9th Annual F5 Event Sees Larger Turnout Than Ever Before

The 9th annual National AADE F5 took place at the Humble Civic Center on Thursday, November 8th. This year’s event had over 5,500 people in attendance, 83 cook teams, and 123 dishes that were judged.

Skipper Johnston, the F5 Chairperson, was very pleased with the outcome. “This year’s event went very well! We had a record number of people come out and join in the fun. There were several new aspects that were added to the mix this year. The addition of the Astro Turf carpet that was installed down the walkways of the arena was a significant improvement and eliminated the dirt issue that we had experienced in year’s past. Being able to communicate through texting allowed us to contact door prize winners, send out important information, and allowed attendees to vote for their favorite dishes by using their cell phones.”

The AADE would like to thank everyone who was able to make it out this year. We especially appreciate the amazing cook teams who put so much time and effort into ensuring that the attendees have great food and a terrific environment to have fun.

“The people on this committee are a wonderful group. We are very fortunate to have so many members that are dedicated to the AADE and

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The DTC’s will resume their technical meetings in January. The Deepwater and Emerging Technologies Group will meet January 23, 2013 and the Fluids Management Group on February 21, 2013. Both meetings will be held at Lakeside Country Club.

Both committees have had changes in leadership for the upcoming year. Greg Galloway (Weatherford) has served at the Chairman of the Deepwater and Emerging Technologies Group for almost 5 years. Nicholas Lirette (Noble Energy) has assumed the role of Chairman and Greg will serve as Vice Chairman for the DETG.

Dave Beardmore (ConocoPhillips) has served as Chairman of the Fluids Management Group for almost 3 years and is stepping down in January. Theron Weathersby (M-I SWACO) who has served as Vice Chairman will replace Dave as Chairman.

The AADE Houston Chapter wants to thank Greg and Dave for their strong leadership and commitment to AADE and also thank Nick and Theron for taking on these responsibilities. Attendance at the Drilling Technology Committee’s programs has increased each year. The combined steering committees have over 45 members who work to organize and coordinate programs throughout the year. The DTC’s will continue to provide informative educational programs on new technology, advances in deepwater exploration and drilling fluids, among other topics. There is no charge to attend the Drilling Technology Committee meetings and attendance is open to AADE members and their guests.

The Drilling Technology Groups Corporate Sponsorship Program is underway for the 2013 program year, January through December 2013. The sponsorship fee is $500 for the year. Each corporate sponsor will be recognized in a PowerPoint presentation which will run at all DTC meetings. Anyone interested in becoming a sponsor for either the DETG or the FMG should contact Bernita Chavis, Drilling Technology Committees Coordinator, at bjchavis@hal-pc.org.
Mid-Body Drillpipe Tube Wear Solution

Mid-body tube wear in drillpipe is a serious problem when drilling long laterals which are common in many of today’s shale plays resulting in the downgrading of pipe after as little as one year’s drilling. The reason is that the drillpipe has to be run in compression to get weight to the bit and this causes contact between the mid-body and the formation. Where the formation is also abrasive this leads to accelerated tube wear. Drillpipe was never designed to be treated this way but it is necessary to drill such wells. In days gone by a Driller could have lost his job for doing just this. We would like to present a tested solution here rather than simply accepting this as “the price for getting the job done”.

WearSox has been developing this product for some years with downhole tests conducted in places as far flung as Sakhalin Island. A recent modification to our spray metal process was tested in the Bakken Shale over the last year, representing ten ~10,000 foot laterals drilled, with very positive results.

The wall thickness of 4” drillpipe which had been in service in the Bakken Shale was measured to develop a full length wear profile. Ten joints of new drillpipe were then treated with WearSox spray metal over a length of 8 feet in the center of each and with 1/8” thickness. A further 11 joints were marked for control purposes. In the process of drilling 10 laterals the most worn of the untreated control joints measured only marginally above 80% wall thickness. At the same time the center of the spray metal bands wore 25-30% of their original thickness with no other damage. This indicates that this protective sleeve could potentially drill a further 30 to 40 wells while the wall thickness of the pipe beneath would still remain virgin.

WearSox spray metal can equally be applied to worn drillpipe and thus can extend the life of drillpipe which otherwise would be downgraded on tube wall thickness.

For more information contact:
John Gammage,
John@WearSox.com

Advanced Ultra Deep Water (UDW) Filtration System

With advances in drilling, completion, and production technologies in the ultra-deep water (UDW) environment, TETRA has proactively upgraded its diatomaceous earth (DE) filtration systems technology to address the challenges and step change requirements that ultra-deep water presents.

TETRA’s uniquely designed SafeDEflo® UDW Filtration System is a high flow rate, large capacity plate and frame filtration system with a comparatively small footprint. The UDW filtration system offers 30% more filter area in the same footprint as a conventional 1600-ft² filter press, with a design capacity of twice the flow rate.
Focus on New Technology

The system is designed to offer:
- Effective Filtration of Clear Brine Fluids with densities ranging from 9.0 lb/gal to 17.0 lb/gal
- High sustained circulation rates of up to 50 bbls/min
- Increased capacity to filter fluid volumes of up to 5000 bbls without interruption of service
- Significant rig time and cost savings

The UDW filtration system is modular, and consists of the filter press, mixing/pod skid, pump skid, SafeDEflo® DE Load Station, as well as an optional mixing/pod skid extension. Additional equipment can be integrated to provide system redundancy as well as increased capacity.

The SafeDEflo® UDW Filtration System offers the following advantages when compared to a conventional 1600 ft² unit1:
- 30% increased effective filtration area (EFA)
- 150% increased maximum flow rate
- 39% more run time
- 24% decreased operating downtime

For more information contact:
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Sometimes Nano is Just Too Small...

With much of the current focus of drilling technology development aimed at nano-sized particles, Halliburton Baroid has recently introduced an engineered granular solution for the most severe sources of lost circulation. STOPPIT™ lost circulation material (LCM) is a particulate-based, engineered, one-sack solution that is designed to stop partial to severe drilling fluid loss rates. It is an example of an engineering design which takes ordinary materials and delivers extraordinary results.

The new LCM composition is comprised of specific materials, each with precise sizes and engineered concentrations. This helps save the operator from incurring more non-productive time while mixing the individual components of the blend. Its multi-modal particle size distribution (PSD) has been designed to provide fracture tip isolation in loss zones with fractures between 200 and 2500 microns. Another specially designed feature of the composition is its toughness. This quality imparts resistance to displacement from the fracture by pressure fluctuations that are commonly exhibited downhole.

This new technology provides exact QA/QC specifications, while remaining cost competitive with many current products that have little or no quality control. While the formula of this new material is proprietary, the components are common in the industry and used in the same manner as LCM that is currently familiar to drilling personnel.

Features:
- Engineered, one-sack multi-modal PSD LCM
- Plugs fractures up to 2500 microns
- Typical pill treatment applications up to 80 lb/bbl; not recommended for background material
- Exhibits material toughness to resist displacement due to changes in downhole pressure caused by swab/surge, wellbore breathing, bit reaming, etc.
- Inert material; effective in all fluid types
- Temperature stability ≥ 600°F
- Field-proven to be pumpable through drill strings equipped with:
  - MWD tool (including positive pulser)
  - Bit nozzles as small as 11/32”

If there is a possibility of severe drilling fluid losses, STOPPIT LCM should be kept on location to be used as the first contingency plan. This engineered, one-sack LCM can give operators a cost effective solution to help mitigate partial to severe drilling fluid loss rates, lowering non-productive time and saving money.

For additional information please contact:
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Real-Time Compositional Gas Analysis Benefits

The oil and gas industry has seen a rapid increase in horizontal drilling and the corresponding need for reliable formation data to make steering decisions. Drilling Engineers and Geologists both on and off-site have access to a wealth of information which can be used to make better economic decisions. However, while numerous parameters are evaluated in real-time, the industry has continued to rely on relatively low data frequency technologies for the detection and analysis of hydrocarbons.

With the method of gas chromatography used throughout the industry today, full hydrocarbon gas readings may take up to 8 minutes. Depending on the drilling rate, this delay can represent a large gap in valuable data.

Pason Systems has employed a revolutionary technology utilizing tunable filter spectroscopy to allow the collection of real-time, accurate compositional gas data with a 1-second sampling rate.

Spectroscopy is the study of the interaction between radiation and matter. The concept is based on the fact that every molecule has unique absorption lines (or fingerprints); therefore, specific wavelengths can be monitored to measure various molecular concentrations. In the case of the Pason Gas Analyzer, the radiation source is light and the matter is hydrocarbon gases.

The use of tunable filter spectroscopy allows the user to collect individual concentrations of methane, ethane, propane, n-butane, i-butane, n-pentane, i-pentane, and CO2, all with 1 second data intervals.

The data collected forms the basis for calculating the wetness, balance, and character ratios. These ratios are critical geological indicators used to define the oil/gas and oil/water contact points, and to detect the presence of natural gas liquids in the formation. The calculations can further be used to infer geological properties of the formation being drilled, and with the increased data density, better steering, drilling, and completion decisions can be made.

Below is a Pason Systems example where wetness and balance ratios were plotted. The shaded areas reflect the crossover zones indicating condensate or oil. This knowledge allows the driller to stay “in the zone”, yielding a more efficient and productive well.

For more information Visit: www.pason.com

Managed Pressure Operations (MPO): The Riser Gas Handling System

When an influx is taken while drilling in deep water with a riser, there is a risk that gas has migrated or circulated above the subsea blowout preventer (BOP) before a well is shut-in. On such occasions, mud in the riser may need to be diverted overboard in order to prevent combustible gas from blocking ignition sources. Such a scenario can cause containment loss and an environmental spill.

To address this challenge, Managed Pressure Operations (MPO) has developed the Riser Gas Handling System (RGH) to rapidly contain and circulate gas out of the riser. This highly integrated technology consists of a flow spool and quick close annular (QCA) that are deployed below the slip joint and an automated pressure control manifold and high rate mud gas separator located on the rig. High flow rate hoses with fast-connect
Focus on New Technology

gooseneck attachments serve as conduits from the flow spool to the manifold and pressure relief line.

When riser gas is detected, the driller signals the remote-activated system to open the isolation valves on the flow spool permitting the QCA to seal in the riser in three seconds; this process happens 10X faster than a conventional annular. With flow diverted toward the manifold, gas circulates out of the riser and through the ultra-high rate mud gas separator. Such a system has the capacity to handle a significant volume of gas in the riser and reduces the response time needed to handle rapid gas break out and migration near the surface.

The MPO riser drilling device (RDD) can be deployed with the system while managed pressure drilling or mud cap drilling. This configuration involves installing a seal assembly consisting of two active seals that are installed across the two annular elements. The bottom annular is also designed to deliver a three-second, 3000psi riser sealing capability when the lower seal assembly is not installed.

Regardless of the configuration, the flow spool and riser sealing device are slim enough to drift through a 49-inch rotary table requiring only two hours of rig up time.

For more information contact:
Christian Leuchtenberg, CTO
cleu@managed-pressure.com
www.managed-pressure.com

Revolution of BICO ThruTubing Power Sections

SpiroStar Supreme power sections are the next generation in thru tubing technology that has been developed by BICO Drilling Tools, Inc. to supplement SpiroStar Evenwall™ product line.

While original SpiroStar power sections and motors have continuously been the standard of excellence, the new design represents substantial advancement in power section design with enhanced features.

Less Rubber: New power sections contain approximately 30% less rubber than previous generations of Evenwall™ power sections. This can result in 35% - 60% increase in power and torque output. The thinner layer of rubber further reduces the probability of chunking due to hysteresis. This makes these power sections more suitable for harsh application such as high temperatures, nitrogen rich (underbalanced environments) or oil-based mud systems.

New Elastomer compounds: New hard rubber compounds have improved the sealing surfaces, while providing amplified power. This can reduce stalls up 40 percent. Moreover, the new rubber compounds inhibit the invasion of nitrogen and aromatics in oil-based applications.

Flow Rate: High flow rate capacity has been incorporated into the overall design feature to enhance hole cleaning in horizontal or high angle wells. This feature becomes more critical as laterals increase in length. Moreover, larger chamber capacity permits higher flow rates without creating critical internal velocities that can be detrimental to the motor power section life.

Field tests have proven that these new power sections surpass previous performance and provide significant economic savings to operations in terms of reduced drilling time on bottom, improved milling operations and reduced number of stalls.

For more information contact: Farhod Hamidov
fhamidov@bicodrilling.com
Focus on New Technology

Automated Real-Time Drilling Optimization

In a world where the new cell phone can fly a remote controlled aircraft, a series of robots can manufacture a car in a few hours, a commercial pilot can program the flight plan into a tablet computer then sit back and relax from take-off till touch-down, and a rocket powered sky-crane can autonomously lower a rover onto the surface of another planet, the drilling industry is asking the question, “Why can’t we do that?”

Taking a quick look at any drilling recorder in real-time, the situation becomes a little bit more complex than flying an airplane. The downhole environment is difficult to quantify in real-time; therefore, drilling is better compared to driving a train from the caboose without any rails.

June 2012, National Oilwell Varco® released its drilling supervisory and automation control software application called DrillShark™. Using demonstrated algorithms, the application adjusts the drilling parameters to find the “sweet spot” while correcting for formation variation. The app mimics a well-trained driller by constantly varying the bit weight and top drive speed while monitoring the rate of penetration and mechanical specific energy. As part of the exciting future of automated drill rig operation with NOV’s operating system NOVOS™, the DrillShark application uses intelligent automated controls to constantly pursue and maintain optimum drilling parameters.

Drilling automation in tandem with the pre-well, post-well, and real-time support by a centralized team of drilling optimization engineers enables operators to expand the fleet of active rigs at lower total drilling costs. The control objectives are adjustable to accommodate the specific optimization goals of a well, rig, or field. With a high turnover rate and variable experience levels of rig personnel, operators can spend less time supervising each individual rig by using automated operating systems to reach their goals. The proven result is faster ROP, longer BHA life, and reduction in drilling time and costs.

Automated real-time drilling optimization is a new and exciting advancement in the petroleum industry. As with all technology, the aim of drilling automation is to increase safety, reduce risk, increase efficiency, and save money.

To answer the question, “Yes. Yes, we can.”

For more Information Contact:
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Kirtland.McKenna@nov.com
www.nov.com

Innovative Isolation System Plugs Gas Migration

Conducting a high-quality cement job is vital to achieving well integrity, but even a perfect cement job is subject to damage due to pressure and temperature variations; which can result in potential micro-annulus channels between the cement sheath and casing string. To protect against such cement failures and accompanied lost production and expensive intervention and remedial cementing operations, Weatherford’s Micro-Seal™ Isolation System (MSIS) can be run on casing strings to provide an effective, economical and permanent solution for added protection. The isolation system demonstrates greater flexibility than conventional elastomers, featuring a proprietary hybrid swellable elastomer activated by...
Focus on New Technology

oil, water, wet gas or any combination of these to isolate a range of wellbore geometries and reservoir temperatures.

The unique and innovative system is based on a standalone, slip-on swellable isolation seal unit (MSIS-U), also known as the heart of the isolation system. When combined with Weatherford’s mechanical centralizer bow (MSIS-B), and rigid (MSIS-R) designs, the system provides the best possible chance for wellbore isolation. Its ultimate goal is to create at least one point in the well where total isolation is achieved. Strategically positioning multiple tools on the casing string can provide a series of response points for excellent casing standoff, highly efficient mud displacement during cementing operations, and superb sealing of fluid migration wherever it may occur; improving wellbore isolation and stability in both regular and irregular annular geometries.

To date, more than a 1,000 of these systems have provided simple, cost-effective solutions to plug gas migration along the micro-annulus in cemented liners, including use in many US shale gas plays like the Marcellus in the Northeastern United States. The innovative technology has also been implemented in regions such as offshore Angola and the Middle East, proving to significantly reduce costs associated with reduced intervention and remedial cementing operation frequencies.

For more Information Go To:
weatherford.com/micro-seal

The New McCoy weCATT Torque Sub

The weCATT is a tool that monitors make up from a top drive and records torque, turns and hook load. The data can be transmitted wirelessly to WINCATT® or other data acquisition systems. The unit comes with API connections and mounts below the top drive. When it is in place it transmits data wirelessly to a torque turn system on the rig floor. It is ideal for use with casing running tools [CRT] that are also mounted below the top drive.

The weCATT is powered by a long life battery and the unit is certified for Class 1, Division 1, Zone 1 Group IIB, T4 and to ATEX /CSA/UL/IECEx . The torque capacity for the unit is from -50,000 to +50,000 ft. lbs. The hoist capacity is 1,000,000 lbs. with a 2.25 safety factor. It should be noted that the hoisting capacity will be limited by the connections used.

The unit is designed to API 8C Specification for hoisting equipment and the threads are manufactured to API 7 Specification. The unit has a high dynamic sampling rate up to 450 samples per second and has the ability to count turns and RPM without an encoder assembly. The unit uses 2.4 Ghz – XBEE® (Zigbee 802.15.3 Radio) for wireless transmission. The coverage distance of the wireless transmission is greater than 90 meters (line of sight).

The unit has a sleep mode feature to extend battery life and the battery has been tested for 30 days continuous use, which is a major factor for field operations. The system can transmit wirelessly to any of the WinCATT® systems with direct line of sight. For other monitoring and data acquisition systems it can transmit wirelessly to an EX receiver RS232 or 4-20mA output and from there to the torque turn or other system.

The weCATT provides accurate information from a distance particularly from CRT tools. It has a temperature range of -40 C to +70C.

This versatile and highly accurate system is built to withstand tough field conditions and is available for purchase from McCoy Drilling & Completions.
FuseTek Hybrid Technology Drill Bits

In the Gulf of Mexico (GOM), operators often experience mud losses during cementing. Studies have found that, in these deepwater wells, even a weak wellbore may naturally have a large potential of being strong as a result of a high stress concentration layer that may naturally exist around the wellbore. However, conventional mud is a perfect fracturing fluid; without control, it can easily fracture and penetrate this high stress layer, leading to lost circulation.

STRESS-SHIELD™, a new wellbore strengthening technology offered by Sharp-Rock Technologies, Inc., is specially engineered to convert mud or cement slurry to a non-fracturing fluid to prevent fluid penetration of the high stress layer through fracturing. This technology promotes the timely formation of a tight particulate seal for an incipient fracture to enable the stress layer to shield the wellbore.

For robust conversion engineering, a specially standardized particulate product is manufactured for a quantified capability of fast fracture sealing at various concentrations. When a required level of fast sealing is determined on the basis of a rock mechanics evaluation of a weak wellbore, a critical conversion concentration of the product in the mud or cement slurry to be converted is then defined. At levels above this critical concentration, the fluid can form a seal before the fracture opens too wide and become a non-fracturing fluid.

Because of frequent lost circulation while cementing in GOM, this new technology was accepted by a major operator for application in a 21-in. subsalt section of a deepwater well. A volume of mud was first converted and quality controlled for the designed fast sealing capability. Next, the non-fracturing mud was pumped downhole through a complex drilling bottomhole assembly (BHA) to cover the openhole wellbore below salt before pulling out of the hole for running casing. No mud losses were observed while running casing. After the casing was successfully run to the bottom, another non-fracturing mud pill was pumped before the cement spacer. Once again, no mud losses or other issues were observed during cementing.

For more information contact:
Max Wang at 281.450.4944

New Drill Pipe Integrating Hydomechanical Hole Cleaning

While hole cleaning is commonly understood phenomenon associated with drilling deviated wells, many drillers still have difficulty properly managing the entire process. Experience reveals that less-than optimal hole cleaning can lead to drilling performance inefficiencies impacting non-productive time, bore-hole quality or even losing the drill string and well.

The HydrocleanTM Drill Pipe is designed to address annular pressure and Equivalent Circulating Density (ECD) issues commonly encountered in horizontal and extended reach wells. The new
drill pipe incorporates specially designed bladed scallops in each tool joint producing a number of hydro-mechanical effects without compromising the performance of the drill string. ECDs can be managed and optimized to achieve overall performance improvements and reduce drilling costs. The new drill pipe can be used both offshore and onshore and is also economically justifiable for onshore drilling operations.

Efficient cuttings transport and keeping the well clean enough for trouble-free operations are challenges associated with drilling highly deviated wells. Cuttings tend to accumulate on the low side of the hole forming thick beds causing the flow velocity to become insufficient to clean the hole. Large boreholes drilled at high ROPs will usually require additional rig time. Time spent implementing hole cleaning procedures can be significant and are for the most part recognized as necessary to achieve trouble-free operations. A more in-depth analysis of drilling performances and time spent on hole cleaning operations can lead to a safer and more efficient operation using Mechanical Hole Cleaning Devices (MCD) using a more holistic and in depth review of the drilling process itself.

The new Hydroclean TM Drill Pipe integrating mechanical hole cleaning concepts in each tool joint of the drill string has been designed to drill for horizontal and ERD wells. The new drill pipe offers unique benefits for managing ECD without compromising the performance of the drill string while optimizing hole cleaning. It is expected to deliver cost and time savings compared to conventional drill pipe. It is also economically justifiable for conventional and unconventional onshore drilling operations.

For more information contact:

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**What is Driving Drilling Automation?**

As a significant proportion of industry professionals are advocating increasing levels of drilling automation, it is worth reflecting on what is driving this trend.

One of the reasons for this demand is that the industry needs a way to both maximize the performance of the rig and lessen the effect of the competency gap without compromising safety or the reliability of the equipment. Designing software that can capture knowledge and enabling that knowledge to control the drilling process will address many of these issues.

Such a system, which is currently being tested in the field, is NOVATM – National Oilwell Varco® Automation – an ‘open-architecture’ system using real-time downhole data to control drilling parameters. The open system can enable any company to build tools that plug into the bottom hole assembly and for others to develop and provide software applications that run on the surface control system. This technology allows the control system to be the same on every type of drilling rig so that when rig crews move they do not require retraining.

This system can mitigate vibrations, which consume energy and damage expensive tools, and enable real-time geo-steering. It also improves the hole
quality, well placement and rates of penetration. As we recognize the benefits of closed-loop drilling, managing downhole pressure with increasing precision, automation systems like this can enhance our ability to react to the signals received from the well. We can respond instantly to kick detection and early signs of losses, a level of control which can mitigate the development of more serious well control problems and their safety and environmental consequences. This also suggests that we can develop systems for automated well control should the detected conditions demand a response which is not forthcoming from human intervention.

Automated control of rig equipment will improve reliability by ensuring operation within defined envelopes and also enable the drilling simulation we use for training to closely emulate processes seen on the rig.

Most importantly, automation can take personnel safety a step further, allowing more operations to be controlled remotely.

NOVA will bring the immediate benefits of automation and the promise of autonomous drilling in the future.

**Fish Bypass: Innovative Applications of MWD Ranging**

Perhaps one of the most frustrating situations that can be encountered while drilling a well is to have an off-bottom fish with significant hole below the fish. In extreme instances, a well has been drilled to total depth and while tripping out prior to running the completion string, the BHA gets stuck with thousands of feet of open hole (in the pay zone) below the fish.

Recently, Chesapeake Energy found themselves in such a situation, with a thirty-two foot (32’) long fish in the hole at less than 3000’ MD, and open hole to a depth of over 14,000’ MD. A simple sidetrack would not suffice for a number of reasons, including the incremental time and expense required to re-drill over 11,000 feet of hole (including drilling a new curve and lateral). Perhaps more importantly was the realization that the existing open hole could not allow a close offset to be drilled and successfully stimulated with a multi-stage frac job, thereby putting a significant number of productive acres at risk.

Scientific Drilling’s MagTraC MWD Ranging technology in conjunction with gyro surveys was selected to address the drilling challenge. This technology utilizes data collected by the MWD in order to determine the distance and direction from the MWD to a source of magnetic interference (casing string or fish). An open hole whipstock was set immediately above the top of the fish, the well was sidetracked and MWD Ranging was used to monitor the position of the fish, keeping the sidetrack hole approximately one foot away at all times. As the bit depth of the sidetracked hole approached the bottom of the fish, the hole was guided toward the fish making contact. The bit tracked down the fish for approximately seven feet (7’) before tagging the lower end of the fish. The toolface was worked in order to bypass the previous eight and three quarter inch (8 ¾’) bit located on the end of the fish. The sidetrack hole re-entered the existing open hole approximately one foot (1’) below the base of the fish and the operator was able to run to bottom and then successfully run and cement the planned completion string. The unique application of Scientific Drilling’s MWD Ranging technology resulted in Chesapeake being able to complete the horizontal well as planned, thereby “recovering” a large number of productive acres that may otherwise have been lost.
Focus on New Technology

Global Intelligence: Connection Ratio Secrets

The basics of providing VSAT communications are fairly simple. A VSAT Service Company leases a segment of bandwidth from the Satellite Space Segment provider and then leases a segment of that pool to the customer. The services are delivered via a HUB location to the remote site. The company typically provides the remote hardware such as the dish antenna and indoor equipment. Pretty simple right?

The most important part of this service is the actual bandwidth and how it is “shared”. This space segment is typically too expensive to provide a one to one ratio service. In order for a service provider to be competitive they have to build the pool of bandwidth. A customer leases this shared service at a reduced rate due to the provider spreading the costs of the bandwidth amongst the many customers. The customer will then utilize the available bandwidth that is provisioned. This sharing of bandwidth is often called the contention ratio.

The quality of the service or customer experience is defined by this formula. It is important to know that too small of a pool with too many users, coupled with high bandwidth usage, equals poor service.

A right sized pool of bandwidth, with the appropriate number of users set up with an acceptable “Burst Information Rate” (BIR) will result in a superior customer experience. This would be considered a low contention ratio and a more expensive cost of operation for the provider.

Here is the rub, there are no meters or gauges to show the contention ratio. Therefore the customer cannot be sure what the contention ratio is being provided by the vendor.

When choosing a VSAT service provider it is important to ask for a Service Level Agreement (SLA). A reputable provider will provide the customer with an SLA and the monitoring tools to show that the service purchased is actually being provided. Let Global Data Systems be your provider.

MWD for Coil Tubing Extended Reach

Teledrill Inc. has developed a 2” MWD system that is capable of simultaneously transmitting data from downhole sensors while extending reach in coil tubing drill out operations. A patent pending downhole tool develops pressure pulse amplitudes in the range of what is developed by commonly used vibration and water hammer tools. These tools are used to reduce friction between the tubing and casing and/or provide end load, leading to reduced drag, improved weight transfer and improved reach. The magnitude of the MWD pressure pulse can be varied via downlink commands, in order to provide the appropriate end load for tubing advancement. This variable end load decreases coil fatigue by generating greater magnitude pressure pulses only when needed not over the entire lateral section. The tool can also be turned off and on via downlink commands, reducing downhole pressure drop and improving hole cleaning effectiveness during short trips.

Downhole sensor measurements include weight, torque, annular pressure, bore pressure, temperature and inclination. The weight sensor measures the load applied to the drilling motor and mill, indicating the effectiveness of weight transfer from surface. When downhole weight trends towards lower values, as additional tubing is reeled into the well, a downlink command can be sent to the MWD tool to increase pressure pulse amplitude resulting in an increased end load, improving weight transfer. Effective weight for efficient milling is maintained and drag is reduced allowing further reach. The torque measurement and the differential between the annular pressure
and bore pressure allows for monitoring of drilling motor performance. Motor stalls and stator chunking can be avoided, reducing lost time and excessive cycling, improving operational efficiency. Equivalent circulating density is calculated from the annular pressure measurement allowing for monitoring of hole cleaning effectiveness, increasing plugs milled per short trip, in the case of plug and perf completions. The Teledrill 2” MWD tool is rated to 175°C operation and will be in field trials in Q1’2013. For more information contact:
Bob Macdonald at 281-550-0434 x102
bob.macdonald@teledrill.com

Connections Satisfy New Offshore Safety Standards

A new generation of high-performance premium connections, validated to withstand worst-case discharge scenarios in severe wells, is being introduced in the Gulf of Mexico by VAM® USA LLC. This brings a new tool to the design of casing strings that comply with the more stringent safety and engineering requirements enacted since the failure of the Macondo well.

In addition to reporting all well parameters, U.S. regulators require offshore operators to determine the load conditions that could occur during a worst-case discharge, including evaluating the reliability of casing strings in such scenarios. Casing integrity depends upon the pipe’s ability to withstand the expected load conditions; that also is a primary consideration for casing connections as they are the weakest part of the casing string.

This fall in the Gulf of Mexico, VAM® USA LLC is introducing the VAM® 21 threaded-and-coupled premium connection with a revolutionary design that complies with ISO 13679 Connection Application Level IV (CAL-IV) within the full pipe body envelope, extending the limits of well designs in the most severe drilling environments. Available in 5-inch to 13-inch outer diameters (ODs), the connection’s ratings for tension, compression, internal and external pressures are all 100 percent of pipe body yield strength (PBYS). Recommended applications include production casing or tie-backs in extreme high-pressure, high-temperature (HP-HT) well designs, whether offshore or onshore. A high-torque option, VAM® 21 HT, is available in sizes 5-inch to 9-inch OD, providing excellent rotational capacity.

Earlier in the year, VAM® USA LLC introduced VAM® BOLT, a flush large-OD premium connection for surface and intermediate casing applications in big-bore subsea wellhead systems. Available in sizes ranging from 11-inch to 18-inch OD, the flush connection’s tension and compression efficiency are rated at 52 percent to 64 percent PBYS, while its internal and external pressure ratings are 100 percent of PBYS. The connection provides extreme clearance and excellent jump-out resistance, with superior resistance to back-out torque, and two metal-to-metal seals that achieve high seal-ability in extreme loads.

Meanwhile, VAM® SLIJ-II, the premium connection which has been used widely in the Gulf of Mexico for the past decade in intermediate casing strings and liners, has been entered into several testing qualification programs due to post-Macondo regulations and worst case discharge requirements. The core test procedure is ISO 13679, to either CAL-III or CAL-IV, in new sizes and weights for deepwater well design requirements.

For more information contact:
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bob.macdonald@teledrill.com
Reducing Costs; Improving Efficiency

Cubility’s MudCube offers a revolutionary approach to fluid and solids separation. Designated a proven technology by Statoil, this innovative waste management method uses a compact, lightweight solids control system to reduce waste volume and improve filtration. As a result, the MudCube enhances well control and decreases HSE risk in drilling operations.

Additionally, the MudCube’s integrated vacuum conveyor separator (VCS) system eliminates the traditional process of shaking fluid and solids to separate the two, resulting in lower power consumption and an extended screen lifetime.

The MudCube receives fluid and cuttings conventionally through a distribution box. From here, its unique VCS processing technique takes effect.

Fluid is distributed evenly via adjustable gates across a replaceable, non-tensioned, woven wire stainless steel screen secured to a drive belt and vacuumed through the entire area of the screen and belt via a vacuum tray. If the cuttings are very wet, an air knife blows on them and returns the excess fluid to the active system. While the MudCube does not shake, micro-vibration devices are employed to increase maximum flow capacity.

As available screen openings are covered by flow, air travels more quickly through remaining openings. This increased air velocity, coupled with a continuously rotating screen, offers high resistance to screen blinding, minimizing the potential for fluid to escape the unit as waste.

A secondary air knife removes residual solids from the screen and deposits them in the discharge line, further preventing screen blinding. After passing through this secondary filtration system, clean fluid is separated from air and gas in a negative pressure generating unit. The unit’s cyclone filter vent captures moisture as water or oil mist and vapor and returns it to the active system. This recovery feature minimizes losses to evaporation and benefits the environment. Finally, the filtered drilling fluid collected in the negative pressure vessel is deposited back into the active system via gravity flow.

For more information contact: Asbjørn Kroken, Cubility’s Vice President of Engineering Marketing and Sales, at (281) 362-2718 or ask@cubility.com

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