Remote Sensing Survey (RSS) with Nuclear Magnetic Resonance (NMR)

for

Hydrocarbons, Minerals, Gems, Water and polymetallic nodules

2004-2004

More of 350 Resources Exploration Projects worldwide with positive results

Introduction

- POISK Group offering a time & cost effective solution to remodel the ways and means of petroleum exploration. Fands-LLC with 30 years in Exploration worldwide gives the support and knowledge of countries to Sebastopol
- By ingenious remote sensing expertise plus corroborating field works derived from the Nuclear Magnetic Resonance (NMR) theory, commercially relevant anomalies are identified, delineated and geologically substantiated.
- Pre-knowledge on economic feasibility of acreage is provided; recommendation on best area for targeted seismic (if so pursued); the identification and geological validation of best spot for appraisal act is provided as a result of RS-NMR studies.
- The application of three integrated disciplines of patented remote sensing acumen, scientifically vindicated NMR field works and the ultimate G&G authentication of the findings, exercises a strong and innovative toolkit that is as disruptive as it is efficient.
- The world specialist in Geo Holography for exploration is Poisk Group

Overview of the Technology

- The innovative technology of remote search for hidden minerals is based on traditional and proprietary methods of **remote sensing of the Earth and special NMR equipment of POISK Group in Fands-llc in south america and Africa**
- A key feature of NMR is that the resonance frequency of a particular substance is directly proportional to the strength of the applied magnetic field. It is exploited in imaging techniques; if a sample is placed in a magnetic field then the resonance frequencies of the sample‘s nuclei depend on where in the field they are located.
- Radio-frequency magnetic fields penetrate both soft and hard rock allowing higher resolution anomalies mapping and can easily be used with a boat, plane, helicopter or truck for exploration.
- Remote geoholographic is created from instrumental set (stationary and field equipment) for remote search and contour plots of hidden mineral resources (oil, gas, gas condensate, and ore deposits), and accumulations of drinking water, and geothermal, as well as remote determination of important geological characteristics of their bedding to a depth of 6000m.

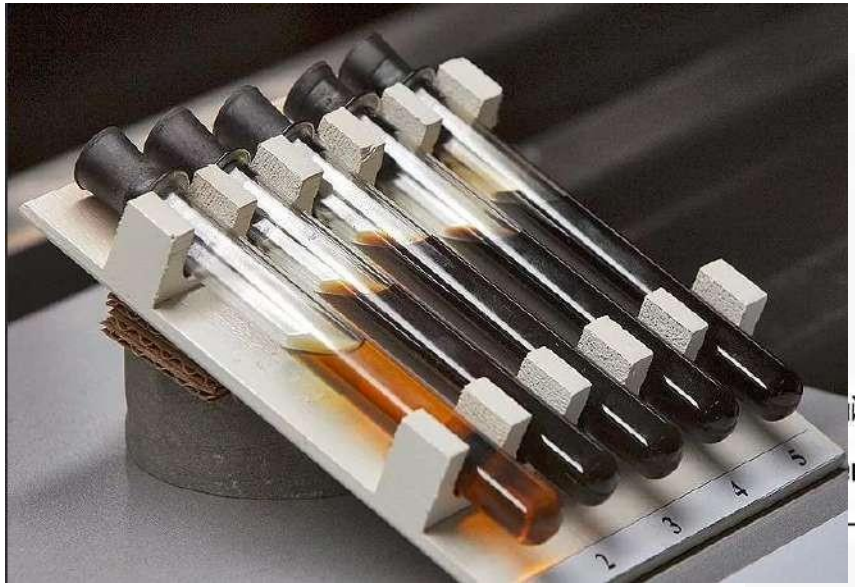
How it works

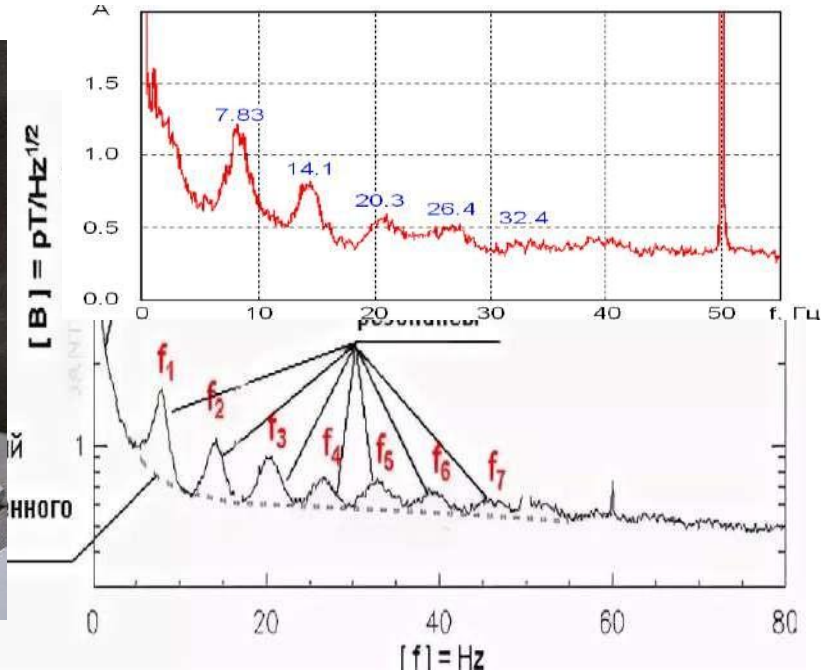
STEP-1 Sampling + Data Base	STEP-2 Remote Sensing + Data Processing	STEP-3 Field Survey
Analysing the Oil/Gas samples from the nearby field (same play type).	Satellite survey of the interest area and imaging of the analogue photographs	Additional examination of the identified anomalies using field equipment
Recording the frequency spectrum of the reference elements present in the sample	Processing images with ingenious nanogels and enhancement in a small-size Nuclear reactor	Field survey using special NMR equipment of the POISK group
Lab testing of samples using special POISK equipment	Identify boundaries of hydrocarbon accumulation by processing digital and analog satellite images taken in various frequency ranges of the visible ultraviolet and IR spectra.	Plotting the contours of anomalies associated with petroleum accumulations on maps of the survey area. Generating geological sections with depths of hydrocarbon accumulations

Step I – Sampling + Data base

1. Collect and analyze oil samples from nearby fields (same play),
2. Identify reference elements in the samples,
3. Record frequency spectrum of the reference elements,
4. Save the reference element's data base for further hydrocarbon studies

Certain elements (e.g. V, Ni, Cu, Fe, Mn, Mo, Cr etc) are distinguished in oil composition, which are the main markers ("reference elements") in the identification of oil. Each element has its own (inherent) nuclei oscillation frequency.





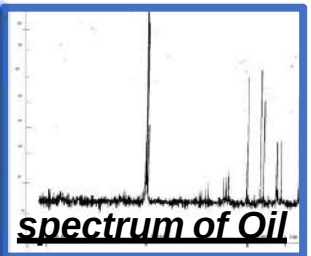
Step I – Sampling + Data base

1 Samples of samples: hydrocarbons, ores, rocks - the water

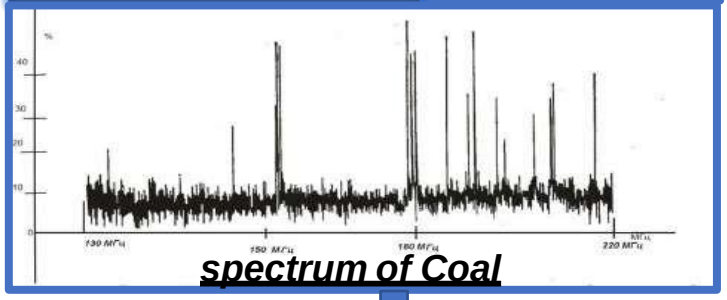
2 **The study sample :**
1) Neutron activation method
2) Atomic - absorption (spectrophotometer "Saturn")
3) RENGO-fluorescent methods

3 The choice of reference element

4 Spectra were recorded on the reference elements "test matrix“



spectrum of Oil



spectrum of Coal

5 Laboratory testing of samples with identification of specimens using equipment complex «Search»

6 **Result**
Data bank of recognition spectra for remote identification of deposit types

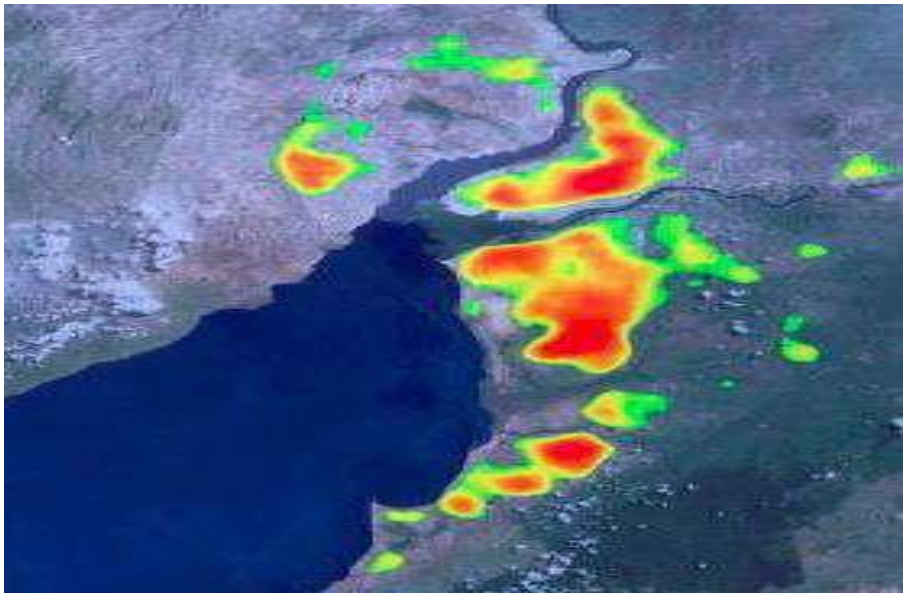
Step I – Sampling + Data base

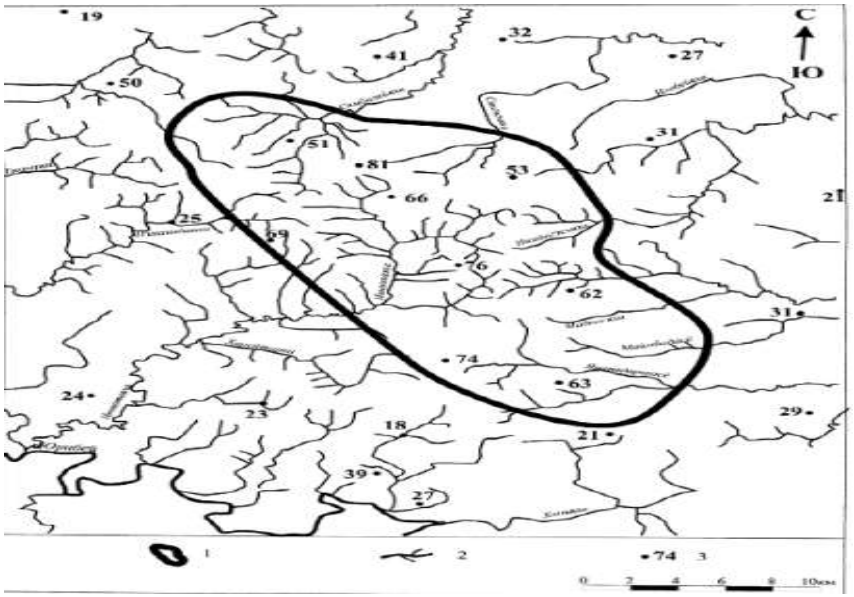
Sample Analysis Process

- The presence of rare earth metals, especially tungsten and titanium (in micro-quantity) are determined in the oil sample. According to their ratio, oil origin can be determined, that is, one may find out, for example, oil is from which country. Same approach is implemented in the NMR survey, i.e. NMR spectra of these elements are recognizable when we search for oil accumulations.
- In oil samples, the composition of other metals is analyzed, the content of which differs significantly from the rest of the NMR spectra. They can also be used as additional diagnostic factors of oil in a particular region, i.e. they are the so-called "test" search matrices.
- Integral electromagnetic spectra (information and measurement spectra) are recorded from oil samples by exciting metal atoms when oil samples are introduced into the "atomization furnace" (temperature = 2500 °C) using special spectral equipment which is part of the "Poisk" facilities complex. Thus, we record the so-called working search diagnostic matrices.

Step II – RS + Data processing

1. Perform satellite survey and imaging of the Area of Interest (AOI).
2. Process the image material with ingenious nanogels and solutions to amplify and highlight spectral anomalies associated with petroleum accumulations.
3. Enhance processing of the image in a small-size nuclear reactor,
4. Plot preliminary boundaries of hydrocarbon accumulation on the AOI map.





Step II – RS + Data processing

Interpretation of space **analog** photographs, identification and delineation of areas with anomalies

1

Photo reconnaissance of search areas

2

Processing satellite analogue data images with nanogel solutions

3

Exposure of the image in the IR-100 reactor

4

Transferring the boundaries of the light area from the photograph to the map of the search area

5

Work results

Step II – RS + Data processing

What we record and process in Analog Photographs?

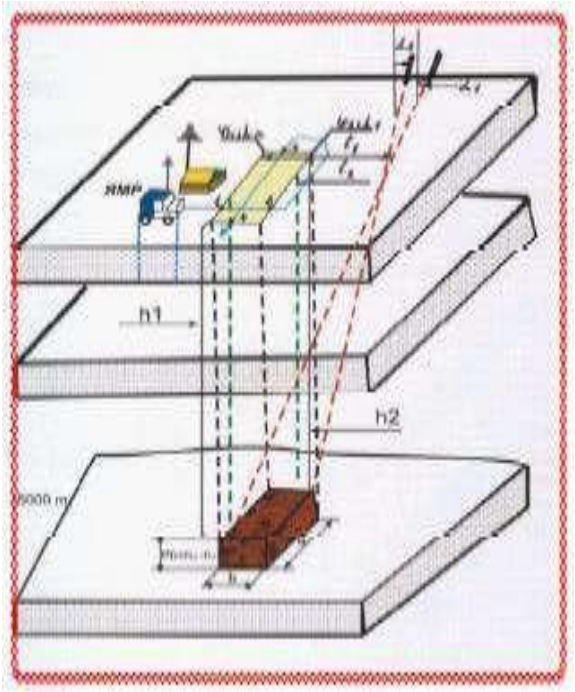
- On analog satellite images, characteristic electromagnetic fields (spectra) that exist over each type of "deposits" (oil, water, ore, etc.) are recorded. Characteristic electromagnetic fields (of a specific frequency) are formed over the deposit (anomaly), i.e. on the ground surface due to various chemical, thermal and electrochemical processes in rocks with prolonged migration of oil, gases (other metals in ores) from great depths to the ground surface.
- Poisk technology enables to "visualize" on analog satellite images the characteristic electromagnetic fields in the form of "high brightness zones", after special processing of photo paper using chemical reagents (nanogels), phosphors, sensitizers (layers of mixtures), which are selected for each type of deposits (oil, gas, ore, salt water, fresh water, etc).
- Processing of digital satellite images in the visible spectrum provides only the "primary" visible signs (images) of various anomalies or areas of scattering of mineralization of various metals (copper, gold, molybdenum, etc.).
- Accuracy of identification and delineation of anomalies of various minerals by processing of analog images (Poisk's patented technology) is significantly higher than traditional methods and approaches of geological exploration.

Step III – Field survey + Theory

1. The resonant frequencies of the reference molecule‘s atoms are imposed/modulated on the carrier frequency by a high-frequency generator.

2. High-frequency electromagnetic fields, characteristic of the reference sample‘s elements, are induced above an oil accumulation by its resonating frequencies.

3. Each characteristic electromagnetic field is sequentially recorded by a sensitive receiving device tuned to register resonant frequencies of the reference sample‘s atoms, ensuring a plausible identification of petroleum accumulations.

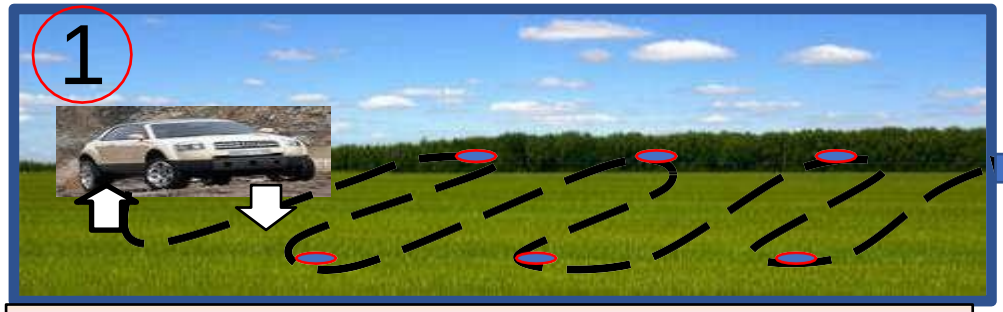


Precise boundaries of petroleum accumulations are plotted on the area-of-interest.

Step III – Field survey + Theory

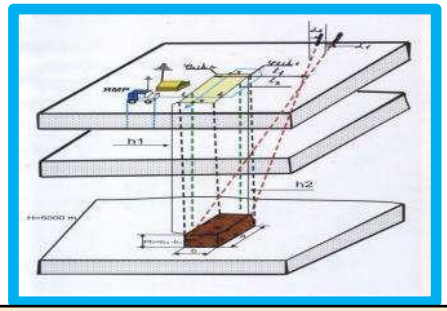
Inspection of the anomalous areas with field equipment, selection of a point for drilling and calculation of reserves

1



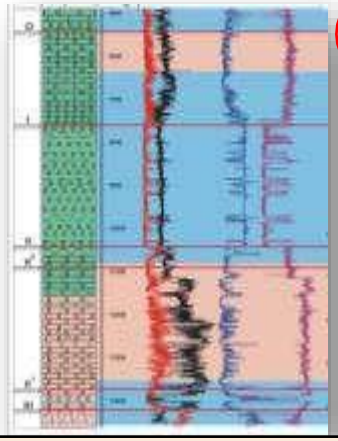
Refinement of areas and boundaries of the site

2



Determining the depths of horizons at measurement points with field equipment

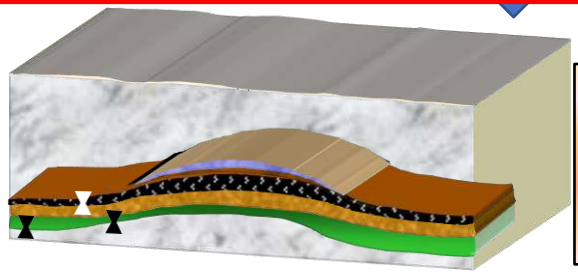
3



Building depth slices by measurement points

4

5



Construction of a volumetric profile of the deposit collector, ore body

Deliverables

After Step-1 & 2

Accuracy - 60% to 80%

1. **Maps with identified anomalies associated with petroleum accumulations**
2. **Cross sections with depth of occurrence**
3. **Recommendations where to drill and core**

After Step-3

Accuracy is about 90%.

1. **Maps with precisely delineated areas of anomalies**
2. **Cross sections with more precise depths of occurrence**
3. **Thickness of potential reservoirs**
4. **Volumes estimation**

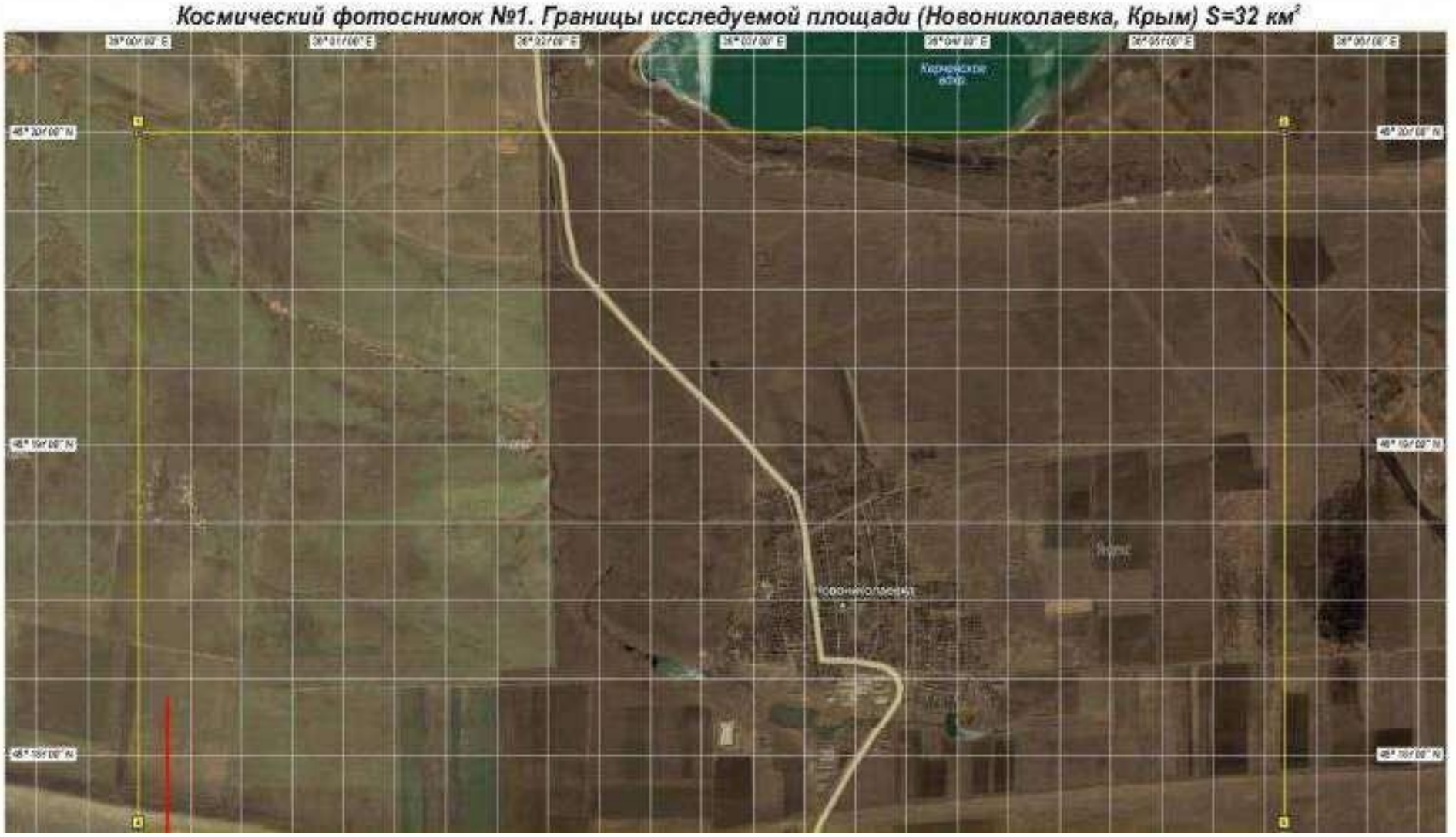
Final Report might provide the geological substantiation (optional) including:

a - Geological setting analysis,

b- Resources Evaluation

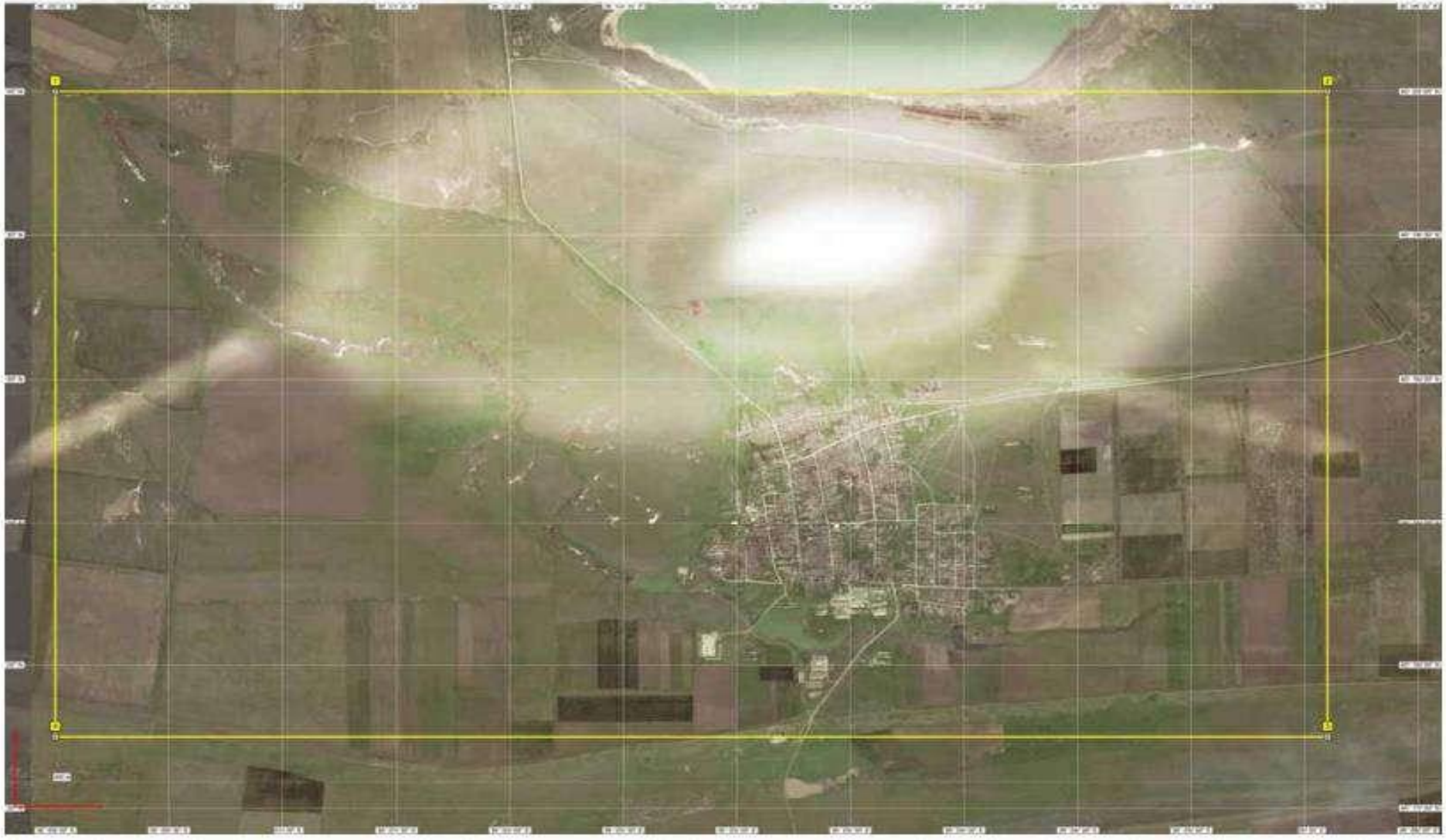
Deliverables

Sample 1: step-1



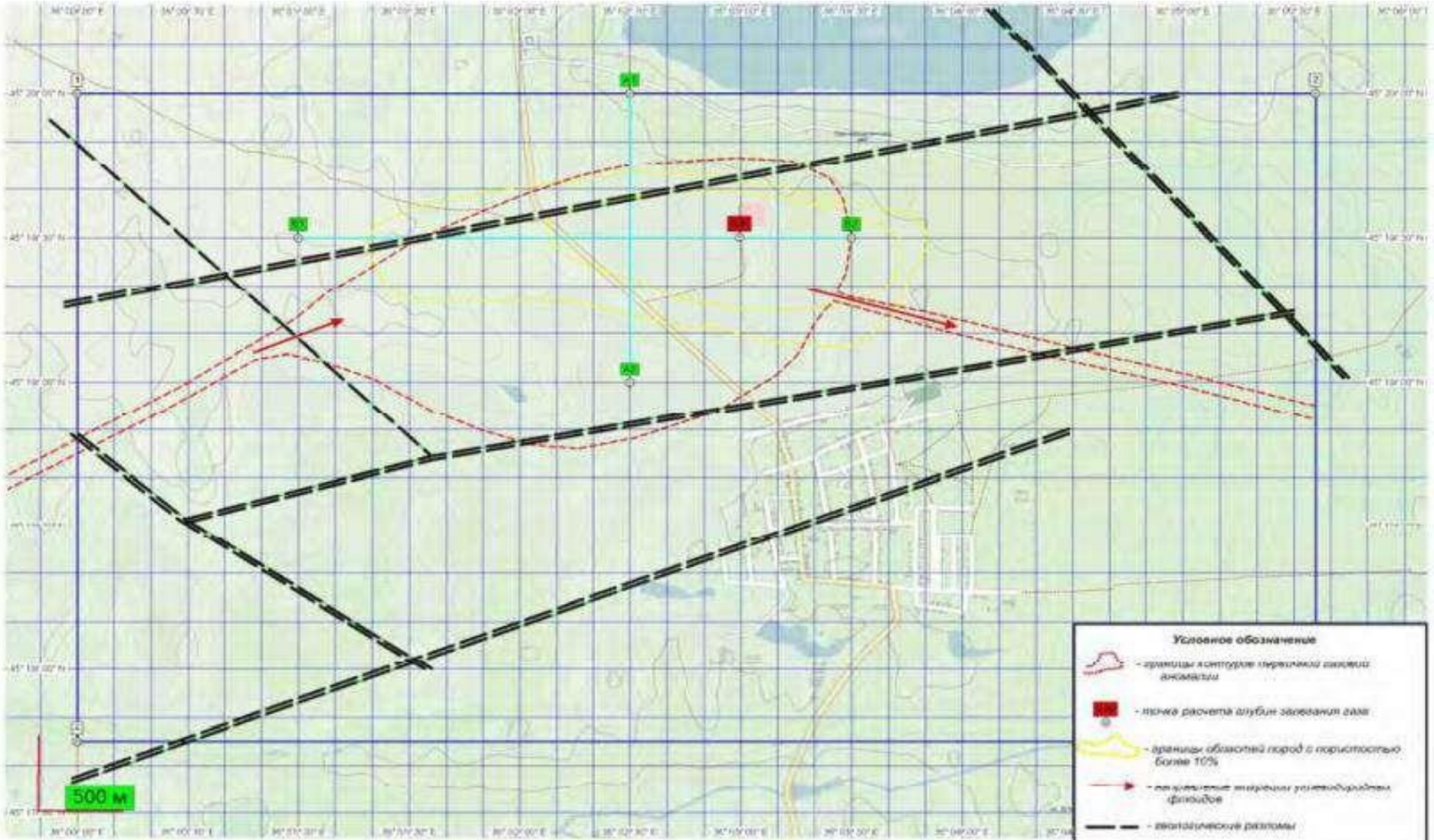
Deliverables

Sample 1: step-2



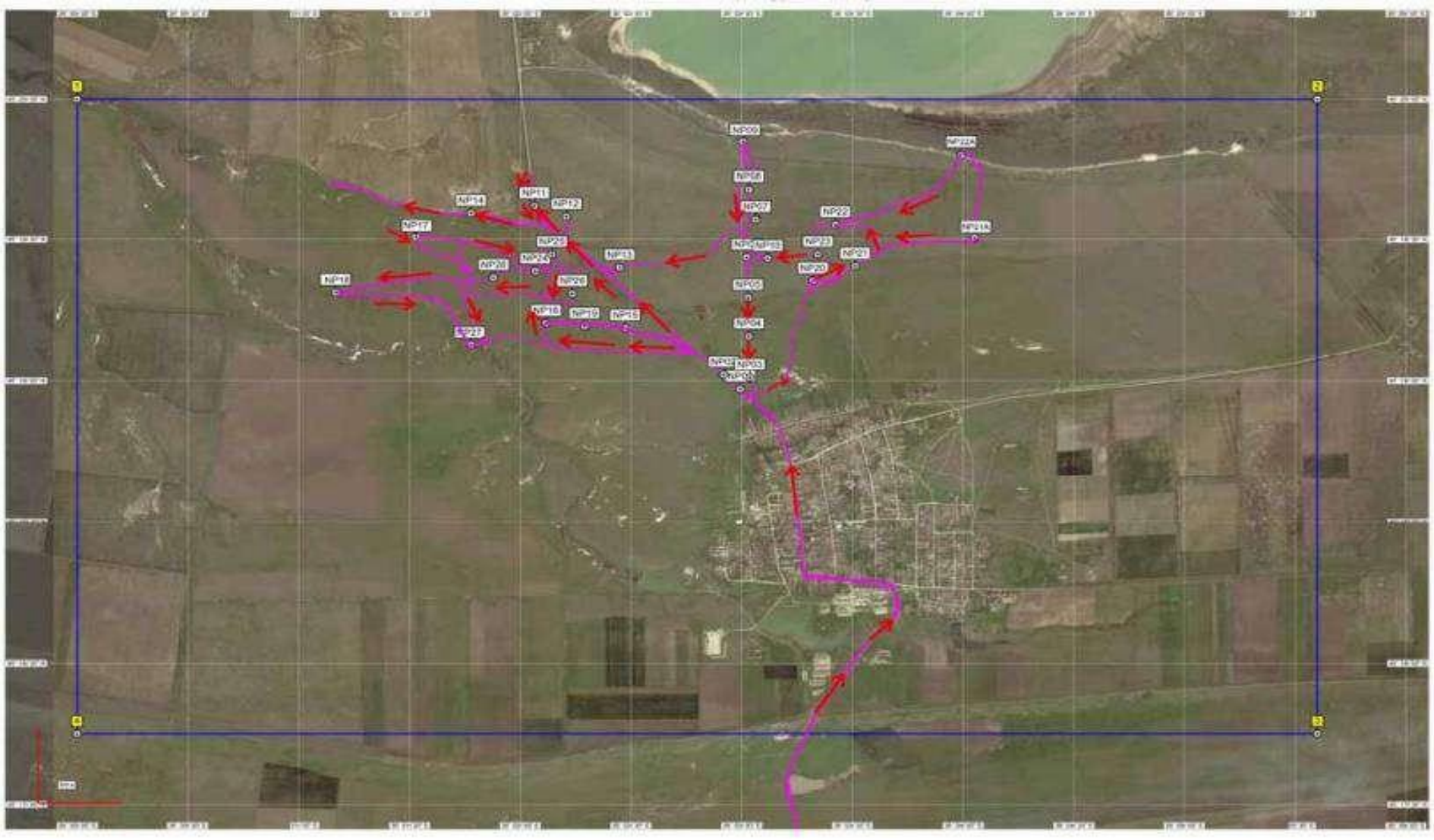
Deliverables

Sample 1: step-2



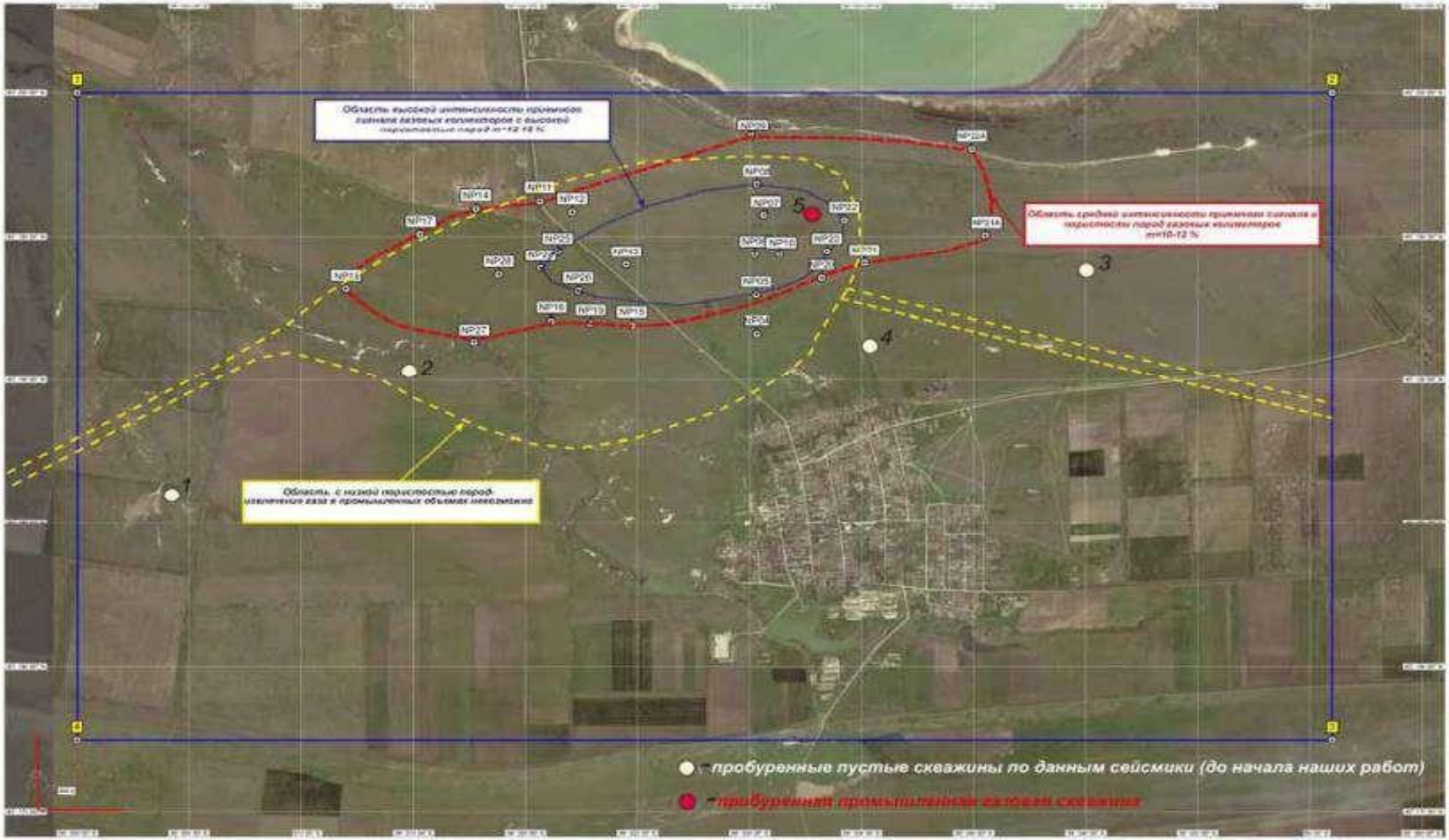
Deliverables

Sample 1: step-2



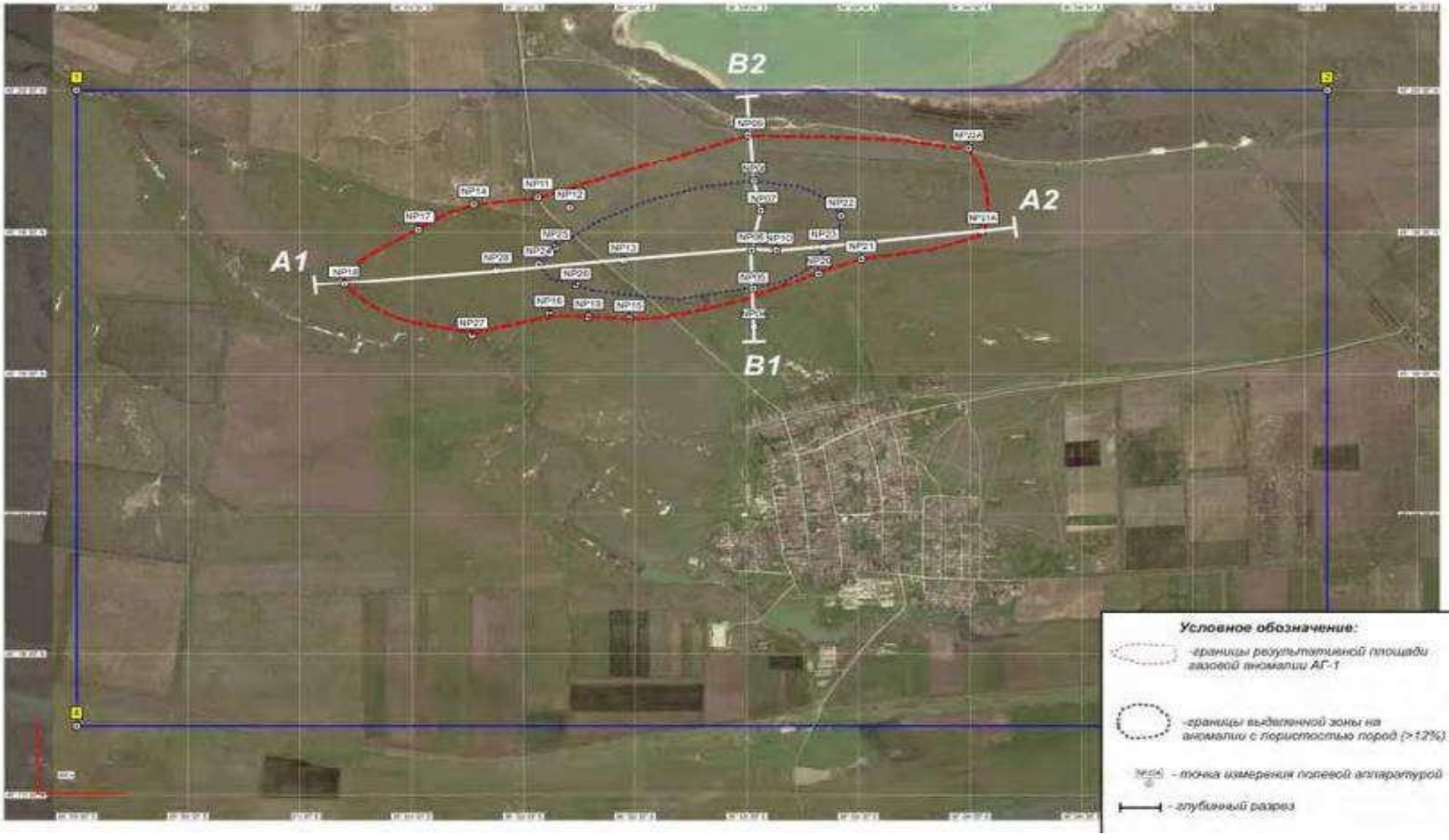
Deliverables

Sample 1: step-2



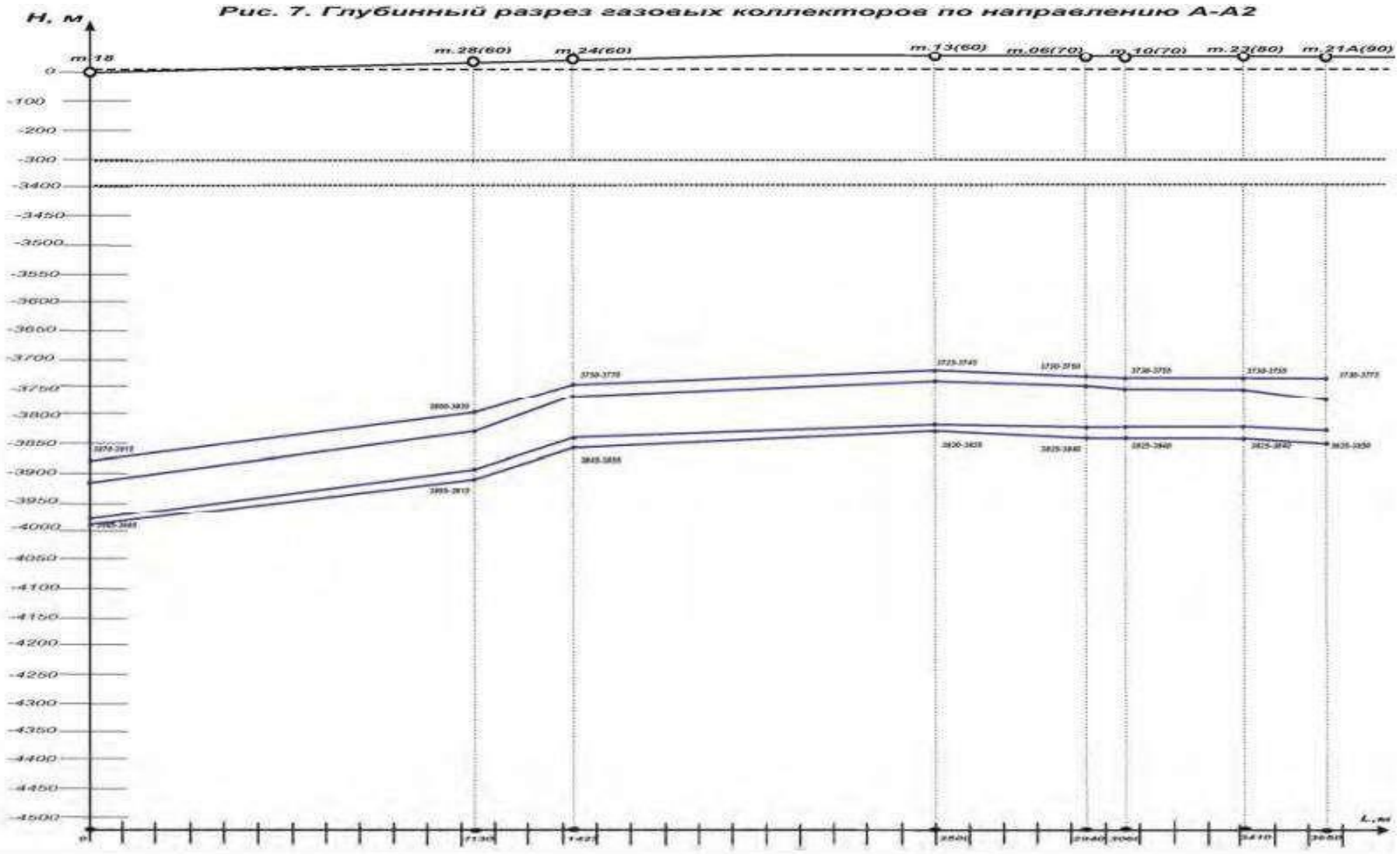
Deliverables

Sample 1: step-2



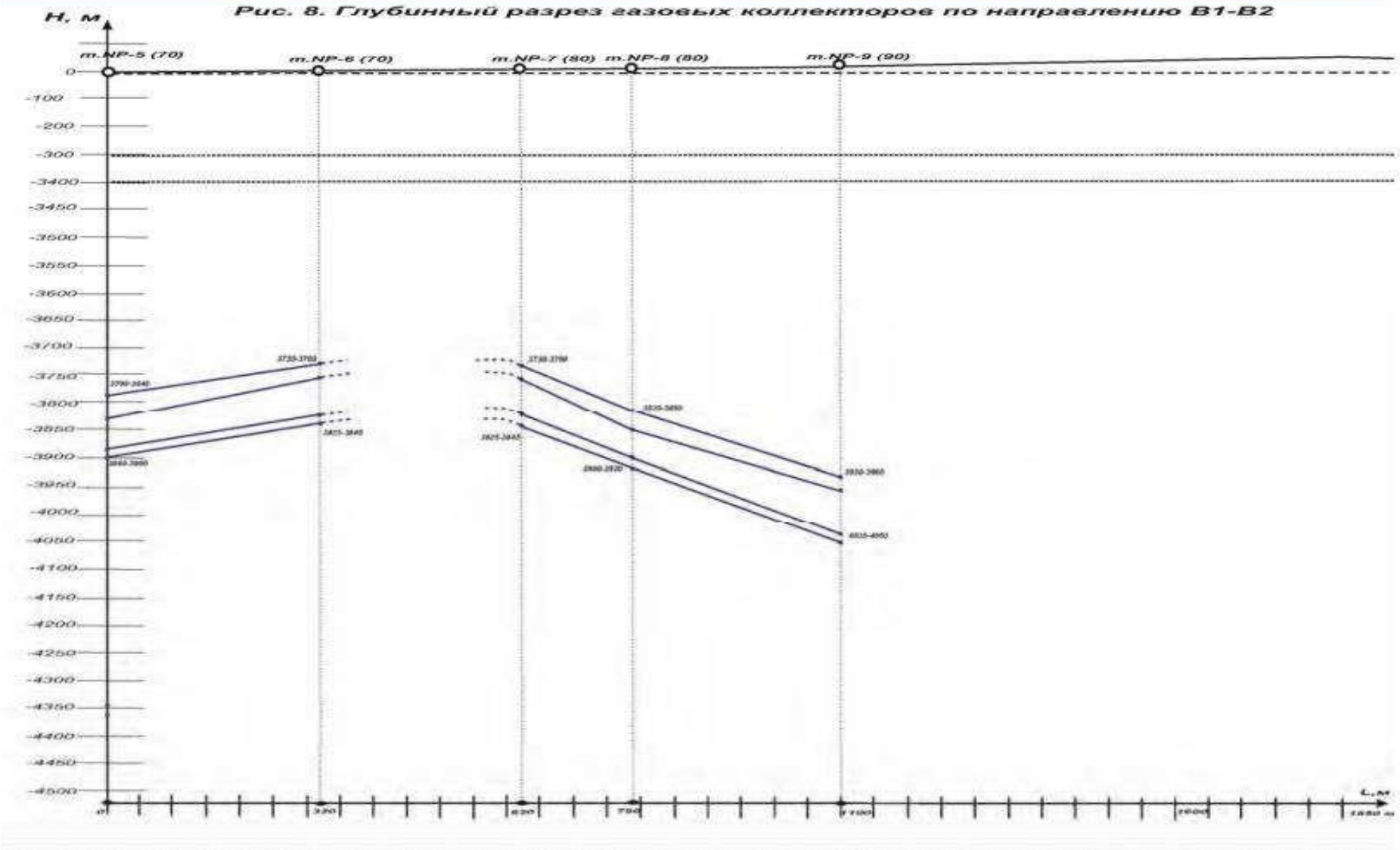
Deliverables

Sample 1: step-2



Deliverables

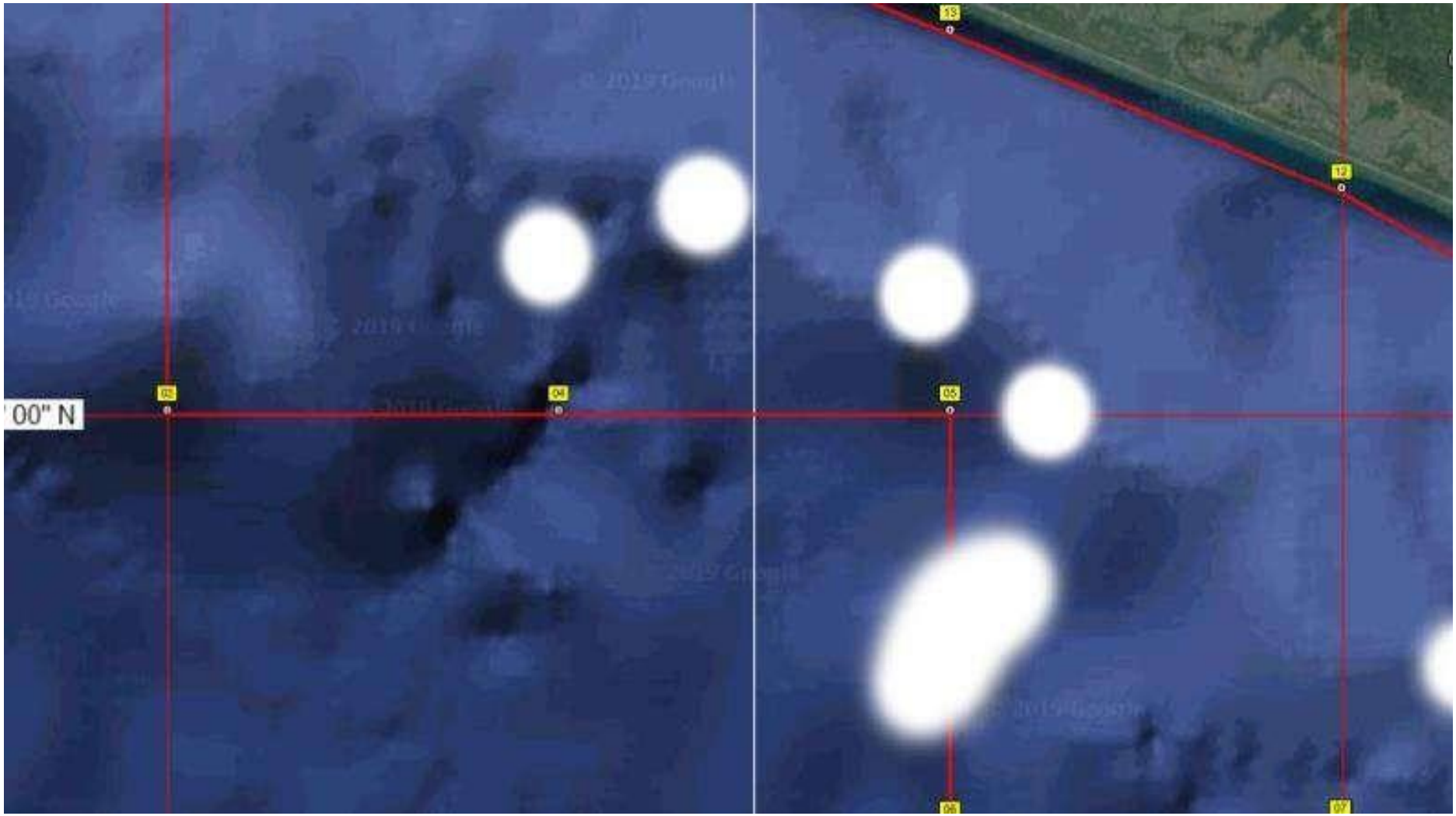
Sample 1: step-2



Deliverables

Sample 2: step-2

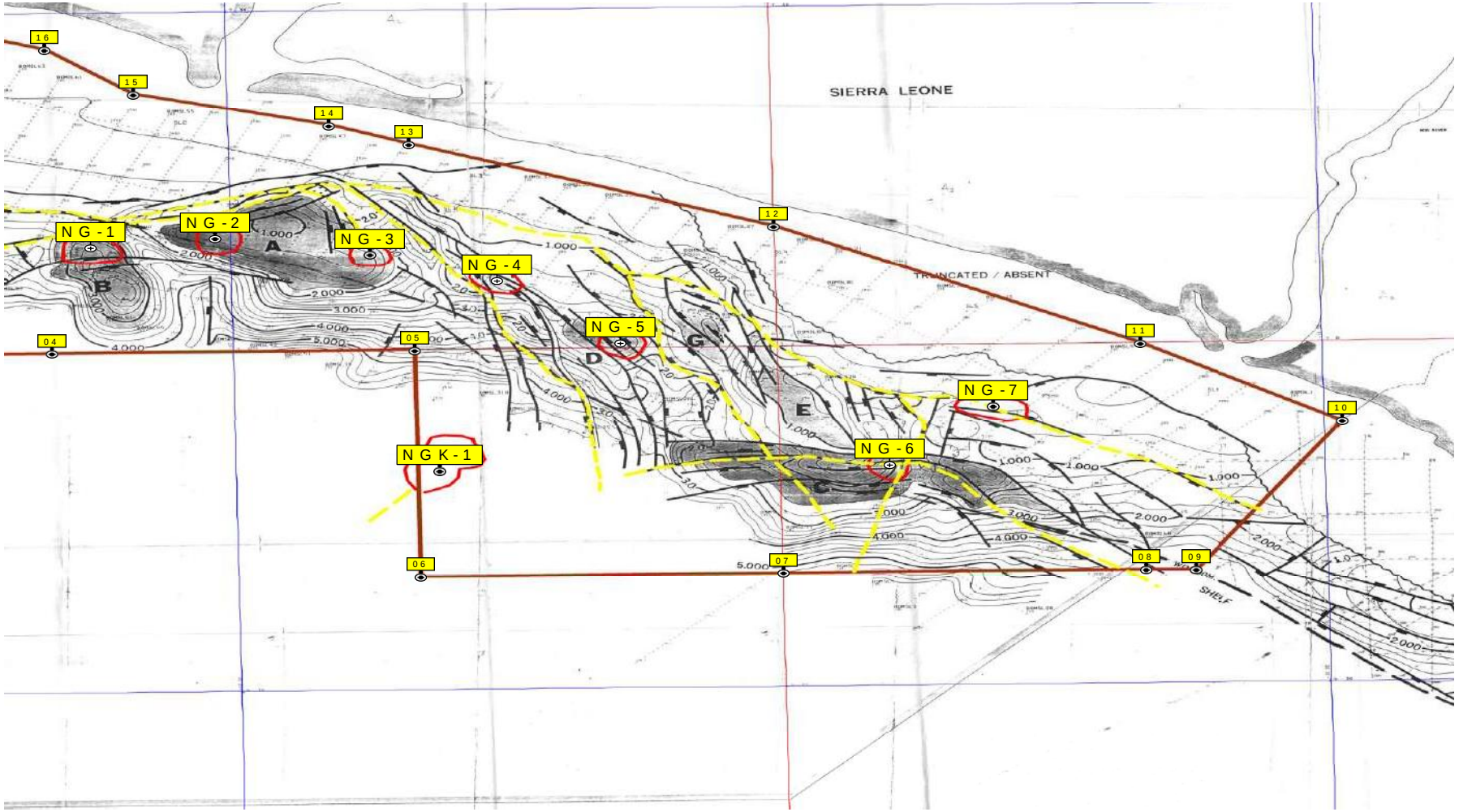
Topographic map with anomalies associated with petroleum accumulations



Deliverables

Sample 2: step-2

Structure map with anomalies associated with petroleum accumulations



Deliverables

Sample 2: step-2

Resources evaluation (optional) provided reservoir properties are known from the nearby oil fields in the same play

Simulation Settings — Mode: EXPLORATION PROSPECT — Notes

	Original In Place		Prospective Undiscovered Recoverable Reserves						
			Liquids		Sales Gas		Total Geologic Pre-Drill	Above Commercial Threshold (Option is OFF)	Above Economic Threshold (Option is OFF)
	Oil	Gas	Oil	Total Cond	Non-Assoc	Soln			
	MMMT	MMCM	MMMT	MMMT	MMCM	MMCM	MMMTE	MMMTE	MMMTE
P99	12,45	0,00	2,06	0,00	0,00	0,00	2,06	NA	NA
P90	24,76	0,00	4,20	0,00	0,00	0,00	4,20	NA	NA
Mode	39,15	0,00	7,21	0,00	0,00	0,00	7,21	NA	NA
P50	57,77	0,00	10,33	0,00	0,00	0,00	10,33	NA	NA
Mean (P99->P1)	72,15	0,00	13,00	0,00	0,00	0,00	13,00	NA	NA
P10	142,53	0,00	26,25	0,00	0,00	0,00	26,25	NA	NA
P1	291,68	0,00	54,45	0,00	0,00	0,00	54,45	NA	NA
Chance of Success >>							Pg- Chance of Geologic Success (>=Ab Min reserve)	Pc- Chance of Commercial Success (>=MCFS) (Option is OFF)	Pe- Chance of Economic Success (>=MEFS) (Option is OFF)
							11,3%	NA	NA

Current settings...
Estimating method:
VOLUMETRIC (Area X Net Pay X HC Yield)
Intermediate Simulation: 5000 Iterations
Resources Simulation: 5000 Iterations
Truncations:
Input= 0,00/1,00
Output= 0,00/1,00
Complex Trap option OFF
Area-Pay correlation= 0
Raw Gas Surface Loss: NONE
Percentile Sorting: HC Equiv only

In this product, the term 'reserves' denotes PROSPECTIVE RESOURCES, or the ultimate recoverable resources that will be produced should this prospect become a field. It does not conform to the definition of 'proven reserves' provided by the U.S. Security and Exchange Commission.

Key Features and Benefits

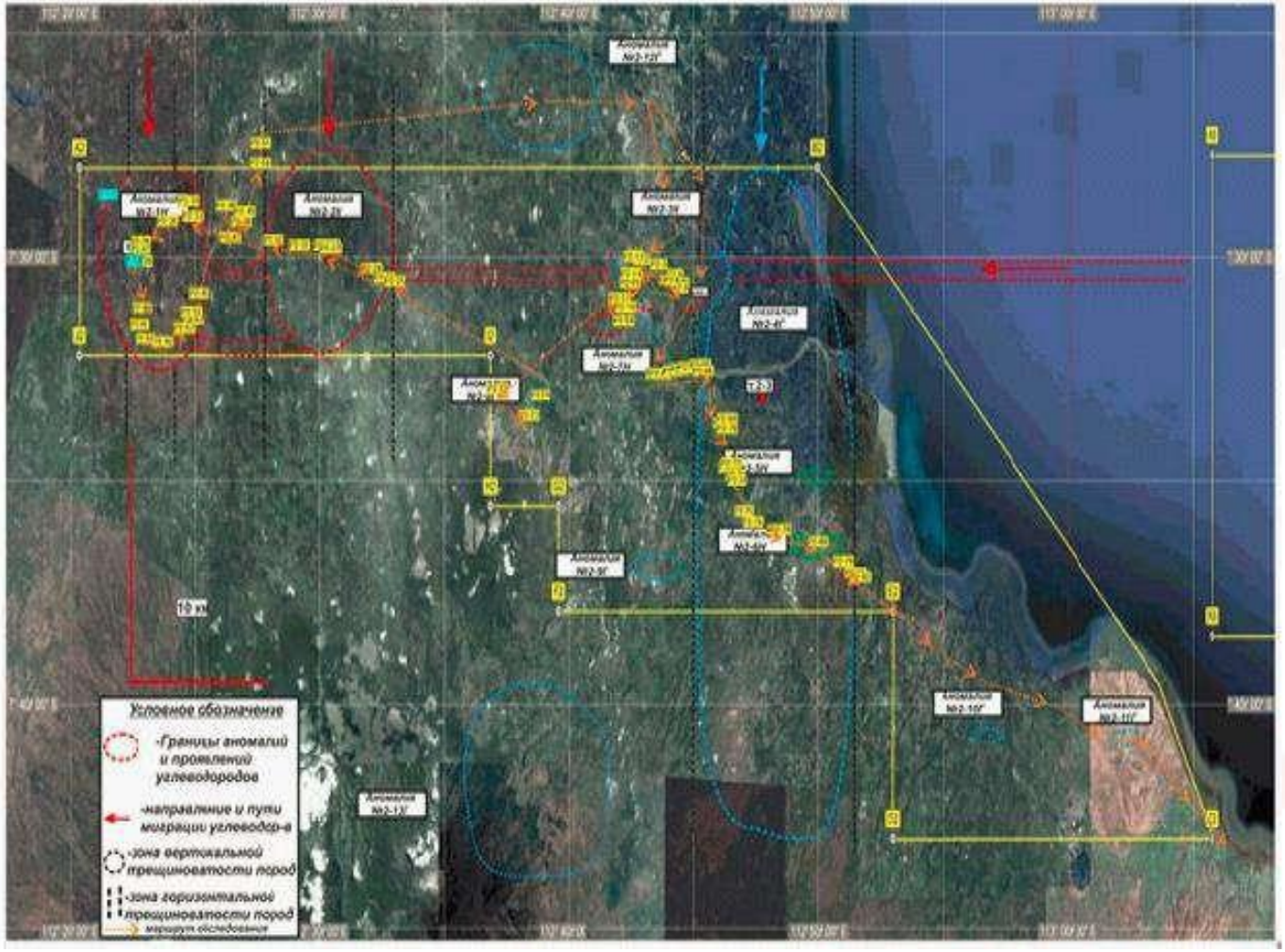
1. *Highly Cost-effective and Time-effective technology for identifying the focus area of hydrocarbons and other minerals.*
2. *This technology is unique with analogue image data processing.*
3. *The reliability of the obtained results based on NMR & remote sensing data after Stage-1 (Step-1&2) is 60%-80%, and after performing field work in Step-3 is about 90%.*
4. *3D Seismic data acquisition area could be finalized without investing time and money in 2D seismic and other geophysical surveys.*
5. *If seismic is already done in any area, this NMR-RS technology helps in identifying and validating the drilling locations. Also helps in the assessment of probable reserves of hydrocarbons, ores and groundwater prior to drilling.*
6. *This Technology is very useful in the remote and topographically challenging terrains like Manipur, Mizoram, Nagaland, J&K states of India.*
7. *Detection of hydrocarbon and geothermal waters up to depth of 5000 m, ore bodies up to 1500m, underground drinking water to depths of 1000 m.*
8. *Vertical resolution of the anomaly after Step-2 is 100m and after Step-3 is 30-50m.*
9. *The total time for the execution of NMR-RS exploration work on survey area of 1000 sq. km. is approximately 2 months for Step-1 & 2, and 5-6 months for Step-1,2 &3.*

Projects

- Oil, Gas and Gas condensate
- Coal
- Uranium
- Zinc, Lead
- Molybdenum
- Copper
- Polymetallic ore
- Diamond etc.

About 300 projects worldwide (Russia, Mongolia, Colombia, Ukraine, USA, Indonesia, Australia, Congo etc.)

Case Study I



License block in Indonesia

Productive wells are sitting within the areas outlined marked with red color

Testimonial

Russ Techno
Tel: +62 8170 228877 FAX: +62 21 84306196

CV RussTechno Indonesia
Ruko Permata Boulevard Blok BA, No.1
Jl Pos Pengumben Raya Jakarta Barat 11550 – INDONESIA

Date : 1 June, 2012 r.

Re: SBRDSS report reference

In accordance Contract No.1, 28.11.2011 between RussTechno Indonesia and Sevastopol State University, Sevastopol's specialists (head of team - Ph.D. Kovalev N.I.) were involved with a set of equipment "Poisk" for remote search for oil and gas with identification its depth and deposit on Brantas Block in Java, Indonesia total area 3050 km2. Off-shore – 2 blocks and On-shore – 3 blocks.

Previously, these areas were studied by traditional seismic methods and have more then 30 wells.

The study was performed in February 2012. Based on the results of study on Brantas Block by using remote method SBRDSS Sevastopol specialists discovered total 31 hydrocarbon anomalies.

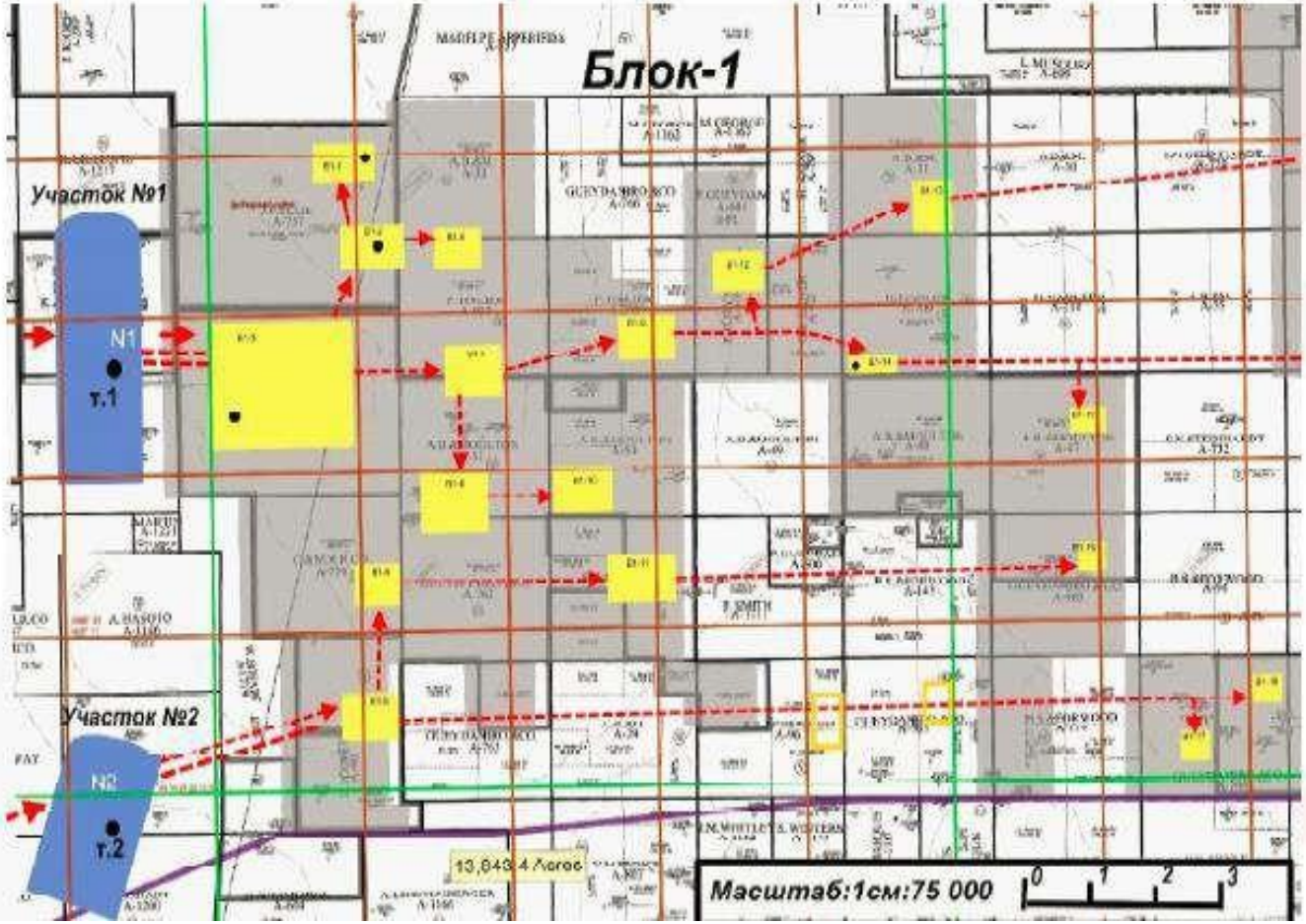
SBDRSS remote method was proven by compare with seismic date available in Lapindo Brantas company. This method is cost effective and very accurate in depth and deposit result.

Regards,

Thanigasalam
President Director

CV RUSSTECHNO INDONESIA

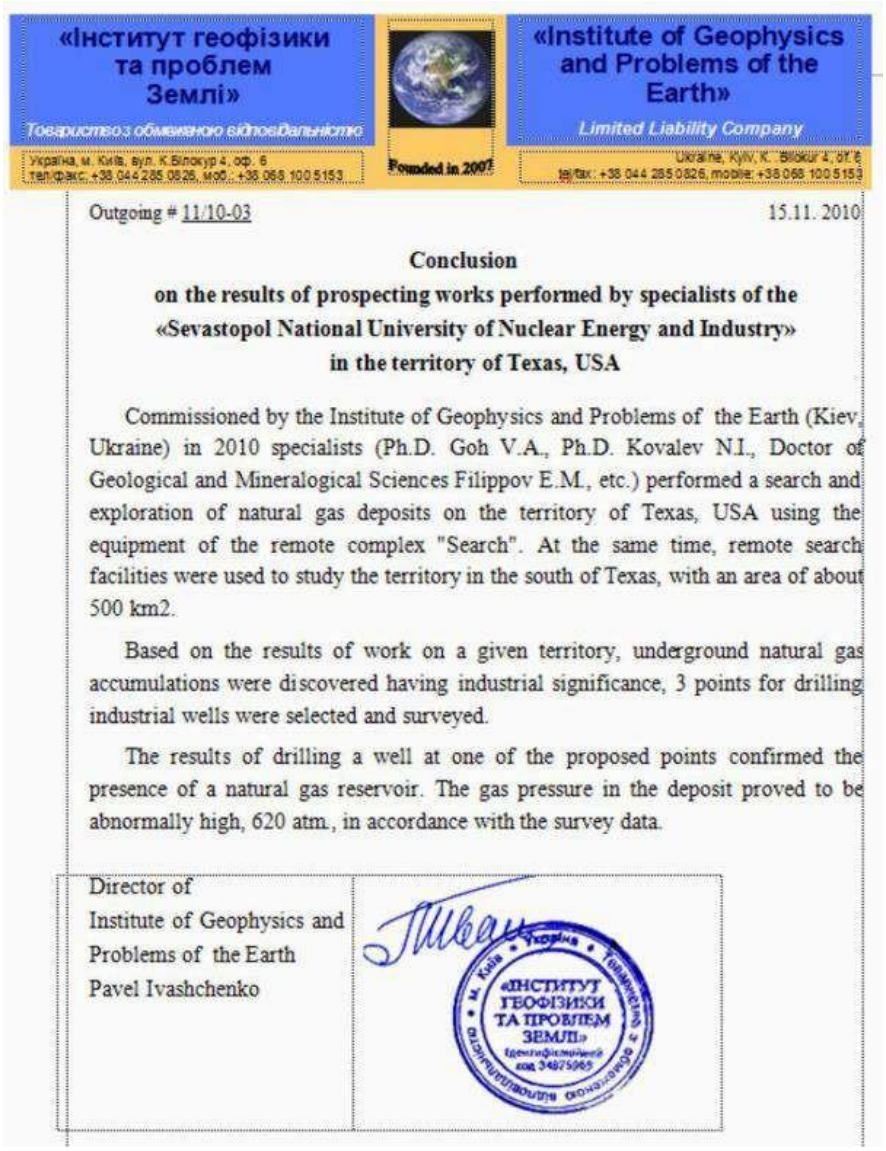
Case Study II



License block in Texas, USA

Well N-1 penetrated shale oil formation as indicated by the corresponding anomaly

Testimonial



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Founded in 2007

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Outgoing # 11/10-03 15.11.2010

Conclusion

on the results of prospecting works performed by specialists of the «Sevastopol National University of Nuclear Energy and Industry» in the territory of Texas, USA

Commissioned by the Institute of Geophysics and Problems of the Earth (Kiev, Ukraine) in 2010 specialists (Ph.D. Goh V.A., Ph.D. Kovalev N.I., Doctor of Geological and Mineralogical Sciences Filippov E.M., etc.) performed a search and exploration of natural gas deposits on the territory of Texas, USA using the equipment of the remote complex "Search". At the same time, remote search facilities were used to study the territory in the south of Texas, with an area of about 500 km2.

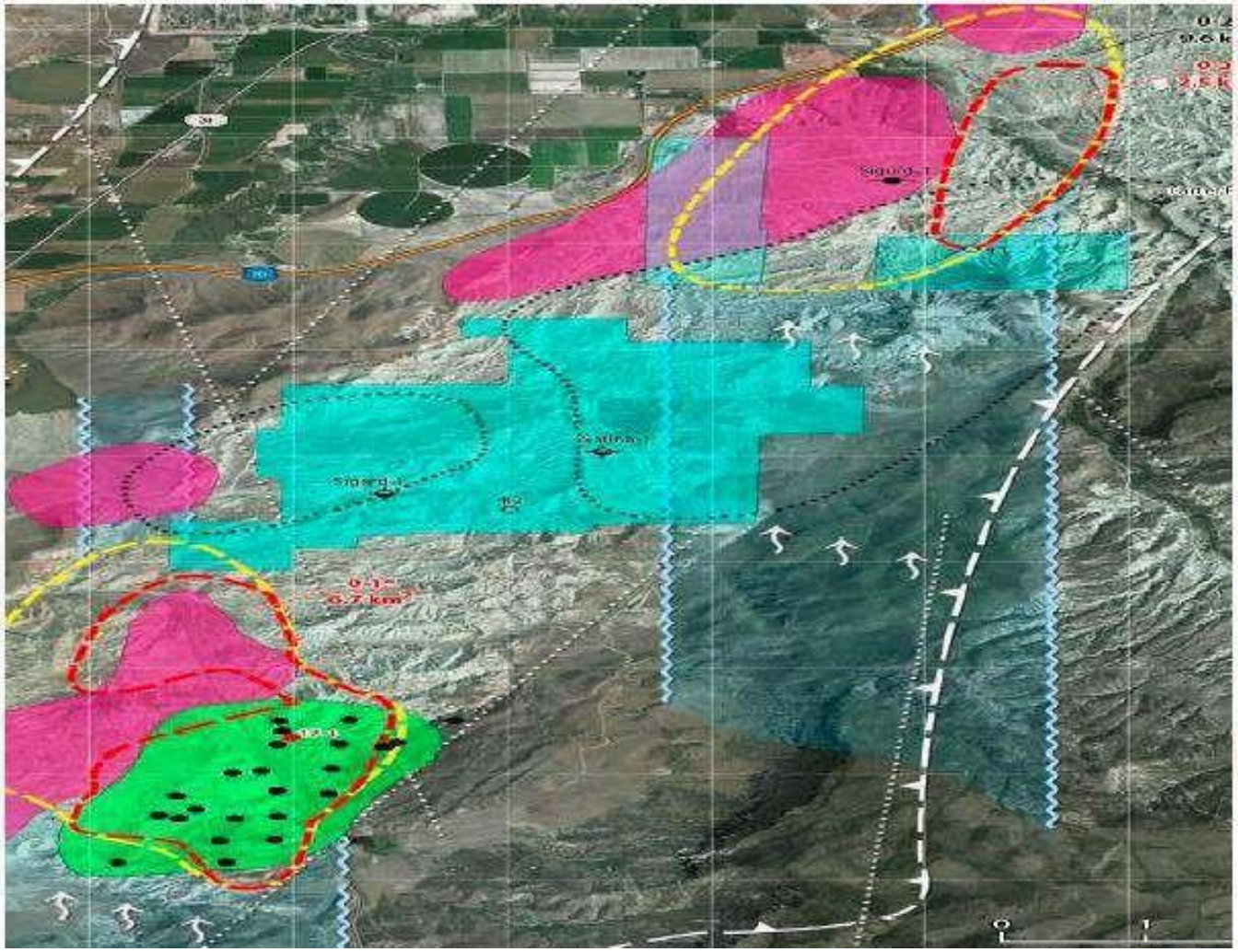
Based on the results of work on a given territory, underground natural gas accumulations were discovered having industrial significance, 3 points for drilling industrial wells were selected and surveyed.

The results of drilling a well at one of the proposed points confirmed the presence of a natural gas reservoir. The gas pressure in the deposit proved to be abnormally high, 620 atm., in accordance with the survey data.

Director of
Institute of Geophysics and
Problems of the Earth
Pavel Ivashchenko

«ІНСТИТУТ ГЕОФІЗИКИ ТА ПРОБЛЕМ ЗЕМЛІ»

Case Study III



License block in Utah, USA

The oil accumulations and wells locations have proved the delineated anomalies. Recommendations were made to drill new wells at the identified anomalies to the north-east.

Testimonial

"CARPATHIA", LLC
Limited Liability Company
470 E 3900 So Suite104, Salt Lake City, Utah 84107
Off.801-293-3314 Fax:801-303-0720
Cell:801-380-2087 ttvol333@gmail.com

"КАРПАТІЯ", ТОВ
Товариство з Обмеженою Відповідальністю
Cell:8063-740-4071 ttvol333@gmail.com

FINAL REPORT
On Presentation-Demonstration of "Deep Vision" Model

"CARPATHIA", LLC, represented by Vasyl Lyubarets, as a party representing "Deep Vision" Model of discovering natural resources that being tested, and Kelly Alvey, as a party participating in the test, have executed this Final Report concerning final results of testing unique Model "Deep Vision".

Results of inspection of objects, located on the territory of the state of Utah, USA Dated 25 of February 2009

Object #	Kelly Alvey's data	"Deep Vision" data	Comparison %	CONCLUSION
X "0"	Nothing	Nothing	100 %	Matching results
X 1	Nothing	Nothing	100 %	Matching results
X 9/1	6380	6150-6450	100 %	Matching results
X 9/2	6380	6150-6420	100 %	Matching results
X 9/3	6500; 9500-10000	6040-6420; 9450-9750	98 %	Matching results

Director of "Institute of Geophysics and Problems of the Earth"
Technical Director of "Benif International" Corporation — Pavlo N. Ivashchenko

Inventor of "Deep Vision" Model
Professor — Vitaly A. Gokh

Inventor of "Deep Vision" Model
Professor — Mykola I. Kovalyov

Signatures of Witnesses

Vasyl O. Lyubarets, Leader-President of "CARPATHIA", LLC

Kelly Alvey

Rex W Hardy, Lawyer

Roy Moore, Wolverine Gas and Oil Company of Utah, LLC. Landman

Ray Beckham, BYU Professor

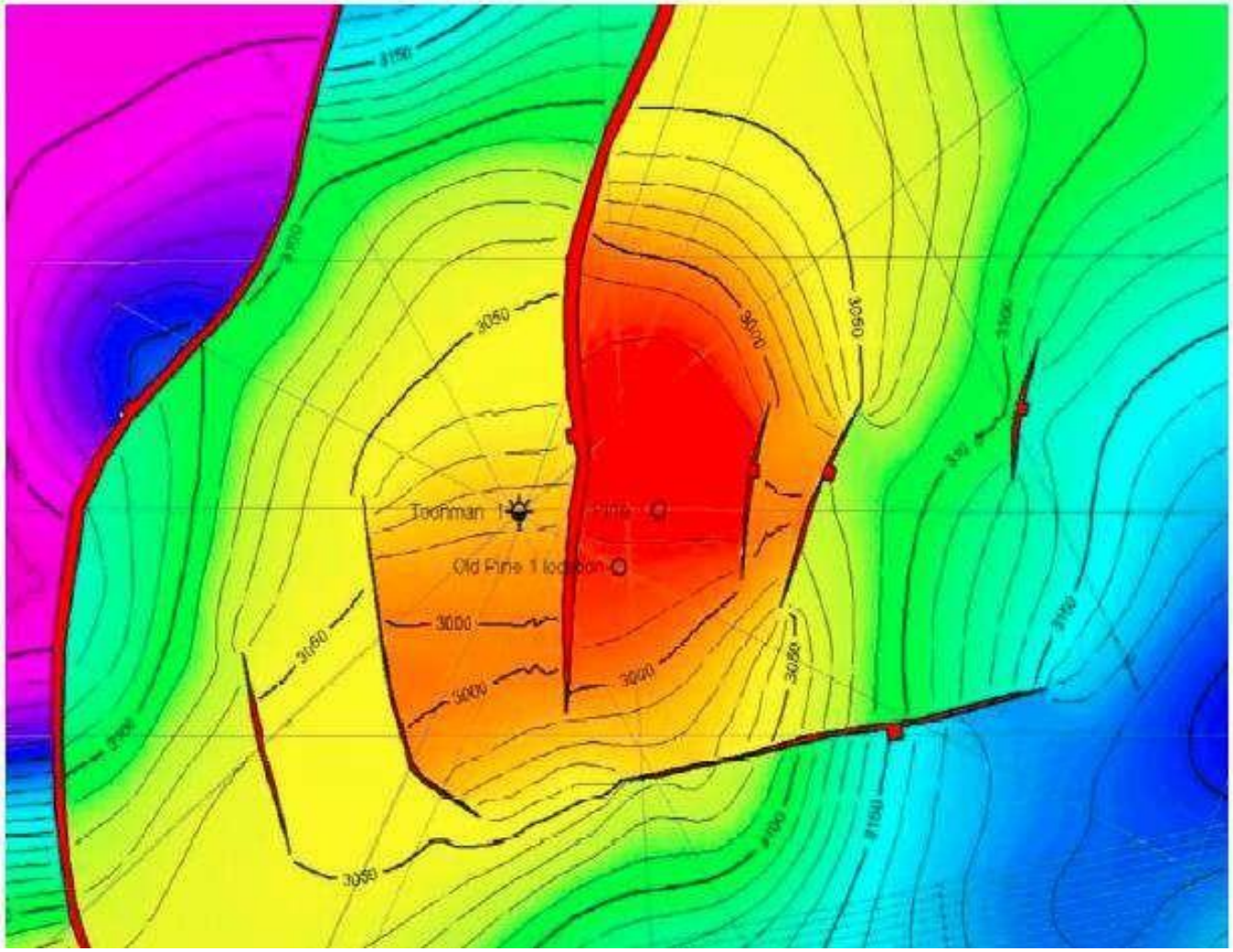
Jeffrey F. Chivers, "ENDEAVOR" Capital Group, LLC

Brad Whittaker, CEDO Executive Director

Edward W. Fail, P.G.UT Government Department of Natural Resources

Arbitrator — Elizabeth Goryunova, Director of International Relations Salt Lake Chamber of Commerce

Case Study IV



License block Pel-105 in Australia

Well Pine-1 location was changed as suggested the identified anomaly. The well has been drilled and proved to be productive.

Points of Consideration

1. *Highly Cost-effective and Time-effective technology for identifying the focus area of hydrocarbons and other minerals IN South América.*
2. *This technology is unique. No analogue image processing available in the world.*
3. *The reliability of the obtained results based on NMR & remote sensing data after Step-1 & 2 is 60%-80%, and after performing field work in Step-3 is about 90%.*
4. *3D Seismic data acquisition area could be finalized without investing time and money in 2D seismic and other geophysical surveys.*
5. *If seismic is already done in any area, this NMR-RS technology helps in identifying and validating the drilling locations. Also helps in the assessment of probable reserves of hydrocarbons, ores and groundwater prior to drilling.Usefull for Re exploration in Brownfield (oil, gas, minery)*
6. *This Technology is very useful in the remote and topographically challenging terrains like Andes or Shale área in South of Continent (Vaca Muerta, los Monos..)*
7. *Detection of hydrocarbon and geothermal waters up to depth of 5000 m, ore bodies up to 1500m, underground drinking water to depths of 3000 m.*
8. *Vertical resolution of the anomaly after Step-2 is 100m and after Step-3 is 30-50m.*
9. *The total time for the execution of NMR-RSS exploration work on survey area of 10000 sq. km. is approximately 2 months for Step-1 & 2, and 5-6 months for Step-1,2 &3.*

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