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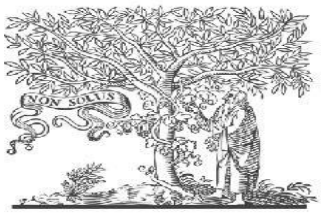

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IJIEMR Transactions, online available on 12th March 2021. Link
https://ijiemr.org/downloads/Volume-10/ISSUE-3

DOI: 10.48047/IJIEMR/V10/I03/53

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Volume 10, Issue 03, Pages: 299-302.

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SCIENTIFIC BASIS OF GEOTECTONIC FACTORS AND THE INFLUENCE OF SOLETOKTOGENESIS ON THE FORMATION OF ANOMOUSLY HIGH PRESSURE IN THE FORMATIONS

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Abstract: An analysis is made of the formation of anamolously high pressures in the formations during the tectogenesis process, the location of salts in the formations and the occurrence of complications during the drilling process depending on the field conditions.

Keywords: anomalous pressure, tectonic, fluid, geotectonic, salt tectogenesis, salt marsh, flowing salts, halogen, hydrothermal, brine, gravitational motion, geostatics, bends, anhydrites, rock pressure.

Introduction

Geothermal conditions in the oil and gas field are one of the main factors in the formation of abnormally high pressure in the reservoir (abnormally high pressure in the reservoir). The increase in temperature in the reservoir is associated with tectonic movements, and the temperature over large areas slowly penetrates from the deep layer of oil into the deeper layer, causing its abrupt changes. The emergence of catagenetic processes in intrusive massifs, volcanogenic-sedimentary complexes, fractured systems, saline shafts and organic matter increases the temperature of the layer within the boundaries of the clean zone and affects the formation (AHPD). An increase in temperature significantly increases the volume of rocks, fluids, oil, gas and water [3]. According to a study by Bradley D.S., the grain size expansion of non-cemented spherical minerals is approximately $5x10^{-6}$ units. vol. / ^{0}C. The volumetric expansion coefficient of fluids in the formation (unit of volume / ^{0}C) is as follows (Table 1).

Table 1

Water	$200x10^{-6}$	Oil	$1000x10^{-6}$
Mineral water	$400x10^{-6}$	Gas (ideal)	$4000x10^{-6}$

Favorable geotectonic conditions play a leading role in the formation of anomalous pressures in the upper layer. The most active tectonic conditions are characteristic of the Alpine fold region, but they correspond to very ancient folds.

Uneven distribution of deposits leads to the formation of layers of high and low pressure, which in turn leads to a differentiation of processes, as a result of which the force of gravity, vertical pressure acts on the plastic mass and directs it to move to the low pressure zone.

Chostov B.A. Studying the cause of formation (AHPD), he explains that in addition to rock pressure, tectonic stress played a major role in the formation of reservoir energy and the rapid formation of folds in the roof, where the greatest stress accumulates [3]. Explaining the mechanism of the transfer of rock pressure to a layer of liquid and gas is a complex process, and under normal conditions rock pressure is perceived by the skeleton of the layer and is not transferred to fluids. The study (AHPD) in oil fields depends on the nature of the geologic shift and is a natural state. Typically, fractured limestones are exposed by oil and gas deposits and are covered with clay and other types of plastic deposits.

Salt tectogenesis is widespread in the Amudarya uplift of the Chordzhu plateau and in the Bukhara-Khiva oil zone, as well as in other

regions. Salt domes and rock salts play an important role in the formation of stuck oil and gas pipes. Such formations are observed in a number of fields in the Predgissar oil and gas zone, in the geological position of the Zevarda, Alan, Pomuk and Cholkuvar fields. These deposits are characterized by deformation of sedimentary deposits, shear penetration of saline mass, active penetration of salts and simultaneous uplift of layers.

The specificity of saline diapirism has led to the occurrence of saline problems through the deposition intervals above it. Leverson scientifically substantiates his theory of plastic plastic leakage of salt [6] in such a way that the salt itself is deposited in a layer in the form of a highly viscous liquid or plastic substance and has the property of readability. This is due to the fact that during the drilling and operation of the Kokdumalak field, oil was extracted from the products. If we observe the accidents that occurred during the drilling of wells in a desert area (in 3 wells), it is observed that in the initial period of the fountain gas appears under high pressure, and then a salt mixture comes out.

According to many researchers, in the Surkhandarya and other deposits of Central Asia, there are cases of interlayering of saline layers in the initial period at the high Jurassic period. Its origin under the influence of metamorphic surface waters in halogen formations and in deep settlements has been little studied at individual excavations, sections, or at local sites.

The formation of halogen rocks as a result of hydrothermal processes has attracted the attention of geologists. In the Almalyk region, under hydrothermal conditions, sulfurous and saline rocks form hydrothermal anhydrides in their upper and internal strata [4]. The salt content in naturally saline areas is chloride. They consist of two main processes - evaporation, mixing with sedimentary and saline rocks under surface conditions. This mixing also occurs in the subsurface sedimentary layer. The presence of salt water in salt pools causes them to be buried together or settle by gravity, i. E. layered salt crystals (rapeseed) are formed between the layers. It should also be noted that since the rock rapidly condenses and becomes an impermeable layer, compression occurs not only in the lower layer, but also in the upper layer. Analyzing this idea on the basis of practical data, the mass of rapeseed penetrates to the bottom of the layers as a result of the compaction of the salt layers.

If we analyze this idea on the basis of practical data, then the mass of brine penetrates to the bottom of the layers as a result of the compaction of the salt layers.

Here, heavy salt water falls by gravity. It begins as a result of pool formation and flows rapidly during the salt pool phase, and the saline water salinity reaches its maximum value. Due to the lack of data from studies of gravitational motion in practice, it was neglected. A systematic study of these problems was begun in 1938 by Moscow State University (MSU). Research data show that highly mineralized waters are located on top of less mineralized waters and that they are redistributed by specific gravity.

A heavy flow of liquid goes down, and a light flow goes up. This shift is called the movement of the gravitational flow. It was found that the redistribution of water of different density occurs without an isotherm, the volume of which does not change. This occurs both in the vertical direction and in the inclined surface layer.

The gravitational movement of the flow occurs in the water system of static and gravitational pressure due to the pressure difference, which leads to a downward movement to the difference in specific gravity.

As a result of the redistribution of water, the solutions are mixed, and the falling salt water mixes with the salt more than before. As the difference in specific gravity increases, the gravity fall rate increases as the rock permeability and formation slope increase, and the fluid viscosity decreases.

Under the influence of the gravitational force of gravity, the heavy current during descent forms a conical flow. Salt water flows through the upper surface, if it is flat or

inclined, then it flows through it, if it is curved, then it accumulates in it.

The gap between the streams, the conical stream gradually levels out, the most concentrated water is collected at its base. As a result, salt water is at the lowest position in the system.

When a strong leak reaches the impermeable layer, the contact between them is broken, the salt water reaches the impermeable layer with the maximum internal salinity in the form of elongated drops and again occupies the conical flow. Thus, depending on the source of salt water, the gravitational movement of the flow lasts a long time and its speed, the presence of impermeable layers forms a direct or reverse vertical hydrochemical zone.

When the depth at the top is filled with a $CaC\ell_2$ cone nitrate mixture, a well-dissolved solid salt is added to it. At the bottom of a salt water source, there is a vertical stream of heavy water. The layer of fresh water gradually bends under the influence of the flow of heavy water, turns into a linear flow, and finally, the water in this layer is compressed around and up. A cone-shaped stream of fresh water rises upward, and then salt water rises. The presence of clayey layers reduces the mixing rate. In this case, the salt water flows through the silty surface and is quickly absorbed into the silt. In this case, the flow penetrates the pores and cracks, and the salt water and dirt come into contact with each other.

The salt layer of the Upper Jurassic is spread over most of Central Asia. The Bukhara Khiva-Murgab uplift is characterized by glib-block tectonics. The foundation blocks are separated by ancient fragmented zones, most of which are located far from the drilling zone.

The saline stratified territory of the Mesozoic strata at low altitudes in Khiva-Bukhara-Murghab and Afghanistan, Tajikistan is similar to the lithological features of Southwestern Gissar.

The platform at the bends of South-West Gissar and Beshkent in recent years shows that in the middle part of the section there are red anhydrites within the Almurad dolomites. These types of anhydrites cover a very large area. The thickness of the salted almurad ranges from 10–30 to 100–120 m. Rock salts are gray layered anhydrites, clays, and in some places kaley salts.

This process is very interesting, since the density of rock salt under normal conditions is 2.2 g / cm^3, but it does not change even with an increase in the pressure of the aforementioned rocks. In all cases, it is observed that rock salt does not actively penetrate into sedimentary deposits. An important aspect in order of formation (PLL) is that rock salt and other salts are crushed by permeable fractured rocks that are located in the bedrock. Due to the high plasticity of rock salt in the reservoir, it is partially or completely squeezed out of the structure gaps under the action of geostatic pressure and sent to the transition to the rising sump.

Consequently, the thickness of the rock salt will be the minimum between structures and the maximum thickness in the welded parts of the rise. For example, in the Zewarda, Pomuk and Cholkuvar gas condensate fields, the reef massifs are associated with fractured Jurassic limestones and are thickly covered with rock salt and anhydrite. At the Zeward deposit, the rock salt layer is 2600 to 2950 m thick, and the anhydrite layer is 2774 to 3000 m thick.

On the Pomuk deposit, the rock salt layer varies from 2400 m to 2600 m, and the anhydrite layer changes as it rises, sometimes from 2630 m to 2700-2900 m.The thickness of this layer in the Cholkuvar deposit ranged from 2850 to 3375 meters of rock salt, and the anhydrite extended to a depth of 3430 meters. The salt layers are in soft and solid states, the pressure in the formation is expected to be 25.5 MPa. When drilling well No. 10, the density of the flushing solution was 1.32–1.37 g / cm^3. The pressure in the tectonic zone of the formation was about 63.0 MPa, which led to an accident. Such formations of tectonic compression with high anomalous pressure also appeared during the drilling of the Zeward field.

In such sediments, the AHPD contacted it and transferred it directly to the gas cap due to its contact with the plastic salt rock, its location under the influence of geostatic

pressure and the fact that the gas deposits below were covered with cracks. During drilling, abnormally high pressure is directed towards the top of the well with the opening of the fracture. This mechanism of rock pressure transmission and occurrence (AHPD) is one of the most common cases. The plasticity of the salinity of the reservoirs, their permeability complicates the process of drilling wells and requires the use of sediment washing solutions. It also creates back pressure and prevents deformation of the salt layer.

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