

Highlight

Half-year progress

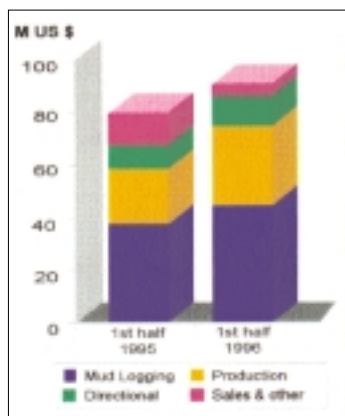
Income up 30% for services

The first six months of 1996 have been extremely busy. Turnover was over US\$90 million which means:

- it is up 16% over the first half of 1995
- income from services is up 30% over the same period.

The biggest contribution came from Production which is 46% up on 1995 and 21% ahead of the budget forecast. The other service lines, Mud Logging and Directional Drilling, also saw increases but sales of equipment are down compared to their exceptional performance in 1995.

The Group's accounts were closed at the end of June to determine the profitability for the first half of the year. This is a lengthy procedure, so we are looking forward to seeing the consolidated results by mid-October.



Half-yearly income - 1995 & 1996

INTERVIEW WITH BRUNO FLORIS

Looking to the Future



Low permeability testing for ANDRA, France

It is 9 months now since you took charge of the company. Can you say if your first impressions about Geoservices have been confirmed?

Oh yes, absolutely.

Geoservices is an international service company, with all that this implies; it has the ability to react and adapt quickly, personnel who are willing and endowed with an attitude of service to the client, obvious operational capabilities and sound technical know-how. There are, however, a few areas with room for improvement, and these could become critical in a period of rapid growth. I have to say that there is a strong regional spirit within the company, and a lack of means for Group planning and consolidation, which impedes the optimum use of our resources.

What do you think it is that makes Geoservices different from other service companies?

Its great ability to adapt to difficult or unusual local conditions. This gives it the edge over its bigger competitors in such places.

Presumably you've had time to think about a strategy and the direction the company should take; may we know what you have planned?

We have done a lot of work in this area, especially at the last Management Committee meeting

with Bruno Burban, the regional vice-presidents and the service line managers, and later in a working group chaired by J-F Daviau. First of all we analysed the company's position in relation to its clients and its competitors, then we evaluated its strong points and its weaknesses, studied the evolution of our markets, decided on some basic moves and produced the first draft of a three-year plan. This is of course fairly standard procedure and was mostly conducted in-house, but we also made use of the database available at IFP's Strategy Department and the results of surveys conducted by specialised companies.

Where does your thinking lie at the moment?

We are going for a strategy of growth which we have temporarily christened "the 3 thirds".

We are aiming to realise a third of our turnover in mud logging, our original service line (this doesn't mean that we have any intention of relinquishing our world leadership, on the contrary). Another third will come from production services and the remaining third from the rapidly growing but fiercely competitive activities such as directional drilling, integrated services and new services. The latter group will be carried out through partnerships and will make full use of our worldwide knowledge and experience.

continued . . .

INTERVIEW WITH BRUNO FLORIS

Looking to the Future *(continued)*

In a nutshell, Geoservices has to be a multi-service company, with a range of services spread wide enough to enable it to withstand the inevitable economic ups and downs of our industry.

What will this change for the personnel?

More than any other type of company, a service company must have good, highly motivated personnel in order to survive. This means they must be listened to. We have just distributed a questionnaire to personnel in certain areas to evaluate how they view the company.

Of course we are not sitting around doing nothing while waiting for the results of this survey. Training has been stepped up and we completed 9800 man-hours of tuition in the first 6 months of the year. We

are also opening a new production training centre which should be operational in October 1996.



Mrs Miguel Labourg who recently joined the Human Resources Dept.

We have also beefed-up the Human Resources Department to make it more accessible, and we are going to extend the annual interview to the whole Group. These interviews are essential for obtaining feedback from the personnel and also allow managers to do their job more effectively. This action will

also be the basis for a fair and equitable salary policy which will take into account each person's performance, from the regional manager to the field operator.

How has 1996 been for the company so far?

Our income for the first six months* is very encouraging as regards services, and is comparable with the best in the industry.

The year should end showing a marked improvement over 1995 in terms of turnover and profit.

However, there is still a lot of work to be done if we are to achieve the level of profitability which will enable us to finance our future growth ourselves.

** see article on first page*

Interview conducted by Keith Ross

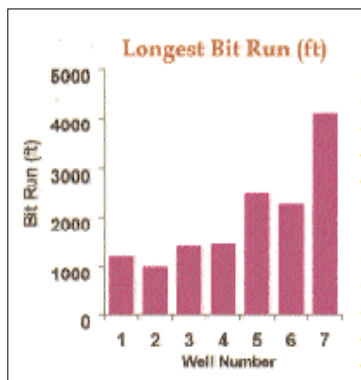
TECHNICAL ACHIEVEMENTS

ALS-V : The Geoservices solution for extending bit life and reducing drillstring failures

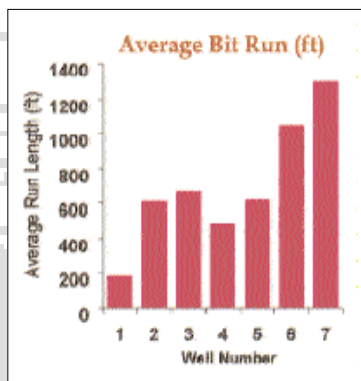
ALS-V stands for Advanced Logging System - Vibration Data, and was introduced to the industry by Geoservices at the beginning of 1990. The vibrations referred to are the vibrations often generated in a drillstring while drilling. Uncontrolled vibrations can quickly become expensive, seriously reducing bit life and causing drill string failures.

Drillstring vibrations are spotted by measuring and plotting surface data such as WOH, Torque, RPM and Stand Pipe Pressure at a high sampling rate. When problems are detected, alarms and graphic displays are automatically triggered on the drill floor, warning the driller to take corrective action before any damage occurs.

Geoservices markets the system as an add-on to a full ALS service or as a stand-alone package. It comprises a dedicated PC with special acquisition board in the mud logging unit, and a video repeater or a Rig Floor Computer (RFC) installed on the drill floor. Geoservices installs the system on the rig, makes the necessary calibrations



*Improvement in longest bit run for seven wells**



*Improvement in bit run length over seven wells**

and takes care of maintenance. We also train the rig personnel how to interpret the information displayed in real time, since it is the driller who has to react to events if an abnormal situation arises. The Geoservices engineer is also in charge of reporting any abnormal drilling situations detected. These vibration reports are of prime importance for further in-depth analysis of the phenomena encountered, and are used to optimise drilling conditions for future wells.

We presently have 20 systems in operation around the world, about 50% of which are in South America. A major oil company has written to us saying that the service "far exceeded our original expectations", and that it had "dramatically improved our capabilities to avoid vibration-induced drillstring failures". They went on to encourage us to market the service more widely and declared that it had dramatically reduced their costs through extended bit life and avoided breakdowns. ("These bit life improvements ... produced savings of approximately \$1.2 million on each of the last two 17 1/2" sections" *).

** Source: SPE paper 28908 "Experience in the Detection and Suppression of Torsional Vibration from Mud Logging Data". M.J. Fear & Fereidoun Abbasian.*

NORTH AMERICA

Life in the DST department in Houston has been particularly busy this year. As the support facility for the Group's DST operations worldwide, it has seen a dramatic increase in activity, with a three-fold increase in the shipment of equipment. Since entering the DST market in 1992 we have now reached the stage where all spares and capital items are manufactured by ourselves, enabling us to keep prices to the levels of three years ago. The increased activity has necessitated running several training courses this year for new hires. Technical innovations include the development of an "Annulus Underbalance" system for a client in the Far East and a new HP/HT Retrievable Packer, designed and manufactured by Geoservices Houston.

LATIN AMERICA

Geoservices Mud Logging is back in Peru! After many year's absence we are glad to be back in the land of the Incas with a contract for one year. Our MWD operations in Columbia continue successfully on 2 rigs with hopes for more. The biggest news is that we are involved with a consortium which has been awarded a major surface facility contract in Venezuela. Two Venezuelan companies and another French company (Technip Geoproduction - also a member of the ISIS Group) are also involved in the project which is scheduled to be operational for February 1997. We are to provide a temporary production facility and 2 years operation and maintenance for the whole plant.

EUROPE & AFRICA

Our flexibility and adaptability paid off recently in helping to secure a range of long term production service contracts in West Africa (well testing, including DST, wireline and gauge operations). The G4 (4th generation) MWD tool continues



Running gauges in West Africa

to prove its worth in central England in an important and developing market. Being selected as the preferred contractor over our much larger competitors has been particularly gratifying. This was the case for HP/HT services offshore Holland where our "excellent performance and support" resulted in an extension of the contract for an additional 5 wells. More clients are specifying this high level of service, leading one to award us a 3-year contract in the UK sector of the North Sea.

MEDITERRANEAN & MIDDLE EAST

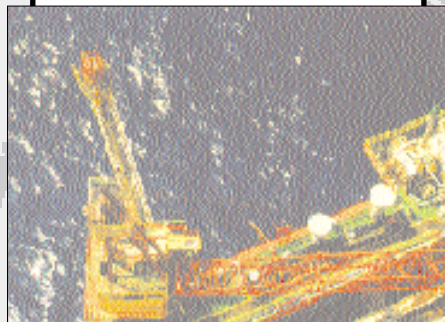
Well testing services continue to grow faster than mud logging here. Our sixth EPF (gas) will come on stream late September offshore Italy. Sustained memory gauge activity, with a definite trend towards very long surveys (up to 4 months). Our new service, wireline logging, has been gaining momentum, and should grow rapidly

Mediterranean and Middle East continued . . .

in order to satisfy client demand. For next month, we have ordered two high sampling rate MQG-X prototypes (10 -20 readings per second) for potential new markets. Fabrice Anglereaux moved to Milan to look after special projects, leaving Chris Platt in charge of the Middle East with newly appointed operations managers in Oman (P. Immaraj) and Abu Dhabi (D. Kumar).

ASIA - PACIFIC

Production activity continues to grow in this region. Building on our success in the Gulf of Thailand, we are presently operating two full well testing packages offshore in the Malaysia-Thailand Joint Development Area. We have also been awarded a two-year contract for an international oil company developing a major field offshore India.



Well testing in the Gulf of Thailand

Noteworthy on the mud logging front was the recent award of a 5-year contract from a major client in Brunei. We were selected on our proven ability to provide a high technology package (ALS-2, Gaslogger, real-time data transmission...) and personnel to assist with the client's HP-HT drilling programme.

NORTH AMERICA

Underbalanced Drilling (UBD) -
a unique drilling service provided by Geoservices

Conventional drilling wisdom used to be that if you didn't make sure your mud weight was high enough to contain the formation pressure, you were asking for trouble. All the text books said that the drilling fluid pressure should at least balance the formation fluid pressure, and preferably 'overbalance' it with some margin of safety.

Not any more. Many operators are now purposely drilling reservoirs with fluid that is too light to stop the formation from flowing; in this condition they are said to be drilling 'underbalanced'. This may sound dangerous but with new technology and modern underbalanced drilling equipment it has now become an accepted way to drill an oil or gas well.

Geoservices' equipment is playing a leading role in underbalanced drilling in North America, particularly in Canada, where our Electromagnetic MWD (EM MWD) and our UBD data acquisition system are making a big contribution to the scene. Underbalanced drilling started there in the early 1990s; since then we have provided MWD or directional services on over 200 wells drilled underbalanced in Canada and more than 300 worldwide.

So how does one go about drilling underbalanced, sometimes known as 'flow drilling' or 'low head drilling'? Well, if you decide to drill with fluid (as opposed to air or foam) this can be light mud, oil, diesel oil, or plain water. Even these naturally low-density fluids might need lightening up for some low-pressure formations, and this is done by injecting gas into the circulating fluid. Typically nitrogen is used, for availability and increased safety, but air and natural gas have also been used.

If you want to drill a horizontal section in the reservoir, the odds are you'll be looking for a directional MWD tool. Nearly all MWD tools on the market are the 'mud pulse' variety, so-called because they transmit downhole information to surface by emitting a sequence of positive or negative pressure pulses in the drillpipe. However, the information

can only get to surface if it has an incompressible column of fluid to travel through, which is not usually the case in a UBD well. This is where our Electromagnetic MWD tool comes in. Its data transmission system, which relies on the transmission of electromagnetic waves

work out of calculating the downhole flowing pressure (critical for knowing if the well is underbalanced or overbalanced) since this measurement is transmitted to surface and displayed in real time along with the directional data. Happily for Geoservices, the EM MWD with the Annulus Pressure



Some of the team in Calgary, from left to right: Jeffrey Wilson, Kathy Adams, Alfred Lee, Kellie Elder, Hal Papke, Ken Currie and Dion Wagstaff

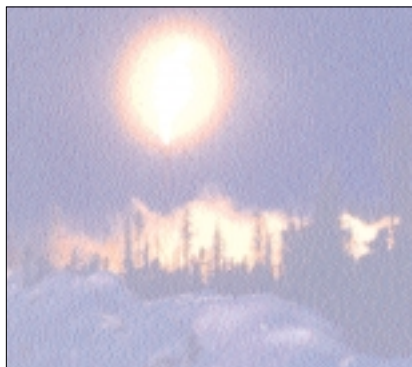
through the formation, is not bothered by the kind of fluid in the well, and works just as well even if there is no

Sensor is the only tool of its kind with proven operational references available on the market today.

Why drill underbalanced ?

- increased ROP, reduced drilling time
- reduced formation damage or invasion by drilling fluid
- quick indication of well's viability from hydrocarbon influx
- formation productivity can be evaluated by production tests during drilling phase.

fluid at all! Also, our tool comes with an important addition -- an 'Annulus Pressure Sensor' (strain gauge). This device takes the guess-



Flaring off gas while drilling ahead on an underbalanced well in Canada.

Another great contributor to this drilling technique is our UBD data acquisition system, a completely new development, not related to the ALS. This gathers a host of surface and UBD-related downhole data into the same database, enabling a supervisor to view the complete well system in real time. The effect of any change to the system is clearly visible, which makes it much easier to maintain optimum conditions.

A typical Geoservices crew on an underbalanced drilling job in Canada is 2 men to run the MWD, 2 directional drillers if we do the directional work, and one more for the UBD data acquisition system, if this is included. Most work takes place in the winter when the ground is frozen; it winds down in the spring when the ground gets boggy and picks up again in the summer when it dries out. A job will generally take only 4 to 10 days to complete, often in winter temperatures of -40°C. Last year the temperature dropped to -50°C... not a place to get caught outside without your thermal underwear!

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