



## UZBEKGEOPHYSICS" - activities for the benefit of the country

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### ABSTRACT

In any country of the world, there is a practice in the production of hydrocarbons that plays a huge role - the structures of geological exploration. Uzbekistan is not an exception to the rule here. In our country, great efforts are being made to explore new deposits of hydrocarbon raw materials. In the current conditions, when the wealth of the country's subsoil is a source of prosperity and economic growth of the country, the activities of UZBEKGEOPHYSICS JSC can be considered very important in this area.

**Keywords:**

Exploration, hydrocarbon, expedition, well, logging, development.

Our country has untold riches in its bowels. Proper use of them is the key to success not only in the economy, but also in all other sectors.

In the study of the geological structure, especially in the exploration and prospecting of oil and gas fields, geophysical methods of exploration are of great importance.

The first geophysical studies for oil and gas were started in Uzbekistan in the mid-forties by the Office of Field and Production Geophysics of the MNP on the territory of the traditional oil provinces - the Surkhandarya and Fergana intermountain depressions.

The increase in the volume of exploration work led to the need to form in August 1957 a specialized "Uzbek Geophysical Trust", now the Joint Stock Company "O'ZBEKGEOFIZIKA".

This contributed to systematic and targeted geophysical research on the territory of the republic, involvement in the exploration of the Ustyurt region and the Bukhara-Khiva oil and gas region, where large reef hydrocarbon deposits were discovered. Until 1995, the geophysical service was part of the State Committee for Geology, and since 1996 it has been part of the National Holding Company Uzbekneftegaz. According to the Decree of the

President of the Republic of Uzbekistan dated November 18, 2019 No. No. PP-4522 "On measures to improve the system for organizing and conducting geological exploration for oil and gas" JSC "Uzbekgeofizika" was transferred to the structure of the State Committee for Geology.

The Company has 5 branches (expeditions), geographically located in the main oil and gas promising regions of Uzbekistan:

- "Bukhara geophysical expedition",
- "Fergana geophysical expedition",
- "Ustyurt geophysical expedition"
- "Yakkabag geophysical expedition",
- "Amirabad field-geophysical expedition".

The Company and its branches in the field successfully solve the problems of a comprehensive study of the deep geological structure of the oil and gas regions of the Republic, search, identification and preparation for deep drilling of promising oil and gas structures, conducting specialized field geophysical surveys in wells

The subject and goals of the company's activities

The purpose of the Company's activities is to make a profit when performing geophysical surveys for oil and gas.

The main task of the Company is to meet the needs of the state and other customers in geophysical work on the territory of the Republic.

Field studies are carried out using advanced methods of seismic prospecting CDP 2D and 3D, VSP, electrical prospecting MTS, ZSD-ZI, VES-VP and ChZ-VP, high-precision gravimagnetic survey of various scales. In field work, modern technologies of non-explosive excitation by powerful seismic vibrators and registration by multichannel telemetry systems are used.

Field geophysical works are carried out at all stages of well construction during exploration and operation of deposits and include:

- wireline logging in open and closed holes,
- opening and separation of layers,
- carrying out emergency liquidation works,
- geological and technical studies of wells,
- gas logging control during drilling.

In well surveys, computerized logging stations are used with a set of digital downhole tools that provide an extended range of geophysical surveys in wells.

On the basis of the Joint Stock Company in the Geophysicist settlement of the Kibray district of the Tashkent region, specialized Parties of direct subordination to the Association are located, providing services to expeditions:

- A production geological and methodological batch of processing with a geophysical computer center equipped with high-speed hardware and software systems Integral-plus, Geovector-Plus and Geocluster, providing deep processing and machine interpretation of field geophysics data with high reliability, confirmed by drilling results.
- A party of reserves calculation that performs a laboratory study of the petrophysical properties of the core, operational and quantitative interpretation of well logging data using the GeoOffictSolver HSC and calculation of hydrocarbon reserves.

A batch of digital equipment with a training and methodological center that monitors the technical condition of geophysical equipment in all expeditions and various types of its repair. The Party has the only Metrological Center in Central Asia that conducts

metrological verification and calibration of equipment:

- for seis marine reconnaissance MOGT-2D and 3D;
- downhole instruments and surface equipment:
- for vertical seismic profiling;
- for electrical, acoustic, radioactive and other logging methods.

#### TRAINING FOR SPECIALISTS

Educational and methodological center operating on the basis of the Institute of Higher Engineering

Pedagogy of the Tashkent State Technical University named after Beruniy, carries out advanced training and retraining of geophysical specialists in relevant areas of technical progress:

- new technologies for field and field geophysics (3D seismic survey, multichannel digital telemetric registration systems);
- computer logging stations and operational GIS processing systems;
- advanced systems for machine processing and interpretation of geophysical data;
- management and production of blasting during seismic exploration and perforating and blasting in wells, and others.

Classes are conducted by highly qualified specialists of the Association, the Institute and employees of organizations - suppliers of imported equipment.

Upon completion of the training course, specialists receive a certificate for the right to maintain equipment and equipment, as well as to perform the relevant types of work and services.

The longevity of JSC "Uzbekgeofizika" is due to the consistently high technical level of the equipment and equipment used and the high professionalism of specialists

#### Products and services

In the Republic of Uzbekistan, JSC "Uzbekgeofizika" is a service provider for field geophysical work using seismic survey methods in 2D and 3D modifications, electrical, gravel and magnetic surveys in the search and exploration of oil and gas prospective structures.

By order of drilling organizations, Uzbekgeofizika JSC performs field and geophysical work in wells during the exploration and operation of deposits and calculates hydrocarbon reserves.

To date, the products of JSC "Uzbekgeofizika" are:

- results of field production geophysical surveys, experimental methodological and thematic work, including office work in the form of geological reports and recommendations for the continuation of exploration work in the search and exploration of oil and gas fields;
- results of processing and interpretation of field and production geophysics data with issuance of relevant conclusions and recommendations for drilling and well testing;
- preparation and transfer to drilling of oil and gas promising structures and monitoring of promising areas being drilled;
- calculation of oil and gas reserves by fields;
- long-term and operational planning of geophysical work to ensure the growth of hydrocarbon reserves in the Republic of Uzbekistan;
- development, improvement and implementation of new methods, technologies and technical means;
- systematic replenishment of geological and geophysical funds, ensuring their use in the prescribed manner;
- services for testing, adjustment and repair of geophysical equipment, instruments and equipment, development and small-scale production of non-standard equipment and equipment, petrophysical laboratory core analysis, preparation of design estimates and other regulatory technical and methodological documentation for geophysical work, provision of scientific and technical information, performance of design work and other types of work not prohibited by the legislation of the Republic of Uzbekistan;
- release of consumer goods and provision of paid services to the population.

The quality of the presented results and the services provided meets the requirements of the standards and regulations of the industry and the enterprise

Article 55 of the Constitution of the Republic of Uzbekistan stipulates that the land, its subsoil, water, flora and fauna and others are natural national wealth, are subject to rational use and are protected by the state. There are currently 2,086 deposits of 73 types of minerals in the republic, 437 of them are being developed on an industrial scale. The State Committee for Geology and Mineral Resources implements a unified state policy in the field of geological study of mineral resources and protection, as well as the settlement of mining relations. The main part of the regulatory framework regarding the sphere has been updated, a number of positive changes have been made. In particular, the first steps have been taken in the practice of providing services for issuing a license for the right to use subsoil plots in electronic form. The procedure for issuing a license for artisanal mining of precious metals following the results of an electronic auction on the electronic trading platform "E-IJRO AUKSION" has been established. At the same time, in the further development of the sphere, the Ministry of Justice, together with the State Committee for Geology and Mineral resource base. The essence of geology is to explore, identify underground resources, form a mineral resource base, keep records and extract these resources. In particular, work on the exploration of underground resources is carried out by SE "Kizilkumgeologia", "Toshkentgeologists "Urannodirmetallgeologiya" committee. Geological exploration of underground resources is a very complex and time-consuming process. The regulatory documents currently used for regulation were developed in the 90s of the last century. They do not provide for the use of modern technologies and methods of work, they do not correspond to realities. As a result, this leads to the fact that the average period of work on the study and geological mapping is 3-5 years, only 4-5 geologists carry out permanent research. For example, an analysis of the experience of such foreign countries as Australia, Great Britain, China and Turkey shows that advanced information technologies are used in the implementation of geological exploration,

including software Geobank mobile, Geobank, Micromine softw tablets. In addition, the current procedure for accounting for reserves of underground wealth identified during geological exploration is not implemented in the G system and is used in 90 percent of the countries of the world, which to some extent prevents attracting foreign direct investment into the sphere. It should be noted that these points were criticized at a meeting on the further development of geology, the expansion of geo-mining, which was chaired by the President of the Republic of Uzbekistan on July 1 of this year. As a result, relevant instructions were given to a qualitatively new level. High tax rates and subscription bonus rates (up to 10,000 minimum wages) also negatively affect the widespread attraction of investments in the sphere. For example, in our country, the tax rates for the use of subsoil are 25% for gold and silver, 15% for copper, 10% for uranium, 10.4% for e. .6% for gold, 4.2% for silver, 4.5% for copper, 5% for uranium, 2 work of wealth has a number of unresolved problems. For example, automated electronic public services have not been fully implemented in the sphere, which leads to the request from a business entity of documents that are not provided for in legislative acts, untimely consideration of applications for obtaining permits, unreasonable refusal to issue land plots for deposits by state authorities on places. The State Committee for Geology and Mineral Resources from April 15 of this year, individuals and legal entities, issues licenses for the extraction of precious metals at alluvial gold deposits on the terms of entrepreneurial risk. At present, 42 out of 70 subsoil plots located on the E-IJRO AUKSION unified electronic trading platform have been sold, and the results of the study revealed that excavation work has not begun on any of these subsoil plots. Analysis of the activities of the Institute of Geology and Geophysics named after Kh.M. Abdullayev, who plays an important role in the development of the sphere, it was revealed that sufficient attention is paid to this. In particular, the administrative building of the

institute was built in 1968. 80% of the building is outdated and does not meet the requirements of the time. Moral and physical special equipment, geophysical and geological equipment involved in field work. 75% of electron probes, microanalyzers, microscopes and other equipment available in the laboratory became unusable. To eliminate the above systemic shortcomings and problems, the Ministry of Justice has developed the following proposals aimed at improving the field of geology, the process of providing public services in this direction: - revision of internal documentation, streamlining it with a single regulatory legal act; - revision of documents regulating the conduct of geological exploration in accordance with international standards, including from the point of view of an adaptable procedure aimed at increasing efficiency; - determination of measures for the introduction of software and information and communication technologies in the implementation of work on the region's geological mapping of subsoil, further strengthening the material and technical base and funding; - revision of royalties and lump-sum payment rates for the main types of strategic metals in terms of their reduction; - development of a government decree on the development of the activities of the Institute of Geology and Geophysics named after Kh.M. Abdullayev; - simplification of the decision-making process on the allocation of land plots on the territory of the deposit by local government authorities, compliance with the process of issuing a certificate of granting a mining allotment.

Thus, JSC "UZBEKGEOPHYSICS" is the flagship in solving the pressing problems of the industry.

#### **List of used literature:**

1. Openinfo.uz 19.12.2017
2. inovageo.com 11.06.2020
3. Uzbekgeofizika.uz.22.09.2019.
4. ing.uz 22.03.2017.
5. Gazeta.uz. 05/22/2020.