

GeoWorld

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News from the FIELD preparing for the upturn

Production record in Asia

Even though the market is still slower than in previous years, production activity and corresponding turnover in Asia-Pacific in August was the best month in the region's history. In China we were able to "green burn" heavy oil with a GOR of almost zero. The client recognised the special performance of our Burner head and greatly appreciated our service.



"Green burning" heavy crude oil during a full package DST-surface well testing job on the Nanhai-6 rig offshore China.

In India we have received praise from one of the Majors for full package well testing services. The oil company stated in a letter that we had proved throughout the whole process of "bidding, negotiation, shipment, custom clearing, field performance and testing data report" that we were able to work on extremely short notice in a very remote location, under difficult conditions, and still deliver outstanding service performance.

Another success in Indonesia to follow our series of successful steps of market penetration for production services, was the award of a long-term well monitoring (MPLT) contract (3 years) in July 99 for one of our major clients.

The productive desert in North Africa

Despite the current low level of activity in Libya, the Bu-Attifel team are still highly motivated and focusing their efforts on the rig-less operations clients are still requesting. Geoservices' mast truck, with Elmar pressure control panel, allows us to perform



A Geoservices mast truck in operation in the Libyan Desert with one of our production logging trucks in the foreground at right.

efficient combined production logging and surface well testing operations.

During Benoît Debray's recent trip to Libya, he and Fabrice Anglereaux (country manager) visited the Bu-Attifel base which is very well organised and maintained. A wide range of services is available from this base representing a very valuable asset in technology and experience for the entire Group. Forecasts of activity for Spring 2000 show that there is reason to look forward to growth in North Africa again and so opportunities to use this asset to best advantage.



Shamir Kasim and Dominique Didier from Bu-Attifel are eager to welcome and support all types of well operations in the desert.

Big Lever Contract in the North Sea

Geoservices was awarded its first Big Lever Contract (BLC) by Shell recently. A BLC is Shell's latest system for awarding contracts which has evolved from their experience with integrated services. It breaks down the groupings of services into more aligned "Clusters" so that key performance indicators can be agreed. This BLC is entitled Data Acquisition, with Geoservices doing all the mud logging and Schlumberger taking care of wireline logging, MWD and LWD. The contract covers the entire North

Sea for Shell, and will lead to several new rigs being installed as work begins to turn the corner and pick up into next summer. Two rigs are expected offshore Holland from Spring 2000 plus 2-3 onshore rigs for the NAM. There are a potential 5 wells planned in Norway.

Four CFMs were installed for an extended reach well for Total on the North Alwyn A platform. This contract, which installed the first Geo 5000 (first version of the ALS) back in 1986, has come full circle as it gears up to develop a new reservoir in the deeper Triassic. A ReservalTM has also been added along with continuous real-time data transmission to Total's Aberdeen shorebase. The CFMs lived up to expectations, with the client being very pleased with the real-time information provided.

Precision decision in Canada

Amid the recent spate of take-overs and mergers, Computalog, Geoservices' Canadian partner in the joint venture company United GeoCom Drilling Services was bought by Precision Drilling Corporation, a Canadian drilling company. According to Precision's website, it is "the premier provider of land drilling services and the top integrated oil-field and industrial service contractor in Canada, servicing oil and gas exploration and production companies in western Canada and abroad". Geoservice's management has met Precision's management and as far as the joint-venture goes, it is business as usual.



Meeting in Paris, from right, Hank Swartout (Chairman, President and CEO of Precision Drilling), Bob Miller (Computalog), Trevor Kemp, Georges Hostache, Bruno Burban and Benoît Debray.

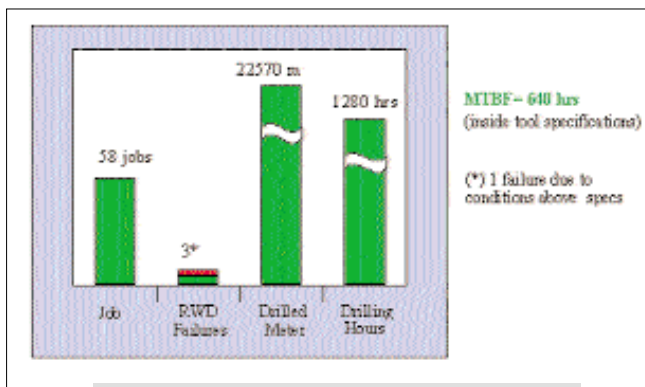
TECHNICAL ACHIEVEMENTS

Resistivity logging in the Americas

Geoservices RWD (Resistivity-While-Drilling) tool continues to establish an excellent reputation for itself on both American continents. Operations in South America are mostly concentrated in Venezuela while in North America they are confined to Canada and performed through United GeoCom Drilling Services, our joint-venture with Computalog. In Venezuela, a typical well is drilled from a small land rig on the shores of Lake Maracaibo. Two MWD operators and two RWD operators working 12-hour shifts spend about three days building angle in the 9⁵/₈" phase. Casing takes about two days before they spend another two days drilling a 6¹/₈" horizontal drain of about 300 m in the reservoir to a reach a total measured depth (TMD) of 1,000 to 2,000 metres. The rig

then moves from 0.5 km – 25 km before spudding the next well in the field. The wells drilled in Canada, on the other hand, are shallower and require much shorter working time for our tools. They are all

pad at an angle of 45° from surface by a slant rig (inclined derrick). The United GeoCom crew arrives after the 9⁵/₈" casing has been set at about 100 m TMD, and then continues on the 45° inclination with an 8³/₄" hole to a TMD of just 600 metres, sometimes 900 metres. One MWD operator and one RWD operator can usually rig up, do the job, and rig down in two days. The Resistivity is normally run with the Gamma Ray in both areas. The Gamma Ray helps the geologist pick the target top, while the RWD replaces the cost and time of an electric log. On one occasion so far in Venezuela the Resistivity was run with the Extended Range option to drill underbalanced to 3,600 m (11,800 ft) TMD.



Global operations statistics for the RWD tool.

heavy oil wells. A typical well here would be one of six or seven drilled from a central

Thanks to Nicolas Forge, Robert Bernard-Moulin and Ken Currie who supplied information for this article.

SPORTING ACHIEVEMENTS

Geoservices at the top of Europe!

An intrepid group from Head Office recently managed to scale Mont Blanc, the highest mountain in Europe, situated in the French Alps. Fabio Ceconi, Alain Delvas, Olivier Desloovere, Nicholas Forge, Denis Hafon, Bruno Le Brière, Martin Liebeck and Louis Soulier took a guide to



Alain Delvas and Fabio Ceconi displaying the colours at the highest point in Europe.

long to get back down again. Of the three possible routes to the top, they went up the most scenic, but also the most difficult, since it includes two other peaks on the way, Mont Tacul and Mont Maudit. Coming down the Grand Mulets was probably more tiring than going up and was

lead them to the summit at 4,807 m (15,770 ft). Well equipped with ice axes and crampons (shoe spikes) in addition to the usual climbing ropes and harnesses some of the team managed to get to the top in five hours, but it took them just as

particularly dangerous near the bottom due to the bad condition of the ice field. The hazards included lots of deep crevasses, one of which was unexpectedly and involuntarily examined at close quarters by Martin!



The group of climbers before they set off.



Martin Liebeck and Louis Soulier flank their guide at the summit.

Softball champions in Maracaibo

The "ULE Tankers", Geoservices' softball team in Maracaibo, Venezuela has won the championship organised there among local clubs. Under the management of Guy Torcatis, the team skillfully worked its way to the final in August, when it beat the Gallegos team 13 - 6 to take the trophy. A dozen clubs took part in the tournament which proved a good occasion for employees and their relatives and friends to get to know each other better in a recreational atmosphere.



Guy Torcatis (left of centre) and Donal O'Neill (General Manager of Shell Venezuela S.A.) with the champion team: Luis Vargas (Captain), Jairo Leal (Vice-captain), Hendrick Nava, Mario Bermudez, Jose Duran, Raylis Blanco, Gustavo Urdaneta, Audio Urdaneta, Anderson Marte, Jose Marte and Pedro Bermudez.

ISIS at our side**An interview with Jacques Burger***Executive Vice President of ISIS***Is it true that your personal contacts with Geoservices go back more than thirty years?**

Yes it is, back to 1968 to be precise. I was working for IFP at the time on a request from the Romanian Ministry for Oil and I met Mr Rebilly and Mr Issenmann with a view to purchasing a logging unit. The Romanians were exploiting a heavy oil reservoir and were looking for a unit for what was then an original sort of operation that we would now call "reservoir monitoring". I also had the pleasure, in 1991, as General Delegate of CEP&M and COPREP, of awarding first prize to Geoservices for "an innovative project leading to a key product for a company"; this was for your work on the transmission of data by electromagnetic waves, technology which has since been used with great success in directional drilling and well testing services.

ISIS is known as an investment company, could you explain what this means and tell us something about your company's objectives?

An investment company's primary business is holding the securities of other companies for investment purposes. ISIS was created by the IFP (Institut Français de Pétrole) in 1975 and given a twofold mission:

- to foster technological research by contributing to the creation of high-value-added service companies for the oil and gas industry

- to build up a strong investment portfolio of service companies with international scope in order to underpin their growth.

ISIS has been quoted on the Paris Stock Exchange since October 1997 and, in addition to its 35% stake in Geoservices, its portfolio includes stock in CGG (19.2%), Coflexip Stena Offshore (21.3%), Technip (12.2%),



Jacques Burger (right) with Christian Lascaux at the barbecue in Le Blanc-Mesnil in June.

Ipedex (46%), Dietsmann (15%) as well as a number of other service companies.

Some would say that as an investment company, without a product or a service to sell, all ISIS has to do is to sit back and wait for the dividends to roll in.

Well that may be what a passive individual investor might do, but ISIS is not a passive investor, it is an active institutional investor. Like any serious investor, we seek to maximise our investment and we do that by actively helping our companies to develop. We want our affiliate companies to hold a leading position in their area of activity. We also intend to play a role in consolidating the sector of the oil and gas industry in which ISIS is investing.

How do you think ISIS can best help Geoservices at the moment?

I would say principally in the area of technical development. Remember

ISIS is a subsidiary of IFP so we have access to a wealth of technical information and research data. In fact, as far back as 1994, two years before ISIS got involved with your company by increasing its capital, Bruno Burban and myself were already trying to strengthen the ties between IFP and Geoservices. These relations have been successfully reinforced in recent years and, as you know, a lot of business is conducted simply because established relationships are in place. We would also hope to help with advice on company strategy and to this end I am serving on Geoservices' Strategy Committee, chaired by Olivier Issenmann, and including Maurice Laurent, Bruno Burban and Benoît Debray.

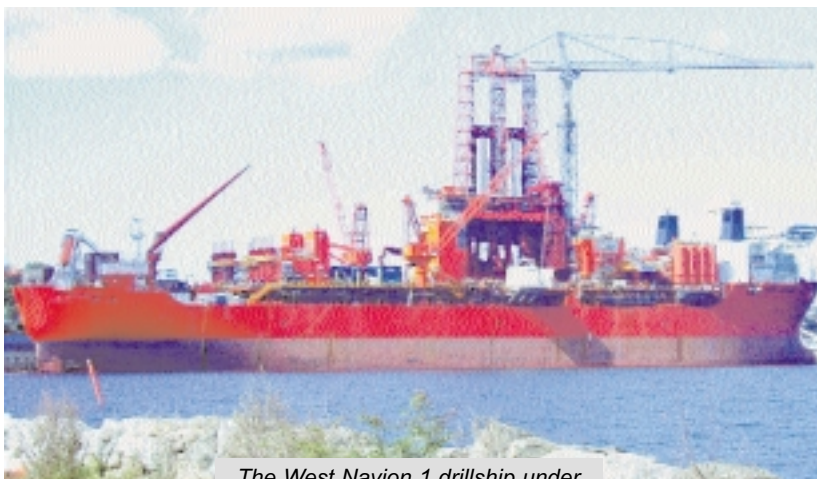
Presumably you and your colleagues thought that Geoservices had a bright future when you were prepared to invest 135 million francs (US\$22 million) in the company in 1996?

Indeed we did, and we still do; Geoservices could have a brilliant future. You have a highly-skilled work force, you are at the leading edge of some of the technology used in the oil and gas industry and you have an enviable network of offices and bases located all over the globe. I believe that as soon as we come out of this difficult period, which is now just a matter of time given the sharp rise in oil prices, Geoservices' activity will increase sharply. Time will tell whether we have made a good investment or not but just now we are very confident in the future.

Thanks to Jacques Burger for giving this interview.

Specially designed ALS unit on board a “half-billion-dollar” drill ship

A new generation drillship, West Navion 1, is nearing the completion stage in Stavanger, Norway. The ship's design is based on Statoil's Multipurpose Shuttle Tanker System (MST) which includes unusual features such as a dual Ramrig derrick and storage capacity for up to 100,000 bbl of oil produced from well test operations.



The West Navion 1 drillship under construction in Stavanger, Norway.

The latest cost estimate for building the ship for shipping company Navion (50%) and drilling contractor Smedvig (50%) is US\$470 million, an 88% increase on the original estimate of US\$250 million. The rig should now be carrying out a deepwater contract for Norwegian operator Statoil offshore Greenland but unfortunately is almost one year late on its delivery time. Geoservices in turn has been contracted to supply mud logging services for Statoil when the drill ship is finally put into service.

The West Greenland well is now expected to be spudded next year after two shake down wells have been completed. This will be in 1200 m of water about 150 km west of Nuuk, the island's capital. The license, awarded in 1996, covers some 9847 km² and is equivalent to 17 standard blocks offshore Norway.

Although Geoservices will be providing a specially designed ALS unit, including a Reserval[®] and Cuttings Flow Meters (CFM), we are providing very few other sensors. The parameters not covered by our sensors will be monitored by a system known as Drillview, already built into the rig's instrumentation. Drillview will be connected to Geoservices' mud logging unit so that all data are collected at a centralised processing point by the people who best know how to handle it. The dual derrick system has complicated matters slightly but a special interface has been prepared

to deal with this by our Operational Assistance Dept. (OAD) in Paris.

West Navion I is equipped with six separate shale shakers so six CFMs will be required; these will be the first installed by Geoservices Norway. Installation will be less straightforward than usual because the rig allows cuttings to be segregated in the



Kirsteen Mason from the Aberdeen office in one of the new ALS units showing a flat screen in the background.

trough for collection in separate areas, depending on whether they are drilled with oil-based or water-based mud.

The CFM has been earning wide acclaim recently for its part played in drilling a world record extended-reach well in Argentina. Its ability to measure the weight of cuttings produced from a well in real time, thus giving valuable information on hole cleaning efficiency has attracted the interest of the Norwegians.

The Reserval will be on board to monitor both mud OUT and mud IN. Monitoring OUT and IN gives a clearer indication of drilled gas since background gas retained in the mud can be better measured.

The logging unit is one of the latest ergonomically designed, high specification, A60-type used in the North Sea.

The design provides better noise reduction, natural light and comfortable working space for up to five field engineers or client personnel. It is pre-cabled with a 'plug-and-play' type facility that provides a choice of different keyboard and monitor positions. The latest flat screen technology and micro keyboards are also used to provide more space. Even the chairs have been specially designed to satisfy the very demanding requirements in Norway for better working conditions.

Thanks to Steve Davidge, Arie Romer and Torgeir Sandvik who supplied information for this article

ERRATUM

The Y2K article on this page in the previous GeoWorld (June 1999) contained incorrect information about the rules for leap years. The rules are in fact as follows:

Every fourth year is a leap year unless it falls on a century year. Century years, however, become leap years if they are divisible by 400. So the years 1800 and 1900 were not leap years whereas 2000 will be.

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