SUMMARIES

Chlebosz R., Fabia B., Wysocki S.: **Non-bentonite Drilling Mud for HDD with New Polymer PT-51** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

Horizontal directional drilling are more often used in engineer practice. They have to improve living standard by allowing electricity, fuel and information transport and by building municipal water supply systems. When the ground methods are too expensive, or impossible the underground installations will be perfect solution. They enable to avoid easily the obstacles such as: roads, buildings or even rivers. The drilling muds are one of the most important elements of HDD technology. Choosing optimal mud system help maximalize drilling progress and minimalize risk of investment. The article presents results of research into drilling mud for HDD method with the addition of new polymer PT–51 modified by CO_3^- ions. It was also tested against salt monovalent and bivalent contamination, the temperature resistance and lubricity. The results show that composed mud can be applicable in the industry.

Keywords: *drilling mud, horizontal directional drilling*

Dubiel S., Wojnarowski P., Pyrzak P.: **Analysis of Changing Permeability of Main Dolomite Rocks in the Well Zone on the Basis of Drill Stem Testing Results** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

The geologic and reservoir conditions in the Main Dolomite strata of the Polish Lowland as well as their influence on the drilling up conditions and testing of the productive horizon are discussed in the paper with special emphasis on disturbed permeability of rocks in the well zone. The changes of Main Dolomite permeability were analyzed on the basis of the DST DG-2 results. The radius of the well zone of lowered permeability of reservoir rocks was determined.

Keywords: *oil and gas field, anomalous reservoir conditions, drilling up and testing, change of permeability of rocks in well zone*

Wojnarowski P., Pyrzak P.: **Efficiency Analysis of Oil Exploitation with Selected Secondary and EOR Methods Using Numerical Simulation** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

Effective exploitation of matured oil fields became important problem because of high oil demand. It is possible to increase recovery factor by application adequate secondary or EOR method of exploitation. In this work efficiency analysis of water flooding and polymer flooding for Carpathian oil field was done. Results of multivariant numerical simulations shows, that for selected heterogeneous reservoir polymer flooding is much efficient and could be used directly after primary recovery.

Keywords: *oil production, EOR methods, numerical simulation*

Kryzia D.: **Analysis of Natural Gas Changes Concentration at the Global Market** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

This article presents changes in degree of concentration that have occurred over the years on market of natural gas. Aspects such as resources, production, consumption, export and import of natural gas were taken into account. The level of concentration was calculated on basis of participation of individual countries in terms of global data values. The calculation of concentration degree was made also for the world as a whole on the basis of the shares of the different regions. Importance of degree of market concentration on formation of level of energy security was also explained. To measure concentration Herfindahl-Hirschman Index (HHI) was used. The rest of article examines changes in calculated value of HHI and discuss the most important of them. Assesses their significance and determined effects of which have on the natural gas market. The article also attempted to determine direction of future changes to degree of concentration.

Keywords: *concentration, market, natural gas, Herfindahl-Hirschman Index (HHI), energy security*

Seredyuk V., Voltchenko D.: **The Polyfunctional Reagent for Fighting From Scalings, Contained in Asphaltene, Resin and Paraffin Deposits in Fluid Mixture** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

The review of reagents, applied for fighting salt, asphaltene, resin and paraffin deposits in oil-field equipment has been performed. The mechanism and reasons of depositing of salts in fluid mixture and on the walls of equipment have been scrutinized. The mechanism of action of some inhibitors of salt, asphaltene, resin and paraffin deposits has been described. The results of the researches on determination of efficiency of the reagent Tween 80 for the prevention of salt and paraffin deposits have been resulted. On their foundation the conclusions about the efficiency of the reagent have been done.

Keywords: *inhibitors of salt, asphaltene, resin and paraffin deposits*

Kaliski M., Jedynak Z.: **Factors Shaping World's Oil Prices in 2009** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

The purpose of article is to identify the phenomena which take place in the socio-economic environment in the world. The actions taken will make it possible to determine their influence on the level and dynamics of petroleum price changes in 2009. It presents available predictions in 2010–2011

Keywords: *crude oil, price, economy, restrictions*

Dubiel S., Matyasik A., Ziaja J.: **Systematics of Influence of Oil and Natural Gas Mining on Natural Environment** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

The environmental influence of oil and natural gas mining has been systematized in the paper. Types and causes of environmental transformations in oil areas were analyzed. Endangerments of hydrocarbon exploitation were identified, and cause-and-effect relations between selected environmental transformations were worked out in view of drilling activity.

Keywords: *oil mining, drilling, environmental protection*

Bednarz S., Artymiuk J.: **Importance of Hoisting Systems Load Test Sof Drilling and Production Equipment** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

Mast and drawworks system for running and pulling drill string, holding it at drilling, casing and tubing running operations influences on mast/derrick load value. Additionally high load of drawworks can be exerted during rig up operation. Load tests of mast and drawworks performed give impact of loading forces on mast framework behaviour, eventuality of design defects and critical deformations. Load tests decrease risk for implementation of systems uncomplying with basic safety requirements

Keywords: *Mast, derrik, hosting system, load test.*

Bujok W., Kroczka S., Wysocki S.: **New Non-bentonite, Sea Water-based Polymer--starch Mud with PT-48 Polymer for Drilling in Clays and Shales** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

In this paper the results of lab research of new non-bentonite, sea water-based polymer-starch mud with PT-48 polymer for drilling in clays and shales were shown. Tested mud is designated for offshore drilling.

Keywords: *Non-bentonite drilling mud, mud for clays and shales*

Sedlaczek R.: **Characterization of Hazards During Transport and Storing of Liquefied Natural Gas – LNG** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

Due to the rising worldwide demand for natural gas (about 2%/year), and large distances between potential producers and consumers, LNG technology has been growing rapidly in recent years.

LNG technology bases on favourable properties of natural gas in the liquid form. Natural gas condenses into liquid at temperature of approximately -162°C at atmospheric pressure. Liquefaction reduces its volume by approximately 600 times, making it more economical to transport through the ocean (distances over 3000 km).

The most important requirement for LNG technology is to provide safety for people and the environment. The properties of LNG, that make it so profitable, make it potentially hazardous at the same time.

In this paper the LNG boil off gas generation for receiving terminals has been presented. The sources of boil-off gas have been discussed, and a numeric example, which illustrates the BOG generation for the specific set of assumptions, has been provided. In further part of the article fire and explosion hazardous, the rapid phase transition (RPT) and the rollover phenomena, which can occur during transporting and storing LNG, have been discussed.

Keywords: *LNG, boil-off gas, RPT, rollover*

Solecki T.: **Analysis and Assessment of Well Renovation Possibilities in Health Resort Połczyn** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

The article presents two ways of restoring the capacity of the extraction of mineral water from the borehole. The first way is to improve the well without changing its construction, using casing perforation and well stimulation. The second way is to re-drilling aquifer in the inclined axis of the borehole and the installation of additional well screen covering the entire thickness of the aquifer. The analysis shows that both methods allow the restoration of borehole extraction capacity. The choice of way should be determined on the basis of their cost.

Keywords: *mineral water, well renovation, well stimulation*

Pilch B., Rychlicki S., Siemek J.: **Energy Policy of EU and the Role of Gas in Energetic** • Drilling Oil and Gas 2010 • Volume 27 • No. 3

In 2007, the European Union/ European Council/ designer a new energy policy, involving 20% reduction in energy consumption, 20% increase in renewable fuels, and 20% reduction in greenhouse gas by emission by 2020. According to IGU, this target is not very realistic and rather difficult to achieve. It would be more realistic to improve energy efficiency by 5%, increase the share of renewable fuels to 15% and reduce carbon dioxide emission by 10%. This problem was presented in the paper. Else it, the authors have presented European gas demand and potential export capacity for different sources and directions.

Keywords: *energy policy, european gas demand,*