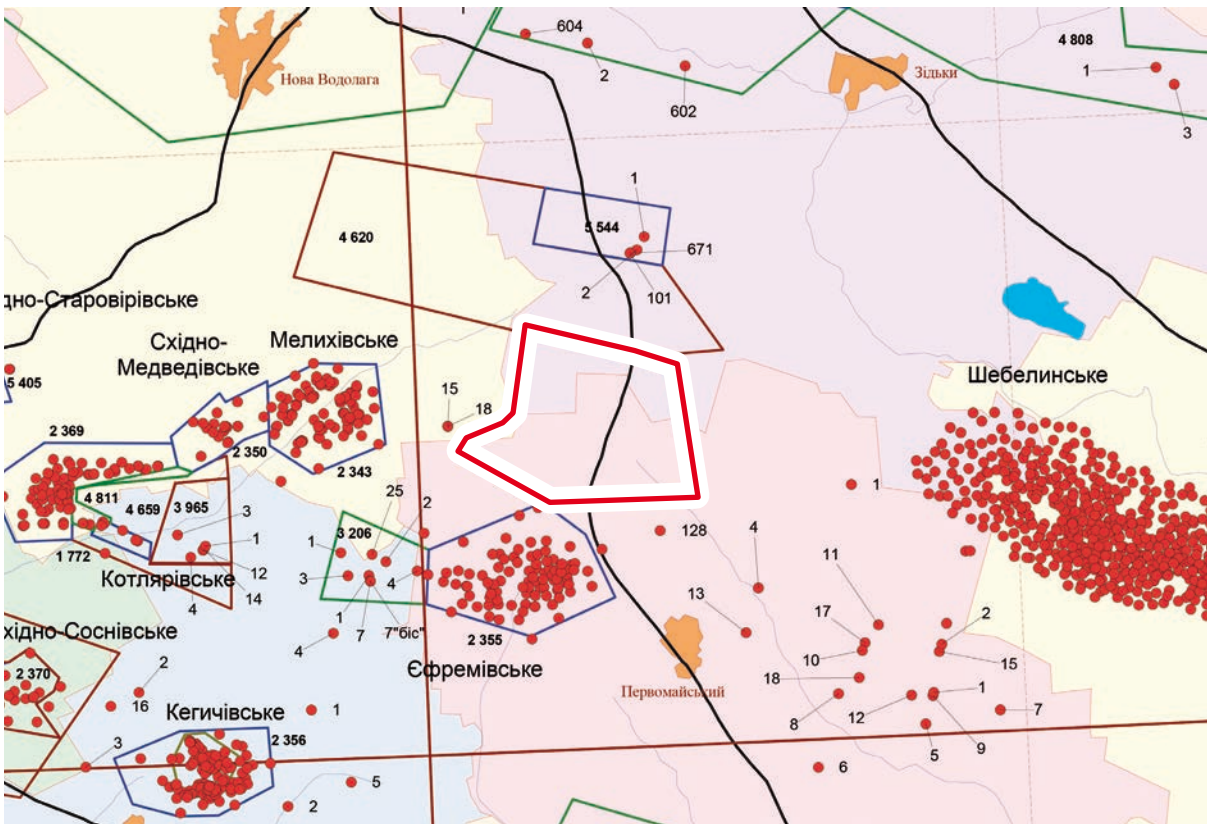
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Bezpalivske, Shurinske, Shebelynske, Efremivske, Melykhivske fields.

Map of North Efremivska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	36	5	24.89	49	33	43.55	36	5	30.79	49	33	43.84
2	36	10	42.44	49	32	45.77	36	10	48.34	49	32	46.06
3	36	12	46.03	49	32	16.48	36	12	51.93	49	32	16.77
4	36	13	29.53	49	28	0.47	36	13	35.42	49	28	0.77
5	36	6	15.42	49	28	2.54	36	6	21.32	49	28	2.84
6	36	1	52.82	49	29	46.99	36	1	58.72	49	29	47.30
7	36	2	19.28	49	30	12.05	36	2	25.19	49	30	12.36
8	36	4	7.68	49	30	38.07	36	4	13.58	49	30	38.37
9	36	4	38.93	49	30	56.27	36	4	44.83	49	30	56.57

- well
- ★ gas-distribution plant
- gas pipeline
- NORTH EFREMOVSKA BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of oil and gas, North-Efremivska block belongs to Mashivka and Shebelynka petroleum province. In terms of tectonics, the block is located in the northern cutoff part of the Dnipro-Donets graben. The depth of the bedding of the basement within the block is 15-17 km.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

not estimated.

Well data

No wells have been drilled at the area of the block.

Seismic surveys

The main seismic surveys of North Efremivska block have been done by common depth point method in 1981-83, by team 37/81. The regional CDP profile Leventsovka-Bezlyudivka crosses the block from the southwest to the northeast.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1981	11	221,2	12-24
1983	1	9,0	12

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

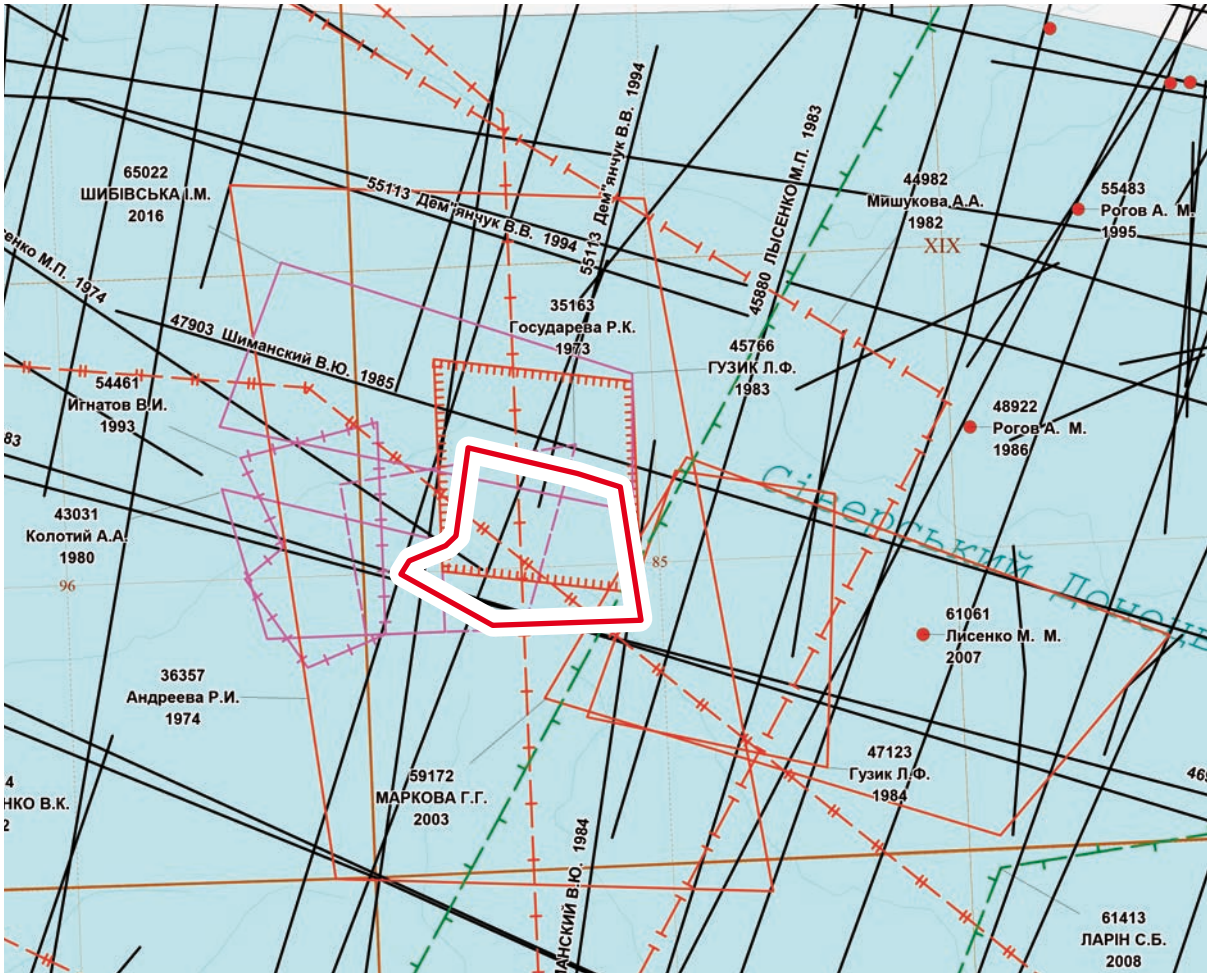
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 11

NORTH EFREMOVSKA LICENSE

Map of geophysical surveys and seismic lines





MAP SYMBOLS

 1:25 000

 1:50 000


 1:100 000

 geophysical survey

 seismic lines



NORTH EFREMOVSKA BLOCK

 survey with no mapping

45860 report number

Рогов А.М. author of the report

1982 year of the report



BLOCK 12

DOBRENSKA LICENSE

LOCATION

Dobrenska block is located in Krasnohrad district of Kharkiv region. Acreage of the block is 122.23 sq.km.

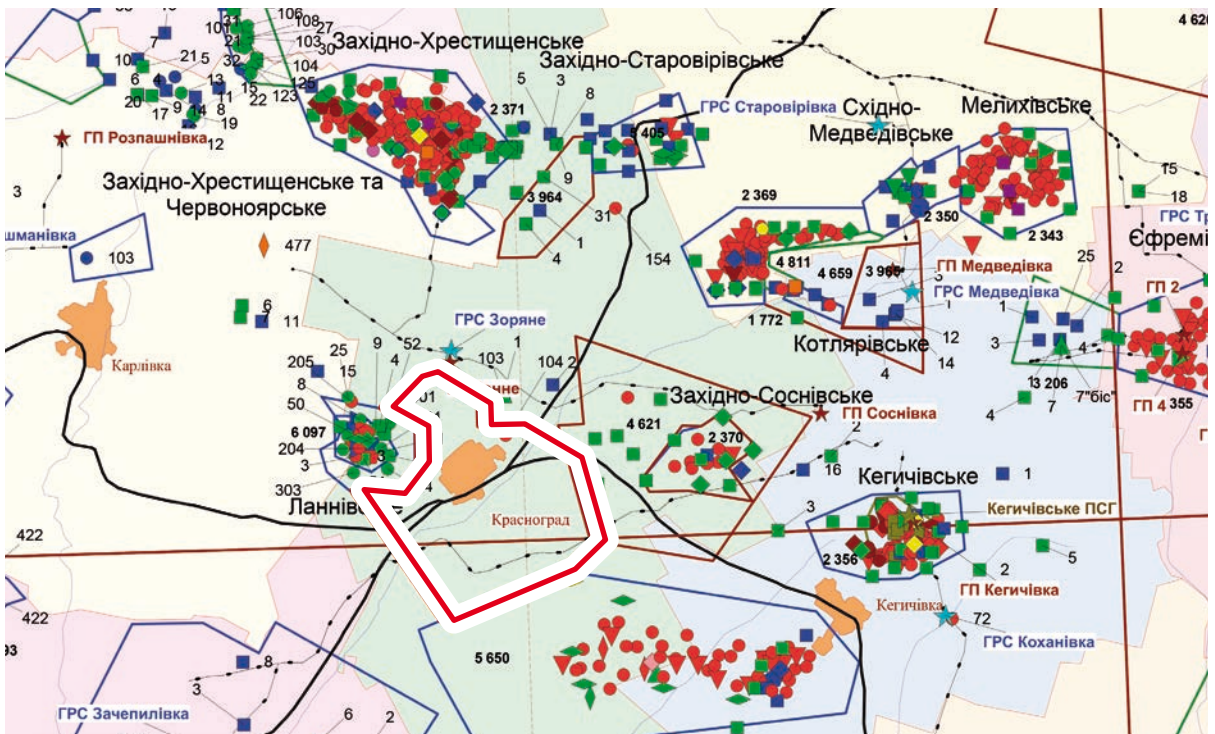
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Lannivske, Kobzivske West-Sosnivske gas condensate fields.

Map of Dobrenska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	35	25	6.28	49	25	37.06	35	25	12.20	49	25	37.40
2	35	27	42.42	49	24	31.62	35	27	48.33	49	24	31.96
3	35	27	42.42	49	23	49.73	35	27	48.33	49	23	50.07
4	35	29	23.61	49	23	48.82	35	29	29.52	49	23	49.16
5	35	32	11.83	49	22	39.32	35	32	17.74	49	22	39.66
6	35	33	14.43	49	19	55.73	35	33	20.34	49	19	56.07
7	35	31	40.43	49	18	59.73	35	31	46.33	49	19	0.07
8	35	25	30.75	49	17	26.99	35	25	36.65	49	17	27.34
9	35	21	12.42	49	21	49.72	35	21	18.34	49	21	50.07
10	35	23	15.42	49	21	39.72	35	23	21.34	49	21	40.07
11	35	24	31.42	49	22	40.73	35	24	37.34	49	22	41.07
12	35	24	33.42	49	23	50.73	35	24	39.33	49	23	51.07
13	35	22	47.42	49	24	31.73	35	22	53.34	49	24	32.07
14	35	24	18.30	49	25	29.12	35	24	24.22	49	25	29.47

- well
- ★ gas-distribution plant
- gas pipeline
- DOBRENSKA BLOCK

GEOLOGICAL CHARACTERISTICS

Dobrenska block is located in the central, the most submerged part of the Dnipro-Donets Basin and belongs to the Mashivka and Shebelynka petroleum regions. The depth of the basement embed within the block is 11.0-13.5 km. Dobrenska structure is located in the south-eastern part of the block.

In the north-western part, Dobrenska block is determined far-off plunge of the Lannivska structure. The Lannivska structure is a brachyanticlinal fold of the south-eastern strike, the western part of which is complicated by the Verhnyolannivsky salt stock.

Dobrenska and Lannivska structures are separated by a deep upfold. In the northern and eastern parts of Dobrenska block are developed South-Verbivsky and South-Sosnivsky downfolds.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Not estimated.

Well data

In the eastern part of Dobrenska block, appraisal well No. 632 has been drilled, which was stopped at a depth of 4500 meters in the Cartamishean deposits of Permian (upper Carboniferous).

Seismic surveys

Dobrenska block was not explored deliberately by geological exploration. At the boundary of the block, along its perimeter come the ends of lines, performed in the 1970's and 90's and aimed at studying areas in the vicinity.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1977	4	50,3	12-24
1984	2	27,0	12-24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

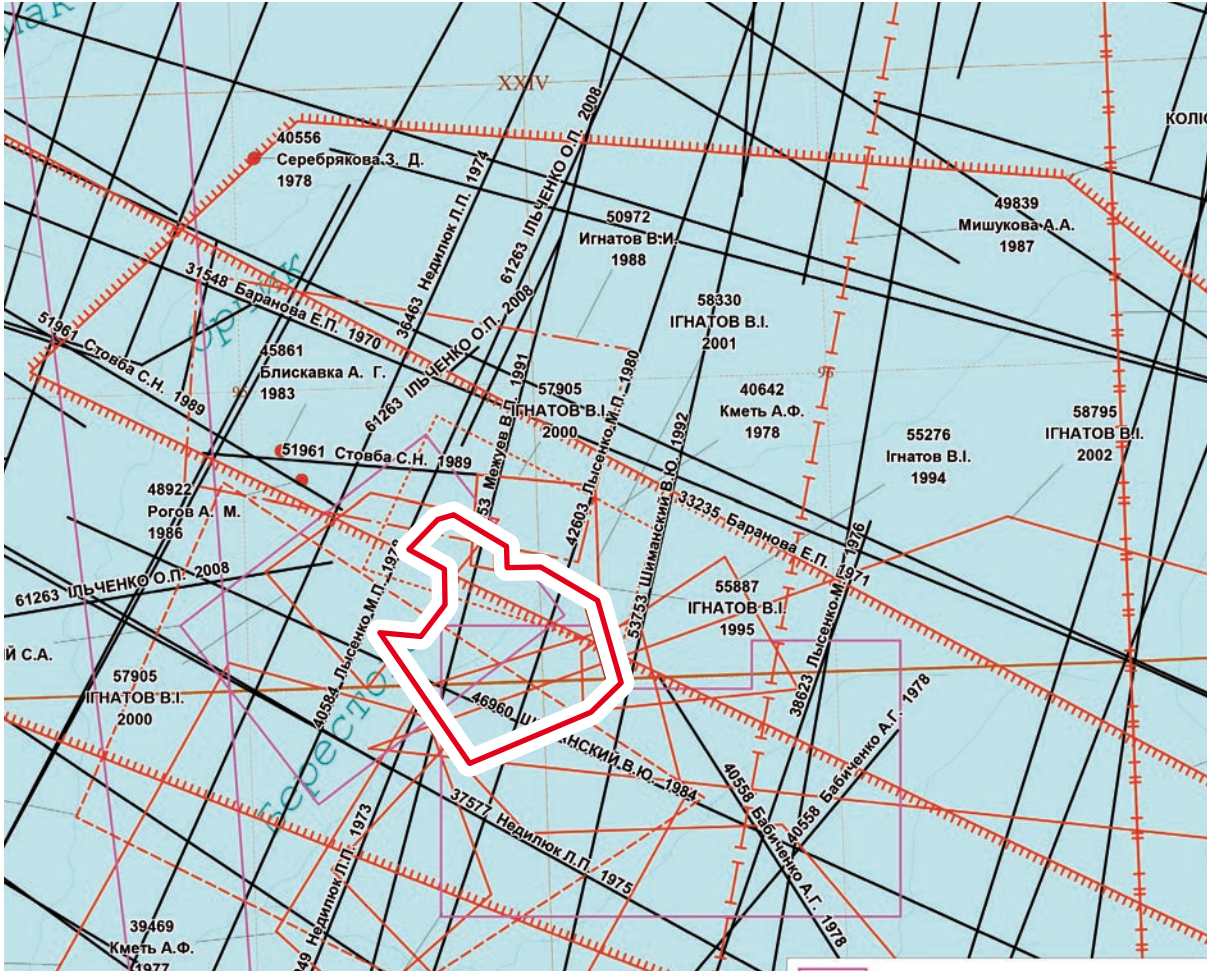
Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block's area;

Stage III (24 months) – one productive well drilling.








BLOCK 12

DOBRENSKA LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

- | | | | | | |
|--|--------------------|---|------------------------|-------------------|----------------------|
|  | 1:25 000 |  | DOBRENSKA BLOCK | 45860 | report number |
|  | 1:50 000 | | | Рогов А.М. | author of the report |
|  | 1:100 000 | | | 1982 | year of the report |
|  | geophysical survey |  | survey with no mapping | | |
|  | seismic lines | | | | |



BLOCK 13

OPOLONIVSKA 1 LICENSE

LOCATION

Opolonivska-1 block is located in Borzna and Bakhmach districts of Chernihiv region at a distance of 10 km to the west of Bakhmach city. Acreage of the block is 247,87 sq. km.

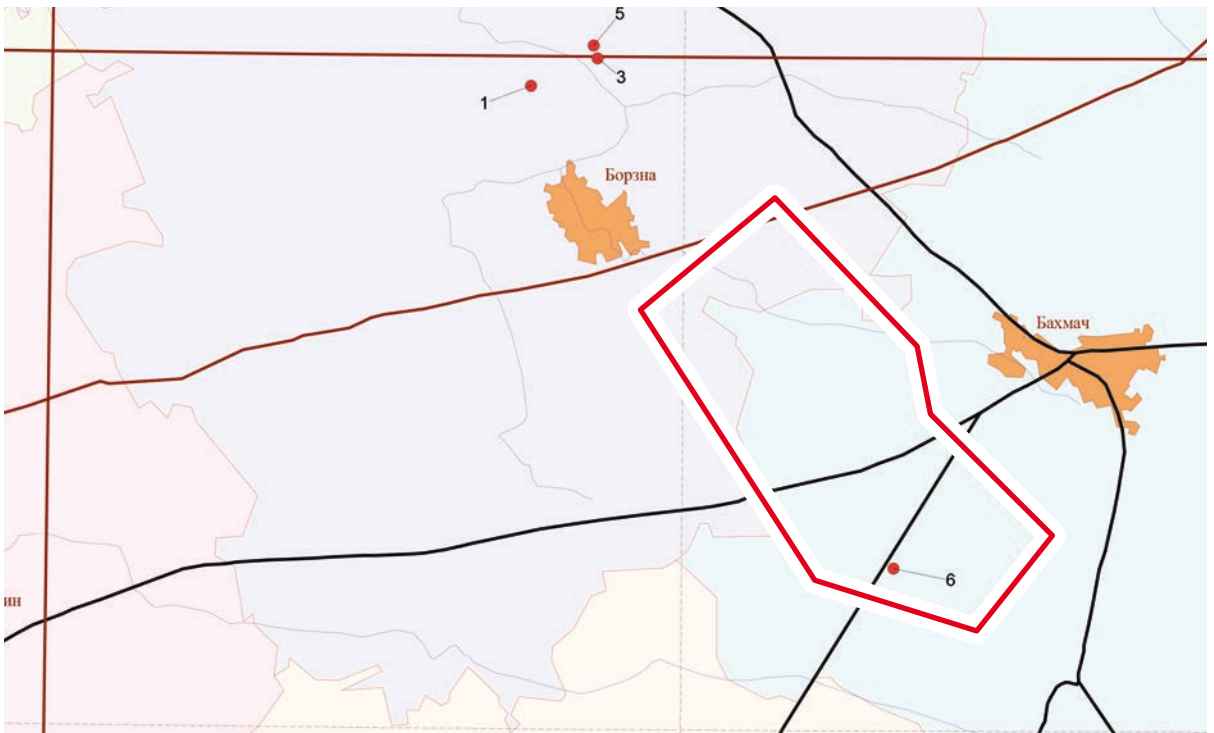
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Bakhmach oil field with deposits in the upper Visean stage is located within the block. To the south-east of the block is Sofiivska oil field, and to the north-west - Kynashivska and Yadutivska fields.

Map of Opolonivska 1 block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	32	35	54.10	51	4	32.67	32	36	0.39	51	4	33.09
2	32	27	41.97	51	12	26.32	32	27	48.28	51	12	26.74
3	32	33	57.07	51	15	44.68	32	34	3.39	51	15	45.09
4	32	40	37.09	51	11	24.68	32	40	43.39	51	11	25.09
5	32	41	15.09	51	9	25.68	32	41	21.39	51	9	26.09
6	32	46	57.11	51	5	52.68	32	47	3.39	51	5	53.09
7	32	43	27.11	51	3	4.68	32	43	33.39	51	3	5.09

- well
- ★ gas-distribution plant
- gas pipeline
- OPOLONIVSKA 1 BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of oil and gas geological zoning, the block is located mainly within the northern part of the Sofiivka and Monastyryshche petroleum regions of the Dnipro-Donets Basin.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

As of January 2018, the possible oil reserves of the Bakhmach deposit of subcategory 122 are 18 thousand tons, the accumulated extraction is 1 thousand tons.

Pivnichnozahorivska structure is accounted in the deposits of the Upper Devonian with inferred oil resources (subcategory 334) in the amount of 2.454 million tons

Inferred oil resources (subcategory 334) of Strilnykivska structure is 0.338 million tons.

Well data

14 wells were drilled at Bakhmach structure. Well No.6 yielded an inflow of oil with an initial rate of production of 10.2 m³ per day on a 10mm choke in the perspective intervals of 2797-2801m and 2811-2814m. Another well No. 526 discovered oil-saturated sandstones, and limestone with a crude smell in the core (1411,1-1426,6 m). There was no drilling at Strilnykivska and Pivnichnozahorivska structures.

Seismic surveys

According to the results of the seismic surveys carried out in 2008-2009, 11 profiles with a total length of 96,045 km have been performed, 19 profiles with a total length of 233 km (team 6/79, 6/82, 6/85) have been reworked, and a new passport for Pivnichnozahorivska structure have been issued (Sabetsky V. and co-authors, 2009).

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1971-1972	4	56,8	6-12
1974	2	17,0	24
1974-1975	3	36,7	24
1975	2	22,4	24
1976	6	105,1	12-24
1977	1	20	24
1978	8	116,6	24
1979	19	343,9	24
1980	3	42,5	24-48
1982	12	227,6	48
1985	4	49,8	24-48
1988	5	67,1	48
1990	1	11,6	48
1992	6	71,7	48
2002	3	26,3	48
2008	12	155,3	48-96
2013	2	19,5	48

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

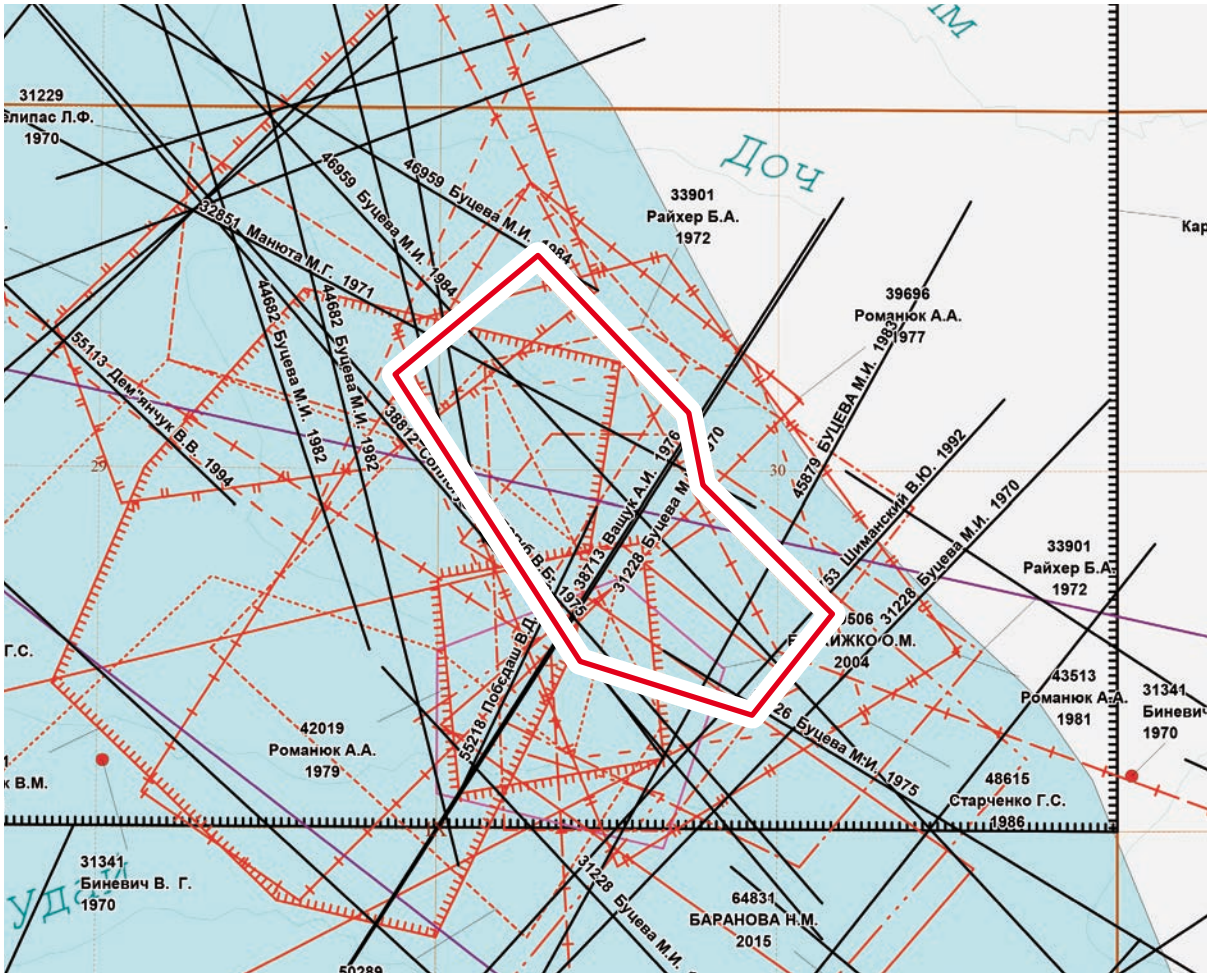
Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 13

OPOLONIVSKA 1 LICENSE

Map of geophysical surveys and seismic lines





MAP SYMBOLS

 1:25 000

 1:50 000

 1:100 000

 geophysical survey

 seismic lines



OPOLONIVSKA 1
BLOCK



survey with no mapping

45860 report number

Рогов А.М. author of the report

1982 year of the report



BLOCK 14

OPOLONIVSKA 2 LICENSE

LOCATION

Opolonivska-2 block is located in Borzna, Ichnya and Bakhmach districts of Chernihiv region at a distance of 15 km southwest of Bakhmach city. Acreage of the block is 230,51 sq. km.

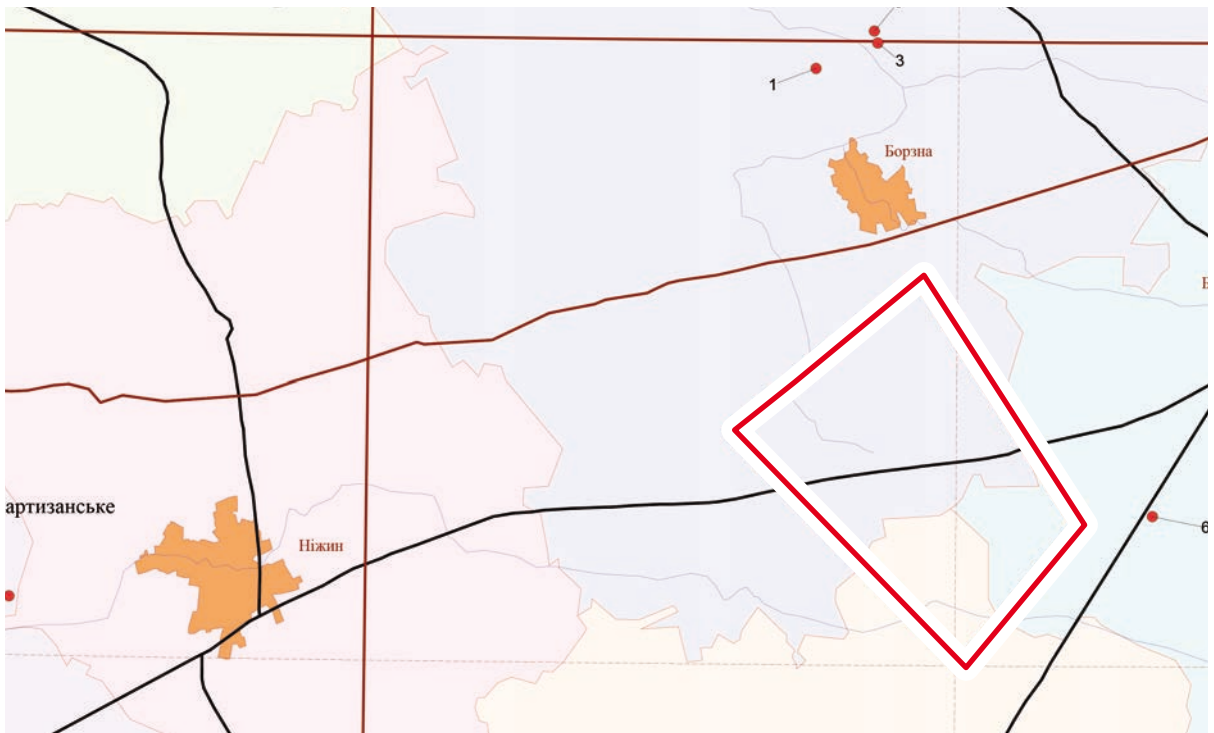
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Bakhmach oilfield with deposits in the Upper Visean stage is located in the proximity to the block in the northeastern direction. To the south-east of the block is located Sofivska oil field with deposits in the upper and lower Visean stage.

Map of Opolonivska 2 block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	32	35	54.10	51	4	32.67	32	36	0.39	51	4	33.09
2	32	29	58.10	50	59	59.66	32	30	4.39	51	0	0.10
3	32	18	12.08	51	7	28.66	32	18	18.39	51	7	29.10
4	32	21	13.08	51	9	0.66	32	21	19.39	51	9	1.10
5	32	27	41.97	51	12	26.32	32	27	48.28	51	12	26.74

- well
- ★ gas-distribution plant
- gas pipeline
- OPOLONIVSKA 2 BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of oil and gas geological zoning, the block is located in the northern part of the Sofiivka and Monastyryshche petroleum regions of the Dnipro-Donets Basin.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Inferred oil resources (subcategory 334) within the Northern zone (Yershivska and Yelska structures) are 0,325 million tons, Southern (Perovska and Nizhna structures) - 0,26 million tons. Total estimation resources for Yershivska zone of structures is 0,585 million tons.

Well data

In the northern part of the block, on the southern slope of the Velykozahorivska salt-dome structure, in 1979-1980, a structural exploratory well No. 794 with a depth 2290 meters was drilled with no commercial results.

Three exploration wells were drilled in the southern part of the block: two were within the scopes of Ivanhorodska structure and one was located at Plyskivska structure. According to the results of the drilling, it was discovered that upper Devonian deposits are highly submerged.

In the Yershivska zone of sandstone reservoir rock in the lower part of the Visean stage, which had been first explored in 1985 by seismic exploration, the drilling has not been carried out.

Seismic surveys

On the territory of Opolonivska 2 block, seismic surveys have been carried out by the teams of the state enterprise Ukrgeofizyka No. 6-11 / 76, 6/77, 6/78, 6/79, 6/85, 5/88, 5/92, 10/90.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1975	2	26,7	24
1976	10	212,75	24
1977	5	89,35	24
1978	7	129,32	24
1979	2	36,12	24
1982	1	15,7	48
1985	7	132,93	48
1988	1	13,5	48
1990	2	27,1	48
1992	8	82,45	48
2002	7	83,65	48

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block's area;

Stage III (24 months) – one productive well drilling.



BLOCK 15

KALIUZHNA 1 LICENSE

LOCATION

Kaliuzhna 1 block is located in the territory of Lebedyn and Okhtyrka districts of Sumy region. Acreage of the block is 162.36 sq. km.

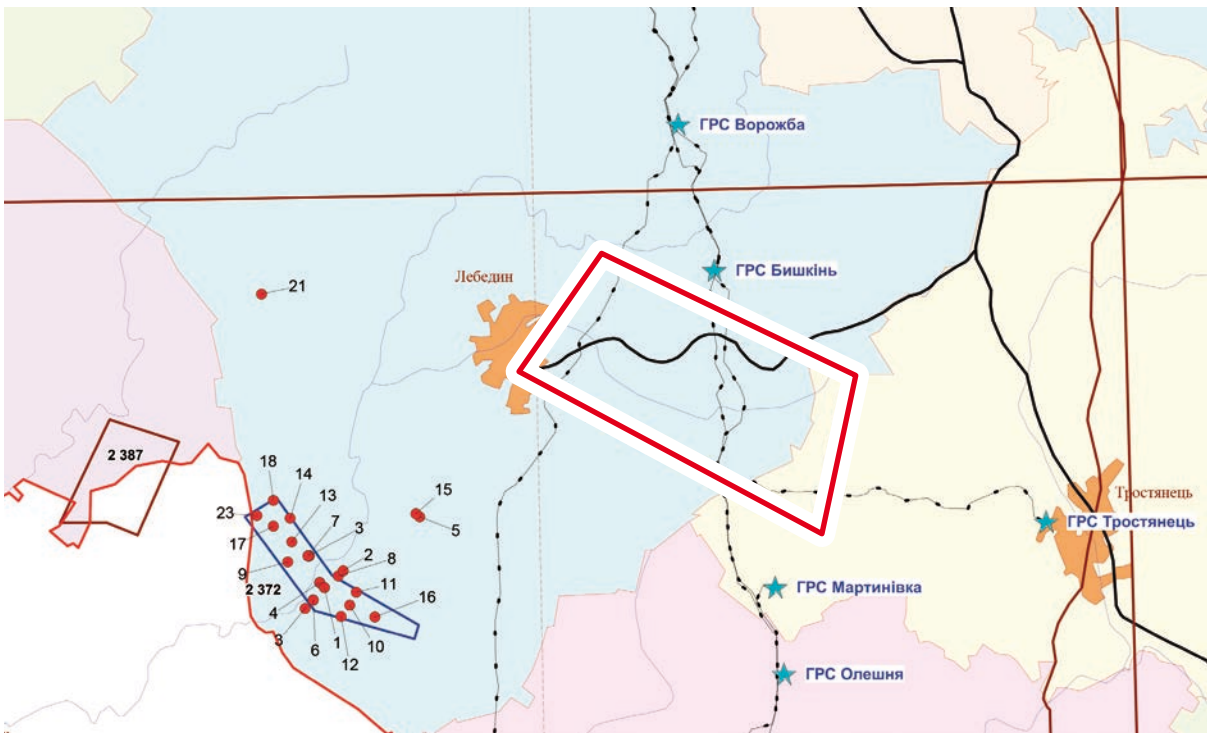
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Marchenkivske, Tarkhanivske.

Map of Kaliuzhna 1 block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	34	33	9.92	50	37	58.31	34	33	16.06	50	37	58.64
2	34	45	42.62	50	33	54.72	34	45	48.73	50	33	55.04
3	34	43	50.40	50	28	54.36	34	43	56.50	50	28	54.69
4	34	28	54.99	50	34	16.17	34	29	1.12	50	34	16.50

- well
- ★ gas-distribution plant
- gas pipeline
- KALIUZHNA 1 BLOCK

GEOLOGICAL CHARACTERISTICS

Kaliuzhna 1 block is located within the Northern edge of the Dnipro-Donets depression. Kaliuzhny object on the deposits of the lower Carboniferous (reflecting horizon V2-n) is an anticlinal belt of structures of the northwest strike, within which Lebedynska, Kalyuzhna and Tryhubivska folds are determined.

Dimensions of Kaliuzhny oil and gas object on the reflecting horizon V2-n (C1V2) within the structure contour minus 2275 meters of screening discordant fault are 13.0 x 1.7 km, the amplitude is 80 meters, the perspective area is 21 sq. km.

Productive horizons are expected in Upper Visean sediments of lower Carboniferous (sandstone), in unconsolidated reservoir rocks, in the range of depths 2000-2650 meters.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Preliminary estimation of inferred resources (subcategory D1) accounts for 1,155 million tons of oil equivalent.

Well data

In 1993-1994, on the Lebedynska structure, appraisal well No.1 was drilled at a depth of 3500 meters. The well passed 1070 meters of basement rocks, presented by crystalline schists. Waterflooded sandstones are discovered in the Visean deposits.

Seismic surveys

During 1984-1994, in the area of Kaliuzhna 1 block, seismic surveys by common depth point method have been carried out by teams 25/84, 47/89, 34/90. In 1990, an aerospace research of this territory has been conducted, according to which the Cheremkivska anomaly has been identified, which corresponds to the Tryhubivska and Kaliuzhna structures.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1990	9	180,8	24-36
1992	7	104,2	24-36

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 15

KALIUZHNA 1 LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

1:25 000

1:50 000

1:100 000

geophysical survey

seismic lines



KALIUZHNA 1 BLOCK

survey with no mapping

45860 report number

Рогов А.М. author of the report

1982 year of the report



BLOCK 16

DROHOBYTSKA LICENSE

LOCATION

Drohobyt'ska block has an area of 140.9 km² and is located in Mostyska, Sambir and Drohobych districts of Lviv region between the settlements of Stare Selo, Bolechivtsi, Nezhukhiv, Zaluzhany.

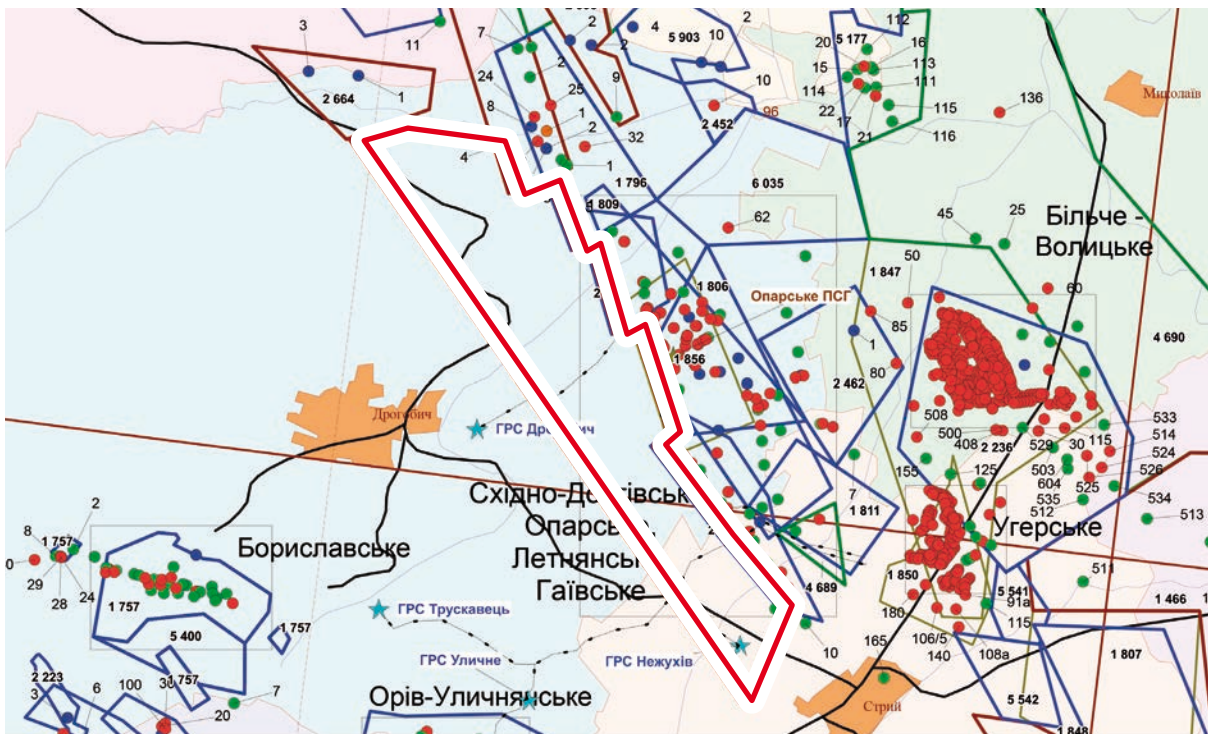
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Oparske gas, Haisvske gas condensate, Hrushivske gas condensate, Letnianske gas condensate and East-Dovhivske gas fields.

Map of Drohobyt'ska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	23	28	60.00	49	28	0.00	23	29	6.34	49	28	1.07
2	23	30	37.00	49	28	27.00	23	30	43.34	49	28	28.07
3	23	34	24.00	49	28	26.00	23	34	30.34	49	28	27.06
4	23	35	25.00	49	27	10.00	23	35	31.34	49	27	11.06
5	23	36	42.00	49	27	38.00	23	36	48.34	49	27	39.06
6	23	38	4.00	49	25	57.00	23	38	10.34	49	25	58.06
7	23	38	33.00	49	26	11.00	23	38	39.34	49	26	12.06
8	23	40	0.00	49	23	60.00	23	40	6.33	49	24	1.06
9	23	40	39.00	49	24	18.00	23	40	45.33	49	24	19.06
10	23	42	30.00	49	21	44.00	23	42	36.32	49	21	45.06
11	23	41	60.00	49	21	22.00	23	42	6.32	49	21	23.06
12	23	45	0.00	49	19	20.00	23	45	6.32	49	19	21.06
13	23	47	35.00	49	17	45.00	23	47	41.31	49	17	46.06
14	23	46	30.00	49	15	15.00	23	46	36.31	49	15	16.06

- well
- ★ gas-distribution plant
- gas pipeline
- DROHOBYTSKA BLOCK

GEOLOGICAL CHARACTERISTICS

The block is located within the Bilche-Volytska zone of the Pre-Carpathian Foredeep and the Kosiv-Uhersk subzone. The geological structures of the block involve Paleozoic, Mesozoic and Cenozoic sediments. Commercial pools of gas on the deposits in the vicinity associated with the sandy-siltstone rocks of the horizons of the Lower Dashavska Sub-Suite. Reservoir rock in Sarmatian, Carpathian parts of the section are terrigenous sandy siltstone rock.

Experimental data shows that the clay cap rocks on the neighboring Letnyanske deposit, even in the presence of microcracks, can contain gas condensate deposits with reservoir pressure of 2,4-12 MPa. The good sealing properties of the clay cap rocks is due to the presence of clay of minerals, which are capable of swelling and “healing” cracks in the rock.

Interpretation of existing seismic data shows that the northwest part of the block up for auction contains the northeast wing of the Dobrovlyanska structure.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

not estimated.

Well data

Within Drohobytka block, 11 wells have been drilled. None of these resulting in commercial production. Most of the wells showed gas with water.

Seismic surveys

Within Drohobytka block 2D seismic has been conducted during 1981-1993 (85/52, 57/89, 52/91 57/91, 57/93).

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1985	14	114,3	12-24
1989	16	140,258	12-24
1991	14	166,373	12-24
1993	3	19,186	12

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D archival seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block’s area;

Stage III (24 months) – one productive well drilling.

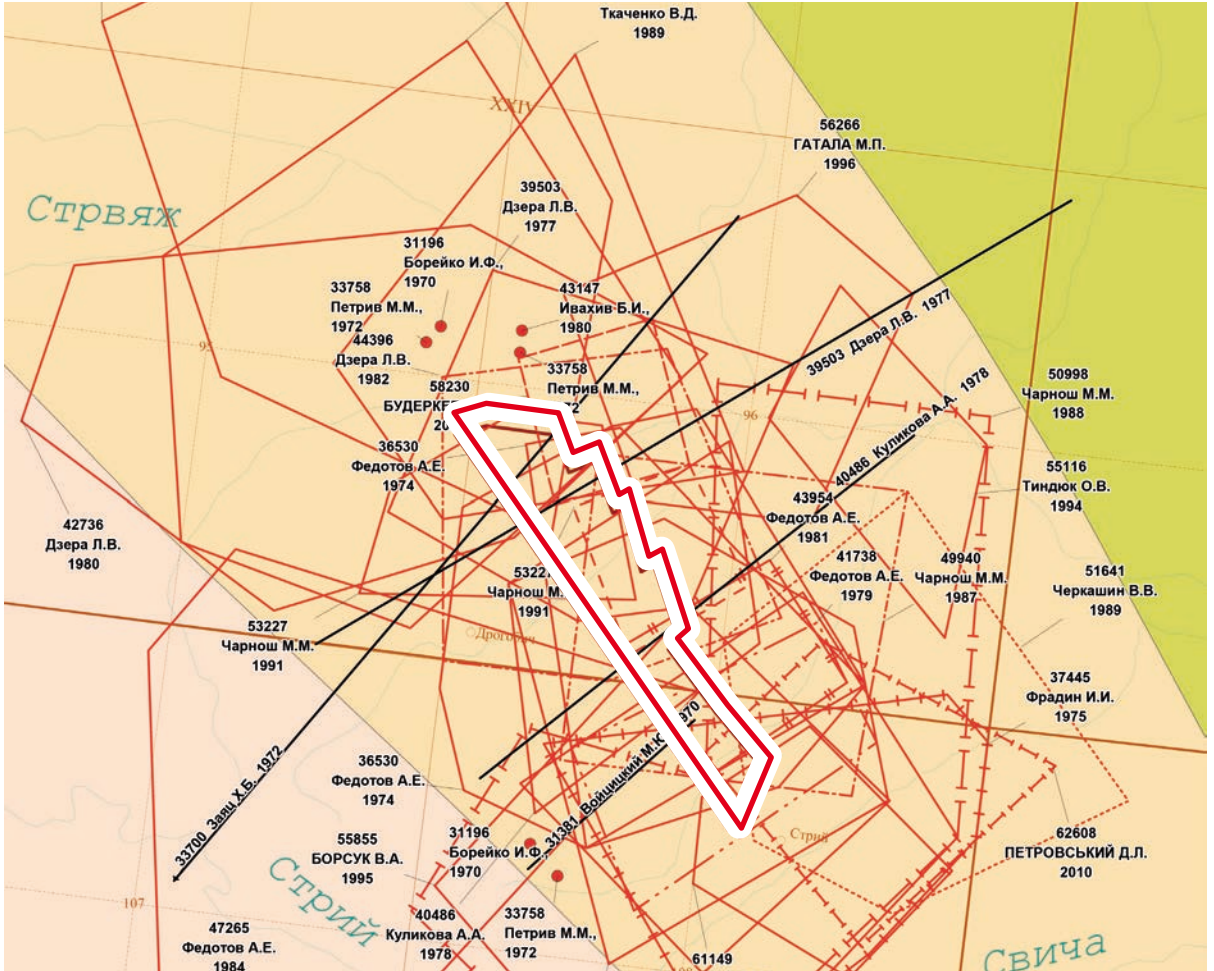
REPORTS

The search and preparation of oil and gas prospecting objects in the Bilko-Volytsky zone of the PreCarpathian Foredeep. “Report on the results of the seismic surveys of the common depth point shooting in Turynska (team No.52/89), Khymchinska and Putylska (team No.53/89), Dobrotovsky (team No./89), Grynivska (No.56/89), Tvirzhska and Dobrylyanska (team No.57/89) areas and vertical seismic profiling in deep wells (team No. 60/89), carried out in 1989-1991 by Yanyshyn Y.I., 1991. Report on the results of seismic exploration works on the Dobryansko-Chernivtsi-Kiblyarska area of the Carpathian region carried out in 1993-1995 by the teams 51/93, 52/93, 53/93, 54/93, 56/93, 57/93, 59/93, 60/93. Borsuk V.A., Charnosh M.M. 1995.

BLOCK 16

DROHOBYTSKA LICENSE

Map of geophysical surveys and seismic lines





MAP SYMBOLS

 1:25 000

 1:50 000


 1:100 000

 geophysical survey

 seismic lines



DROHOBYTSKA BLOCK

 survey with no mapping

51238 report number

Павлюк В.А. author of the report

1988 year of the report

Data on wells drilled within Drohobyt'ska block

Name and No. of the well	Altitude, m	Depression, m (horizon)	Testing result
1-Dorozhiv	284,2	4310 (N1stb)	-
1-Roliv	293,5	4611(ГА)	3734-3513 m (HD-16) reservoir water with clay solution
13-Hrushiv	268,8	2377 (J)	2240-2215 m (N1s) gas and water 2005-1980 m (N1s) water
14-Hrushiv	272,2	3882 (N1s)	3100-2820 m (N1s) – water
1-Mykhaylevychi	275,6	3050	-
2-East Dovhiv'ska	269,1	2054 (N1s HD-13)	1863-1896 m (HPD-12) water with the release of combustible gas 1914-1950 m (HD-12) Qr – 6,4 ths.m ³ /d, aerated water; 1945-2000 m (HD-12,13) Qr- 4,08 ths.m ³ /d; 2016-2024 m (HD-12,13) water
4-East Dovhiv'ska	282,7	1950 (N1s)	1718-1766 m (HD-13) Qr – 1,3 ths.m ³ /d, 1558-1530 m (HD-12) Qr – 1,76 ths.m ³ /d, 1456-1453 m (HD-11) Qв – 37,2 m ³ /d
6-East Dovhiv'ska	279,0	1950 (N1s)	1733-1781 m (HD-12) water with gas 1795-1848 m (HD-12) gas flare 1896-1911 m (HD-13) water with gas
2-South Opar'y	282,2	3137 (J)	3040-3014 m (J) dry 2450-2415 m (N1s) gas was released 2380-2307 m (N1s) water with gas 2252-2242 m (N1s) water with gas 2220-2180 m (N1s) water 2190-2180 m (N1s) water with gas
3- South Opar'y	312,8	3229 (N1s HD-16)	well is flooded
1- Nezhukhiv'ska prospecting well	310,4	2080 (J3)	2042,5-2080 m (J3) reservoir water

BLOCK 17

KADOBNIANSKA LICENSE

LOCATION

Kadobnianska block is located in the north-western part of Kalush district and partly in the territory of Dolyna district of Ivano-Frankivsk region. Acreage of the block is 21,17 sq. km.

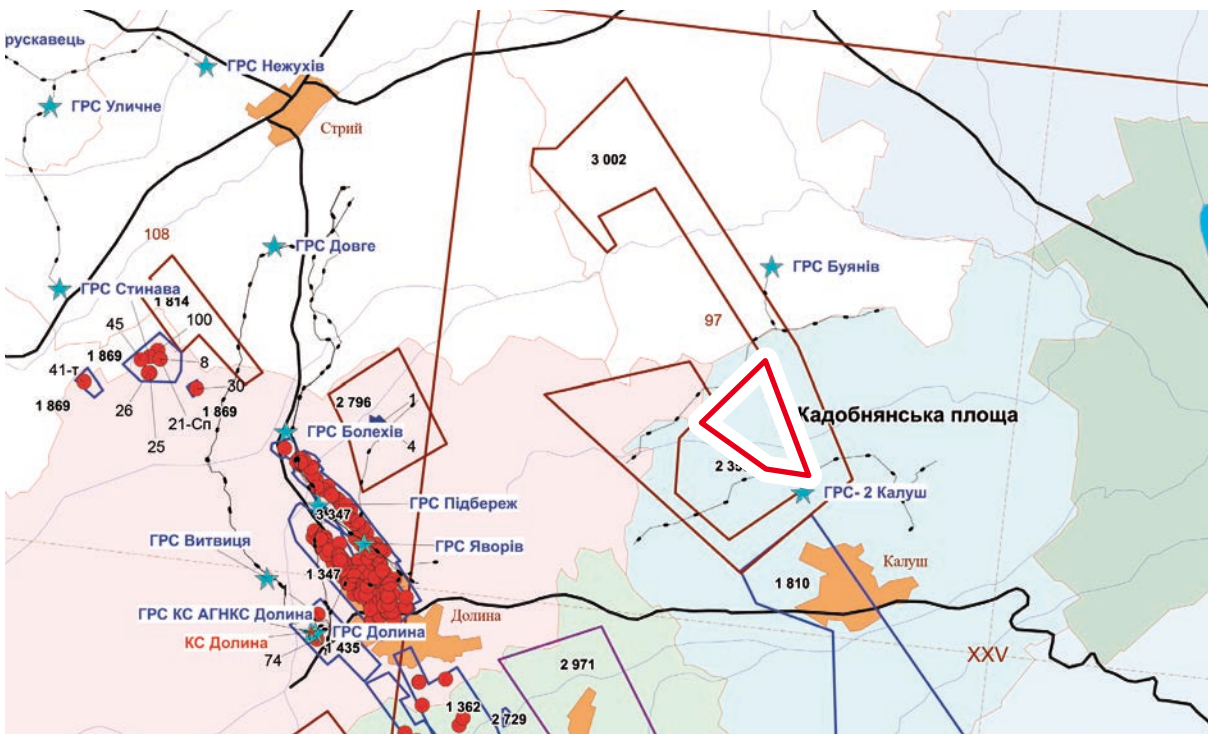
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Kadobnianske gas field is located within the territory of Kadobnianska license.

Map of Kadobnianska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	24	19	10.00	49	5	23.00	24	19	16.18	49	5	24.03
2	24	17	1.00	49	5	26.00	24	17	7.19	49	5	27.03
3	24	13	34.00	49	6	41.00	24	13	40.19	49	6	42.03
4	24	16	22.00	49	8	56.00	24	16	28.19	49	8	57.03

● well

★ gas-distribution plant

----- gas pipeline

▭ KADOBNIANSKA BLOCK

GEOLOGICAL CHARACTERISTICS

Kadobnianske deposit belongs to the central part of Kosiv-Uhersk subzone of the Bilche-Volytska zone of the Precarpathian depression. Gas bearing capacity of the sandy deposits of the lower Sarmatian stage (3 horizons) and the upper Tortonian stage (8 horizons) has been discovered by the exploration works conducted in the period from 1946 to 1956. The horizons of the lower Sarmatian stage are embedded at a depth of 158-420 meters, and the upper Tortonian stage at 454-1075 meters.

Trial exploitation of the deposit began in late 1955 from the Sarmatian and the Baden deposits and ended with the elimination of wells due to their depletion during 1956-1983. 1013,205 million m³ of natural gas was extracted in the field from the beginning of the commercial development.

In 1983, for the purpose of creating the underground gas storage, natural gas has been injected to the Baden deposits of the field. In the underground storage mode, the gas deposit with a small amount of gas injection and run worked during 1984-2001.

The target at Kadobnianska field is the exploration of natural gas deposits in Tortonian (NIt) and Sarmatian (N1s) sediments.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

During 2003-2011, JSC "Ukrgezvydobuvannya", which possessed the license for this deposit expanded contingent resources of the natural gas in the field to 107 million m³ (subcategory C 2). Also the field includes inferred resources with density 10-20 billion m³ per 1 sq. km.

Well data

The total exploration drilling footage at Kadobnianska block is 23,846 linear meter.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1989	1	9,5	12
1991	1	5,0	12
1992	9	67,1	12-24
2002	7	42,5	24
2014	1	7,0	40

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on 1/4 of the block's area;

Stage III (24 months) – one productive well drilling.

Contacts for obtaining information

Type of Data	Description	Contacts
Coordination	Organization of the auctions and coordination of state geological data disposal	State Geological Service of Ukraine Head of Permitting and International Relations Department +38 044 536-13-20 dozvilnadra@ukr.net Head of the Auction Department +38 044 456-60-56 auction@geo.gov.ua
Seismic surveys	Review of the reports is free of charge at the state enterprise Ukrgeofizyka. Acquisition of the right to use of data is possible upon request to the State Geological Service of Ukraine. Cost shall be determined after evaluating the amount of data requested.	Ukrgeofizyka Chief geologist +38 044 453-38-02 info@ukrgeofizyka.com.ua
Well data	Review of the reports is free of charge at the state enterprise Geoinform of Ukraine. Public register of oil and gas wells is at the link below: http://geoinf.kiev.ua/wp/sverdlovini.php Logging data is provided by the Ukrainian State Geological Prospecting Institute upon the request. Acquisition of the right to use of data is possible upon request to the State Geological Service of Ukraine. Cost shall be determined after evaluating the amount of data requested.	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua Ukrainian State Geological Prospecting Institute Deputy director +38 044 430-70-26 gv@ukrdgri.gov.ua
Geological reports	Review of the reports is free of charge at the state enterprise Geoinform of Ukraine.	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua
Licensed blocks data	Public map of licensed blocks is on the links below: www.geoinf.kiev.ua/wp/interaktyvni-karty-spetsdozvoliv.htm www.minerals-ua.info/mapviewer/goruchi.php	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua
Land tracts	Public land tracts map is on the link below: www.map.land.gov.ua/kadastrova-karta	State Service of Ukraine for Geodesy, Cartography and Cadastre +38 044 244-82-47 land@land.gov.ua
Environmental Impact Assessment	It is necessary to conduct an EIA within a year after awarding a petroleum license	Ministry of Ecology, EIA Department +38 044 206-20-89 m.shimkus@menr.gov.ua

Useful contacts



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