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شكر و تقدير

Petroleum Today تتقدم بخالص الشكر والتقدير الى السادة التالي أسمائهم لما قدموه وما زالو يقدموه من إسهامات قيمة للمجلة منذ خروجها للنور عبر كتابة المقالات العلمية وطرح الرؤى الفنية الخاصة بتطوير وتحديث قطاع البترول المصري كما يسعدنا إستقبال المزيد من المقالات والرؤى الخاصة بقطاع البترول.

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Mediterranean Sea Gas

Throughout history Mediterranean Sea is an important route for traders and travelers from ancient times, which allows trade and cultural exchange between the emerging nations in the region and its history is crucial to understanding the origins and evolution of many modern societies. (for three-quarters of earth).

By the 21st century and invent new technologies for exploration and extraction of natural gas and oil from the depths in the sea, came to the circle of light the eastern Mediterranean area with reservoir gas contains huge reserves worth hundreds of billions of dollars, so that some have likened to the Arab Gulf region beginning seventies, where Geological Survey predicts that the Eastern Mediterranean contains about 3.5 trillion cubic meters of natural gas and about 1.7 billion barrels of oil, and Egypt owns the greatest share of these reserves according to the study.

The importance of discovered Natural Gas comes at a sensitive site and all of these countries are in dire need of any energy source. Also we cannot forget the geographical proximity to Europe hungry for each point of natural gas.

There is no doubt that most of the petroleum activity in the world countries, accompanied by political differences as a result of conflicts of interest, and the Eastern Mediterranean region does not differ from other promised petroleum areas, but there are differences in the details and the nature of the conflict between one region and another. So there must be a recent international conference that combines all the countries of the region to lay the foundations and rules are binding on all parties, which defines the rights and limits of each country on the sea surface, as well as the existence of an agreement to how to share the common fields between these countries under the international rules.

We cannot forget to welcome all attendees of MOC 2014 Conference and Exhibition and we hope that the exhibition will be a great opportunity to exchange experiences and skills and products that contribute to the increase in the petroleum sector and the development of all the Mediterranean Sea Countries.

And In the end, we salute you all and wish for Egypt pride and dignity

Petroleum Today

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Egypt News

20 New Agreements in the proceedings phase investment of $10.2 billion

Egyptian Petroleum Minister Sherif Ismail said in a speech in front of Egypt's International Economic it is implementing strategies and action plans to bridge the gap between supply and demand within 5 years which is import gas and speed up the reimbursement of foreign partners where it has been repaid $3 billion of receivables during the months of December and September, and the signing of new agreements to search for oil and natural gas, especially as basic petroleum activities of the substrate, where 36 new agreements were signed since November 2013 with investments about $2billion to drill 153 new wells and there are 20 new agreements in the phase of the proceedings of its investments $10.2 billion, is also working to accelerate the development of new projects to the development of gas production, which is currently implementing the investments of $12.9 billion development project is planned to start in the implementation of new projects with investments of $10.9 billion, and pointed out that it is working to start early production from the project north of Alexandria gas in 2017 at a rate of production of $1.2 billion cubic feet gas per day.

He added that it is currently implementing a plan to develop refinery coefficient through a number of ongoing projects and planned investments of $9.3 billion, as it is the implementation of the petrochemical projects to maximize the added value of the wealth of nature and create jobs with investments of $6.2 billion, including $4.3 billion investment underway and $1.9 billion planned investment, He explained that the new Mineral Resources Law step on the road to increase the contribution of the mineral wealth of more than 5% per annum in GDP and attract investment and promote mining activities and create new jobs.

A New Agreement to search for Oil and Gas in Western Desert

In the context of the intensification of research and exploration in order to increase production of oil wealth Engineer Sherif Ismail, Minister of Petroleum and Mineral Resources signed a new petroleum agreement between EGPC and Tharwa Petroleum company to search for oil and gas in the Western Desert east Abo Sinan area with a total investment reaches a minimum at about $15 million and of about $5 signature bonus for the drilling of four new wells.

The agreement was signed by Minister of Petroleum and Engineer Tarek Al Mulla, Chief Executive of EGPC and Engineer Raafat El Beltagy head of Tharwa Petroleum Company.

He pointed out that the new agreement is one of 21 new agreements and is currently working on the completion of production procedures, with investments of about $10 billion, giving the impetus to research, exploration and production and expand Egypt›s reserve of oil and natural gas.

Signing the final contract for the first floating vessel for receiving and storing LNG shipments

Engineer Sherif Ismail, Minister of Petroleum and Mineral Resources, and Tor Wennesland Ambassador of Norway and Consul General in Cairo witnessed the signature of the final contract for the first floating vessel for the reception and storage of liquefied natural gas shipments and return it to its gaseous state again and send it to the national network of natural gas, between the Egyptian Natural Gas Holding (EGAS) and Hogg Norwegian suppliers ship for a period of 5 years to provide quantities of natural gas in excess of 500 million cubic feet per day to fill part of the additional requirements for power plants.

Engineer Khalid Abd Al Badi head of the Egyptian Holding Company for Natural Gas signed with Mr. Svaenning Stola Prime Hogg Company in the presence of Dr. SherifSuse, First Undersecretary of the Ministry for gas and Tarek Al Mulla, Chief Executive of the EGPC

Three Conditions for the purchase of gas from Companies in gas fields operating in the Eastern Mediterranean

HamdyAbd El Aziz, Official spokesman of the Ministry of Petroleum, commenting on the report published by news agencies around the signing of a memorandum of understanding between the partners in the gas field Tamar and Dolfinios Egyptian Holding Company for the export of natural surplus gas from Israel to clients satellites belonging to the private sector in Egypt for a period of 7 years, the memo was merely from being a letter of intent between the two companies, like the letter of intent were signed by Spanish Union Fenosawith American Nobel company and its partners in the Tamar field and British BG with partners in the field of Levathian.

He stressed that the position of the Ministry of Petroleum of the companies to buy gas from the American Nobel company and its partners working in the gas fields in the eastern Mediterranean in the Israeli economic water, which was announced clearly by the consistent is that there will not be any agreements between the parties without the consent of the competent Egyptian authorities, including achieve the national interest of Egypt and achieve high added value to the Egyptian economy and come up with solutions to outstanding issues of commercial arbitration, and so far has not reached the Ministry of Petroleum any formal letters in this regard.

Amendment Gas Agreements in Egypt to encourage foreign partners to develop fields

Tarek Al-Mulla, Chief Executive of EGPC revealed the continuing adjustment purchase price of the discoverer of some foreign partners gas procedures, especially extracted from deep and non-traditional water in the new geological structures, the actions initiated by the petroleum sector since 2006, and explained that he is currently taking the necessary to modify procedures new gas agreements in most agreements.

He pointed out that it was finally modify the new gas prices in some of the conventions of American Apache Company, ENI of Italy, SHELL non conventional gas in the new geological Company, RIO of German, and EDISON of Italy.

He said that there are currently negotiations with British Gas Company in this direction, pointing out that these procedures to the petroleum sector aimed at achieving a balance between production costs and purchase prices of foreign partners, in order to motivate them to speed development of discovered fields and intensify research and increase domestic production rates.

Arab News

‘‘Kuwait Oil”succeed in re-gain 90 wells

Director of preview wells in Kuwait Oil Company Group, Saeed Alshaheen announced the group›s success in re-gaining 90 oil wells in the south and east of Kuwait with total oil production up to 90 thousand barrels per day, and 22 wells in the west of Kuwait with total oil production of 15 thousand barrels per day.

Alshaheen said in a statement issued by the company that the group about two years ago has to apply a special fracturing technology that aims to facilitate oil mobility and to ensure the flow naturally referring to the latest types of fracturing technology in the field’s application. He said the results were «amazing» and exceeded expectations as the group was able to increase production three times from these wells in addition to the ongoing efforts by the group to re-gain some of the wells that have stopped production entirely by applying other techniques.

Three giant Oil projects in Abu Dhabi in 2014

Oil and Gas market in the Middle East Report 2014 issued by MEED magazine said that Abu Dhabi has 3 three main fields of development projects.

Projects include projects the development of «Zakum», as the company plans to increase production of the field to 750 thousand barrels per day compared to 500 thousand barrels per day currently, and by developing and adding platforms, and pipelines under the sea, and 4 units of crude oil processing facilities in the existing crude facilities on artificial islands.

The magazine added that the second huge oil projects in the fields Alnasr, Serb, and abo lulu, as the company plans to include (Adma- APCO), as well as 400 thousand barrels per day of crude by 2020 by 300 thousand tons of additional available from developing the three fields.

The report said that among the mega projects to develop the third phase of the northeast BAB area, which includes three major fields which are alrumitha and Shanayel and Dabayaa.

ARAMCO begin to develop three oil fields to add 500 thousand barrels per day of production capacity

Saudi ARAMCO started to take practical steps to develop three oil fields to add 500.000 barrels per day to its production capacity in order to sustain the production at 12.5 million barrels a per day and make up for any usefulness due to decline in production of some oil fields that have been recently shut down production such as Alkhafji field. The development targeted the fields khurais, almazalig and Abu Gevin where laid contracts with Italian Saipem Company to start construction of new industrial facilities contribute to raising production capacity of khurais field by 300.000 barrels a per day to exceed 1.5 million barrels per day by the year 2017 will also contribute to add 200 thousand barrels per day to the fields almazalig and Abu Gevin.

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International News

Group of Twenty aimed to create a new Global Entity responsible for Energy

Australian newspaper said in a report that the leaders of the twentieth seek to lay the foundations for a new global system to trade energy to help ensure open markets and prevent the use of oil and gas supplies as instruments of foreign policy summit of the Group.

It said the report did not attributing to sources, the essential part of the plan - which has the support of Saudi Arabia and Russia - will create the highest institution Organization of the Petroleum Exporting Countries (OPEC) and the International Energy Agency .

The newspaper said that talks on energy security for m over have yet been affected by the growing debate on climate change.

Haaretz said that the Group of Twenty agreement is expected to include commitments concerning the security

of energy supplies and transparency on pricing.

It is likely that the agreement also includes restrictions on the use of energy and support commitments on energy efficiency.

'BP' says it is committed to investing in Russia and will not sell its stake in ''ROSNEFT''

Robert Dudley, CEO of BP said the oil giant Company is committed to investment in Russia does not intend to sell its stake in Rosneft, despite sanctions imposed by western countries on Russia.

Dudley said in a press conference on the sidelines of an energy conference in Abu Dhabi «We are still partners in the long term. Will not do anything contrary to sanctions, but sanctions do not include doing Business in Russia».

BP owns 18.5 percent stake in Rosneft, according to data from Thomson Reuters.

U.S. Oil production will exceed 9.4 million barrels per day in 2015

US Energy Information Administration said crude oil production in the United States will exceed nine million barrels per day in December.

This came in a report to the expectations of management of production in the short term, at which time you see the continuity of output growth through 2015 despite expectations of falling prices.

It will be the expected production surpassed 9 million barrels per day in December, is the first since 1986, and will continue to grow to 9.4 million barrels on average next year.

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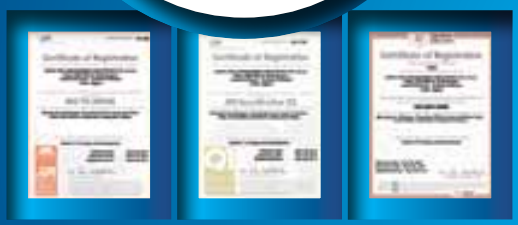

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Corporation News

AGIBA Petroleum raises its production to more than 69 thousand barrels per day

AGIBA Petroleum Company achieved record production rates unprecedented affiliate zones, the Western Desert and the Gulf of Suez fields amounted to more than 69 thousand barrels of crude oil daily reflection of the sector's strategy to maximize the oil production from oil fields economically and without an increase in planned spending.

This came in a report received by Engineer Sherif Ismail, Minister of Petroleum and Mineral Resources of Geological Mustafa Albahr President of AGIBA Petroleum Company.

The report pointed out that the increase in production is mainly attributed to achieve promising results in the oil deep Imre field in Western Desert, which has two new wells Imre – 15 and Imre -9 which added more than 10.000 barrels of crude oil per day as well as the addition of about 2,500 barrels per day as a result of the success of workover operations for Imre -11 and Imre -13, and the successful hydraulic fracturing of well Imre-6 to improve water injection efficiency, and it added that the company has

succeeded in isolating producing layers of water in the wells Ramly -29 Western Sahara and Ashrafi -5 in Gulf of Suez, which led to improving wells' productivity and increase in the net oil production on the account of associated water.

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The Itallian "Eni" signed a contract worth $6 billion with Ghana

Ghana announced that it has signed a contract to explore oil in the sea worth six billion dollars with the Italian oil giant ENI Group, expressing the hope that leads to an increase in caused oil production.

In a statement, Ghanaian Oil Minister Emmanuel ArmaKofi Bouahassured the signing of this contract.

The minister said that contract was for the complex «Cape Three Points,» which will go into production in 2017, «Which will allow production capacity increase in the country».

Ghana, which began the extraction of oil at the end of 2010 from the Jubilee field, faced great difficulties to achieve its objectives in the field of production, especially because of the absence of foreign investors' interest.

At the present time, Ghana -the second economic power in West Africa - thanks to exports of gold and cocoa, about 100.000 barrels of oil per day, and occupies a large margin ranked second behind its neighbor Nigeria, which produces two million

GDF SUEZ signed two agreements for West El Burullus Development Project

GDF SUEZ
BY PEOPLE FOR PEOPLE

GDF SUEZ Exploration Egypt B.V., BG Egypt and PETRONAS Egypt signed on 27th of November 2014 two agreements: The first one on the Construction & Tie in Agreement and the second one related to Transportation & Processing.

The West Delta Deep Marine (WDDM) is currently producing gas reserves from the WDDM Concession via the WDDM onshore facilities. Upon signature, GDF SUEZ will be able to process gas from West El Burullus (WEB) Development Lease at the WDDM processing facilities in Idku.

Attending the signature ceremony were Sherif Ismail, His Excellency Minister of Petroleum of Egypt,Khaled Abdel Badie ,EGAS Chairman (Egyptian Natural Gas Holding Company) ,Tarek El Molla,EGPC Chairman (Egyptian General Petroleum Corporation); Maqsood Sher,GDF SUEZ Egypt President, Arshad Sufi ,BG Egypt President and Mohamed Amin, PETRONAS Egypt President.

Maqsood Sher, commented: "The signature of these agreements marks the achievement of a very important milestone that will lead to complete and finalize other formalities enabling the Final Investment Decision of WEB. When put in production; WEB should deliver 100 mmscfd daily gas production to the Egyptian domestic supply showing GDF SUEZ long term commitment in Egypt"

MR. AHMED HASHEM

PROSERV. EGYPT CHAIRMAN INTERVIEW FOR PETROLEUM TODAY MAGAZINE

Mr. Ahmed Hashem
Chairman

First of all we need to shed light on Proserv and it's services?

- We succeeded in entering the oil & gas market 7 years ago and managed to achieve our Mission and vision; w established a wide network that enables us to gain new clients through our offices in Egypt and abroad. We have the largest client list in the region.
- We have a wide range of services which include; Drilling Consultancy, Manpower, Work Permit, Logistic Services, Oil & Gas Training, Shipping & Forwarding Services, Engineering Services, Mining Services, Oil Field Inspection Services.

What out performs Proserv on the other petroleum service companies?

- All of our latest projects and current ones are done to the highest standard of satisfaction to meet and exceed our client's expectations. We also manage to bring new blood (new foreign companies) to the Egyptian market by international Round Tenders. We established 3 companies to meet all of our clients' needs and requirements and due to our market experience we provide each client with its applicable work services bouquet; each company has its own qualified and certified team which empowers our hierarchy and organization leading us to always get the correct and accurate feedback to maintain the right track to follow. We achieved this by bringing together a strong knowledge base and dedication to our client's satisfaction.

How many branches belonging to the company inside and outside Egypt and the man power?

- We have 2 offices in Egypt other than our Head office in Cairo located in Alexandria and Suez. Other offices in Malta & Morocco. Our work force is around 600 site labors and 100 office employees.

Does the company has expanding plans in the short term?

- In the process to expand in a new downstream business introducing a high quality lubricants and greases to the Egyptian oil and gas market.

How does ProServ care about its employees & how does it raise their competence?

- We believe that our most valuable asset is our employees. ProServ care about employees and the role of work in their lives. We respect employees as individuals, trusting them, supporting them, enabling them to achieve their aims in work and in life. We help them develop their careers through planning, work, coaching and training. We recognize everyone›s contribution to our success - our staff, our clients and our candidates. We encourage and reward achievement.

What is the quality certificates granted to the company?

- Our professionalism and experience caused us to be granted the highest international certificate such as TRACE (Anti Bribery compliance solution), FCPA (Foreign Corrupt Practices Act), ISO 9001, ISO 18001, ABS, E.I.F.F.A and FIATA. Most of our international registrations are renewed directly and free of charge based on our achievements and work professionalism.

Proserv

New Products

Shale Software

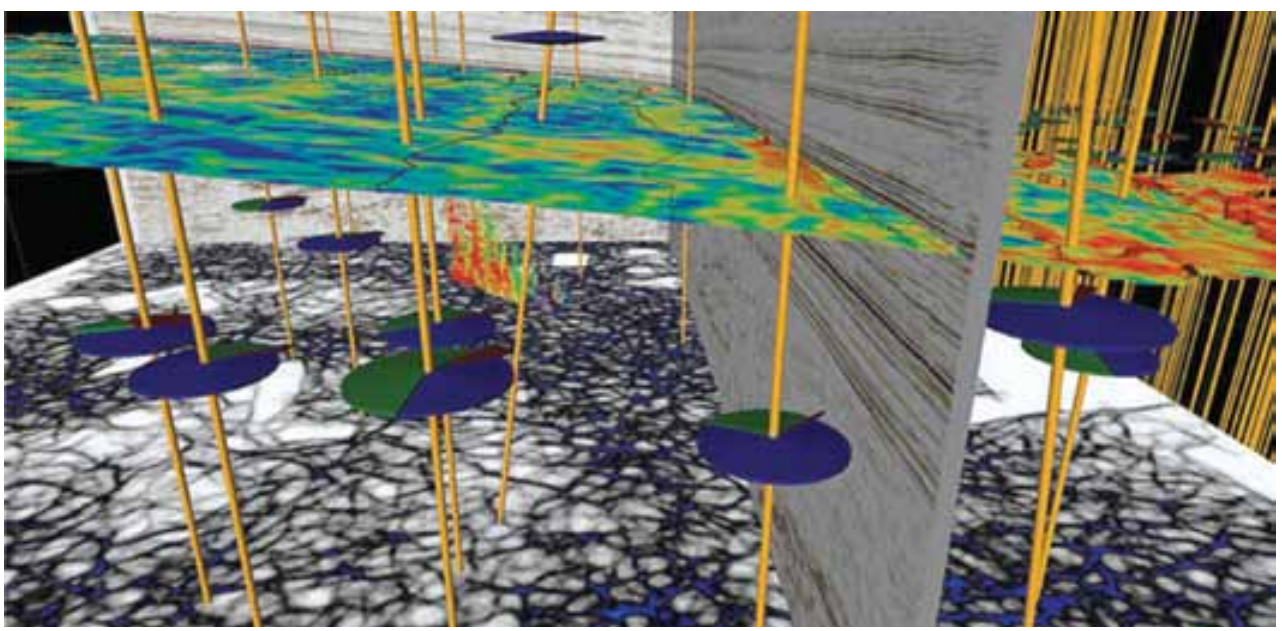

Fig. (1) Schlumberger's Petrel Shale software allows users to characterize shale reservoirs from exploration to production.

Integration of shale work flows is critical to improve the success of shale assets. Schlumberger announced the release of Petrel Shale, a customized user interface and tool set engineered for exploiting shale resources (Fig. 1). Petrel Shale has been designed specifically to address the integration challenge from exploration to production. Scalable and straightforward to deploy, Petrel Shale optimizes operations to increase capital efficiency. The Petrel Shale work flow is presented in a user-friendly way to increase productivity in evaluating and developing shale assets. For the first time, geoscientists can seamlessly integrate geological, geophysical, and production data to define sweet spots, automatically plan well locations, and analyze production trends. Customers are able to gain a greater understanding of how production relates to geology by linking the data and disciplines. Acreage is assessed by incorporating published data and comprehensive well-¬database analysis. Petroleum-systems evaluation and risk tools deliver play analysis and a greater chance of successful mapping. Petrel Shale is easily extended from map- to model-based interpretations. It leverages the Petrel software platform to offer reliability, technology, and innovation in a fit-for-shale solution.

- For additional information, visit www.software.slb.com/petrel-shale

Volumetric-Measurement System

Halliburton introduced the Core-Vault system, a solution that provides a more-accurate volumetric picture of the amount of oil and gas trapped in unconventional reservoir rocks. The system allows operators to contain and bring to surface the reservoir fluids within rock samples, allowing for measurement of the volume of hydrocarbons in place (Fig. 2). Traditional coring tools allowed 50 to 70% of the hydrocarbons to escape from the rock as the samples depressurized on their way to the surface. Building a model of the volume of oil and gas in a reservoir therefore required operators to estimate this fluid loss rather than measure the fluids in place, and the estimates were often inaccurate. By preserving 100% of the fluids within the core sample, the CoreVault system allows for an improved understanding of potential production within the reservoir. The CoreVault system, when combined with a rotary sidewall-coring tool, allows up to 10 cores to be sealed at reservoir conditions in a single wireline run, saving time when compared with full-hole coring and allowing more targeted samples to be taken.

- For additional information, visit www.halliburton.com

Fig (2) Halliburton's CoreVault volumetric-measurement system preserves 100% of the fluids within the core sample.

Rigless Technology

Offshore platforms require systems that can safely and efficiently conduct critical well abandonment and late-stage intervention operations to revitalize wells and extend productivity. Weather¬ford recently introduced the Rig-Free 351000/ Light-Duty Pulling and Jacking Unit, a cost-effective alternative to rigs and snubbing units (Fig. 3). This unit meets American Petroleum Institute 4F specifications and is ideal for conductor removal. The unit uses a range of technologies and resources to address operational challenges. With its small footprint, light weight, and modular design, the unit is easy to transport and is suited for platforms with space and structural limits, and for downgraded, damaged, or nonexistent derricks. The unit has a hydraulically powered telescoping mast that sits directly above the well center and an integrated jacking system and power swivel stand that require no additional rig-up time. With a self-clamping system, the unit can skid from well to well, providing flexibility to accommodate changes in well conditions. A blowout preventer (BOP) is placed under the unit, making it fully compliant with regulatory requirements. When skidding between wells, the BOP can be disconnected and moved with the unit for mobilization efficiency and cost savings.

- For additional information, visit www.weatherford.com

Fig (3) Weatherford's Rig-Free Light-Duty Pulling and Jacking Unit pulls 35,000 lbm and jacks 1,000,000 lbm.

Hydraulic-Fracturing System

Tendeka launched its FracRight complete hydraulic-fracturing system, enabling the collection and analysis of stimulation data in unconventional reservoirs. The FracRight system is a fully integrated fracture-sleeve solution for selective multizone stimulation in openhole or cased-hole applications (Fig. 4). It enables the installation of multiple sleeves for each stage to be fractured, optimizing stimulation efficiency and production. The sleeves are shifted open by pumping a ball from surface, allowing for subsequent stimulation of the selected stage either from a single sleeve or a cluster of sleeves. FracRight allows users to verify isolation integrity, analyze the individual characteristics of each production interval, and make critical adjustments in the fracturing operation. The FracRight system can be integrated with Tendeka's real-time distributed fiber-optic stimulation-¬monitoring service to provide more-effective evaluation and management of multizone completions. The system gathers the information required to measure, model, and optimize the stimulation treatment and subsequent flowback and production profiles. The system also can be used in conjunction with Tendeka's Quest software suite for the analysis and presentation of stimulation and production data.

■ For additional information, visit www.tendeka.com

Fig. (4) The FracRight hydraulic-fracturing system from Tendeka.

Intelligent-Well System

Wells with long horizontal laterals are sometimes susceptible to early water or gas breakthrough near the heel of the well. Premature breakthrough can quickly transform a healthy well into a water or gas producer, leaving hydrocarbons unrecovered in the reservoir. Baker Hughes recently introduced the MultiNode all-electric intelligent-well system to enable operators to monitor and remotely control an extended number of production zones in both cased and openhole completions. If water or gas breakthrough is detected in one part of the lateral, the active flow-control device (AFCD) in that zone can be choked back or closed completely to lock out water or gas (Fig. 5). Up to 27 AFCDs can be run in a wellbore and controlled from the surface with a single tubing-encased conductor cable. Each AFCD includes six customizable choke settings—including the open and closed positions—that can be adjusted from the surface. The surface controls also can be accessed by use of a supervisory control-and-data-acquisition interface to monitor and control production zones remotely from virtually anywhere. The all-electric intelligent-well system combats early water and gas breakthrough in long laterals and helps operators actively balance flow in production zones.

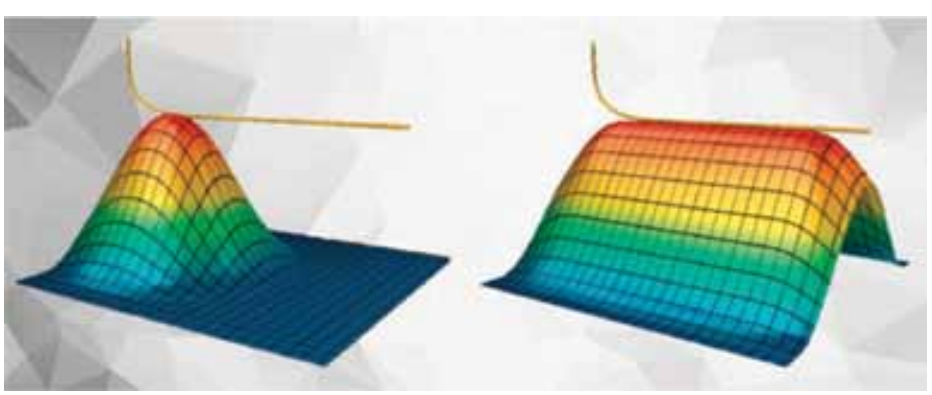

Fig. (5) Early water or gas breakthrough leaves hydrocarbons unrecovered (left). Use of the AFCDs in Baker Hughes' MultiNode intelligent-well system helps balance production across the lateral and increases ultimate recovery (right).

■ For additional information, visit www.bakerhughes.com/multinode

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Vice President of CATEC:

We have lots of Competitive Advantages and plans to expand in the Middle East and North Africa!

Shamel Elnomany is an Egyptian Engineer and has the Canadian nationality. He graduated from McMaster University, Canada in 2006 from the Mechanical Engineering and Management Section.
Directly after graduation he worked in Toronto, Canada for two years in Shaw Group, a reputable American EPC company with 7+ billion dollars in projects worldwide. He worked within an engineering team on a petrochemical project for SABIC in Saudi Arabia.
He moved to Egypt in 2008, and now he has been working in CATEC for the past seven years.

CATEC (Consulting And Technical Engineering Company) is one of the leading companies in the Middle East and North Africa in the field of boilers, textile machinery, special lubricants and pumps. The company was established 35 years ago and entered the oil services sector since 13 years ago.
The Company has hundreds of customers in more than 40 countries, and it is the official exclusive agent for several German reputable industrial manufactures. It also has many competitive advantages that made it a pioneer in the field of leasing and operating boilers to Oil Services Companies as well as industrial factories.
In addition, the company is keen on the permanent training of its workers, whether in Egypt or Germany, to raise the level of technical performance for them in order to offer the best service to customers.
Petroleum Today Magazine had the honor to meet Engineer Shamel Elnomany, Vice President of CATEC, to identify the industrial areas of work and operations, as well as how the Company serves the Oil & Gas sector, and the company's future vision for expansion in the Middle East and North Africa.

When was CATEC established and its work fields?

- "CATEC was established in 1980 as an Engineering company, and obtained the exclusive agency of top German & European industrial manufacturers. CATEC started working in textile machines and after 3 years the company entered the field of boilers, pumps and special lubricants for all types of industrial applications.
- The company is an exclusive agent of "BOSCH Industrial" German company (formerly known as LOOS), and also provides boiler services throughout the Middle East & Africa. CATEC also is an exclusive agent of "LUTZ" German company for drum pumps, in addition to "Klüber Lubrication" German company for lubricants. I would like also to add that Klüber possesses more than 2000 types of special lubricants used in delicate areas in all kinds of complex industrial applications.

Since when CATEC began to provide its services to Oil Sector Companies?

- "As I said earlier, the company is the agent of "BOSCH

Industrial" in the field of boilers, and in 2002 the company decided to buy boilers and redesign it with accessories inside 20ft containers for easy and quick mobilization. We rent our mobile boiler systems to oil services companies with our operation, consisting of engineers and technicians to operate the boilers on offshore & onshore rigs. We have started working first in Egypt and expanded after that throughout the MENA region. Now, we work in many Arab countries and our most important customers are SCHLUMBERGER, HALLIBURTON, EXPRO and ALMANSOORI. Let me note that our containerized boilers are used in the Testing stage, as well as tank-cleaning processes.

We would like to highlight the number of company branches and the number of workers in it?

- "The company has four offices in Egypt as well as a workshop and a warehouse in the industrial area of Borg Alarab in Alexandria. We also have a temporary office in Canada to serve our projects in North America. We have hundreds of customers in more than 40 countries around the world, and the company has more than 60 staff members between Engineers, Technicians, and Administrators. Our technical staff have the required Certificates, and our boilers have TÜV German certification".

What is the competitive advantage that CATEC has?

- "The company has several competitive advantages. For example, our operational staff has the highest technical level of qualified engineers and technicians to work on boilers, so that if any malfunction occurs in a boiler during operation they are capable to fix the problem on site, while our competitors' operators cannot and an Engineer must be sent to fix problem. The second advantage is that the company is working in the field of boilers for more than 30 years now, and our BOSCH brand boilers are the best and most reliable in the world. Third advantage is that CATEC can provide a rental boiler for its clients upon request during two or three days only, and our prices are very competitive compared to our European competitors".

How does CATEC give concern to its staff in terms of training and upgrading their technical and professional levels?

- "CATEC puts training and raising the technical level of engineers and technicians as first priority to always exceed our customers' expectations. The company gives training courses once a week in order to teach all the new technology of boilers, to keep up with technological progress. We also send several Engineers every year to BOSCH in Germany for intensive training on boilers and gain new knowledge. In addition our Engineers are faced with new boiler problems at factory sites, which also represents a kind of training. Also every three or four years we organize seminars and we invite managers and engineers of our clients' companies for training on boilers and identify all what is new in this field. As a result of this training system, CATEC has countless maintenance contracts of various brands of boilers (not only BOSCH) throughout Africa, Middle East and South Asia.

What is CATEC Company's future vision for enlargements and offer more services for companies?

- "We have visions and objectives aspirations of expansion in the coming years throughout the Middle East and North Africa, and we also aim to add to our company two boilers each year to serve the high demand of our oil & gas customers, We are also considering to add mobile compressors and light towers in our rental business to the oil & gas sector".

The Fracture Characterization and Fracture Modeling of a Tight Carbonate Reservoir: The Najmah Sargelu of West Kuwait Part (2)

By
O. Fonta, Beicip-Franlab; H. Al-Ajmi, N.K. Verma, and S. Matar, KOC; V. Divry, Beicip-Franlab; and H. Al-Qallaf, KOC

Integration of the 3D seismic data set

The principal objective was to obtain the maximum benefit from the conventional post-stack 3D seismic data set to spatially delineate the large scale fractures identified from BHI logs analysis in the Najmah – Sargelu reservoir. It also aims at producing robust and reliable maps for constraining those features in the 3D fracture model.

Seismic Facies Analysis (SFA) principles

SFA analyzes automatically the character of the seismic traces in a given reservoir window, and try to relate, if possible, its variations to the variation of geological properties of the reservoir. This methodology consists in characterizing each portion of trace over the reservoir interval by a series of seismic attributes. These attributes define a multidimensional space in which the traces are represented as points (Fig. 18).

The coordinates of each point are the particular values of the different attributes for the traces under consideration. In this space, statistical cluster analyses are carried out for grouping neighbouring traces responses. Each group of traces corresponds to a particular seismic facies. At the end of the process, a seismic facies map is provided that represents largescale fractures distribution. Further details on SFA technic can be found in ref. 3.

Seismic attributes selection

Since clustering procedures are based on a multivariate statistical analysis, the final seismic facies maps are all the more robust when the working set of variables is composed of a rather limited number of attributes. In other words, the use of more number of seismic attributes will not necessarily result in a more accurate map. Therefore, the critical factor is the selection of optimal number of seismic attributes to be used for the analysis. From our experience, dissimilarity, edge and curvature are a good set of attributes to be used for fracture prediction work.

Therefore, the SFA was performed at the Najmah and Sargelu levels based on:

1. A specific principal curvature analysis (see ref. 4);
2. The edge: an horizon-based attribute highlighting discontinuities;
3. The dissimilarity: an attribute directly linked to the 3D variations of the seismic trace pattern.

The seismic facies map

Several tests were conducted to get the most appropriate seismic facies maps for fracture detection including tests on the number of optimal seismic facies, the use of separate seismic surveys, etc. At the Najmah level, the best result (Fig.

19) was obtained with 15 seismic facies and using a nonsupervised approach. It resulted in a seismic traces classification without any prior information. It gives a neutral, objective view on the seismic data sets.

The interpretation of the seismic facies map was first based on the 3 main assessments. Fractures can be associated to:

1. high positive/negative values of curvature;
2. high dissimilarity of neighbourhood seismic traces;
3. high values of edge.

The final seismic facies map showing potential fracture occurence at Najmah level is presented in Fig. 20. Non fractured seismic facies have been switched off. The map shows very clear structural trends extending throughout the study area with orientation similar to the mapped seismic faults and large scale fractures identified at wells. A similar work was performed at Sargelu level. These structural trends were picked to define structural lineaments shown as straight lines on Fig. 20.

Comparison of the seismic facies map with well data

The seismic facies map together with

the structural lineaments was validated against the large scale fractures identified from BHI logs analysis. In general, we noted a very good agreement between large-scale fracture orientations and location and the directions of the structural lineaments. For instance, on field A (Fig. 21) one can see that fracture orientations at well 1 and well 2 are in agreement with the location and direction of the nearest lineaments. Well 3 shows N80E oriented fractures which can be correlated with a NESW trending lineament passing nearby.

In conclusion, the SFA approach was totally validated by the correlation with well data and is expected to be more reliable than any single attribute maps, including curvature. It also confirms that the structural lineaments interpreted on the seismic facies map can be used to model the large scale fractures in the Najmah – Sargelu reservoir of West Kuwait.

3D Fracture Modeling

The objective of this task was to generate the 3D fracture model using stochastic realisations of the discrete fracture network. This task corresponds to the geometrical representation of the fractures. The "upscaling" of this geometry into equivalent fracture properties required hydraulic characterisation of the fractures and specific upscaling calculation that are presented in the last steps.

The two scales of fractures (i.e. small scale diffuse fractures and large scale fractures) were modeled separately in the fracture modeling:

Small scale diffuse fractures were constrained in the model using specific fracture density maps for each reservoir units. They were generated from Vshale maps using cut-offs as defined in the fracture analysis step: diffuse fractures occur where Vshale is lower than 30% i.e. in the clean limestone units. Diffuse fracture models were thus generated in the limestone units II, IIIB, V and VI but not for the shaly units I, IIIA, IIIC and IV.

We also considered the geometrical fracture properties of the three fracture sets including avg. dip, avg. dip-azimuth, and statistical dispersion, (see table 1). Finally, we constrained the diffuse fractures model with the S/T ratio previously calculated which give the fracture spacing for the three fracture sets in the different reservoir units (see table 2). It may be recalled that diffuse fracture density is higher (S/T ratio = 0.6) when Vsh ranges between 0 and 15%, the diffuse fracture density is lower (S/T ratio = 1) when Vsh ranges between 15% and 30%.

Large-scale fractures were constrained using the final structural lineament network picked on the seismic facies map.

The structural lineaments are assumed to be vertical and crossing all reservoir & non reservoir units in the model. Thus, large scale fractures will be present in all units including the shaly non-reservoir units. This assumption is in agreement with the seismic interpretation and the reservoir engineering data.

Reservoir layering

The initial reservoir layering was subdivided to take into account the different fractured layers identified in the fracture analysis step. The reservoir layers where diffuse fractures are present are units II, IIIB, V-1, V-2, V-3 and VI-2. The "non reservoir" units where only the large-scale fractures are present are units I, IIIA, IIIC, IV and VI-1.

An example of a 3D stochastic realization of the fracture model is presented in Fig. 22. This model was generated at a grid cell on field C. The horizontal scale is 100m. One can see that the fracture distribution is based on the variations of the bed thickness in the different reservoir units. For instance, the fracture model reflects very well the high fracture intensity at the top and at the bottom of unit V (layers V-1 and V-3) and a lower fracture intensity in the middle of that unit (layer V-2).

Hydraulic characterization of the fracture network

The objective of the hydraulic charcterisation is to validate the geometry of the fracture network in the Najmah – Sargelu reservoir and eventually to quantify the hydraulic fracture characteristics required for the full field equivalent parameters computation.

Basic reservoir engineering

A classical review and analysis of the four fields production history was conducted including drilling history, wells performances analysis, Kh study, PLT analysis, welltest review and re-interpretation.

Several facts suggest that all tectonic fractures sets are open and conductive in the reservoir and play a key role on production in the Najmah – Sargelu reservoir of Kuwait:

- Mud losses are common while drilling the reservoir.
- The PLT analysis (see section below) showed that flow occurs in front of the diffuse fracture sets.
- Large scale fractures are also involved in the production and could be highly conductive.
- The Kh analysis suggests that there is a strong contribution from fractures to the flow compared to the measured matrix permeability. Kh tests are in the order of 100 to 1000 times greater than Kh from cores.
- Several well tests have been interpreted with a dual porosity effect.

Qualitative assessment of conductive fractures

The fracture density logs deduced from the BHI logs analysis were compared to the available PLT logs. This comparison was done to verify whether a given fracture set has more influence on the

flow. This is only a qualitative approach and no quantification of the fracture conductivity is done at this stage.

The results are presented for the vertical well B on Fig. 23 that experienced a lot of mud losses while it was drilled through the Najmah - Sargelu reservoir. The PLT log shows that the production is coming from two zones only:

- Minor production from unit IIIB. On the fracture density log, this interval is highly fractured with small scale diffuse fractures mostly oriented N170E.
- 80% of the oil comes from the bottom of Unit V. It is also a highly fractured interval where the three diffuse fractures were identified.
- 20% of the production comes from below the perforations where large scale fractures were noted (see also Fig. 19).

Similar observations were made in different wells from different limestone units. We thus concluded from this correlation that all fracture types (diffuse and large scale fractures) and all fracture sets are open and contribute to the flow in the Najmah – Sargelu reservoir – West Kuwait.

Quantitative assessment of conductive fractures

This step aims to obtain a better knowledge of the hydraulic fracture properties through the simulation of synthetic well tests using the 3D fracture model previously generated. The fracture model will be considered reliable if the synthetic welltest matches with the real welltest. In addition, the hydraulic properties of the different fracture families are measured.

The signature of the real welltest

A welltest was selected from the vertical well B located on field C. The match of the welltest derivative curve on a log-log plot is presented on Fig. 24. Although sometimes erratic the derivative curve shows a dual medium signature which together with the very high test permeability confirms the presence of open fractures contributing to the flow.

The drop in the derivative after the early effects has been interpreted as a dual porosity effect with ω = 1.0 E-03 and λ = 2.00 E-07. The equivalent reservoir permeability was estimated to 600mD.

The methodology for synthetic welltest simulation

The software capabilities allows to use a complex 3D discrete fracture network geometry to run single phase flow simulations and restitute the flow simulation on a log-log plot together with the real well data.

In order to speed up the calculation time we had to limit the number of nodes (a node consists of the intersection of two fractures). Hence, both vertical and horizontal upscaling were required to be performed as given below. (further details on upscaling principles can be found in ref. 6):

- In the Z direction, each unit was simulated as a single layer. Accordingly only three reservoir units II, V and VI were considered in the upscaled model.
- In the X-Y plane two regions were simulated (Fig. 25):

The well cell (region 1) where the fractures are generated according to the parameters deduced from the geological characterisation. This guaranties a good connection between region 1 and the well with the original parameters.

Away from the well (region 2) is an area where the spacing of fractures was increased to reduce the number of computation nodes. The dynamic properties (matrix and fractures) were modified in this region to ensure the dynamic behaviour equivalent to region 1.

Secondly, the PLT analysis at well C-2 showed that the flow comes mainly from unit V. In order to restitute this in the simulation model, the well was perforated only in unit V.

Since the PLT also showed that all sets of fracture are contributing to production, same hydraulic conductivity was assigned to all fracture sets within each region.

Finally, the matrix porosity used for the simulation is the same porosity value of 5% based on core data that was used for the well test interpretation. Similarly the matrix permeability of 0.01 mD was used based on core measurements. This value will also guaranty a low matrix contribution.

Match of the synthetic welltest with the real data

A trial and error method was used to obtain a good match of the well test by changing the diffuse fracture and large scale fracture conductivity. Matrix properties are constant in the simulation of the welltest. Results of the match are shown in Fig. 26. During the sensitivity tests, the large scale fractures were found to have a profound effect as the most conductive features in the reservoir.

Indeed, we defined a high conductivity for the large scale fractures to match the drop in the derivative. When the conductivity decreases the drop in the derivative on the loglog plot is shifted to the right. In fact the high conductivity of the large scale fractures creates a double layer effect by connecting the different reservoir layers which is added to the double media effect.

The hydraulic characteristics (e.g fracture aperture and hydraulic conductivity) of each fracture set and of each fracture type (diffuse fractures and large scales fractures) are presented in table 3. These values were combined to the 3D fracture geometry to produce the full field fracture properties models.

Full Field Fracture Properties Models

The 3D fracture models were turned into full field equivalent fracture properties models on the four fields A, B, C, and D.

Values of fracture porosity, fracture permeabilities (Kx, Ky, Kz) and block sizes (a, b, c) were computed using rigorous upscaling methods and assigned to each grid cell of the four full field models. More details on the computation of the equivalent fracture properties can be found in Ref. 4.

The fracture properties models were exported in GRDECL Eclipse format using 100mX100m CPG grids for each field and are ready for reservoir simulations.

Conclusions

The methodology used in this study was successful in characterising and modeling the different types, the different scales and the different sets of fractures in the Najmah – Sargelu reservoir of West Kuwait. A rigorous integration of the different data sets complemented by specific innovations was achieved during the study:

- Fractures analysis from cores: key result is the identification of open tectonic fractures (joints) and of closed / cemented non tectonic fractures (early diagenetic fractures). The study has clearly demonstrated that only tectonic fractures play a role on the production.
- Fracture analysis from BHI logs: it demonstrated that two scales of tectonic fractures must be considered in the reservoir e.g. small scale diffuse fractures (controlled by shalyness and mechanical bed thickness) and large scale fractures (controlled by faults / subseismic faults). Relationship between fracture density, shalyness and mechanical bed thickness were established from real subsurface data using acoustic images.
- Integration of 3D seismic data set enabled through a Seismic Facies Analysis to spatially delineate the large scale fractures in the reservoir.
- Hydraulic characterisation of the fractures was performed using a synthetic welltest simulation matching the real welltest data. This gave measurements of fracture aperture and fracture conductivity.

Results of the this integrated analytical work were used to build 3D discrete fracture models which are eventually turned into full field equivalent fracture properties models ready for reservoir simulations.

Acknowledgements

The Authors acknowledge valuable contributions of Thomas Radford of BP, Adnan Al-Shamali & Rasha Al-Muraikhi of KOC & Pierre Morice of Beicip-Franlab. Authors are thankful to Fahed Al-Medhadi and senior management of Kuwait Oil Company (KOC) and the Ministry of Energy, Kuwait for the permission to publish this paper.

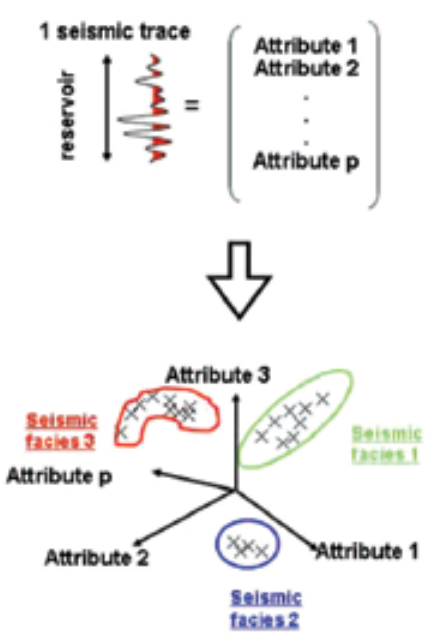

Fig. 18 : Principles of the Seismic Facies Analysis showing the representation of different siemsic facies in the attribute space.

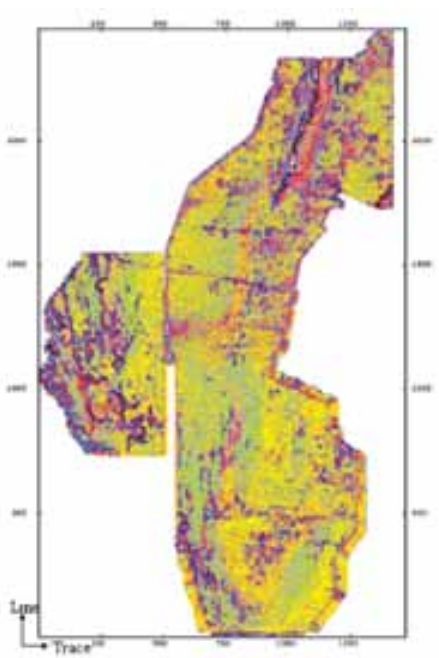

Fig. 19 : Seismic Facies obtained with 15 seismic facies at Najmah level.

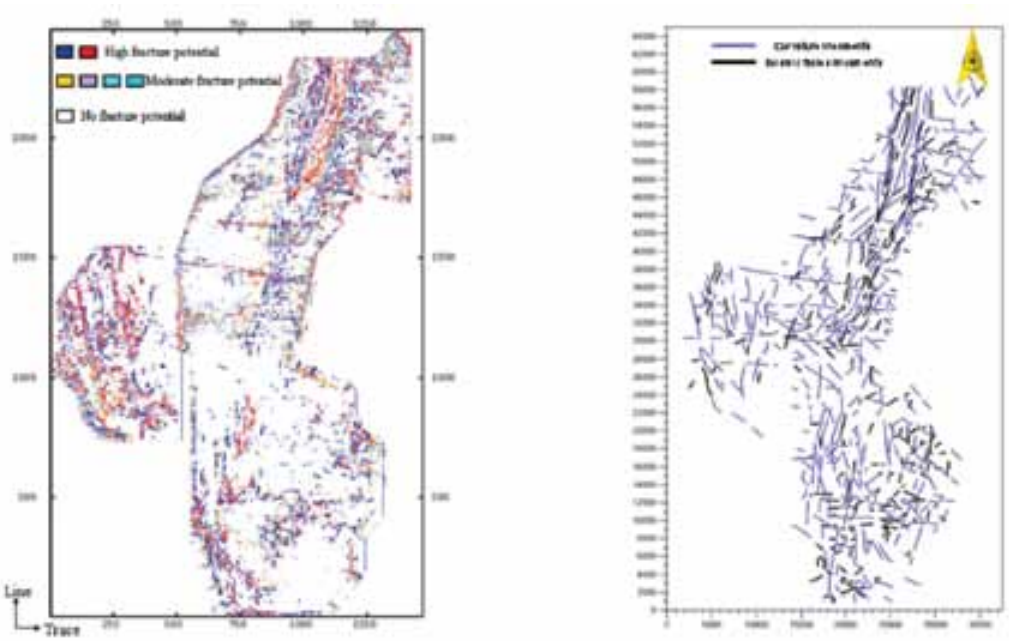

Fig. 20 : Final seismic facies map showing potential large scale fractures occurrence at Najmah level (left). Interpretation ofstructural lineaments is shown on the right.

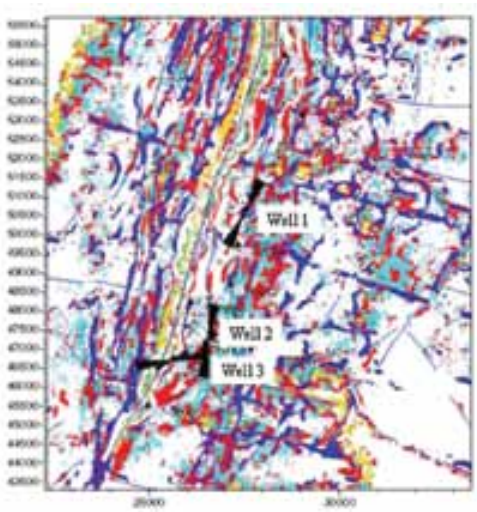

Fig. 21 : Correlation between fractures at wells and the seismic facies map

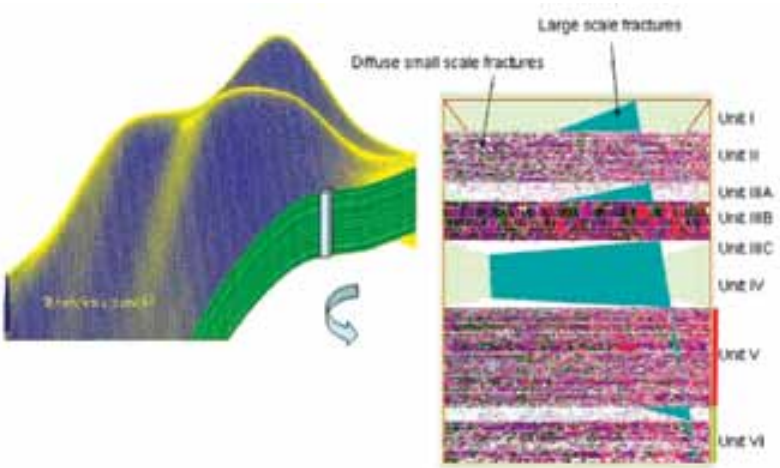

Fig. 22 : 3D stochastic fracture model displayed in a reservoir grid cell showing the impact of variable bed thicknesses on fracture occurrence in the reservoir.

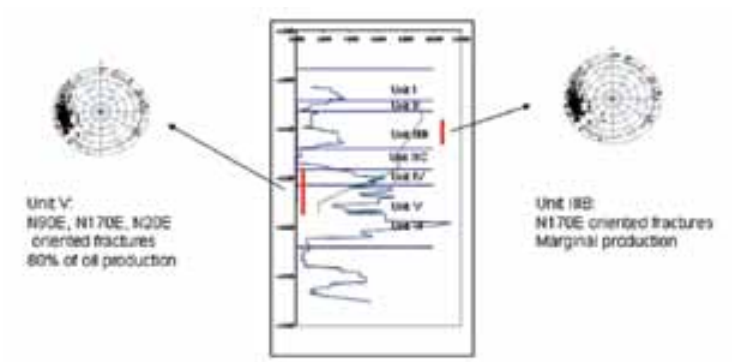

Fig. 23 : PLT log at well C-2. Flow comes through all types and all directions of fractures in the Najmah-Sargelu of West Kuwait.

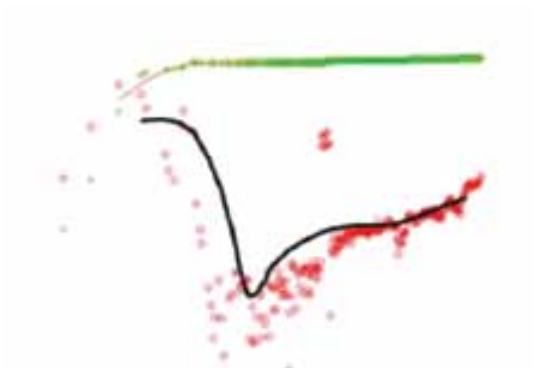

Fig. 24 : Derivative log-log plot and welltest interpretation at well C-2

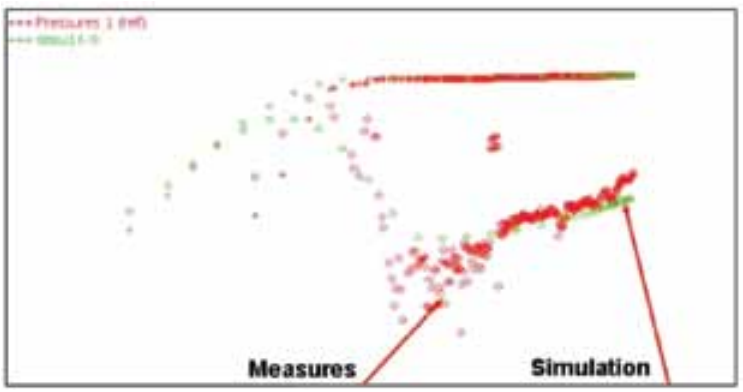

Fig. 26 : Synthetic welltest signature matching the real welltest data at well C-2. Flow simulation is based on the fracture model shown in Fig. 25.

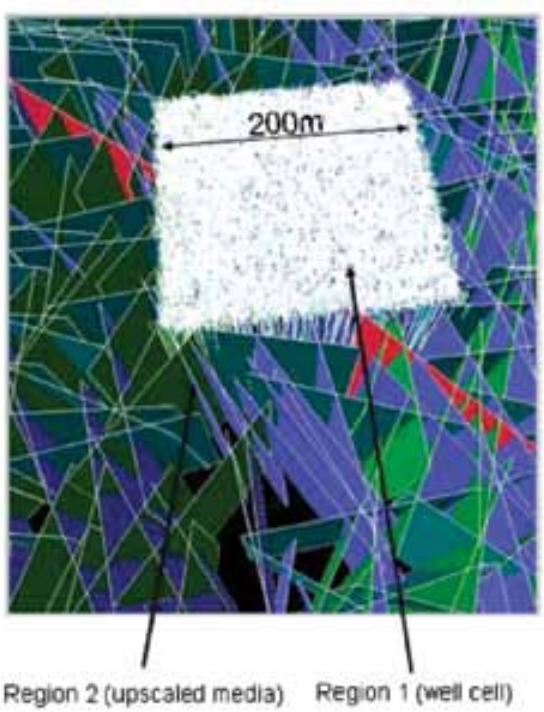

Fig. 25 : A detailled (region 1) and an upscaled (region 2) fracture media were used in the synthetic welltest simulation

	Unit II	UNIT V			Unit VI
		Layer V-1	Layer V-2	Layer V-3	Layer VI-2
Field A	0.27	0.25	0.37	0.30	0.28
Field B	0.36	0.31	0.30	0.53	0.35
Field C	0.24	0.28	0.36	0.29	0.33
Field D East branch	0.28	0.32	0.42	0.49	0.58
Field D West branch	0.26	0.28	0.41	0.40	0.40

Table 2 : Average spacing in meters for diffuse fractures sets. Fracture spacing measurement takes into account the rock shalyness and the mechanical bed thickness

conductivity of diffuse fractures	Hydraulic aperture of diffuse fractures	Conductivity of large scale Fractures	Hydraulic aperture of large scale fractures
300 mD.m	1.4 E-4 m	90 D.m	4.0 E-2 m

Table 3 : Hydraulic conductivity and hydraulic aperture of the different fracture types

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Drilling HPHT Offshore Well Using Managed Pressure Drilling Technology throughout a field case study

By
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Abstract

The primary goal of the Atlantis project is to develop the oil and gas reserves discovered in deep water in the Gulf of Mexico Southern Green Canyon blocks 699 and 743 in a safe, environmentally responsible, cost effective, and timely manner that maximizes the value to the Atlantis owners. The purpose of this document is to provide personnel working on the Atlantis subsea installation, drilling and completion operations with a guide for achieving the best results and making Atlantis the safest, cleanest, most reliable and best performing asset. This is a living document subject to continuous improvement changes. This plan covers the offshore activities related to development execution operations on the Atlantis wells and field infrastructure over the three-year contract period adopted by the Operations Team and authorized through the Atlantis Project Management Team. It is the intention that this will provide a common base from which to work while providing assurance that quality management systems are in place throughout the planning and execution phases of the project. "DDII Operations" shall be defined as conducting independent operations in which the events of any one operation may impact the safety of personnel or equipment and the environment of another operation. Concurrent operations referenced herein apply to interactions between operations, drilling, and construction activities. The intent of this document is to provide procedures to facilitate safe operations during concurrent drilling, production, and subsea construction activities. The Atlantis Team is committed to maintaining a safe workplace and environmentally sound facility while balancing against meeting daily business needs. Pre-job planning, cooperation, and communication between all groups and departments during concurrent operations are crucial to ensuring safe operations. Federal, state, and local regulations are to be followed during all operations and activities.

Introduction

The Atlantis field is located in the western Atwater foldbelt along the 1998 Mad Dog and 1995 Neptune discoveries. First oil is planned July 31, 2006. Water depths vary from 4200 ft on top of the Sigsbee escarpment to greater than 6800 ft off the escarpment. Atlantis is approximately 50 miles southeast of Trokia and 90 miles southwest of Mars in an area with significant discoveries and prospects, but little or no existing export infrastructure. The field exhibits a turbidite depositional environment for which no producing analogues have been identified worldwide.

Plans include a total of 20 wells. 16 are to be producing wells and 4 injectors. Nine of the sixteen will be single frac pack completions in the M5554/ and seven stacked frac pack completions. Costs and timing and anticipated non-productive times are shown in the figure below. The Atlantis develop includes a separate drilling rig or a long-term development unit on contract to rill and complete the wells in the field. The rig will be a dynamically positioned vessel and will stay over the drill center 1 approximately 2 miles away from the PQ. Current plans are for all wells to be drilled from DC-1 off the escarpment in 6800' of water. When the Northern Flank is sanctioned, it will likely be from a separate drill center.

The Horizon drilling rig will begin batch drilling the upper sections on all 16 producing wells. These wells will be drilled down to the 20" casing setting point. The Global Santa Fe development driller (DDII) will be signed to a 3 yr contract to drill and complete wells for Atlantis. The DDII will have bed space for 176 people. Approximately 57- pre-drill wells are expected to be ready for production by first oil. The Pre-drill wells will

be drilled and cased with 9 78/'' casing through the primary productive intervals in the middle Miocene at an average depth of 17000 TVD.

The Atlantis producing well completions will utilize 5 ½ '' 13 chrome tubing. Production rates on some wells may be tubing limited at approximately 3545000- BOPD at first oil. None of the wellbores are expected to be in excess of 50 degrees deviation and will have measured depth ranging from 17000' to 23000'. To enhance reliability and minimize the interventions frac pack completions are the stimulation and sand control method of choice for Atlantis. In the two frac pack intervals for zonal isolation in the event of premature water breakthrough occurs in the lower zone. An isolation assembly will be run across the upper zone if it waters out first. The well design will be configured to accommodate down hole flow control at a later date, however at this time only injection wells will utilize this technology.

The Sand face completion will be designed nipple-less to maintain the largest possible ID throughout the completion. This design will facilitate future thru tubing work-over operations and provide maximum opportunity to recover reserves from deeper intervals without sidetracking through depleted zones. In the event of sidetrack is necessary, the (78/'' casing through the main producing pays will allow the setting of a 7'' liner through the depleted intervals. A 5 ½'' liner can then be set across the deeper intervals and a conventional frac pack preformed. Expandable Sand screens (ESS) will continue to be investigated for use in producing wells later in the development as their reliability is confirmed. Injection wells will be cased and Perforated and will utilize ESS to prevent sand production during shut-ins when cross flow is possible.

Operational Goals

The operational goals for our project not only reflect the safety and technical objectives, they also recognize the goals and commitment of the members. In summary these are:

- Alignment with Atlantis Health, Safety and Environmental objectives
- Zero accidents, spills and high potential incidents
- Leverage lessons learned and demonstrate performance based teamwork
- Project execution excellence through quality planning and assurance

The guiding principles were:

- Quality
- Integrity
- Operability
- Schedule
- Health, Safety and Environmental Assurance Performance

Geological Data & Reserve Estimation

Current reserve estimates for Atlantis are 475800-620-mmboe. The Sanction case reserves are 560 MMBOE. Current estimates suggest the northern flank can be developed with 46- wells tied back to existing subsea manifolds. The P50 reserves are 70 MMBOE. Atlantis consists of six Miocene reservoirs ranging from 16,000' to 18,000' TVD. Reservoir pressures are approximately 9,300 psi with temperatures of 180 F. The two primary productive intervals, the M55 and M54 found in the middle Miocene have an average of 9002000-md of permeability (perm to oil) 140 ft net pay thickness and 1.5- 2 cp oil viscosity. Other potential recompletion intervals are the uphole M57 and down hole M48 and M40.

Health and Safety

Apart from that the key objective for this program is to drill an incident free well. To achieve this objective, we

had policies to follow. We are taking a safety margin in all of our procedures

Trajectory

Directional Survey

The method used to obtain the measurements needed to calculate and plot the 3D well path is called directional survey. Three parameters are measured at multiple locations along the well path MD, inclination, and hole direction. MD is the actual depth of the hole drilled to any point along the wellbore or to total depth, as measured from the surface location. Inclination is the angle, measured in degrees, by which the wellbore or survey-instrument axis varies from a true vertical line. An inclination of 0° would be true vertical, and an inclination of 90° would be horizontal. Hole direction is the angle, measured in degrees, of the horizontal component of the borehole or survey-instrument axis from a known north reference. This reference is true north, magnetic north, or grid north, and is measured clockwise by convention. Hole direction is measured in degrees and is expressed in either azimuth (0 to 360°) or quadrant (NE, SE, SW, NW) form.

Each recording of MD, inclination, and hole direction is taken at a survey station, and many survey stations are obtained along the well path. The measurements are used together to calculate the 3D coordinates, which can then be presented as a table of numbers called a survey report. Surveying can be performed while drilling occurs or after it has been completed.

Calculations and Designing the Well Trajectory:

To calculate and design the well path and trajectory several offset data wells were compared to learn about the nature of the formation and other variables. Using the PPFG the casing points were already known, with other properties of the formation. This design took into consideration the deviation of the well so that minimal number of casing points lie in the deviated section that would be a problem when running the casing in hole and cementing it. The Kick Off Point (KOP) was set to be in the depth of 13,802 ft. The selection of both the kick-off point and the build-up rate depends on many factors. Several being hole pattern, casing program, mud program, required horizontal displacement and maximum tolerable inclination.

Choice of the kick-off point can be limited by requirements to keep the well path at a safe distance from existing wells. The shallower the KOP and the higher the build-up rate used, the lower the maximum inclination. Build-up rates are usually in the range 1.5°/100› M.D. to 4.0°/100› M.D. for normal directional wells. Maximum permissible dogleg severity must be considered when choosing the appropriate rate. In practice, well trajectory can be calculated for several KOPs and build-up rates and the results compared. The optimum choice is one which gives a safe clearance from all existing wells, keeps the maximum inclination within desired limits and avoids unnecessarily high dogleg severities.

Selection of kick-off point (KOP):

A determining factor for the success of the directional drilling operations is to select the best kick-off point or depth at which the directionally drilled section is to be started. The KOP must be selected with due consideration of the drillability of the formations, and the ease of kick-off. The KOP is usually selected in soft-medium, shallow formations where directional drilling is easier. Formations in the deeper part of the well are harder, making it more difficult to achieve directional control. Very soft formations will result in washouts. In addition, the KOP is often selected so that the final angle built up can be achieved prior to setting intermediate or anchor casing. This approach minimizes key-seat problems in holes. Build-up should not be started in a loss or difficult zone.

Selection of inclination or drift angle:

A minimum drift angle of approximately 15° is desirable. A common upper limit is 4548°-. Drift angles greater than this range encounter problems such as increased torque and drag in addition to the requirement to pump down some logging equipment. To remain within the framework of normal operations, the limit of running in wireline tools under their own weight is used to determine the maximum hole inclination. Many operators establish 35° as their upper limit. The target depth must be put into consideration. Deeper wells are more difficult to drill than shallow wells. Drift angles with an upper limit of 4555°- are recommended for deep wells (40005000- m), and 5560°- for shallow wells (20002500- m).

Selection of build-up rate:

The build-up rates are measured as °/30 m (°/100 ft) of wellbore path. Typical ranges for build-up and drop-off angle rates are 130/3°- m, with 3°/30 m being the most common. Angles that are greater can create dogleg and key-seat problems. However, it is recommended that the drop-off rate be less than 1.5°/30 m.

For the target calculated, the EOB point was set to be 14,845.92 TVD, this was set due to several factors, including the formation and to minimize the dog leg severity of the drill string. The BHA had a lot to do with it as well, since it controls the buildup rate which was calculated to be 2.499836°/100 ft along a course of 1083.11 ft. The horizontal displacement of the curved part till the EOB was 253.69 ft. The distance to target was calculated to be 1262.37 ft, with a direction of 331.04 from the EOB point. This was done after several procedures and will be tabulated in the following figure.

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KOP	13,802 ft TVD
Build Radius	2293.3345
Target	16,825 ft TVD, inc 27.06, Az=331.04,E=-611.39, N=1104.80
Build Rate	2.499836°/100 ft
Plane of Proposal	331.04
Max hold angle	27.06 ft
EOB TVD	14845.92 ft
EOB MD	14885.11 ft
EOB Displacement	253.69 ft
Distance to target	1262.37 ft
Direction to target	331.04

The build section in the trajectory was designed and calculated using the minimum curvature method, where all values of the two survey stations were inputted, in the equations mentioned above, then the co-ordinates of the EOB point was calculated in terms of northing, easting and the average dog leg severity was also calculated.

This gives the easting and northing of the EOB point. In order to visualize the results, another software will be used that utilizes the equations mentioned above, to give a value that would satisfy the trajectory of the equation.

The following table (Details of Selected well plan) was created around the values of the KOP and the EOB areas, by assuming that the well would go well vertical from the sea bed till the kick off point. Another assumption that was made that after the EOB the well will go straight, this will allow the well path to reach the target at the specified depth with the same inclination and azimuth. The values before the KOP had 0 northing and easting. Values after the EOB had constant azimuth and inclination yet different northing and easting. The MD of each point was calculated by creating a function that converts the TVD to MD using trigonometric Relationships.

Details of Selected well plan.

After inputting these values in the SES software, which calculates the details of selected plan by hole section, it gives the following:

Inputting these values again in the Surveys tab in this software, using only the MD, inc and Azi, gives out the trajectory of the well along with two diagrams. The northing Vs Easting and TVD vsVsec on Azimuth 331.04 degrees.

Both figures, show a 3D model of the well, that shows the exact path of the well. However, in the second shot, the KOP-EOB section was magnified to show how smoothly its changes its direction with a DLS of about 2.5 deg/100ft.

Managed Pressure Drilling

MPD is a contemporary drilling technology, an advanced form of primary well control, used to drill wells that cannot be drilled using conventional drilling methods due to problems encountered like differential sticking, lost circulation, well kicks, reservoir depletion, narrow pore and fracture pressure windows and other drilling problem associated with non-productive time (NPT) or drilling flat time. MPD is an adaptive process where it provides changeable adjustments to meet the pressure profile objectives while drilling (Rehm et al., 2008). MPD utilizes several tools to mitigate the risks and costs accompanied with drilling wells such as controlling backpressure, fluid rheology, fluid density, annular fluid level, circulating friction and hole geometry (Rohani, 2011).

According to the International Association of Drilling Contractors (IADC) Subcommittee on Underbalanced and Balanced Pressure Drilling (2012), the formal definition of managed pressure drilling is: "Managed Pressure Drilling (MPD) is an adaptive drilling processes used to more precisely control the annular pressure profile through-out wellbore. The objectives are to ascertain the downhole pressure environment limits and to manage the annular hydraulic pressure profile accordingly. This may include the control of back pressure by using a closed and pressurized mud returns system, downhole annular pump or other such mechanical devices. Managed Pressure Drilling generally will avoid flow into the wellbore".

In conventional drilling, around 22 percent of 7680 total drill days from spud date to total depth date was reached, lost to trouble time (Rohani, 2011). In the diagram below, the percentage of drilling down time problems accompanied with conventional drilling are represented in the pie chart diagrams.

Conventional drilling encounters problems due to high overbalance such as reduced rate of penetration, kick-loss cycles, and surge and swab effects, lost circulation, stuck pipe and wellbore stability.

Proper planning of MPD can eliminate these problems by working ideally, static and dynamic pressures are within pore pressure and fracture pressure windows as shown in the diagram above. This provides better borehole stability, reducing downtime and NPT incidents, early kick detection, reduction of kick volume, reaching target depth, less sticking problems and minimal kick-loss cycles, less ballooning effects and surge and swab issues.

There are two types of MPD activities: Proactive method and Reactive method. The Proactive method involves activities where MPD is utilized before starting drilling i.e. it is the technique used for drilling. The IADC (2012) definition of proactive MPD is, "Using MPD methods and/or equipment to actively control the pressure profile throughout the exposed wellbore". Whereas, the Reactive method involves the use of MPD when there is difficulty encountered while conventionallydrilling and it became problematic for the project to move forward without the use of

MPD. Accordingly, IADC (2012) definition of reactive MPD is, "Using MPD methods and/or equipment as a contingency to mitigate drilling problem as they arise". Both proactive and reactive activities consist of one of several MPD techniques which can be classified based on the BHP being 'Variable' or 'Constant'.

Constant BHP Technique

It focuses on maintaining the same wellbore pressure in static and dynamic conditions at some point in the hole by adjusting the backpressure accordingly. The subcategories of constant BHP are:

- Constant Bottom Hole Pressure (CBHP)
- Continuous Circulation System (CCS)

Variable BHP Technique

It focuses on maintaining the wellbore pressure within the fracture and pore pressures windows where it can be slightly overbalanced or underbalanced i.e. it does not require the wellbore pressure to remain the same in static and dynamic conditions. The subcategories of Variable BHP are:

- Dual Gradient Drilling (DGD)
- Pressurized Mudcap Drilling (PMCD)

The subcategories of Constant BHP method in this classification are:

Constant bottom-hole pressure

A method utilized to reduce the effect of equivalent circulating density maintaining BHP within a window bounded by an upper and lower pressure limits. The difference between these two limits is known as margin (Rehm et al., 2008).

The main objective of the technique is to maintain the margin between the highest pore pressure formation and the weakest fracture pressured formation (Rohani, 2012). On the low side, the margin is normally enclosed by pore pressure, Pp, and well-bore stability, Pwbs, whereas on the high side it can be enclosed by lost circulation, Pls, differential sticking, Pds, and fracture gradient pressure,Pfg , where

$$P_p < P_{wbs} < BHP \leq P_{ds} \leq P_{ls} \leq P_{fg}$$

Where:

- The P_p represents the minimum pressure drilling maintains to avoid influx and kicks; i.e. the lower boundary for the BHP.
- The P_{wbs} is the minimum pressure boundary utilized by fields for well control as it is more complex pressure than P_p where it isa function of the magnitude and direction to maximum horizontal stress, σ_{max}, well orientation relative to σ_{max} , well inclination, drilling fluid rheology, rock porosity and permeability, pore pressure, pump rate, rotary speed and rate of penetration, ROP (Rehm et al., 2008).
- The additional P_{AFP} reduces the margin of safety with the upper limits P_{ds} ,P_{ls} and P_{fg}

To illustrate, during drilling, the dynamic BHP or ECD is equal to the static P_{static} and the P_{AFP} where

$$ECD = P_{static} + P_{AFP}$$

When mud circulation stops (for example, when mud pumps are turned off), P_{AFP} becomes zero and ECD is equal to P_{static}:

$$BHP_{dynamic} = P_{static}$$

CBHP replaces the annular friction pressure, P_{AFP}, with an equivalent backpressure P_{back} or annular trapped pressure, P_{trap} to maintain a constant BHP during connections or other pumps-on and pumps-off applications.

$$P_{AF} = P_{Back} = P_{Trap}$$

Therefore, under static conditions when PAFP =0; as shown in the figure above, the relationship becomes:

$$BHP_{dynamic} = P_{static} + P_{Back}$$

Technique:

Closed System:

At static conditions, the choke manifold is closed to restrict the fluid in the annulus flow to increase the back pressure, P_{pb} and compensate for the loss of the annular friction pressure, P_{AFP}.

Open System:

When the pumps are off, the system is mitigated through the use of a continuous circulation system.

Mud Cap Drilling:

This variation method uses two drilling fluid, aheavy viscous fluid known as " floating mud cap" pumped down the backside in the annular space to some height and a lighter less expensive fluid used to drill in the weak zone (Malloy, 2008). The mud cap provides an annular barrier which allows the lighter mud to drill with more hydraulic power and less chip hold-down that will allow an improvement of ROP, lost circulation and kick.

Pressurized Mud Cap Method Drilling (PMCD) Method

The mud cap is created by drilling the hole until circulation is lost. The hydrostatic column floats at a level which balances the BHP in the lowest pressured fracture or vug. The lower density fluid is pumped to drill the formation where it is injected along with all the cuttings into the fracture cavities (i.e. the weak zone). The higher density mud is injected down the annulus over several time intervals and remains on top of the weak zone with opetional backpressure to maintain well control. As illustrated in the following figure, the well is conventionally drilled without losses (a) until it reaches the first fracture and lost circulation occurs (b) causing a mud cap in the annulus (c). The lower density fluid is pumped where it is lost to the formation carrying all the cuttings in warmholes or fractures (d).

Taking the floating mud cap as the starting point, the BHP will be constant until drilling begins again where the formation pressure Pf will increase with depth. As a result, the higher density annular mud cap will lose its capability of containing the constant BHP; and therefore, the mud cap fluid density has to be increased over time to keep the annular friction pressure P_{AFP} within the well control limits. In addition, other fluctuations in fluid

density are required:

- to monitor gas migration in to the annulus where produced fluid is injected back into the formation,
- to mitigate increases in pore pressure P_p where the higher fluid density is increased to maintain surface pressure, and
- to avoid fracture plugging by MPD operations is halted and changed to conventional drilling operations to remove cuttings from the formation's weak zone.

When the drill pipe must be tripped out, higher density mud is pumped down the kill line to compensate for the backpressure loss due to the removal of the drillstring. The volume of mud shall be pumped while the drillstring is removed in order to maintain wellbore pressure at the correct value.

Dual Gradient Drilling (DGD) Method

DGD is drilling with two different fluid-density gradients. A lighter fluid such air, inert gas or light liquid is utilized in the shallower portion of the wellbore and a heavier fluid at the deeper portion enabling the BHP to remain in the pressure margin between Ppand Pf. The main purpose of DGD is to allow the adjustment of BHP by creating a slight overbalance i.e. it prevents exceeding the fracture pressure gradient but still remain above the pore pressure.

Injecting Less Dense Media Method

A light fluid such as air, inert gas or light liquid is injected at a center point in the wellbore decreasing the desnity of the fluid from that point up to the surface (Rohani, 2011). The adjustment of BHP will occur without changing the base fluid density in the wellbore.

Subsea Mudlift drilling (SMD) or Riseless Muds Returns Method

It isapplied in offshore drilling operations where mud returns do not circulate back in the riser as in conventional drilling methods. The returns travel through small-diameter return lines to the seafloor or back to the rig (Rehm et al., 2008). A mud-lift or seafloor pump removes the cuttings and drill fluid from the wellbore annulus and pumps it back to the surface.Adjustments of BHP occur by injecting seawater, a more dense material, creating an inlet pressure of the seafloor pump near to the seawater hydrostatic pressure. This causes the reduction of the pressure imposed on the shallow portion of the well, while increasing the required BHP to control the formation pore pressure i.e. drilling with a slight overbalance which helps in the prevention of shallow gas or water flow.

MPDE quipment:

Rotating Control Device (Rcd)

ThemainfunctionoftheRCDistodivertheupstreamflowfromthewellbore tothechoke manifoldwhilestillmaintaininganeffectivesealbetween thedrillstringandthewell.TheRotating ControlDevice(RCD)providestherotatingsealbetweentheannulusandatmosphereduringMPD operations. Inadditionaltotheo Dynamic(rotating/stripping) andStaticpressureratingforeach RCDmodel,the geometriclimitationsof theRCDdevicesrelatedwiththeselection andavailability of thedrillpipe willdeterminetheappropriateRCDtobeusedinth eMPDoperation.

TheRotatingControlDeviceisbolted on topoftheannularpreventer. Itsmainfunctionisto divert theupstream flowfromthewellboretothechokemanifoldwhilestillmaintaining effectiveseal betweenthedrillstringandthehole.

Rotating ControlDevicetechnology isbasedonapplyinganadvanced compound sealingrubber againstthedrillstringorKellysurface,whichprovidesa neffective, sealbutstillallowsthevertical movement ofthepipe.Thesealingsleeveislocatedwithinasecondaryhousing thatallows unrestrictedrotationofthed rillpipewhilestillmaintaining theseal. RotatingControlDevicesare available in severalmodelsdependingonthepressure thattheycanhold. TheRotatingControl Device specificationsinclude astatic(no rotation) anddynamic (rotating/ reciprocating)pressures. Based on the reservoir pressure of the specified formation, it is recommendedto use the Weatherford7100.Thisdevicewillfulfill thepressurerequirement. Specifications areshownin Table11.

MICROFLUX™ Control System Automated Choke Manifold

The Microflux control system provides a revolutionary change in the accuracy of measurement and analysis of flow and pressure data. It uses proprietary algorithms to identify minute downhole influxes and losses with an unprecedented degree of precision on a real-time basis. The system enables drilling decisions to be made based on actual data versus predicted downhole environments, providing real-time monitoring of wellbore parameters.

The Microflux system makes previously undrillable wells drillable. It combines closed-loop technology with sophisticated, proprietary data acquisition and computer-controlled equipment to enhance rig safety and drilling efficiency to a level not attainable with standard drilling systems or even other managed pressure drilling systems. The MPD choke manifold is a critical component among the MPD equipment. It creates the variable flow restriction that controls the wellhead pressure which in turn maintains a relatively constant bottom hole pressure in both static and dynamic conditions

It is a fully automated system that measure, analyzes and controls changing wellbore conditions in real time. Unlike conventional drilling where the fluid return is open to the atmosphere, the Microflux control system uses a rotating control device to keep the well closed, and subsequently the fluid flows through an automated

Hady Meiser
STEEL GRATING S.A.E

Hady Meiser Egypt is an Egyptian German joint venture investment that manufacture bar gratings with high quality and prices than their imported which used in various fields as petroleum companies – Power stations – Cement companies – Fertilizers company , spiral stairs and slitting coils.

Hady Meiser grating is acknowledged by trade specialists to be one of the best product of its kind in Europe , It›s a fair assessment , we feel and part of the reason is undoubtedly the committed work of our planning department and our reliable delivery dates.

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Indeed , more than 80% of any grating does exist of holes, we simply exploit the fact that a strip of metal positioned .

Perpendicularly and anchored securely can carry substantial load.

Gratings Specification :

our gratings enjoy various specifications they have different sizes of bearing bars starting from 25x 3 mm . up to 50 x 5 mm and fences .

and twisted cross bars 5 mm. or 6 mm in addition to the possibility of manufacturing the serrated grating which are specially made for the petroleum companies

Slitting coils :

In addition that it has been inserted a new production line for rod slitting coils (black-galvanized – hot – cold) in thickness starting from 1 m up to 4 mm.

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Tele : (+202)24175822 - 22903879
Fax : (+202) 26903694 - 22919273
E-mail : Trabia_meiser@hadymeiser.com

Factory :
ElShrouk Industrial Zone (recommended to contact)
Tele : +2 02 44604273 - 4
Fax : +2 02 44604123 - 44698212
Mobile : 0100172 60 68 – 01276798800
E-mail : trabia_meiser@yahoo.com

drilling choke manifold.

The unique feature of the technology is its capability to measure return flow using a flowmeter installed in line with the chokes, and to detect either a fluid gain or fluid loss very early, enabling gain/loss volumes to be minimized. The Microflux system helps achieve drilling program goals through its ability to precisely manage wellbore pressure and overcome the substantial drilling related barriers that have been inhibitive for years using conventional drilling practices. Drilling flexibility and safety are maximized, while risks and downtime are minimized.

Another benefit of the Micro-flux control method is that it allows the management of the discrepancy between BHP and ECD (equivalent circulating density) during the static/ dynamic turnover during connections. In this way it is possible to create a constant ECD at the bit even during a connection or when tripping.

The list below summarizes the benefits of the method for any environment.

1. Large savings on drilling time
2. No need to shut-in well to check flow
3. ECD instantly adjustable – no need to adjust mud weight
4. ECD kept constant during connections or tripping
5. Quick to implement – based on proven and accepted concepts and equipment
6. Substantial risk reduction

- Unknown pore-pressure – exploratory wells
- H2S
- Narrow margin
- Environmentally sensitive locations

7. Huge reduction in kick and blow-out risk

- Fast detection and control
- Accurate detection of kick or loss
- Accuracy of the method depends on the amount of sensors and desire to acquire data
- Unique 3 safety barriers (when using balanced/overbalanced mud system)
- Standard well control procedures if needed
- Easy to restore conventional drilling at anytime.

Command Center

Theofficeunitissizedtoaccommodate theMPDShiftSupervisorandMPDEngineer. Spaceforonlinedataacquisitionservices andadequatelighting. This container has lifting points certified by the API. Theofficeunitwillhavetheoption toselecttheinputvoltage andwillhave sufficient powercord toreceivepowerfrom the company. This anon-zoneratedoffice andwill bepositionedto optimizecritical MPDactivities.Thestandardofficeprovidesnecessarywork stations.

Non Return Valves

Non-return valves(NRV's)arerequired topreventbackflowfrombottomthroughthedrillsstring. Positioning atleast twoNRV'sintheBHAallowsforsafetripping,fulfillingthetwobarriers policy insidethedrillstring. This ensure that no return mud will be directed to the surface through the drill pipe to the surface.

Coriolistypemassflowmeter,whichisalreadyinstalled onthemanifold providesfour importantmeasurements. Thesearemassflow,volumetricflow,density,andtemperature.

Massflow,densityandtemperaturearethedirectmeasurements. Ontheotherhand,thevolumetric flowis derivedfromthemassflowanddensity.

MPD Procedure

The type of MPD to be used is the CBHP. CBHP, Constant Bottom Hole Pressure, is a technique used where surface pressure is applied to maintain constant bottom hole pressure. When the well is closed in, to change connections, this surface pressure compensates the ECD.

it allows the management of the discrepancy between BHP and ECD (equivalent circulating density) during the static/dynamic turnover during connections. In this way it is possible to create a constant ECD at the bit even during a connection or when tripping.

The list below summarizes the benefits of the method for any environment:

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- Standard well control procedures if needed

8. Easy to restore conventional drilling at anytime.

Preparing for MPD:

- Installation of RCD, space requirements between BOP and rotary table.
- RCD Connections.
- Location and connections for the RCD power unit and control unit.
- Return flow line for MPD and conventional drilling.
- Location and configuration of choke manifold, if required.
- Location and set up of the two-phase separator, if required.
- Logging , casing and cementing

operations.

- Pressure bleed-off lines.
- Utility tie-in points for the equipment, power and air.
- Rig-specific equipment

Killing The Well Before Pooh

- With the bit on bottom, circulate bottoms up with MPD Fluid until obtain clear returns from bottom (no well solids on shakers).
- Reduce flow rate to well kill rate.
- Record SPP at the Microflux system once parameters are stabilized. Select SPP constant at the MPD task controller in the Operator's panel with the stabilized value of stand pipe pressure.
- Line up and pump spacer based on MPD.
- Displace well with kill mud main holding the SPP automatically in the Microflux system.
- Monitor that well head pressure is reduced to zero when kill mud is reaching surface.
- Dynamic flow check at the Coriolis flow meter.
- Stop pumping.
- Line up with trip tank and flow check.
- Strip through the RCD bearing assembly up to casing shoe.
- Flow check.
- Remove bearing assembly, install bell nipple and POOH up to surface.

Kick Detection and Management

Closely monitor the following drilling parameters

- Rate of Penetration (Drilling Breaks).
- Mud Tanks Level (Pit gain or loss).
- Out flow rate.
- Stand Pipe Pressure.
- Casing Pressure (MPD choke pressure).
- Total Gas Readings. Max 5% at shakers
- Mud weight (in and out).

1. As soon as a kick has been detected (Gain in mud tanks, Stand Pipe Pressure loss, Increase in Casing Pressure, Increase in the Out flow rate).
   - if the Microflux system is running in manual mode, the choke operator immediately shall start closing the MPD choke to increase the back pressure in the annulus and inform the MPD engineer and the Driller to stop drilling and pick-up off bottom to position the drill pipe for well shut-in.
   - If the Microflux system is running in automatic control, monitor the performance of the choke

Note 1: Flow returns will be aligned to the Rig MGS while circulation is in progress.

2. If the MPD choke is manually operated, adjust the backpressure on the MPD choke to maintain Stand Pipe Pressure constant while the kick is circulated out of the hole. If the Microflux system is running in automatic mode, monitor that the modified drillers method is applied correctly by the system.

Note 2: Monitor trend on Total Active Volume while back pressure is adjusted on the MPD choke

3. If gain in mud tanks is still increasing, approaching limits established in the MPD matrix, in that moment, STOP rig pump FOLLOWING A CONTROLLED PUMP STEP-DOWN and shut-in the well in the MPD choke.
   - If pumps are suddenly stopped the underbalanced conditions will be worsen and more kick volume could be swabbed in the hole.
4. Close the Rig BOP to monitor the Casing Pressure in the Rig Choke gauge.
5. Once the pressure in the casing is stabilized, record the SIDPP, Shut-in Casing Pressure (SICP) whether at the MPD choke or the Rig Choke.
6. Accurately determine the gained volume of mud in the tanks.
7. Proceed to circulate the Gas Kick out of the hole though Rig MGS. Method to control the well should be selected by the owner Co. The driller's method is recommended.
8. Owner Co. decide if the mud weight should be raised to a higher value or to continue drilling with back pressure held in the MPD choke. This decision will depend on what the differential pressure is between the homogeneous hydrostatic column of the mud in the annulus and the calculated Formation Pressure.

Note 3: Any well conditions which exceed the limits according to the well control Matrix will be handled using the conventional well control equipment and procedures.

In the case of our well, NSAL-111, the major risk encountered while drilling is a shallow water flow zone, which endangers our drilling trajectory in several ways. The formation might collapse on the drilling string, due to wellbore instability. While on the other side, the water flow could lead to the dilution of the drilling mud, allowing a kick to occur. Thus the bottom hole pressure must be sufficient to minimize any flow from the formation, without exceeding the fracture pressure. Thus, MPD will be used to drill through this high risk section. The following points will highlight the main risks in drilling this section, and will show how they could be prevented.

Section Objectives

- The primary purpose the 16» casing interval is to provide sufficient fracture strength to reach the 138/5-» TD and to isolate the 9,350› TVD-SWF sand.
- Latch BOPs to well, successful BOP test, successful 10.5 FIT on 20» shoe.
- The pore pressure of the 9,350› TVD-RKB sand is estimated to be 9.29.4- ppg. The directional assembly designed for this section is designed to maintain a vertical well path (see well-specific directional plan).

Key Risks

- A known Shallow Water Flow (SWF) zone will be encountered at 9,350› TVD while drilling this section. SWF sand pore pressure is estimated at 9.2 to 9.4 ppg. The loss of structural integrity due to SWF could potentially lead to a loss of the drill center.
- Hole cleaning – packing off on cement jobs at 16» hanger.
- Pump high-density sweeps to clean hole.
- Sufficient WOB (35- klbs) must be maintained while drilling with a bi-center bit to ensure near gauge hole. Will be unable to back-ream with bi-center.
- Potential to damage 16» hanger (17.183» at 8,890›).
- Dropped objects .
- Concurrent activities between main and auxiliary rotary, bucking machine, cranes, boats, winch and two ROVs.

Shallow Water Flow

An objective for the 16» casing is to isolate the confirmed field wide 9,350› TVDRKB sand. An uncontrolled SWF is considered to carry a high consequence. A shallow water flow has the potential to mine sand, resulting in subsidence, compaction and casing collapse issues. The resistivity data should be plotted as a pore pressure predictor. Interpretation of drilling parameters indicating the early onset of abnormal pressure should also be monitored which includes surface drilling torque. The drill out mud weight of 9.5 ppg (9.75 ppg ESD) is consistent with offsets that drilled the 9,350› TVD-RKB sand and will maintain sufficient overbalance to prevent potential flow.

Light cement slurry will be used for cementing the 16» casing to prevent flow after cementing

Ways MPD can treat this:

The Microflux system connected to the MPD detects any changes in flux whether in positive or in negative. This is done where the drill well injecting and recovering fluid gets through the Microflux choke manifold.

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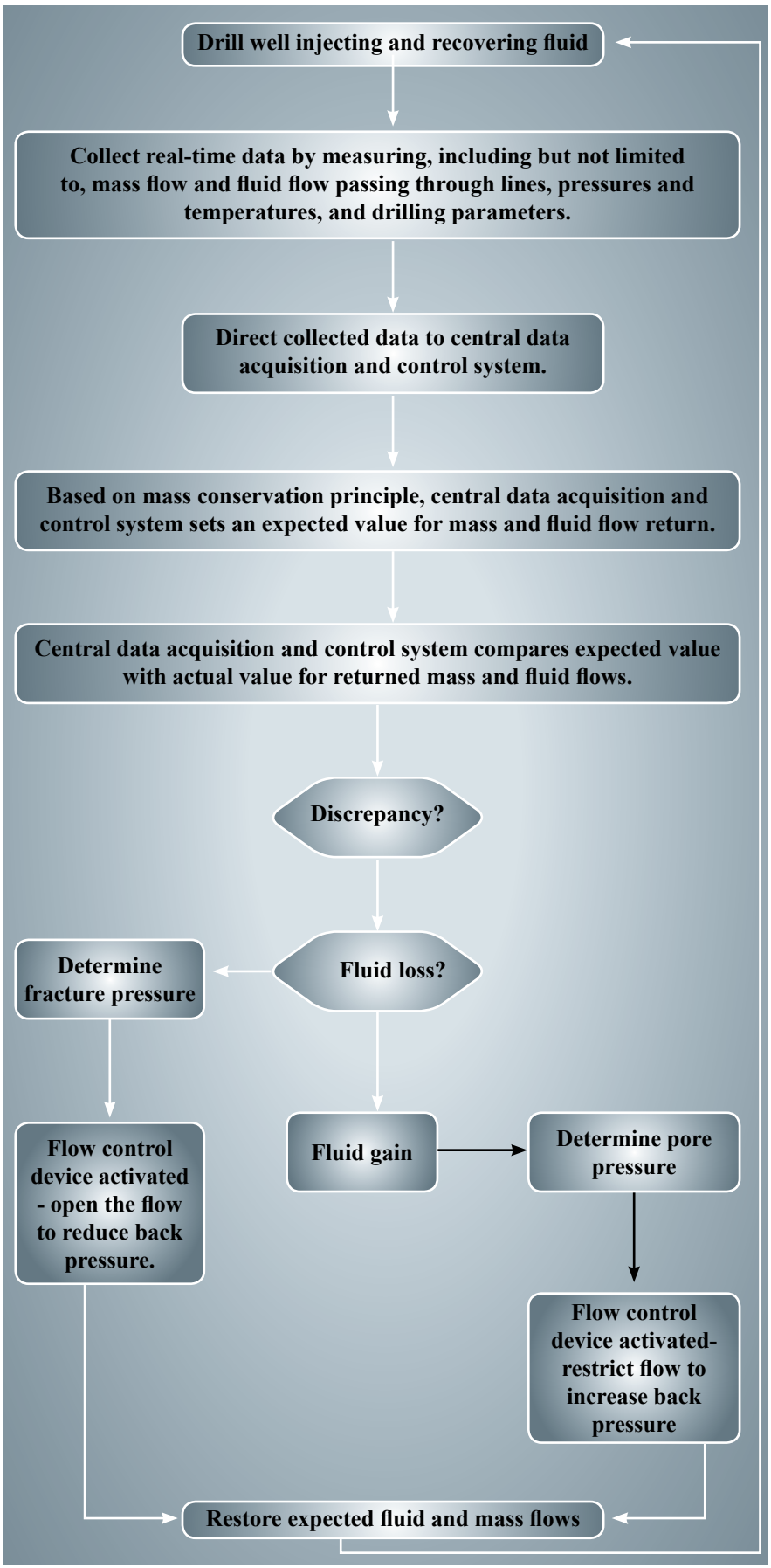
Then real time data is collected by measuring, mass flow, and fluid flow passing through lines, pressures and temperatures and drilling parameters. The collected data is then directed to central data acquisition and control system. Based on mass conservation principles, the control system compares the expected value with the actual value for the returned mass and fluid flows. If there is a difference, certain checks are made to determine either the fracture pressure or the pore pressure, then the flow control device is adjusted to change the back pressure accordingly. The following flowchart will show how the Microflux works.



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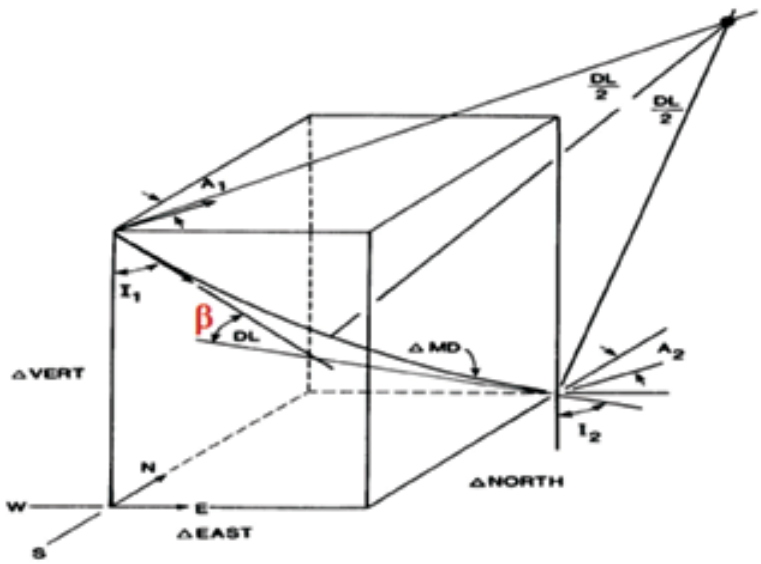
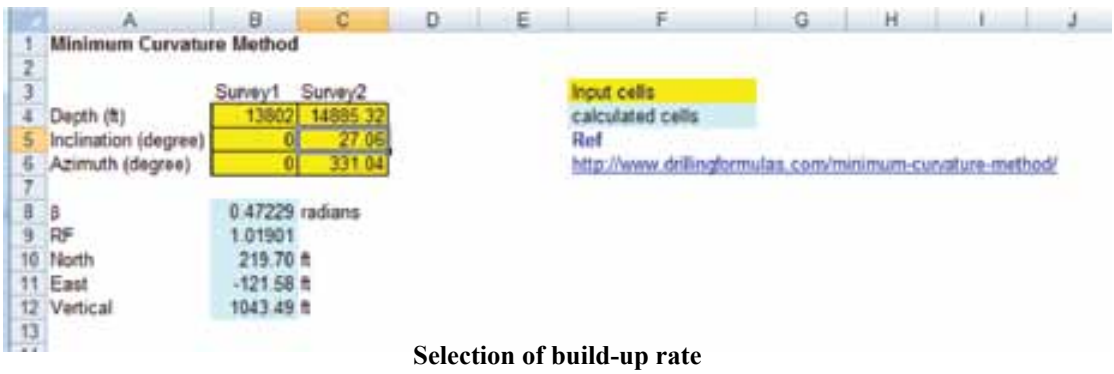
Introduction



Calculations and Designing the Well Trajectory



	A	B	C	D	E	F	G	H	I	J
1	Minimum Curvature Method									
2										
3		Survey1	Survey2			Input cells				
4	Depth (ft)	13802	14885.32			calculated cells				
5	Inclination (degree)	0	27.06			Ref				
6	Azimuth (degree)	0	331.04			http://www.drillingformulas.com/minimum-curvature-method/				
7										
8	β	0.47229 radians								
9	RF	1.01901								
10	North	219.70 ft								
11	East	-121.58 ft								
12	Vertical	1043.49 ft								
13										

Selection of build-up rate

tie_MD	tie_Inc	tie_Azi	tie_TVD	tie_N	tie_E	DLS	Reference	ID
6894	0	0	6894	0	0		Sea bed	0
			7257.579	0	0			1
			7621.158	0	0			2
			7984.737	0	0			3
			8348.316	0	0			4
			8711.895	0	0			5
			9075.474	0	0			6
			9439.053	0	0			7
			9802.632	0	0			8
			10166.211	0	0			9
			10529.79	0	0			10
			10893.369	0	0			11
			11256.948	0	0			12
			11620.527	0	0			13
			11984.106	0	0			14
			12347.685	0	0			15
			12711.264	0	0			16
			13074.843	0	0			17
			13438.422	0	0			18
			13802	0	0		KOP	19
			14089.998	16.8915177	-9.34771126			20
			14489.9922	92.8792039	-51.399051			21
			14680.9925	152.469148	-84.3759331			22
			14845.9158	218.962271	-121.173013		EOB	23
			14947.9458	264.566425	-146.410204			24
			15036.9458	304.346585	-168.424416			25
			15125.9458	344.126745	-190.438628			26
			15214.9458	383.906905	-212.45284			27
			15303.9458	423.687065	-234.467052			28
			15393.9458	463.914193	-256.728614			29
			15482.9458	503.694353	-278.742826			30
			15571.9458	543.474513	-300.757038			31
			15660.9458	583.254673	-322.77125			32
			15749.9458	623.034833	-344.785462			33
			15838.9458	662.814993	-366.799674			34
			15927.9458	702.595153	-388.813885			35
			16016.9458	742.375313	-410.828097			36
			16105.9458	782.155473	-432.842309			37
			16194.9458	821.935633	-454.856521			38
			16283.9458	861.715793	-476.870733			39
			16372.9458	901.495953	-498.884945			40
			16461.9458	941.276113	-520.899157			41
			16550.9458	981.056273	-542.913369			42
			16639.9458	1020.83643	-564.927581			43
			16728.9458	1060.61659	-586.941792			44
			16817.9458	1100.39675	-608.956004			45
			16825.9458	1103.9725	-610.93481			46
			16827.7917	1104.79755	-611.391392			47

Selection of build-up rate

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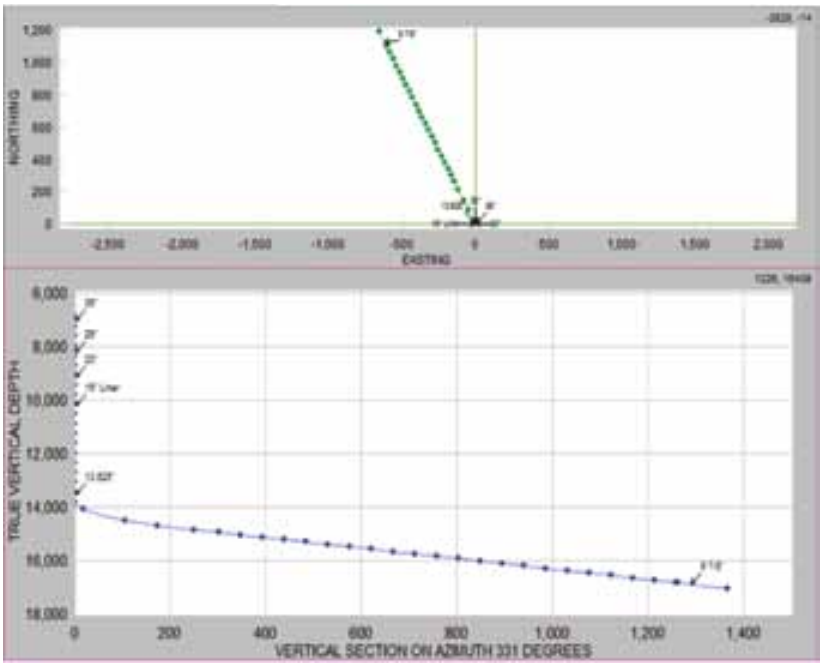
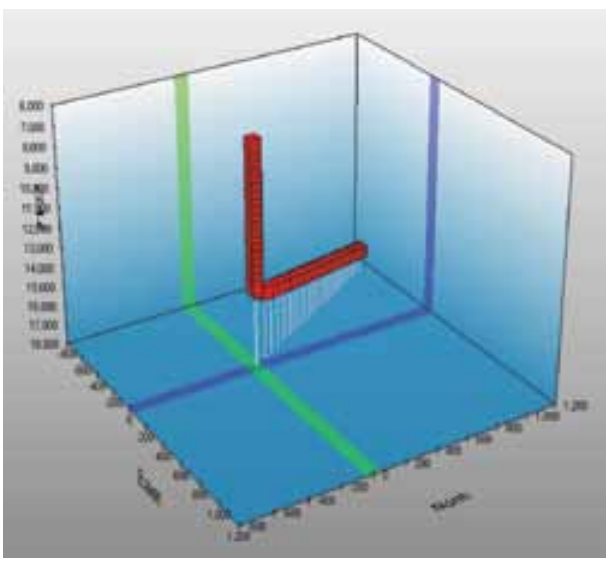
Exporting the second Table, the (*Calculated* Details of Selected Plan by Hole Section) gives the following:

#	Reference	Type	MD	Inc	Azi	TVD	N	E	DLS	VertS
0	Sea bed	Tie Point	6894.00	0.00	0.00	6894.00	0.00	0.00		0.00
1		Vertical	7257.58	0.00	0.00	7257.58	0.00	0.00	0.00	0.00
2		Vertical	7621.16	0.00	0.00	7621.16	0.00	0.00	0.00	0.00
3		Vertical	7984.74	0.00	0.00	7984.74	0.00	0.00	0.00	0.00
4		Vertical	8348.32	0.00	0.00	8348.32	0.00	0.00	0.00	0.00
5		Vertical	8711.90	0.00	0.00	8711.90	0.00	0.00	0.00	0.00
6		Vertical	9075.47	0.00	0.00	9075.47	0.00	0.00	0.00	0.00
7		Vertical	9439.05	0.00	0.00	9439.05	0.00	0.00	0.00	0.00
8		Vertical	9802.63	0.00	0.00	9802.63	0.00	0.00	0.00	0.00
9		Vertical	10166.21	0.00	0.00	10166.21	0.00	0.00	0.00	0.00
10		Vertical	10529.79	0.00	0.00	10529.79	0.00	0.00	0.00	0.00
11		Vertical	10893.37	0.00	0.00	10893.37	0.00	0.00	0.00	0.00
12		Vertical	11256.95	0.00	0.00	11256.95	0.00	0.00	0.00	0.00
13		Vertical	11620.53	0.00	0.00	11620.53	0.00	0.00	0.00	0.00
14		Vertical	11984.11	0.00	0.00	11984.11	0.00	0.00	0.00	0.00
15		Vertical	12347.69	0.00	0.00	12347.69	0.00	0.00	0.00	0.00
16		Vertical	12711.26	0.00	0.00	12711.26	0.00	0.00	0.00	0.00
17		Vertical	13074.84	0.00	0.00	13074.84	0.00	0.00	0.00	0.00
18		Vertical	13438.42	0.00	0.00	13438.42	0.00	0.00	0.00	0.00
19	KOP	Vertical	13802.00	0.00	0.00	13802.00	0.00	0.00	0.00	0.00
20		Build	14090.86	7.67	331.04	14090.00	16.89	-9.35	2.66	19.31
21		Build	14500.61	16.83	331.04	14489.99	92.88	-51.40	2.24	106.15
22		Build	14703.47	22.42	331.04	14680.99	152.47	-84.38	2.76	174.26
23	EOB	Build	14885.11	27.06	331.04	14845.92	218.96	-121.17	2.55	250.25
24		Tangent	14999.68	27.06	331.04	14947.95	264.57	-146.41	0.00	302.38
25		Tangent	15099.62	27.06	331.04	15036.95	304.35	-168.42	0.00	347.84
26		Tangent	15199.56	27.06	331.04	15125.95	344.13	-190.44	0.00	393.31
27		Tangent	15299.50	27.06	331.04	15214.95	383.91	-212.45	0.00	438.77
28		Tangent	15399.44	27.06	331.04	15303.95	423.69	-234.47	0.00	484.24
29		Tangent	15500.51	27.06	331.04	15393.95	463.91	-256.73	0.00	530.21
30		Tangent	15600.45	27.06	331.04	15482.95	503.69	-278.74	0.00	575.68
31		Tangent	15700.39	27.06	331.04	15571.95	543.47	-300.76	0.00	621.14
32		Tangent	15800.33	27.06	331.04	15660.95	583.25	-322.77	0.00	666.61
33		Tangent	15900.27	27.06	331.04	15749.95	623.03	-344.79	0.00	712.07
34		Tangent	16000.21	27.06	331.04	15838.95	662.81	-366.80	0.00	757.54
35		Tangent	16100.15	27.06	331.04	15927.95	702.60	-388.81	0.00	803.00
36		Tangent	16200.09	27.06	331.04	16016.95	742.38	-410.83	0.00	848.47
37		Tangent	16300.03	27.06	331.04	16105.95	782.16	-432.84	0.00	893.93
38		Tangent	16399.97	27.06	331.04	16194.95	821.94	-454.86	0.00	939.40
39		Tangent	16499.91	27.06	331.04	16283.95	861.72	-476.87	0.00	984.87
40		Tangent	16599.85	27.06	331.04	16372.95	901.50	-498.88	0.00	1030.33
41		Tangent	16699.79	27.06	331.04	16461.95	941.28	-520.90	0.00	1075.80
42		Tangent	16799.73	27.06	331.04	16550.95	981.06	-542.91	0.00	1121.26
43		Tangent	16899.67	27.06	331.04	16639.95	1020.84	-564.93	0.00	1166.73
44		Tangent	16999.61	27.06	331.04	16728.95	1060.62	-586.94	0.00	1212.19
45		Tangent	17099.55	27.06	331.04	16817.95	1100.40	-608.96	0.00	1257.66
46		Tangent	17108.54	27.06	331.04	16825.95	1103.97	-610.93	0.00	1261.74
47		Tangent	17110.61	27.06	331.04	16827.79	1104.80	-611.39	0.00	1262.69



Details of Selected well plan



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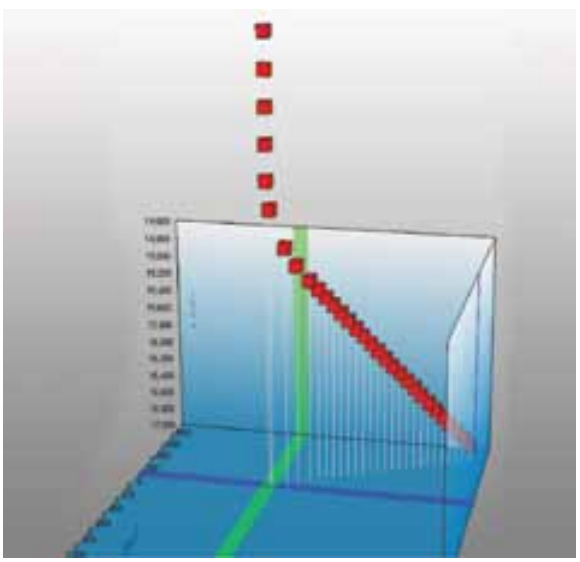
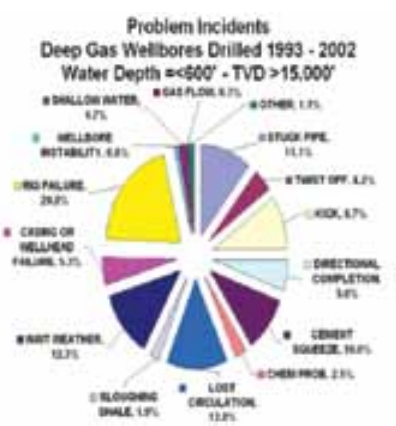
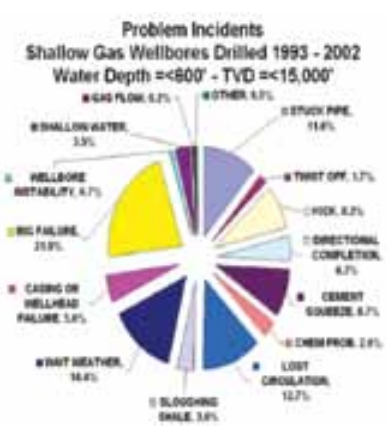
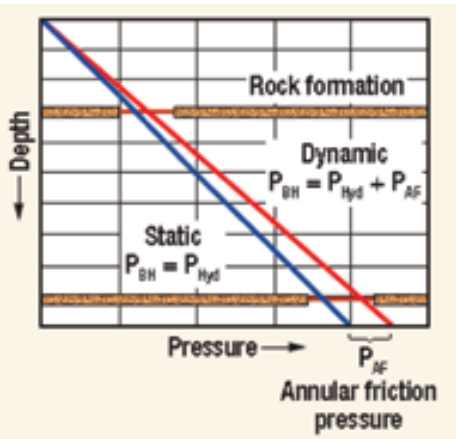


Details of Selected well plan

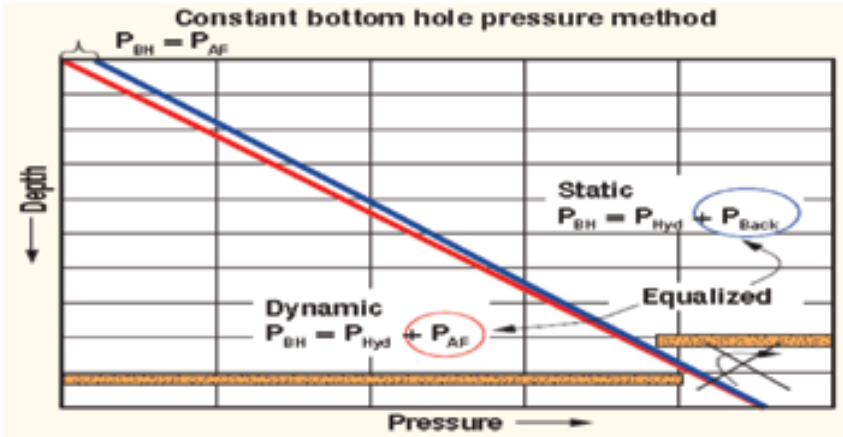




Source: Dodson, 2005

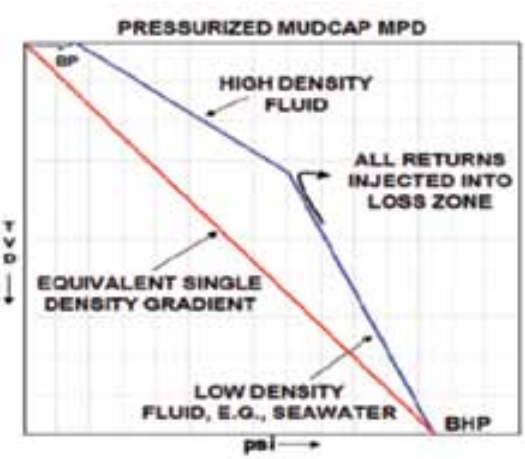


Source: Malloy, 2007

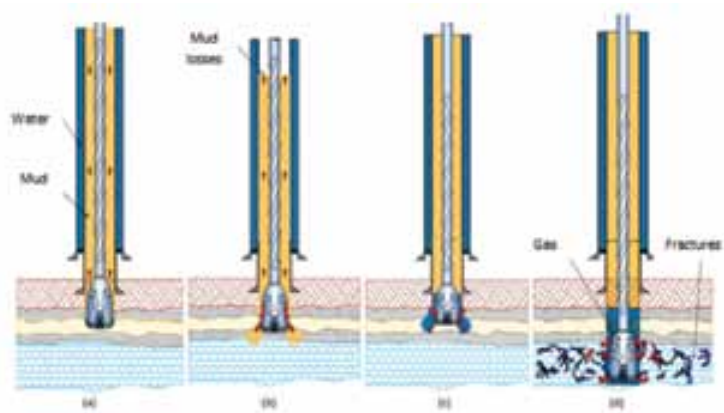


CBHP uses lower-density drilling fluid and imposes PBack to equalize PAF. Source: Malloy, 2007

Pressurized Mud Cap Method Drilling (PMCD) Method

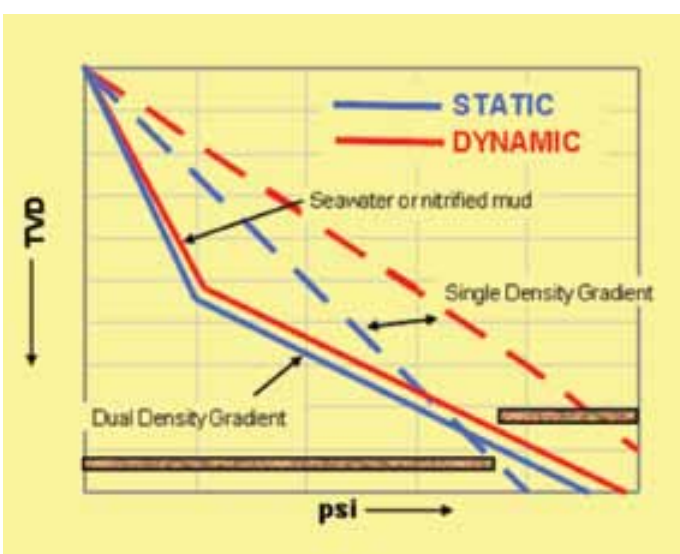


Source: Rohani, 2011



Source: Figures are taken from Malloy, 2008.

Dual Gradient Drilling (DGD) Method



Source: Malloy, 2008

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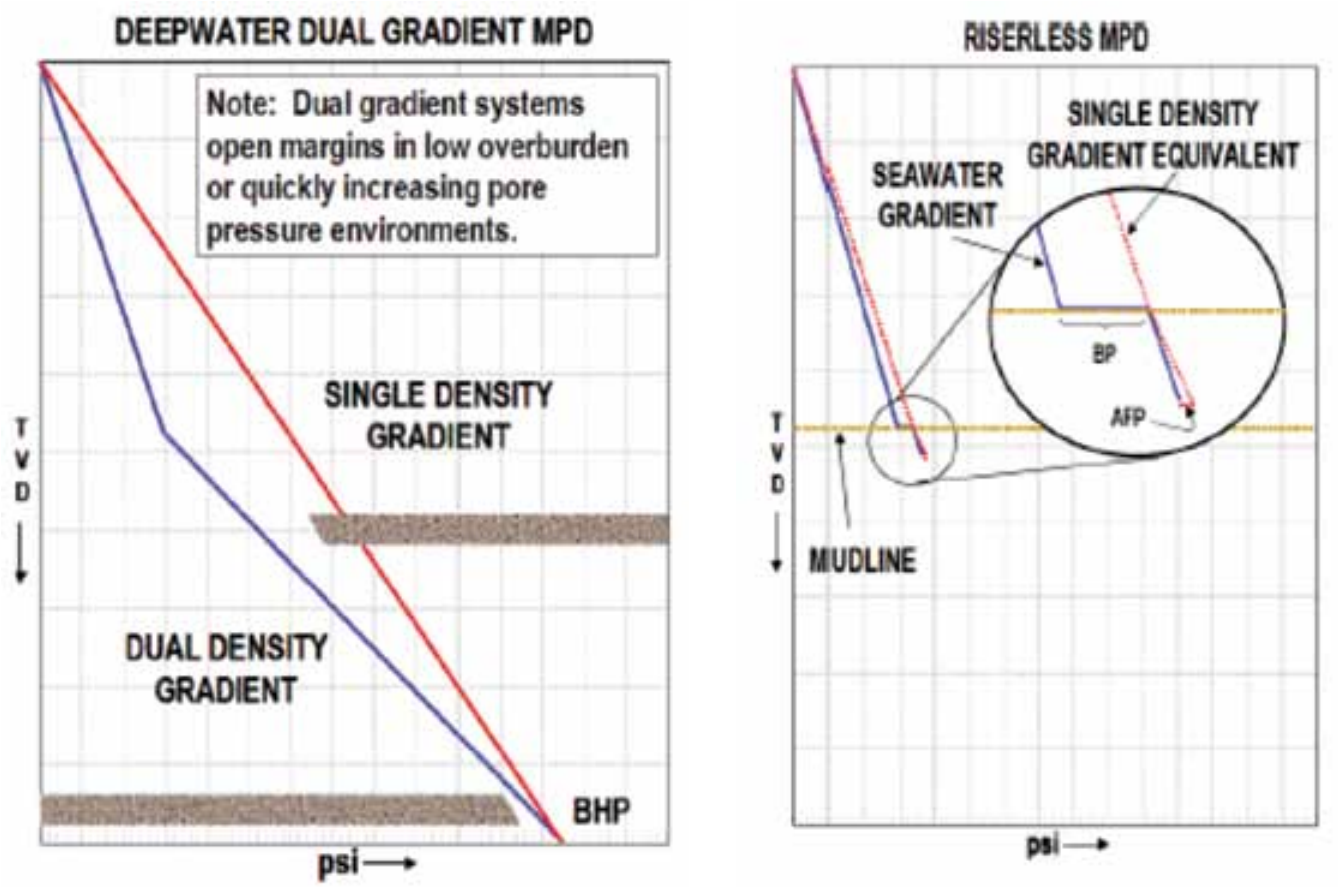
Dual Gradient Drilling (DGD) Method



Source: (Rohani, 2011)

Weatherford Model 7100 1 **http://www.sunrypetro.com/images/rig_par 1**

ROTATING CONTROL DEVICE(RCD)

http://www.weatherford.com/Products/Dril 1

MICROFLUX™ Control System Automated Choke Manifold

Command Center

http://www.storagecontainer.com/wp-conte 1

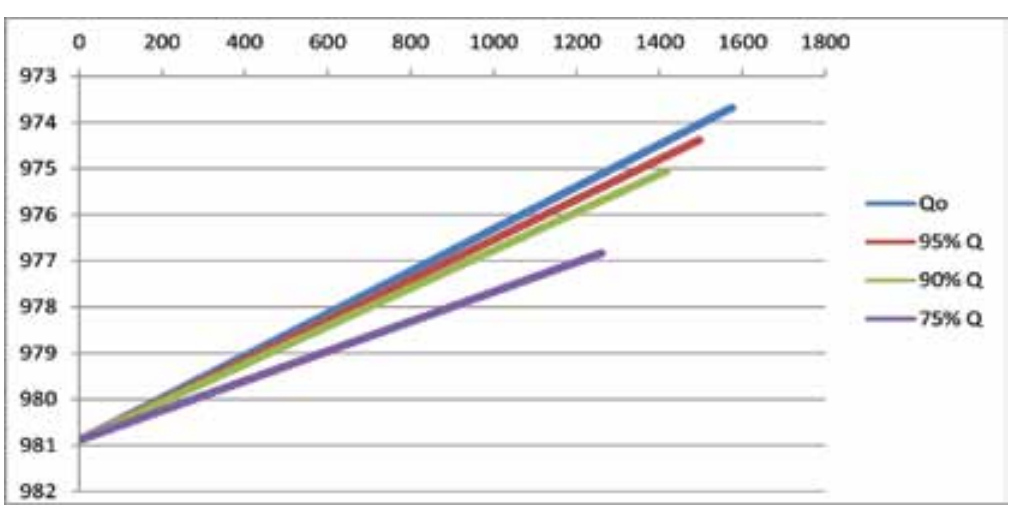
Non Return Valves

Flow Meter-Coriolis Mass Flow Measuring System

MPD Mud Design

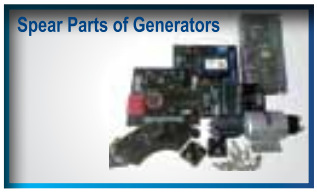
Input	Output		
Section 16			
Formation Pressure (psi)	5,002	Section Length (ft)	1,077
Previous Casing Shoe (ft)	9,088	Sea Bed Level (ft)	6,819
TVD (ft)	10,165	Mud Weight (ppg)	9.5
Drillpipe OD (in)	6.625	Previous Casing ID (in)	19.124
Previous Casing OD (in)	20	Length of Previous CSG	2,269
Pipe Area (in^2)	34.47	Casing Area (in^2)	287.24
Flow Rate (gpm)	1,574	Hole size (in)	17
Hole size Area (in^2)	226.98	Rat Hole	50
BHSP/BHCP	1.2% Fp	6,002	
Hydrostatic Pressure (psi)	0.052(Pm)(TVD)	5,022	
Velocity in cased hole (ft/min)	19.2385(Q/(Acsg-Adp)	119.80	
Annular Flow Pressure in Cased (psi)		3.55	
Velocity in open hole (ft/min)		157.30	
Annular Flow Pressure in Open (psi)		3.66	
Total Annular Flow Pressure (psi)		7.20	
SBP @ BHSP	HP + AFP	980.89	
SBP @ BHCP	HP + AFP + SBP	973.69	
Sensitivity Analysis			
	95% Q	90% Q	75% Q
Total Annular Flow Pressure (psi)	6.50	5.84	4.05
SBP @ BHSP	980.89	980.89	980.89
SBP @ BHCP	974.39	975.05	976.84

Q	SBP @ BHCP
0	980.89
1,574	973.69
1495.3	974.39
1416.6	975.05
1259.2	976.84



Sales Department:

Trade and Supply (Motors - Gearbox - Water pumps - spare parts of Generators).



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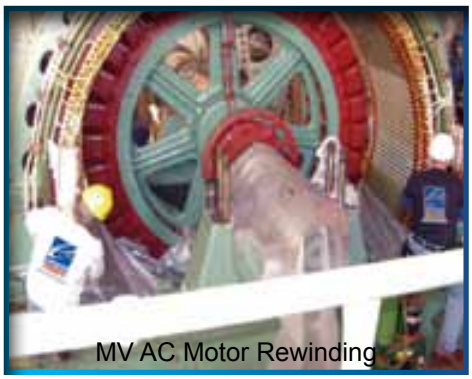
Factory : Industrial Zone (C8) 125
Phone : (+2015) 38 49 04 Fax : (+2015) 36 71 79 Mobile : (+2) 012 22242881 - 012 23429098 - 012 26900609
Website : www.expresmotors.com E-mail : ex.motors@hotmail.com

Express Motors Egypt
اكسبريس موتورز ايجبت


Low Voltage AC Motor Rewinding


MV AC Motor Rewinding


Motor Synchronous 11000 V - 3100 kw


Turbo Generator Rotors Repair


Generator Rewinding Services


DC Motor Rewinds and repairs


HV & MV Transformer Rewinding Services

Maintenance:

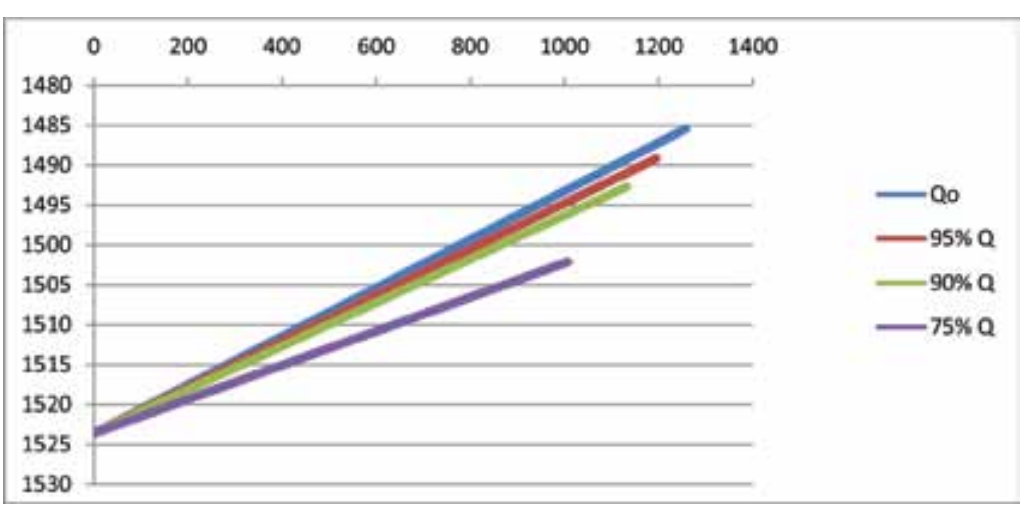
We Rewind & Repair The Following Electric Motor and Generator Types:

AC & DC, Slip ring motors, Synchronous motors and generators,Water pumps, High Voltage AC Motor,Turbo Generator, High& Low voltage transformer.

MPD Mud Design

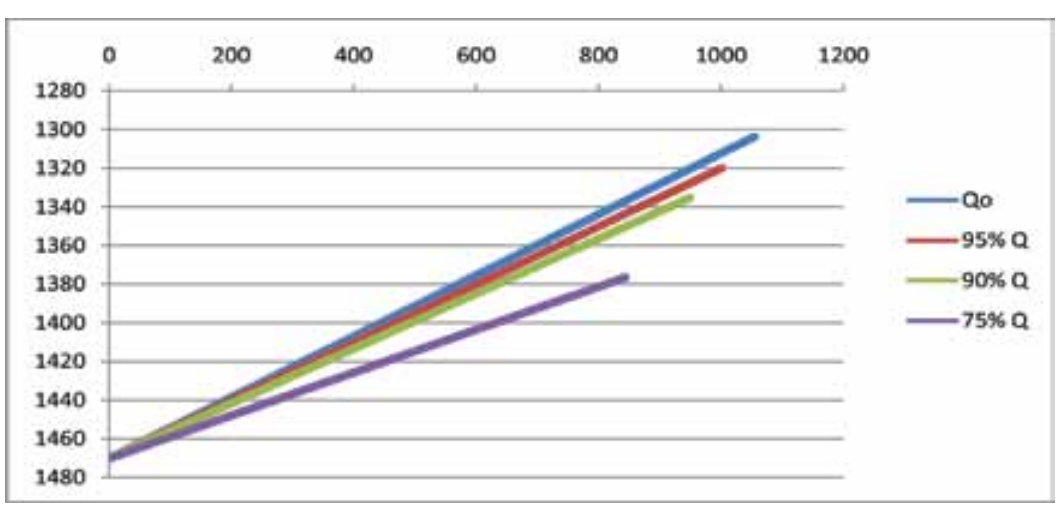
Input	Output		
Section 13.625			
Formation Pressure (psi)	7,255	Section Length (ft)	3245
Previous Casing Shoe (ft)	10,165	Sea Bed Level (ft)	6819
TVD (ft)	13,410	Mud Weight (ppg)	10.3
Drillpipe OD (in)	6.625	Previous Casing ID (in)	15.01
Previous Casing OD (in)	16	Length of Previous CSG	3346
Pipe Area (in^2)	34.47	Casing Area (in^2)	176.95
Flow Rate (gpm)	1,258	Hole size (in)	14.5
Hole size Area (in^2)	165.13	Rat Hole	50
BHSP/BHCP	1.2% Fp	8706.00	
Hydrostatic Pressure (psi)	0.052(Pm)(TVD)	7182.40	
Velocity in cased hole (ft/min)	19.2385(Q/(Acsg-Adp)	169.86	
Annular Flow Pressure in Cased (psi)		16.99	
Velocity in open hole (ft/min)		185.23	
Annular Flow Pressure in Open (psi)		21.18	
Total Annular Flow Pressure (psi)		38.18	
SBP @ BHSP	HP + AFP	1523.60	
SBP @ BHCP	HP + AFP + SBP	1485.43	
Sensitivity Analysis			
	95% Q	90% Q	75% Q
Total Annular Flow Pressure (psi)	34.45	30.92	21.47
SBP @ BHSP	1523.60	1523.60	1523.60
SBP @ BHCP	1489.15	1492.68	1502.13

Q	SBP @ BHCP
0	1523.6
1,258	1485.43
1195.1	1489.15
1132.2	1492.68
1006.4	1502.13



MPD Mud Design

Input	Output		
Section 9.875			
Formation Pressure (psi)	9,637	Section Length (ft)	3,470
Previous Casing Shoe (ft)	13,410	Sea Bed Level (ft)	6,819
TVD (ft)	16,880	Mud Weight (ppg)	11.5
Drillpipe OD (in)	6.625	Previous Casing ID (in)	12.375
Previous Casing OD (in)	13.625	Length of Previous CSG	6,591
Pipe Area (in^2)	34.47	Casing Area (in^2)	120.28
Flow Rate (gpm)	1,054	Hole size (in)	12.25
Hole size Area (in^2)	117.86	Rat Hole	50
BHSP/BHCP	1.2% Fp	11,564	
Hydrostatic Pressure (psi)	0.052(Pm)(TVD)	10,094	
Velocity in cased hole (ft/min)	19.2385(Q/(Acsg-Adp)	236.32	
Annular Flow Pressure in Cased (psi)		105.47	
Velocity in open hole (ft/min)		243.17	
Annular Flow Pressure in Open (psi)		60.97	
Total Annular Flow Pressure (psi)		166.44	
SBP @ BHSP	HP + AFP	1,470	
SBP @ BHCP	HP + AFP + SBP	1,304	
Sensitivity Analysis			
	95% Q	90% Q	75% Q
Total Annular Flow Pressure (psi)	150.21	134.82	93.62
SBP @ BHSP	1470.16	1470.16	1470.16
SBP @ BHCP	1319.95	1335.34	1376.54
Q	**SBP @ BHCP**		
0	1470.16		
1,054	1303.72		
1001.3	1319.95		
948.6	1335.34		
843.2	1376.54		



Mpd Drilling Matrix		Surface pressure indicator			
		At planned drilling back pressure	At planned connection back pressure	Greater than planned back pressure and less than back pressure limit	Greater than back pressure limit
Influx Indicator	No Influx	Continue Drilling	Continue Drilling	Increase pump rate, mudw weight, and reduce surface pressure to contingency levels	Pick up, shut in, evaluate next action
	Operating limit	Increase back pressure, pump rate, mudweight or a combination of them	Increase back pressure, pump rate, mudweight or a combination of them	Increase pump rate, mud weight, and reduce surface pressure to contingency levels	Pick up, shut in, evaluate next action
	Less than planned limit	Cease Drilling, Increase back pressure, pump rate, mudweight or a combination	Cease Drilling, Increase back pressure, pump rate, mudweight or a combination	pick up, shut in, evaluate next action	Pick up, shut in, evaluate next action
	Greater than or equal to planned limit	Pick up, shut in, evaluate next action	Pick up, shut in, evaluate next action	pick up, shut in, evaluate next action	Pick up, shut in, evaluate next action

Data Taken From Catalogs

Design	Catalog
Casing Design	■ Gabolde and Nguyen (2006). Drilling Data Handbook. TECHNIP, 8th edition. ■ Schlumberger, Casing Catalog. ■ Schlumberger iHandbook.
Drillstring Design	■ Schlumberger iHandbook. ■ JerehDrilltech (2012). Bit Catalog. ■ Vam(2012). Drilling Catalog. ■ Gulf Publishing Company (2008), DrillbitClassifer Catalog.
BHA Hydraulics and Bit Record	■ Axis Oil Field (2011). PDC Drill Bits Catalog. ■ Online Halliburton Casing Catalog. ■ VAM (2011). Drilling Catalog.
Riser Design	■ VAM (2010). OCTG Product Selection Guide. ■ VAM (2012). VAM Top FE Riser Catalog. ■ VAM (2012). VAM Riser Catalog ■ Gabolde and Nguyen (2006). Drilling Data Handbook. TECHNIP, 8th edition.
BOP Design	■ Cameron Blow out Preventer Catalog

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-Petroleum Research Institute, Cairo (Full time Researcher : (12008/12/-21 2005/12/) Faculty of Science, Menofia University, Egypt : (20032008-), Graduate Level:Method of Prospecting. And Well Logging

Industry At A Glance

by

Ali Ibrahim

Table (1)
World Crude oil Supply.*
Supply (million barrels per day)

	U.S (50states)	OECD(1)	North sea(2)	OPEC(3)	OPEC (4)	world
Aug.2014	12.55	23.86	2.67	36.31	34.63	90.64
September	12.86	24.22	2.53	35.50	33.78	90.49
October	12.83	24.56	2.82	35.44	33.73	90.63
November	12.88	24.71	2.86	34.80	33.10	90.26
December	12.92	24.91	2.98	34.70	32.98	89.86
Jan.2014	12.90	24.44	2.76	35.80	34.20	90.35
February	12.99	24.62	2.85	36.35	34.70	91.10
March	13.13	24.84	2.86	35.85	34.33	90.36
April	13.63	25.22	2.84	35.73	34.08	91.24
May	13.59	25.05	2.78	35.80	34.15	91.52
June	13.69	25.24	2.80	35.70	34.05	91.73
July	14.07	25.67	2.86	35.85	34.2	92.11
August	14.16	25.73	2.71	35.93	34.3	92.61
September	14.19	25.69	2.69	36.38	34.7	92.94
October	14.32	25.75	2.65	36.45	34.7	93.06

Source EIA

* «Oil Supply» is defined as the production of crude oil (including lease condensate) Natural gas plant liquids, and other liquids, and refinery processing gain.

NA = no data available

(1) OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia,South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

(2) North Sea includes offshore supply from Denmark, Germany, the Netherlands, Norway, and the United Kingdom

(3) OPEC = Organization of Petroleum Exporting Countries: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

(4) OPEC = Organization of Petroleum Exporting Countries doesn't include Angola.

Table (2)

International petroleum consumption
Million Barrels Per Day

	OECD(1)	U.S (50 States)	Canada	Europe	Japan	Non-OECD	China	Other Non -OECD	World
Aug.2013	46.36	19.09	2.29	13.84	4.41	45.65	10.45	17.96	91.01
September	46.21	19.12	2.27	13.90	4.26	45.06	10.72	18.02	91.28
October	46.36	19.27	2.24	13.85	4.32	44.83	10.88	17.45	91.28
November	46.56	19.19	2.43	13.37	4.68	44.89	11.10	17.17	91.45
December	46.85	19.14	2.40	13.01	5.21	44.30	10.78	16.88	91.16
Jan.2014	45.77	18.92	2.27	13.05	4.56	44.58	10.77	17.21	90.34
February	46.53	18.54	2.32	13.81	5.07	44.53	10.57	17.29	91.06
March	46.30	18.68	2.30	13.71	4.75	44.52	10.60	17.27	90.82
April	45.25	18.78	2.22	13.46	4.14	45.84	11.30	17.53	91.08
May	44.95	18.78	2.28	13.26	3.98	45.92	11.16	17.84	90.88
June	45.61	18.93	2.29	13.43	3.94	46.27	11.27	18.12	91.88
July	46.00	19.16	2.36	13.7	4.13	46.23	11.07	18.42	92.23
August	45.95	19.28	2.39	13.42	4.14	46.09	11.00	18.48	92.04
September	46.13	18.83	2.36	14.21	4.17	46.46	11.28	18.47	92.65
October	46.33	19.03	2.33	14.12	4.15	45.86	11.02	17.96	92.19

Source EIA

(1) OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

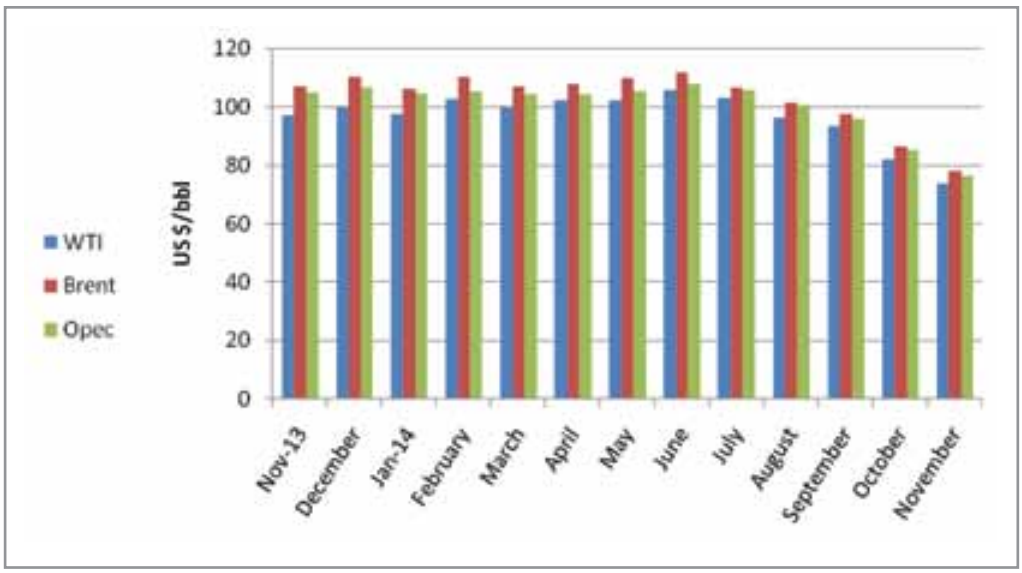
Table (3)

World Natural Gas Plant Liquid Production , Thousand Barrels Per Day

	Algeria	Canada	Mexico	Saudi Arabia	Russia	United States1	Persian Gulf 2	OAPEC3	OPEC4	World
June.13	352	720	321	1,624	446	2,385	2,685	3,120	3,421	8,387
July	352	716	328	1,626	438	2,395	2,680	3,126	3,415	8,395
August	352	707	331	1,641	452	2,412	2,723	3,152	3,449	8,479
September	348	768	330	1,636	449	2,414	2,717	3,044	3,454	8,479
October	348	719	325	1,635	448	2,409	2,719	3,142	3,449	8,478
November	359	726	324	1,640	450	2,409	2,712	3,151	3,455	8,471
December	354	720	329	1,642	442	2,419	2,707	3,157	3,449	8,479
January.14	356	643	354	1,519	444	2,038	2,544	3,058	3,280	8,326
February	352	620	328	1,601	439	2,175	2,670	3,112	3,275	8,519
March	355	688	329	1,606	452	2,395	2,695	3,249	3,335	8,386
April	355	760	330	1,625	448	2,388	2,696	3,121	3,414	8,395
May	350	712	320	1,620	445	2,390	2,690	3,014	3,420	8,390
June	354	719	318	1,619	444	2,385	2,692	3,111	3,415	8,395
July	369	700	330	1,650	450	2,410	2,700	3,115	3,424	8,402
August	370	691	335	1,661	455	2,419	2,703	3,115	3,428	8,404
September	378	694	334	1,645	458	2,398	2,705	3,120	3,425	8,407
October	380	699	333	1,678	459	2,401	2,701	3,121	3,427	8,408

Source EIA

1 U.S. geographic coverage is the 50 states and the District of Columbia. Excludes fuel ethanol blended into finished motor gasoline.
2 The Persian Gulf countries are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.
3 OAPEC: Organization of Arab Petroleum Exporting Countries: Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Qatar, Saudi Arabi Arabia Syria, Tunisia, and the United Arab Emerates Emirates
4 OPEC: Organization of the Petroleum Exporting Countries: Algeria, Angola, Ecuador, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.



Source EIA

Fig. (1) World Crude Oil Prices US $ per BBL

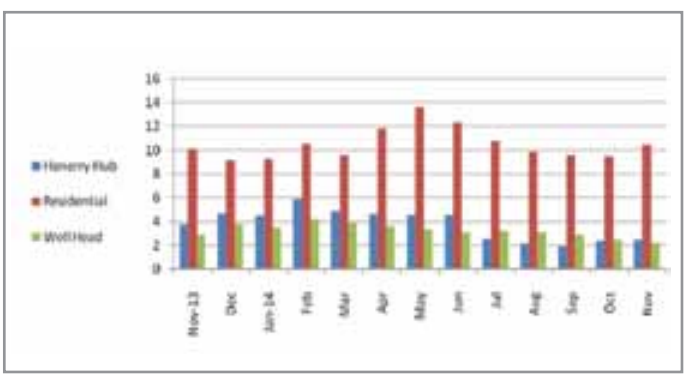
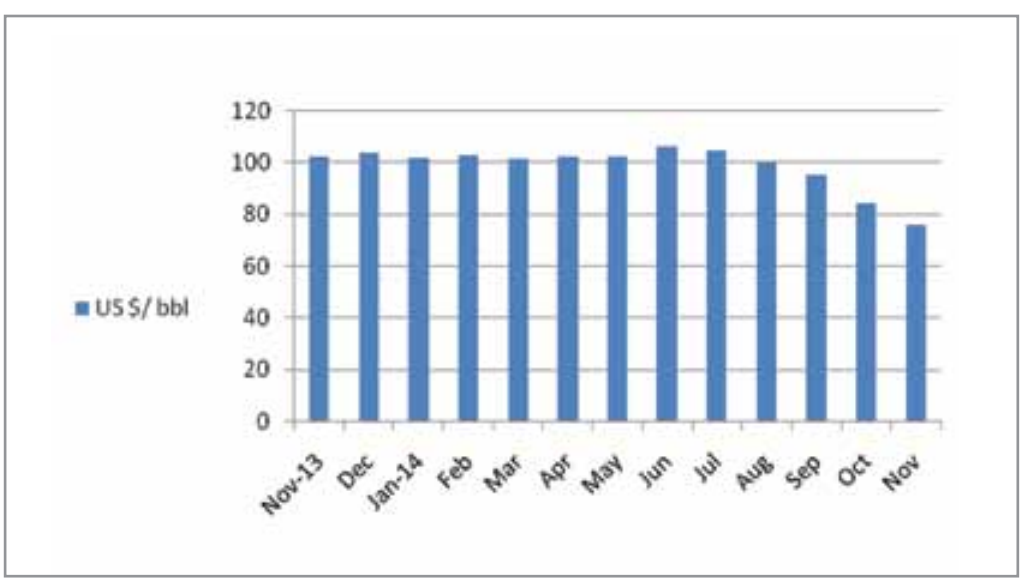


Fig. (2) Natural Gas Prices US $ Per MCF

Table (4)
Egypt Rig Count per Area

	May-14	Jun-14	Jul-14	Aug-14	Sep-14
Gulf of Suez	10	10	11	10	11
Mediterranean Sea	9	9	7	9	7
Western Desert	81	81	84	81	84
Sinai	9	9	8	9	8
Eastern Desert	6	6	6	6	6
Delta	3	3	3	3	3
Total	118	118	119	118	119

Source Petroleum Today



Source EIA

Fig. (3) Egypt Suez Blend Price (Dollars per Barrel) based on 33° API

Atlas Copco Ranked Among Top Sustainable Companies

For further information please contact :

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Cairo, Egypt, November 26, 2014: Atlas Copco, a leading provider of sustainable productivity solutions, today was recognized by the annual Global 100 list as one of the world's most sustainable companies.

The list, presented at the World Economic Forum in Davos, Switzerland, ranks companies that prove they are increasing productivity while using less resources. Atlas Copco is ranked 46, and it was the eighth time the company appeared on the list.

Creating business value through sustainability is at the core of Atlas Copco's products and service. The Group's sustainability goals include boosting customer energy-efficiency by at least 20% between 2010 and 2020, decreasing CO2emissions, working actively to eliminate corruption, and promoting access to clean drinking water in countries in need. New top-modern factories inaugurated last year in China and India that were built according to the Leadership in Energy and Environmental Design standard are other examples of Atlas Copco's commitment to sustainable, profitable growth.

"We believe in creating long-lasting value for our customers and shareholders by integrating social and environmental responsibility into our operations," said John Vanezos, Atlas Copco Egypt General Manager.

The Global 100 Most Sustainable Corporations in the World index, known as the Global 100 list, is presented annually at the World Economic Forum. The ranking evaluated 3 641 publicly listed companies globally that are measured against sustainability indicators such as safety performance and revenues in relation to consumption of energy and water.

To read more, see http://global100.org.

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وإستكمالاً لهذا الفكر الإستراتيجى المخطط لقطاع البترول المصرى بإستكمال حلقات الإنتاج وزيادة اختراق السوق العالمى لمعدات البترول لما لها من أهمية وبعد الوصول للمستوى العالمى لشركات قطاع البترول متمثلة فى شركة بتروجت و شركة إنبى لما لديها من إمكانات بشرية وخبرات تراكمية تؤهلها لمنافسة كبرى الشركات العالمية لمشروعات البترول والغاز داخل مصر وخارج حدودها بمنطقة أفريقيا والشرق الأوسط فكانت مرحلة الدخول فى مناقصات عالمية لتصدير المعدات خارج مصر وقد شاركت ورش بتروجت فى تصدير معدات بترولية لقطر والأردن وليبيا وسوريا والسعودية والإمارت والجزائر.

وفى عام ٢٠٠١ وبأحدث التقنيات تم إنشاء الشركة العالمية لصناعة المواسير IPIC بمدينة بورسعيد لتوفير إحتياجات القطاع من المواسير LSAW لنقل البترول والغاز وبأقطار من ١٦بوصة حتى ٦٠بوصة.

ولتطوير إنتاج ورش بتروجت بدأ إختراق مجال تصنيع معدات حقول إنتاج البترول والغاز عام ٢٠٠٥ من خلال تصنيع طلمبات الأبار (pumping unit) بأيدى مصرية وبمشاركة شركة لافكن (LUFKEN) اقدم كبرى الشركات العالمية الأمريكية بعد الحصول على (API 11E) من معهد البترول الامريكى فى هذا المجال وتم انتاج اكثر من ١٠٠٠ وحدة بأيدى مصرية باشراف امريكى تعمل الأن فى حقول البترول داخل وخارج مصر والانتاج مستمر لتغطية احتياجات شركات القطاع والتصدير الى الاسواق العربية.

ولتطوير وزيادة تعميق هذا الفكر الإستراتيجى لإستكمال الحلقات الهامة لانتاج البترول والغاز لتوفير إحتياجات قطاع البترول تم خلال عام ٢٠٠٦ تأسيس شركة لتصميم وتصنيع وصيانة جميع طلمبات البترول بالسويس بمشاركة شركة روهربومبن الألمانية.

وفى عام ٢٠٠٧ وبمشاركة شركة HH كبرى الشركات الصينية العالمية التى تعمل فى مجال تصميم وتصنيع حفارات البترول البرية لنقل التكنولوجيا لما تمثلة هذه الصناعة من أهمية إستراتيجية لانتاج البترول والغاز وتم تأسيس شركة البترول المصرية الصينية لتصنيع اجهزة الحفر ، لإنتاج اول حفار مصرى صينى بأستخدام أحدث التقنيات العالمية لتغطية احتياجات قطاع البترول المصرى والمناطق العربية وشمال افريقيا.

وقامت الشركة بإنتاج عدد ٥ أجهزة حفر برية تعمل بكفأة وتتجه الشركة نحو الإنتاج والصيانة وإعادة التأهيل لأجهزة الحفر بمصر والشرق الأوسط .

وفى عام ٢٠٠٩ وبمشاركة شركة SOG لصينية وشركة PMC اليابانية تم تأسيس الشركة العالمية لتصنيع مهمات الحفر لتوفير إحتياجات قطاع البترول بمصر وإفريقيا من مواسير وقيسونات حفر الأبار (Casing & Tubing) بتكنولوجيا يابانية ، لإستمرار القطاع فى توفير إحتياجاته من المنتج المحلى وبطاقة إنتاجية مبدئية للمرحلة الأولى ٥٠ ألف طن سنوياً.

ولا شك أن إنجاز هذه الصناعة الإستراتيجية بالسواعد والخبرات المصرية المؤهلة القادرة على إستيعاب أحدث تكنولوجيا العصر تمثل ثروة حقيقية للإقتصاد المصرى وتحقق المعادلة الصعبة والرؤية الصائبة للإستراتيجية البترولية والجرأة فى إتخاذ القرار واقتحام الاسواق الخارجية وتحقيق منظومة التكامل فى الصناعة البترولية من البئر إلى المستهلك وتؤكد قدرة قطاع البترول على جذب الإستثمارات العالمية ومشاركة الشركات العالمية فى مجالات وصناعات غير تقليدية تدخل مصر للمرة الأولى وتساهم فى تحقيق الأمن القومى المصرى وزيادة الإنتاج وسرعة بدء المشروعات البترولية من خلال توفير المعدات والآلات اللازمة للصناعة فى التوقيتات المناسبة وبتكلفة إقتصادية مناسبة ويجب القول أن التصنيع المحلى الثقيل فى مختلف صناعات البترول كان حلماً فأصبح حقيقة على أرض الواقع

لتوفير الاحتياجات وتعظيم القيمة المضافة

تعميق التصنيع المحلي للمعدات البترولية ... شهادة نجاح لقطاع البترول المصري

بقلم: المهندس محمد الجوهري
مستشار الشركة العالمية لتصنيع مهمات الحفر
ورئيس مجلس ادارة الشركة سابقا

بدأ قطاع البترول إختراق مجال تصنيع المعدات البترولية باستراتيجية شاملة لتوفير إحتياجات شركات القطاع من المعدات والمهمات للإعتماد على الذات بالإستغلال الإقتصادى الأمثل للإمكانات والموارد المتاحة وتعظيم القيمة المضافة ودعم القدرات الذاتية ونقل وتطويع التكنولوجيا والتقنيات العالمية الحديثة وقد بدأ ذلك خلال العقد السابق على المستوى المحلي والذى كان يلزمه للدخول في المنافسة الدولية التأهيل للحصول على الشهادات الدولية من المعاهد والجمعيات العالمية حيث بدأت شركة بتروجت كنموذج لتحقيق إستراتيجية قطاع البترول بتأهيل الورش الخاصة بها بالقطامية لهذه المهمة وتم وضع خطة لإختراق هذا المجال حيث بدأ التنفيذ على عدة مراحل بدأت بتجهيز الورش والتأهيل العلمي بالتعريف بالتقنيات الحديثة وإتباع الأكواد العالمية وايضا الحصول على الشهادات الدولية المؤهلة لهذه الصناعات والإهتمام بالجودة كمفتاح لهذه الصناعات وكذلك الإشتراك فى تصنيع وتوريد المعدات للمشروعات المحلية بمشاركة الشركات الأجنبية المتخصصة.

وتضمن هذا الامر ايضا رفع كفاءة الورش بتحديث الالات والمعدات والتأهيل بمزيد من الشهادات والتدريب لتطوير أساليب التصنيع لمعدات مشروعات الغاز والدخول فى المنافسة العالمية خارج حدود مصر للمنافسة بالأسواق القريبة بالشرق الأوسط.

وقد بدأت المرحلة الأولى بتخصيص ورش بتروجت بالقطامية وورش شركة القاهرة لتكرير البترول لهذه المرحلة للتنافس على المنتج وتم التجهيز للحصول على الشهادات العالمية المؤهلة وقد حصلت ورش بتروجيت بالقطامية عام ١٩٩٣ بترخيص من الجمعية الامريكية للمهندسين الميكانيكيين ASME

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ثم توالى تنفيذ المخطط الإستراتيجى بحصول ورش بتروجت على شهادة ISO9002 (إدارة الجودة الشاملة) وقد تقاسمت الورشتين فى ذلك تصنيع معدات معمل تكرير بشركة النصر للبترول بالسويس شاملا تصنيع البرج الرئيسي بمشتملاتها الداخلية للصوانى

كما تم تصنيع إحتياجات قطاع البترول من المعدات المطلوبة لمشروعات الخطة الخمسية بمشروعات شركات خالدة ، قارون ، بترول ابوقير،النصر للبترول ،العامرية للبترول والسويس للبترول .

وبدأت الورش المنافسة والمشاركة فى التصنيع خارج قطاع البترول حيث شاركت ورش بتروجت فى تصنيع معدات محطة كهرباء سيدى كرير ومحطة كهرباء عيون موسى بمشاركة شركات بابكوك هيتاشى اليابانية وشركة هان جانج الكورية ومشروع حديد صلب الدخيلة بمشاركة شركة هولتر الالمانية.

وقد تواكب تطوير القدرات التصنيعية مع التطور المتسارع الخطى بأداء قطاع البترول المصرى للمشروعات الكبرى بالطفرة التى تمت فى بداية عام ٢٠٠٠ بزيادة خطط الإستكشاف والإنتاج للإستغلال الأمثل لرصيد مصر من الغاز الطبيعى وبدأ مرحلة جديدة بالإهتمام بصناعة استخراج الغاز وتسييله وفصل المشتقات فبدأ التوجه لضرورة وضع خطط لتطوير ورش التصنيع لرفع كفأة تلك الصناعة بإعادة التأهيل ورفع الكفأة بالألات والمعدات الحديثة والحصول على الشهادات الاضافية المؤهلة لصناعة معدات مشروعات الغاز (ASME. U2) لما لهذه المعدات من مواصفات واكواد خاصة .

وتم زيادة الطاقات التصنيعية بزيادة عدد الورش المؤهلة لذلك حيث أنشأت بتروجت ٤ ورش متخصصة ومؤهلة فى هذه الصناعة وتم النجاح بالمشاركة فى تصنيع معدات مشروعات إسالة الغاز وفصل المشتقات برشيد ودمياط وإدكو وبورسعيد مع كبرى الشركات العالمية ومعدات مصانع الاسمدة وصناعات البتروكيماويات من ابراج واوعية ومبردات حرارية مع شركة اوادا (Uhde) الالمانية فى مشروعاتها بالاسكندرية والسويس وحلوان ودمياط.

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الشركة العالمية لتصنيع مهمات الحفر

واصلت الشركة العالمية لتصنيع مهمات الحفر IDM نجاحها للعام الخامس على التوالي منذ بدء التشغيل والإنتاج فى تحقيق أهداف مباشرة وغير مباشرة أولها قدرتها على تقديم أسعارملائمة للمنتجات التى تنتجها الشركة ، وساهمت الشركة منذ تشغيلها فىإنخفاض أسعار التوريدات لمواسير تبطين أبار البترول مما يعود بالفعل على التكلفة التى تتحملها هيئة البترول فى حفر أبار البترول غير توافر المواسير فى التوقيتات المناسبة والتى تحقق خطط الحفر والتنمية والاستكشاف للإبار وبذلك تكون الشركة قد ساهمت فى قيامها بالدور المخطط لها لمنظومة التصنيع المحلى لقطاع البترول والدور الاستراتيجي لهذه الصناعة ومما ادى الى توفير المنتجات بشكل دائم ومنتظمفى السوق.

واستمرارنا لنجاح الشركة العالمية لتصنيع مهمات الحفر فقد فازت بالمناقصة السنوية لشركة قارون للبترول لتوريد ال Casing عن العام المالي ٢٠١٤ ومناقصة شركة عجيبة وشركة بتر وسنانوشركة الوسطاني ليصل حجم تعاقدات الشركة منذ إنشاءها الى ١٤٣,٢ مليون دولار وليصل حجم إنتاجها خلال هذا العام الى ٤٧,٨ مليون دولار حيث تستهدف تنفيذ إنتاج ٤٠ ألف طن لعام ٢٠١٤ لشركات بتروبل وبدر الدين و عجيبة و قارون و برج العرب و بتروسنان .

وإن الشركة تمضى قدما في خططتها للتوسعات بشأن المرحلة الثانية المقرر الانتهاءمنها خلال النصف الثاني من عام ٢٠١٥ بتكلفة استثمارية تقدر٣٦ مليون دولار و إن هذه المرحلة مهمة و تمثل استكمالا لهدفا استراتيجيا للشركة ولقطاع البترول حيث سيكون المنتج المصنع النهائى للشركة مصري المنشأ مما يعزز من المنافسة فى السوق.

٤٥ عاما على اكتشاف أول حقل غاز مصري بالبحر المتوسط

في مصر لم يتم اكتشاف الغاز الطبيعي بكميات تصلح للاستغلال التجارى إلا في عام ١٩٦٧ حين تم الاعلان عن اكتشاف حقل أبو ماضي في وسط الدلتا والذي كان بداية الاستكشافات الكبرى للغاز الطبيعي في مصر وتبعه اكتشاف حقل أبى قير البحرى في البحر المتوسط في عام ١٩٦٩ وهو أول حقل بحري للغاز الطبيعي في مصر ثم حقل أبى الغراديق في الصحراء الغربية في عام ١٩٧١

وأدت النتائج المشجِعة لتلك المرحلة المبكرة لتوسيع عمليات البحث والتنقيب في الدلتا والصحراء الغربية وفي مياه البحر المتوسط التي بدأت الاستكشافات الأولية فيها عام ١٩٧٥ إلا إنه لم تبدأ حملات الاستكشاف المكثفة هناك قبل عام ١٩٩٥ لتقود للعديد من اكتشافات الغاز التجارية منذ عام ١٩٩٨ وحتى الآن.

ويجب الاشارة هنا الى انه كانت حقول الغاز الطبيعي في مصر يتم تسيلمها للحكومة المصرية بدون مقابل ولما بدأ استخدام الغاز الطبيعي كوقود في السوق المحلية وبعد ارتفاع أسعار البترول العالمية نتيجة للثورة الأيرانية قام قطاع البترول المصري في عام ١٩٨٠ بإدخال بند جديد في الاتفاقيات المبرمة مع شركات الإنتاج الأجنبية تحصل بمقتضاها على بعض المميزات المادية مقابل تسليم تلك الحقول تعويضا عن تكاليف الاستكشاف سميت بالحافز.

وفي اطار تشجيع الشركاء الاجانب لضخ المزيد من الاستثمارات في قطاع البترول للبحث والتنقيب عن الغاز الطبيعي وفي عام ١٩٨٧ تم زيادة تلك المميزات ليصير نصيب الشريك الأجنبى في حقول الغاز مثل نصيبه في حقول البترول مع التزام قطاع البترول المصري بشراء هذا النصيب بسعر يعادل سعر المازوت - بديل استخدام الغاز - لتشجيع الاستثمارات الجديدة في البحث والتنقيب بعد انهيار أسعار البترول العالمية.

وفي عام ١٩٩٤ تم تعديل الاتفاقيات وزيادة سعر

شراء نصيب الشريك الأجنبى ليعادل سعر " خليط زيت السويس " بدلا من المازوت مما جذب العديد من الشركات العالمية للتنقيب في المياه العميقة خاصةً الذي يتطلب استثمارات كبيرة مما أدى لزيادة كبيرة في الاحتياطيات.

و بدءا من عام ٢٠٠٠ تم عمل اتفاقية لتعديل سعر الغاز بحيث يضع حداً أقصى لسعر الغاز الطبيعي الذي يحصل عليه الشريك الأجنبى ٢,٦٥ دولار لكل مليون وحدة حرارية بريطانية مهما ارتفعت أسعار البترول الخام .

الا انه مؤخرا تدور مفاوضات بين عدد من الشركاء الاجانب مثل اباتشي وشل وايني واديسون وبريتش جاز وبريتش بتروليم والحكومة المصرية ممثلة في وزارة البترول لرفع سعر الغاز الطبيعي الذي يحصل عليه الشريك الأجنبى الى ٣,٥٠ دولار لكل مليون وحدة حرارية بريطانية من اجل دفع الشركاء الاجانب الى ضخ المزيد من الاستثمارات بهدف تنمية الحقول واكتشاف ابار جديدة وزيادة الانتاج وذلك لسد احتياجات السوق الداخلية من الغاز الطبيعي في ظل ارتفاع الاستهلاك نظرا للتوسع في الصناعة الزيادة السكانية .

وتعد منطقة البحر المتوسط منطقة واعدة فيما يتعلق بانتاج الغاز الطبيعي. حيث تتوقع هيئة المساحة الجيولوجية الأمريكية أن يحتوي شرق المتوسط على حوالي ١٢٢ تريليون قدم مكعب من الغاز الطبيعي وحوالى ١,٧ بليون برميل من النفط، وان كانت مصر تملك النصيب الأعظم من هذه الاحتياطيات طبقا للدراسة.

جديرا بالذكر ان هناك العديد من مشروعات تنمية حقول البحر المتوسط التي ستحل ازمة الطاقة في مصر فور الانتهاء منها ويأتي على رأسها مشروع تنمية حقول شمال الإسكندرية والذي تنفذه شركة شركة بريتش بتروليم "بى بى" باستثمارات تقدر بحوالي ٨ مليارات دولار والتي تقدر احتياطياتها بحوالى ٥ تريليون قدم مكعب غاز وبطاقة انتاجية تبلغ ١,٢ مليار قدم مكعب يوميا والتى تمثل ٢٥٪ من الإنتاج الحالى والتى سيبدأ ضخها في الشبكة القومية للغاز قبل نهاية عام ٢٠١٧.

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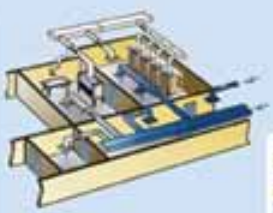

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"ايني" الإيطالية توقع عقدا بقيمة ٦ مليارات دولار مع غانا

اعلنت غانا انها وقعت عقدا لاستكشاف النفط في البحر بقيمة ستة مليارات دولار مع المجموعة الايطالية النفطية العملاقة ايني، معربة عن الامل في ان يؤدي ذلك الى زيادة انتاجها النفطي الناشئ.

وفي بيان اكد وزير النفط الغاني ايمانويل ارما كوفي بواه توقيع هذا العقد.

واوضح الوزير ان العقد يتعلق بمجمع "كيب ثري بوينتس" الذي سيدخل حيز الانتاج في ٢٠١٧ "الامر الذي سيسمح بزيادة قدرة الانتاج في البلاد".

وغانا التي بدات استخراج النفط في نهاية ٢٠١٠ من حقل جوبيلي، واجهت صعوبات جمة لبلوغ اهدافها في مجال الانتاج وخصوصا بسبب غياب اهتمام المستثمرين الاجانب.

وفي الوقت الراهن، تنتج غانا، ثاني قوة اقتصادية في غرب افريقيا بفضل صادراتها من الذهب والكاكاو، حوالى ١٠٠ الف برميل نفط في اليوم، وتحتل بفارق كبير المرتبة الثانية وراء جارتها نيجيريا التي تنتج مليوني برميل من النفط في اليوم.

ديزاني أليسون: أول امرأة تترأس "أوبك"

انتخبت منظمة الدول المصدرة للنفط "أوبك" وزيرة الطاقة النيجيرية "ديزاني أليسون مادويك" في اجتماعها لتكون الرئيسة المقبلة للمنظمة عام ٢٠١٥ خلفًا لليبي "عبد الرحمن الطاهر الأحيرش".

وبناءً على ذلك، تصبح "مادويك" – ٥٤ عامًا – أول امرأة تشغل هذا المنصب، وقبل انتخابها، كانت تعد الرئيسة البديلة لمنظمة "أوبك"، وكانت التوقعات تتجه نحوها.

ولدت السيدة "ديزاني أليسون مادويك" في السادس من ديسمبر عام ١٩٦٠، وتم تعيينها وزيرة للنقل في نيجيريا في السادس والعشرين من يوليو عام ٢٠٠٧، ونُقلت لوزارة تنمية المناجم والصلب عام ٢٠٠٨، ثم عينت كوزيرة للموارد النفطية في أبريل عام ٢٠١٠.

وتعد "أليسون مادويك" أول امرأة أيضًا تقود وزارة الموارد النفطية في نيجيريا وأول سيدة تترأس وفد دولة بمنظمة "أوبك" عام ٢٠١٠.

"كوفبيك" تحصل على تمويل إضافي لخطط نموها بقيمة مليار دولار

أعلنت الشركة الكويتية للاستكشافات البترولية الخارجية (كوفبيك) توقيعها اتفاقية قرض جديد بقيمة مليار دولار أمريكي (ما يعادل ٢٨٨ مليون دينار كويتي) سيستخدم لتلبية احتياجات المشاريع الحالية والجديدة بما يضمن تمويل الخطط التوسعية للشركة عالميا، وقالت (كوفبيك) في بيان صحافي إنها وقعت اتفاقية القرض مع اتحاد مصرفي يضم كلا من بنك (طوكيو- ميتسوبيشي يو اف جي المحدود) وبنك (إتش أس بي سي الشرق الأوسط المحدود) وبنك (جي بي مورغان المحدود) وبنك (الكويت الوطني) وبنك (رويال سكوتلاند) التي ستقوم بدور الضامن والمرتب الرئيسي.وأوضحت أن بنك (جي بي مورغان المحدود) وبنك الكويت الوطني سيقومان بتنسيق ترتيبات الاقتراض في حين سيتولى بنك الكويت الوطني دور وكيل القرض لافتة الى القرض سيتم تسديده خلال خمس سنوات، وتعمل (كوفبيك) حاليا في ١٥ بلدا ولديها ٦٣ مشروعا في قطاع الاستكشاف والإنتاج العالمي وتواصل الشركة العمل لبلوغ أهدافها وتحقيق خططها الاستراتيجية الرامية لزيادة إنتاجها لغاية ٢٠٠ الف برميل نفط مكافئ يوميا واحتياطيات قدرها ٦٥٠ مليون برميل نفط مكافئ بحلول عام ٢٠٢٠.

أرامكو تشرع في تطوير ٣ حقول نفطية لإضافة ٥٠٠ ألف برميل يومياً لطاقتها الإنتاجية

شرعت ارامكو السعودية في اتخاذ الخطوات العملية لتطوير ثلاثة حقول نفطية لإضافة ٥٠٠ الف برميل يوميا الى طاقتها الانتاجية، سعيا الى المحافظة على طاقتها الانتاجية عند ١٢,٥ مليون برميل يوميا وتعويض أي فائد جراء تراجع إنتاج بعض الحقول النفطية وخاصة تلك التي تم إيقاف إنتاجها مؤخرا مثل حقل الخفجي.

ويستهدف التطوير حقل خريص ومزاليج وابو جفين حيث ارست عقودا مع شركة سابيم الايطالية للبدء في تشييد مرافق صناعية جديدة تساهم في رفع الطاقة الانتاجية لحقل خريص بمقدار ٣٠٠ الف برميل يوميا ليتخطى ١,٥ مليون برميل يوميا بحلول عام ٢٠١٧م كما ستساهم في إضافة ٢٠٠ الف برميل يوميا الى حقلي مزاليج وابو جفين.

عجيبة للبترول ترفع إنتاجها إلى أكثر من ٦٩ ألف برميل يومياً

حققت شركة عجيبة للبترول معدلات إنتاج قياسية غير مسبوقة من الحقول التابعة لها بمنطقتى الصحراء الغربية وخليج السويس بلغت مايزيد على ٦٩ ألف برميل زيت خام يومياً انعكاسا لاستراتيجية قطاع البترول بتعظيم الإنتاج من الحقول البترولية بشكل اقتصادى ودون زيادة فى معدلات الانفاق المخططة.

جاء ذلك فى التقرير الذى تلقاه المهندس شريف إسماعيل وزير البترول والثروة المعدنية من الجيولوجى مصطفى البحر رئيس شركة عجيبة للبترول.

وأوضح التقرير أن زيادة الإنتاج ترجع بصورة رئيسية إلى تحقيق نتائج واعدة فى حقل بترول إمرى العميق بالصحراء الغربية الذى شهد حفر بئرين جديدين هما إمرى – ١٥ وإمرى –٩ المحاد واللذان أضافا أكثر من ١٠ الاف برميل زيت خام يومياً فضلا عن اضافة حوالى ٢٥٠٠ برميل يومياً نتيجة نجاح عمليات الصيانة لبئرى إمرى –١١ و إمرى –١٣ ، وتنشيط البئر إمرى –٦ بالتكسير الهيدروليكى لتحسين كفاءة حقن المياه ، وأضاف أن الشركة نجحت فى عزل الطبقات المنتجة للمياه فى بئرى رمل –٢٩ بالصحراء الغربية وأشرفى –٥ بخليج السويس مما أدى إلى تحسين انتاجية الأبار و زيادة نسبة انتاج الزيت

الخام منها على حساب المياه المصاحبة ، لافتاً إلى أنه من المخطط تحقيق زيادة جديدة فى انتاج حقل أشرفى بخليج السويس خلال الفترة القادمة حيث تتواصل الجهود لإضافة طبقات جديدة منتجة فى بئرى أشرفى –٥ وجنوب غرب أشرفى –٢ .

تعديل إتفاقيات الغاز في مصر لتشجيع الشركاء الأجانب على تنمية الحقول

كشف المهندس طارق الملا الرئيس التنفيذى لهيئة البترول عن استمرار إجراءات تعديل سعر شراء الغاز المكتشف من بعض الشركاء الأجانب، خاصة المستخرج من المياه العميقة وغير التقليدى فى التراكيب الجيولوجية الجديدة، وهى الإجراءات التى بدأها قطاع البترول منذ ٢٠٠٦، وأوضح أنه يتم حاليا اتخاذ الإجراءات اللازمة لتعديل اتفاقيات الغاز الجديدة فى أغلب الاتفاقيات.

وأشار إلى أنه تم أخيرا تعديل أسعار الغاز الجديد فى بعض الاتفاقيات لشركات أباتشى الأمريكية، وإينى الإيطالية، وشل للغاز غير التقليدى فى التراكيب الجيولوجية الجديدة، وريو الألمانية، وإديسون الإيطالية.

وقال إن هناك حاليا مفاوضات مع شركة بريتش جاز الإنجليزية فى هذا الإتجاه، موضحا أن هذه الإجراءات لقطاع البترول تستهدف تحقيق التوازن بين تكاليف الإنتاج وأسعار الشراء من الشركاء الأجانب، بهدف تحفيزهم على سرعة تنمية الحقول المكتشفة وتكثيف أعمال البحث وزيادة معدلات الإنتاج المحلى.

هاليبيرتون" تشترى "بيكر هيوز" بحوالي ٣٥ مليار دولار

أعلنت "هاليبيرتون" الأمريكية – ثاني أكبر شركة للخدمات النفطية على مستوى العالم – أنها ستشتري شركة "بيكر هيوز" المنافسة في صفقة اندماج تصل إلى ٣٥ مليار دولار يتم دفعها نقدًا وبالأسهم.

وقالت "هاليبيرتون" إن العرض استحق ٧٨,٦٢ دولار لكل سهم من "بيكر هيوز" بناءً على إغلاق أسعار "هاليبيرتون" في جلسة ١٢ نوفمبر.

وأضافت "هاليبيرتون" أنه من المتوقع إتمام الصفقة في النصف الثاني من عام ٢٠١٥، وسوف يتلقى حملة أسهم "بيكر هيوز" ١,١٢ سهم "هاليبيرتون" بالإضافة إلى ١٩ دولارًا نقدًا لكل سهم يمتلكونه.

ومن المتوقع ايضا ان يكون الرئيس التنفيذي لهاليبرتون، دايف ليزار، من يقود الشركة المندمجة.

٢٠ اتفاقيــة جديــدة فــى مرحلــة الإجــراءات تبلــغ اســتثماراتها ١٠,٢ مليــار دولار

أكد وزير البترول المصرى شريف اسماعيل فى كلمة له امام مصر الاقتصادى الدولى أنه يتم تنفيذ استراتيجيات وخطط عمل لسد الفجوة بين العرض والطلب خلال ٥ سنوات وهى استيراد الغاز والاسراع بسداد مستحقات الشركاء الأجانب حيث تم سداد ٣ مليار دولار من المستحقات خلال شهرى ديسمبر وسبتمبر الماضيين ، وتوقيع اتفاقيات جديدة للبحث عن البترول والغاز الطبيعى، حيث تم توقيع ٣٦ اتفاقية جديدة منذ نوفمبر ٢٠١٣ باستثمارات حوالى ٢ مليار دولار لحفر ١٥٣ بئراً جديدة وأن هناك ٢٠ اتفاقية جديدة فى مرحلة الإجراءات تبلغ استثماراتها ١٠,٢ مليار دولار ، كما يتم العمل على الإسراع بوضع المشروعات الجديدة لتنمية الغاز على الإنتاج ، حيث يتم حالياً تنفيذ مشروعات تنمية باستثمارات ١٢ر٩ مليار دولار ومن المخطط البدء فى تنفيذ مشروعات جديدة باستثمارات ١٠ر٩ مليار دولار ، وأشار أنه يتم العمل على بدء الإنتاج المبكر من مشروع شمال الأسكندرية للغاز فى ٢٠١٧ بمعدل إنتاج ١ر٢ مليار قدم مكعب غاز يومياً.

وأضاف أنه يتم حالياً تنفيذ خطة لتطوير معامل التكريرمن خلال عدد من المشروعات الجارية والمخططة باستثمارات ٩,٣ مليار دولار ، كما أنه يتم تنفيذ مشروعات بتروكيماوية لتعظيم القيمة المضافة للثروات الطبيعة وإيجاد فرص عمل باستثمارات ٦,٢ مليار دولار منها ٤,٣ مليار دولار استثمارات

جارية و١,٩ مليار دولار استثمارات مخططة ، وأوضح أن قانون الثروة المعدنية الجديد خطوة على طريق زيادة مساهمة الثروة المعدنية بأكثر من ٥٪ سنوياً فى الناتج المحلى الإجمالى وجذب الاستثمارات وتعزيز أنشطة التعدين وتوفير فرص عمل جديدة .

توقيع العقد النهائى لأول سفينة عائمة لاستقبال وتخزين شحنات الغاز الطبيعى المسال

شهد المهندس شريف إسماعيل وزير البترول والثروة المعدنية والسيد توم وينيسلاند سفير دولة النرويج والقنصل العام بالقاهرة التوقيع على العقد النهائى لأول سفينة عائمة لاستقبال وتخزين شحنات الغاز الطبيعى المسال وإعادته لحالته الغازية مرة أخرى وتدفيعه إلى الشبكة القومية للغازات الطبيعية، بين الشركة المصرية القابضة للغازات الطبيعية (إيجاس) وشركة هوج النرويجية موردة السفينة لمدة ٥ سنوات لتوفير كميات من الغاز الطبيعى تزيد على ٥٠٠ مليون قدم مكعب يومياً لسد جانب من الاحتياجات الإضافية لمحطات الكهرباء.

وقع العقد المهندس خالد عبد البديع رئيس الشركة المصرية القابضة للغازات الطبيعية مع السيد سفايننج ستولا رئيس شركة هوج بحضور الدكتور شريف سوسه وكيل أول الوزارة لشئون الغاز والمهندس طارق الملا الرئيس التنفيذى لهيئة المصرية العامة للبترول.

ومن جانبه أشار رئيس شركة هوج أن السفينة العائمة تتميز بتكنولوجياتها الحديثة والمتطورة وأنه تم بنائها مؤخراً بحوض بناء السفن لشركة هيونداى الكورية للصناعات الثقيلة وقد غادرت حوض التصنيع فى الثانى من نوفمبر الجارى ومن المخطط بدء تشغيلها بميناء العين السخنة خلال مارس القادم، مشيراً إلى انه تم الاتفاق بين الطرفين على بذل الجهود اللازمة للتعجيل بتشغيل سفينة التغييز العائمة قبل هذا الموعد.

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