

# History of Oil Production in the North Caucasus (Second Half of the XIX - Early XX Centuries)

Daukaev A.A.

Department of Geology, Geophysics and Geoecology  
CRI of the RAS  
Department of Applied Geology  
GGNTU  
Department of Earth Sciences  
AN CR  
Grozny, Russia  
daykaev@mai.ru

Gatsaeva L.S.

Department of Geology, Geophysics and Geoecology  
CRI of the RAS  
Department of SPO, CSPU  
Grozny, Russia  
gls69@yandex.ru

Elzhaev A.S.

Department of Geology, Geophysics and Geoecology  
CRI of the RAS  
Department of Geophysics and Geoinformatics  
GGNTU  
Grozny, Russia  
aslambek.elzhaev@mail.ru

Khamzatov Z.R.

Department of Museology and Cultural Studies, CSU  
Grozny, Russia  
Vip.hamzatova@mail.ru

Sulumov Z.Kh.

Department of National History and Political Science  
CSU  
Department of History  
CSPU  
Grozny, Russia  
zsulumov@mail.ru

Gayrabekov U.T.

Department of Geology, Geophysics and Geoecology  
CRI of the RAS  
Faculty of Geography and Geoecology  
Chechen State University  
Grozny, Russia  
gairabekov\_u@mail.ru

Talkhigova Kh.S.

Department of Theoretical Physics  
CSU  
Grozny, Russia  
talhigova@mail.ru

Kindarova Y.A.

Department of History  
CSPU  
Grozny, Russia  
kindarova\_yakha@mail.ru

**Abstract** – The article provides information on the first oil wells drilled in the North Caucasus. It analyzes the role and importance of the oil industry in the North Caucasus at the beginning of the 20<sup>th</sup> century. Large foreign companies have shown great interest in oil resources of Chechnya. The main factors that contributed to development of the borehole oil production and its advantages were identified. The history of the industrial oil production in Russia provides a striking picture of the struggle of domestic capital with the world oil companies. The article describes the initial stage of industrial production in Grozny oil region which played a key role in developing the oil industry in Russia.

**Keywords** – well; drilling; well oil production; oil industry; the North Caucasus.

## I. INTRODUCTION

In the second half of the XIX century, there was a gradual transition from shaft to well oil production. Socio-economic processes in Russia as well as an increase in demand for kerosene played a crucial role in developing the oil industry.

## II. METHODS AND MATERIALS

The research is based on archive materials and published works.

## III. RESULTS

Drilling as a method for mining and exploration of various minerals has been known since ancient times. Brod and Eremenko noted that more than 2000 BC in Sichuan (China),

salt wells were drilled using bamboo rods [1]. In Russia, the method of salt and water well drilling using wooden or iron rods was used in the XVI-XVIII centuries.

In the XIV century, a special instruction on salt well construction “Mural” was issued. The borehole was called a “pipe channel”, the drilling foreman was called a “pipe master”, etc. [2].

The Russian mining engineers used the experience of salt well drilling accumulated for many years. According archival sources, oil well drilling methods were used on the Taman Peninsula in the 30s of the XIX century [2].

The first oil well was drilled in 1848 in the Bibi-Heybat Square of the Absheron Peninsula by F. Semenov. No one paid attention to the well because it did not produce industrial oil inflows [3].

The technologies existing before the second half of the XIX century (hole drilling, mine drilling, well drilling, etc.) could not meet the demand for oil. Since the 1960s, drilling methods has been used for developing deeper oil-bearing layers of the earth.

After the first wells were drilled, a clear advantage of the borehole production became apparent. Oil exploration operations were carried out on the left bank of the Kudako River [4]. In 1866, in Kudako, A.N. Novosiltsov drilled a 55-meter-deep well with a production rate of 163.5 tons. In 1868, in the Taman fields, the total production volume reached 16 thousand tons, while in 1862, in Baku fields, the oil production from 220 wells was only 5,48 thousand tons [5]. The abolition of the buy-off system in Russia in 1872, the results of drilling the first wells in Absheron and Taman, the ever-increasing oil refining volumes contributed to further development of oil drilling. In 1873, five wells were drilled in the oil-bearing areas of Ilyin district of the Kuban, region. Their flow rate varied from 9.5 to 16 tons per day. Several wells were drilled in Maikop region (1876-1880) with an insignificant flow rate [2].

In the early 1890s, in Dagestan and Terek region, A.M. Konshin conducted geological studies that were of great theoretical and practical importance, and formed a basis for drilling new wells [6]. He studied the geological structure of oil-bearing areas of Terek region and southern Dagestan and emphasized the possibility of formation of large accumulations of oil in the domes of the anticlines, where there was no surface oil.

#### *A. The beginning of industrial production and abolition of the buyout system in the North Caucasus (1893-1901)*

In June 1893, in Grozny oil-bearing region in the Alkhan-Yurt area, Ahverdov drilled well No. 1-1, from which oil was produced in August. Drilling was carried out under the supervision of L.I. Baskakov assisted by A.M. Konshin (the well was in operation until 1902, the total oil production volume amounted to 80.7 thousand tons). In 1894, in the North Caucasus, the buyout system was abolished and the “Rules on the oil fields of the Kuban and Terek Cossack troops” were adopted [7]. The lands around the oil sources of the Terek region were declared “oil-bearing” and were leased. Other areas were issued for exploration. From 1895 to 1900, five trades of

oil-bearing lands were held, and more than 5 thousand applications for oil exploration certificates were filed [7]. The leasing of oil-bearing sites continued in the early twentieth century. Later, “The alphabet of private and leased oil-bearing sites of Grozny oil industrial region” was attached to the map of Grozny district [6]. In 1893-1895, the Akhverdov and Co partnership drilled 6 wells, the Rusanov partnership - 2 wells and the Moscow partnership - 5 wells. Oil production was carried out by the partnership Akhverdova. According to the mining engineer Baskakov, in 1893, 85 thousand tons were produced, in 1894 - 170 thousand tons, and in 1895 - 110 thousand tons. [9]. The turning point in the study of the oil and gas potential of the area was 1895, when well No. 7/977 of 141 m in depth began to produce over 16 thousand tons of oil [9]. The well was used for three years and produced more than 710 thousand tons of oil. These results attracted large oil owners to Grozny district. Grozny and Starogroznskaya oil-bearing area became well-known around the world. English, Belgian, Dutch and other foreign oil companies, crowds of unemployed went to Grozny; new partnerships and companies for oil extraction and exploration were created. In 1895, the first oil pipeline was built by the “Akhverdov and Co” and oil refinery “Uspekhn”. The Russian Standard and Nobel firms began construction of oil refineries [10].

A number of companies were drilling oil wells in Grozny district. IN 1895, the oil production volume increased almost six times and amounted to 454 thousand tons. However, in 1897, oil production in Grozny district decreased by 1/3 compared to 1895, despite an increase in the number of operating wells. The owners of oil-bearing lands were guided by superficial signs: the presence of surface oil, bituminous rocks, gas manifestation, etc. However, the anticlinal theory was developed a long time ago. Large oil companies said: “There will be enough oil for many decades, and there is no need to use artificial measures or to search for new deposits”. In 1900, there were 11 oil industrial in Grozny district. They have drilled over 150 wells [2]. Some entrepreneurs carried out exploration works outside Grozny district: in the western part of the Terek district (Voznesensk and Khayan-Kortov sections), on the Bragan and Gudermes ridges. Drilling began in Dagestan, in areas of surface oil outlets (Berikei, etc.). Due to the lack of information on the geological structure of the areas, only in some wells, there were oil flows. The need for studying the geological structure became apparent. Drilling operations were suspended for some time.

#### *B. Scientific research carried out by the Geological Committee and the survey and exploration of oil and gas (1902-1917)*

Since 1902, the Geological Committee of Russia began areal studies on the geological structure and oil and gas potential due to unsuccessful drilling results and ever-increasing demand for oil. For further development of oil and gas surveys, the results of studies conducted by Yushkin, Andrusov, Mikhailovskiy, Strizhov, Kalitskiy, Golubyatnikov and other famous geologists were used. The results of geological research carried out by the Geological Committee were a scientific basis for further development of oil and gas exploration. Since 1910, exploration began in the

Novogroznenskaya area. Strizhov emphasized the need for this exploration at the very beginning of the 20th century. In 1910-1913. In the Novogroznenskaya area, three wells were drilled. In 1913, well "Bellika" 560 m in depth produced a large oil flow. The discovery of the second large field in Grozny district was of both theoretical and practical importance. New fields became the second largest oil production area in Grozny.

Strizhov and Savchenko studied the structure of the Voznesensk anticlinal fold. In the north wing of this fold, oil was discovered. In the southern wing, the South Voznesensk fold was discovered (1912). Two wells drilled on the southern wing of the Voznesensk fold produced oil in 1915 [6]. It was the third oil field discovered in Grozny district.

Since 1907, they began to carry out exploration works in the Khadyzhen area. In 1911, the first oil was produced. In the same year, geological surveys in Abinsk District of Krasnodar Krai were conducted by Charnotskiy, who plotted a geological map and described the geological structure of the area. In 1906-1915, Charnotskiy, Bogdanovich and Prokopov plotted a geological map of Maikop oil region. In 1909, the well drilled in the Oil Shirvan area produced oil from Maikop sediments (depth 74 m).

#### *C. Development of the oil industry in the North Caucasus during the First World War*

At the beginning of the First World War, the oil industry of Chechnya experienced a number of crisis phenomena. The Russian industry was unprepared for war. In the pre-war years, the oil industry of Grozny district developed intensively. In 1914, 98.4 million pounds of oil were produced in Grozny oil region. In 1900, The oil production volume amounted to 5%, while in Baku, it was 23%. This was due to the growth of production, new wells drilled in Grozny oil-bearing region, and a gradual decline in the production of Baku oil. Consequently, the importance of Grozny oil industry increased. In 1914 (the outbreak of the war slowed down operations), 81200 meters were drilled. During this period, transportation of oil and petroleum products was efficient. For four years, oil production in the new field amounted to 638 thousand tons, which helped compensate for a decrease in the production volume in the the Starogroznen field. In 1917, the total annual production volume for the Starogroznen and Novogroznen deposits was more than 1,700 thousand tons. For 1893-1917, Grozny district produced more than 18 million tons of oil. [6]. At the beginning of the twentieth century, there were only three small refineries in Grozny, and by the first half of 1914, there were seven oil refineries (the eighth refinery was under construction). In 1914, the Akhverdov and Co. built an oil pipeline 150 km long to the Caspian Sea (to Port Petrovsk). It connected Grozny and the Volga market. The construction costs amounted to 4.5 million rubles [11]. During the First World War, American companies wanted to obtain Grozny oil resources. The Standard Oil and Nobel trusts merged, and the Shell Trust continued to grow [12]. The history of the Russian oil industry from 1901 to 1918 is a struggle of domestic capital against the world oil trust. The economy need oil. The oil industry, as the most profitable business, attracted both Russian and foreign capitalists. They

searched for and found new deposits and invested their capital in them. The companies which settled at Grozny oil fields before the beginning of the war continued to control oil production. The role of these companies was crucial. In 1915-1916, the Royal Dutch Shell Transport Company, the Nobel partnership, the Standard Oil company and the Akhverdov and Co partnership increased their land resources [13]. Of 109.16 million pounds of oil produced in 1917, The Shell company produced 50.97 million pounds of oil (46.7%), the Standard Oil company produced 29.19 million pounds of oil (26%), the Ahverdov and Co produced 18.27 million pounds of oil (16.7%) and the Cheleken-Dagestan partnership (the company of the Nobel partnership) produced 4.38 million pounds of oil (4%). Other companies that were not part of these companies produced only 7.35 million pounds of oil (6.6%). Thus, 93.4% of the oil produced in Grozny was accounted for by foreign companies [14]. During this period, the influence of banks on Grozny oil industry increased. Partnerships engaged in oil extraction and processing borrowed money for exploration works. Russian and foreign banks sold shares of oil companies in the Russian securities and foreign markets. Thus, the share of oil companies fell on stock exchanges in Russia and abroad [15]. Along with Baku oil industry, Grozny oil industry played a leading role in the country. In 1917 oil was extracted in Baku - 395.3 million pounds, Grozny - 109.6 million pounds, Romania - 21.8 million pounds, Indonesia - 105.1 million pounds [7]. These data show that Grozny was an important region in the global oil sector. A sharp increase in oil production in Grozny district was due to enhanced development of new oil fields and the use of a mechanical drilling method. If in the initial period, the share of domestic capital accounted for a low percentage of oil production, after 1917 the situation changed dramatically. With an increase in oil fields, the number of oil wells also increases. By 1917, in Grozny oil region, there were more than 300 oil wells. However, due to the lack of metallic oil reservoirs and pipelines, "the extracted oil flowed into open earthen lakes, troughs and craters which caused large losses of oil and its valuable chemical components [16]. Let us give statistical data on the oil fields of Starogrozneny and Novogroznen areas for 1917: if in March 1916, the total oil production volume was 8.848.938 pounds, at the end of February 1917 the oil production volume was 8.535.689 pounds [17]. In February 1917, the number of workers was 7113 people and 1914, respectively. The total number of workers was 9027 [18].

#### IV. CONCLUSION

The borehole oil production method used in the North Caucasus was crucial for development of the oil-producing and oil-refining industries and the Russian economy as a whole. Due to the First World War, the Russian economy, including the oil industry, experienced the crisis [19]. During the First World War of 1914-1918, oil resources of Chechnya were the most important factor for modernization of the Russian economy. Rich oil-bearing areas became attracted attention of Russian and foreign companies that controlled the oil industry in the region. However, the government, realizing that oil is a

strategic raw material, tried to enhance its own control over the oil-bearing areas. In the Novopromyslov oil region, these efforts contributed to the increase in the share of national capital in this strategically important economic sector. The oil industry contributed to the development of related and subsidiary industries of the region.

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