

SUMMARIES

Dubiel S.: Selection of Method for Determining Hydrogeological Parameters of an Unconfined aquifer depending on the Applied Testing Technology • Drilling Oil and Gas 2005 • Volume 22/2

The author analysed the method for interpreting results of testing aquifers in drilled wells based on logarithmic of the this equation view of determining hydraulic transmissibility, piezo-conductivity, and elastic filtering. Attention was paid to the applied methods of testing aquifers with tense water table and unlimited range, in the conditions of constant water pumping rate from the well, and application of one or a few observation (piezometric) wells. The principles for the selection of methods of interpreting the results of observations of water table changes in the well in a function of time, in a function of propagation of the depression cone in the aquifer and in a function of complex (time and propagation) observations were given.

Duliński W., Ropa C.E.: Technical and Energy Analysis of Carbon Dioxide's Disposal in Krynica Zdrój SPA • Drilling Oil and Gas 2005 • Volume 22/2

The increase of natural carbon dioxide's production demand imposes the necessity of improvement processes of gas' extraction, conditioning and disposal. The technical and energy analysis was executed on parameters that had been measured by triple-stage compressor in liquid carbon dioxide's plant in Krynica. The power and efficiency of the compressor had been calculated. The efficiency turned out to be very low and the compressor's has been done. The factor of efficiency of compression, increase over 80%. For decreasing cost of the carbon dioxide's compression, changes in technological scheme of installation have been suggested. Using additional double-stage compressor allows compressing part of gas that is destined for water saturation and therapeutic dry baths, only to 1 MPa. The gas destined for liquefaction will be compressed with triple-stage compressor till 8.0 MPa. As a part of modernization there were introduced some changes in gas conditioning and its storage. The improved method of adsorptive sulfur removal from gas was used by taking impregnated active carbon and there was the membrane replaced in store tank – both acts have an effect on quality of taken carbon dioxide.

Fąfara Z.: Example of Utilization of the Dräger's Method for Recognize of the Hydrocarbon Pollution in Soils • Drilling Oil and Gas 2005 • Volume 22/2

This paper presents the example of utilization of the Dräger's method for localization of the hydrocarbon pollution in soils. First of all, low cost of research and facility of their conducting is advantage of this method. Qualitative and indicative character gotten results presents basic defect of this method. It realize measurements in the area of average largeness of fuel base on area near the stream, where exists the potential danger of the organic contaminants penetrating for surface water. Research relied on execution of the measure well using special probe, collecting of the soil core and measuring the equivalent propane concentration in soil gasses on the chosen depth. It realize two measuring series in different weather conditions, in span over four months. It prepare contour maps of the equivalent propane concentration in soil gasses on base of gotten result. These maps have allowed affirmation of presence the organic contaminants on the chosen area, determination of direction of the potential hydrocarbons inflow and following of efficiency of the made barrier on coast of the stream including the drain well.

Gonet A., Stryczek S., Wojciechowski R.: Compressive Strength of Clayey-Cement Slurries with Fluid Ash "Żerań" • Drilling Oil and Gas 2005 • Volume 22/2

Environmental protection prerogatives and need to lower the price of sealing slurries spur on specialist to seek for new recipes. One of such solutions is the use of fly ashes, which in a number of cases have favourable parameters.

Fluid ash obtained from a power station "Żerań" was characterized in the paper. It was analysed for its suitability for geoenvironmental works, i.e. compressive strength of water-based slurries made of Portland cement CEM I 32,5, fluid ash "Żerań", bentonite clay Monobent W-297. Content of these components in the slurry and water-mixture coefficients were analysed. The obtained results confirmed the manageability of these fly ashes on an industrial scale.

Rybicki M., Wójcikowski M., Blicharski J.: Laboratory Station to Two Phase Flows Investigations in Porous Media • Drilling Oil and Gas 2005 • Volume 22/2

Contents of this paper is the valuation of laboratory station for two phase flows in porous media. This station was contracted at The Gas Department of Drilling, Oil and Gas Faculty AGH University of Science and Technology in Kraków funded by KBN (Project 8T12A04020). This laboratory station enable to carry out the laboratory investigations of two phase flows (gas – gas and water – gas) in porous media. The investigation of mutual gas displacement and the measurement of their concentration at the output of measure chamber. The goal of that investigations it was to determine of methane – nitrogen mixing degree in porous media.

The investigation of mutual gas – water displacement relay on the measurement of water concentration in reservoir by means of microwave apparatus. On the base of this investigations authors test to fix criteria of gas – water contour stability. All carried out investigations fixed usefulness of constructed laboratory station. The investigations will be continued in next years.

Winid B.: Changes in Content Cl^- , SO_4^{2-} and Sulphate Ratio as an Indicator of the Hydrogeological Conditions Estimation Based on the Example of the "Wieliczka" Salt Mine • Drilling Oil and Gas 2005 • Volume 22/2

The content of Cl^- i SO_4^{2-} in "Wieliczka" Salt Mine leaks from several dozen years were used in the calculation of hydrochemical sulphate indicators. Analysis of chemical changes vs. time of these three elements was based on the value of correlation indexes and their relation to each other. The most often observed dependence is a decrease in the sulphate indicator value. Decrease in sulphate content coinciding with an increase in chloride content may cause these changes. Wieliczka waters were classified based on the hydrochemical index value. In the leaks with the greatest number the changes in dissolution of halite and sulphate minerals were not related to each other. For these leaks the value of the index of the sulphate indicator and value of the sulphate content are almost the same. Larger absolute values of the sulphate indicator changes compared to sulphate content may point to a growing danger to the saline water deposits. This may take place when a sulphate zone has been dissolved and due to this, the dissolution of the salt deposit continues.

Wysocki S., Wysocka M., Bielewicz D.: Experimental Study on Corrosivity of Sodium Chloride-Based Packer Fluid in Simulated Offshore Conditions • Drilling Oil and Gas 2005 • Volume 22/2

Packer fluid used in offshore conditions is exposed to extremely different temperatures from -15 to $+60^\circ\text{C}$. Paper presents results of corrosion tests of packer fluid based on sodium chloride with anti-freeze additive – ethylene glycol. Experiments were conducted in simulated downhole conditions. Research results shows that ethylene glycol additive decreases corrosion rate, but still it is pitting corrosion and in low temperature thread-form corrosion also.

Zawisza L., Sowińska-Botor J.: Groundwater Qualitative Changes in the Abandoned "Grodzic" Coal Mine • Drilling Oil and Gas 2005 • Volume 22/2

Closing of mines and flooding old workings is accompanied by a change of the groundwater table level in the Carboniferous aquifer. The 34 coal mines in the north part of the Upper Silesian Coal Basin are connected hydraulically. The connections appear at different depths and are of different character (direct, indirect). Such old workings cannot be totally flooded as the neighboring operational mines could be flooded as well. Only old working in the mi-

nes “Siersza” and “Morcinek” are being totally flooded. In the course of closing, the quality of groundwaters from inactive workings changes. Especially great changes take place in mine’s waters after flooding the old workings at the bottom. The chemical composition of groundwaters changes in comparison to the state, when the mine was operational. Their pH becomes more acid in character, and new ions (mainly sulfate) appear. The qualitative and quantitative changes are forecast for groundwaters. It was based on modeling made for the “Grodziec” Coal Mine.