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Comment

April 2015

Cecilia Rehn, Editor
cecilia.rehn@oilfieldtechnology.com

n the five years since the tragic events at the Macondo Prospect in the Gulf of Mexico, America’s oil and natural gas industry and our regulators have kept our commitment to make offshore operations safer than ever before.” Jack Gerard, API President and CEO, noted in his opening statement delivered at a recent press briefing on industry improvements to offshore safety.

Thankfully, the facts back this up, and the offshore industry has indeed become a safer place to work and produce. Since 2010, API has published over 100 new and revised exploration and production standards; these include standards on well design, blowout prevention equipment, subsea equipment, and worker safety.

Additionally, in 2011 the Center for Offshore Safety (COS) was formed to nurture innovation, share best practices in safety and environmental management and help improve offshore operational safety. COS just published its first annual performance report, revealing that its member companies did not suffer a single fatality or loss of well control during more than 42 million work hours in the deepwater Gulf of Mexico in 2013. The report also underlines that on average, 96% of planned critical maintenance, inspections and testing were performed on schedule.

While zero incidents in 2013 is highly noteworthy, there is always room for improvement. Areas to focus on included safe mechanical lifting and process safety. COS plans use the findings of this report as a baseline for future comparisons of year-to-year performance and safety improvement.

It’s encouraging to see that the industry has moved forward and is making the best from this tragedy, the ensuing drilling moratorium and increased public scrutiny and regulation. Of course, now the bigger challenge facing operators and service providers alike is the low oil price. Our regional report this month (p.10) takes an in-depth look at the Gulf noting that although a few ventures have been delayed, all operators are pushing ahead with existing projects and seem to be focusing on maximising production from already producing fields.

Our April issue will, as always, be distributed from our booth (#4076) at the Offshore Technical Conference. This year, I’m expecting a different, perhaps more somber mood at the show, but there truly is no better time than now for companies with innovative, cost-efficient technology and services to step into the spotlight. Judging by my inbox, quite a few of you are already making some noise.

Speaking of combining experience and assets, I can’t ignore the big news this week – Shell’s bid for BG Group. It’s early days yet and countless analyst reports are being produced every hour. However, it’s clear that Shell’s big gains will be in the LNG market and in the deepwater pre-salt offshore Brazil. As a leader in the Gulf of Mexico deepwater sector, Shell’s experience should help ensure success as it expands into other basins around the world.

Some predict that this is the first in a wave of mega-mergers, although in this uncertain time it’s hard to say what will happen. I do believe that the Gulf of Mexico will remain an important part of the US energy production in the future. Operators here have proven to be good at listening, learning and adopting new technological solutions. And who knows, a few years from now 3D printing across the US energy production in the future. Operators here have proven to be good at listening, learning and adopting new technological solutions. And who knows, a few years from now 3D printing across the


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Royal Dutch Shell to buy BG Group in deal worth £47 billion - due to complete in early 2016

Royal Dutch Shell has announced that it plans to buy BG group in a deal worth approximately £47 billion. The deal is expected to add some 25% to Shell's proved oil and gas reserves and 20% to production, on a 2014 basis, and provide Shell with enhanced positions in competitive new oil and gas projects, particularly in Australia LNG and Brazil deepwater.

Shell's CEO, Ben van Beurden said, "Bold, strategic moves shape our industry. BG and Shell are a great fit. This transaction fits with our strategy and our read on the industry landscape around us. [...] BG will accelerate Shell's financial growth strategy, particularly in deep water and liquefied natural gas: two of Shell's growth priorities and areas where the company is already one of the industry leaders. Furthermore, the addition of BG's competitive natural gas positions makes strategic sense, ahead of the long-term growth in demand we see for this cleaner-burning fuel.

This transaction will be a springboard for a faster rate of portfolio change, particularly in exploration and other long term plays. We will be concentrating on fewer themes, and at a larger scale, to drive profitability and balance risk, and unlock more value from the combined portfolios."

The merger is expected to save the combined companies approximately US$2.5 billion per annum as well as other cost-saving opportunities. BG shareholders will begin to benefit from the dividends available to Shell shareholders, starting with US$1.88 per share in 2015. BG Group shareholders will own around 19% of the combined companies.

Falkland Oil & Gas spuds Isobel well

Falkland Oil and Gas Limited (FOGL), the oil and gas exploration company focused on license areas to the North, South and East of the Falklands islands, has announced that the 14/20-1 'Isobel Deep' exploration well was spudded by the operator, Premier Oil, on 8 April 2015.

The well is located on licence PL004a, in which FOGL has a 40% working interest and will primarily target the Isobel Deep prospect. The well will test the F3 fan systems, which are mapped as entering the basin from the south east margin and comprise a sequence of stacked reservoirs. The Isobel/Elaine complex is estimated to contain mid case un-risked gross prospective resources, based on the operator’s estimates, of 243 million bbls (97 million bbls net to FOGL).

The well is anticipated to take approximately 30 days to drill and no coring or testing is planned. More information will be provided once logging is completed.

Statoil makes GoM discovery at Yeti prospect

Statoil has revealed that it has made an oil discovery in its Miocene Yeti prospect located in the Gulf of Mexico.

"The Yeti discovery expands the proven sub-salt Miocene play further south and west of the Big Foot field," says Jez Averty, Statoil’s Senior Vice President, Exploration for North America. "We are analysing data to determine the size of the discovery in order to consider future appraisal options."

The Yeti discovery was made in Walker Ridge (WR) block 160, which is located approximately 15 km (9 miles) south of the Big Foot field, and 11 km (7 miles) from the Cascade field. All of the blocks making up Yeti were accessed by the current owners in recent years.

Yeti was drilled with the Maersk Developer drilling rig, a sixth generation semi-submersible. Drilling efficiency with Yeti was among the best of any well drilled in Walker Ridge, achieving a rate of approximately 400 ft/d.

In brief

Australia

Woodside Petroleum has successfully completed a binding transaction with Apache Corporation, which will see it acquire the Australian Wheatstone LNG and Balnaves oil assets, as well as the Kitimat LNG project in Canada.

The sale was made for an aggregate purchase price of US$2.75 billion with an expected closing adjustment of US$1 billion.

Iran

Ali Osuli, the CEO of Iran’s Caspian National Oil Company has announced that exploration operations will be undertaken in the Golestan Province, near the country’s border with Turkmenistan.

Osuli was quoted as saying, “If these explorations lead to considerable results, the need to import gas from neighbour countries will be obviated.” Osuli also stated that the operations had a 90% chance of finding gas.

Iran imported approximately 6.3 billion m3 of natural gas in 2014.

Saudi Arabia

According to Oil Minister Ali al-Naimi, Saudi Arabia produced 10.3 million bpd in March, breaking the country’s previous record of 10.2 million bpd, held since August 2013.

The rise in production is reported as being at least partially driven by increased demand from foreign refiners and growing domestic use.

The increase in production is a clear sign that the kingdom has no intention of ceding market share either to other OPEC members or US shale producers in the current climate of lower oil prices.
Survivex signs contract with Hercules Offshore

Survivex has signed a contract with Hercules Offshore for the provision of a fully outsourced training management service (TMS).

The contract, estimated to be worth in excess of £500,000 annually, is the first to be secured by the newly established Survivex TMS department. The long-term agreement will commence immediately as Survivex prepares for operations within the North Sea.

The TMS team will be responsible for producing a comprehensive training matrix, identifying skills gaps and creating individual training plans for Hercules employees. The subsequent sourcing and booking of training will then be handled by Survivex in addition to the maintenance of training records.

Newly appointed TMS Manager Sam Riley commented: “The creation of the TMS department will allow us to add value to the service we can offer clients. We’re looking forward to growing with Hercules and working with them.”

US$1 billion of Nigerian divestments completed

Total has completed the divestment of its stake in onshore Oil Mining Lease (OML) 29 to Aiteo Eastern E&P, a Nigerian company, for US$569 million. Together with the recently completed divestments of OML 24 and OML 18, Total’s share of sale proceeds from these three onshore Nigerian blocks amounts to over US$1 billion.

“The sale of these non-operated onshore blocks in Nigeria is yet another example of our strategy of dynamic portfolio management, achieved at attractive valuations,” said Patrick de La Chevardière, CFO at Total. “These transactions also reduce our exposure to non-operated blocks onshore Nigeria, and allow us to focus on our core, operated developments, such as the Egina project.”

Since 2010, Total has divested its interests in 11 onshore blocks to Nigerian companies, in line with the government of Nigeria’s aim of developing domestic companies in the sector.

UK Oil & Gas Investments PLC makes significant upgrade to Horse Hill discovery

UK Oil & Gas Investments PLC (UKOG) has announce that US-based Nutech Ltd, one of the world’s leading companies in petrophysical analysis and reservoir intelligence, estimate that the Horse Hill-1 well in the Weald Basin has a total oil in place (OIP) of 158 million bbls per square mile, excluding the previously reported Upper Portland Sandstone oil discovery.

The Horse Hill licences cover 55 square miles of the Weald Basin in southern England in which UKOG has a 20.36% interest.

Nutech’s report states this OIP lies within a 653 ft aggregate net pay section, primarily within three agglomerate limestones and interbedded mudstones of the Kimmeridge, and the mudstones of the Oxford and Lias sections. Approximately 72% of OIP, or 114 million bbls, lies within the Upper Jurassic Kimmeridge interbedded limestone and mudstone sequence. In order to establish estimates of total OIP within the licence area, the semi-regional resource potential of the Weald Basin’s eastern footprint is the subject of ongoing analysis under the contracted alliance between Nutech, UKOG and Solo Oil Plc.

The results of the estimated OIP within the licence will be reported when completed.

Stephen Sanderson, UKOG’s CEO, commented: “Drilling the deepest well in the basin in 30 years, together with the ability to use concepts, techniques and technology unavailable in the 1980s, has provided new cutting-edge data and interpretations to comprehensively change the understanding of the area’s potential oil resources.”
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DeepOcean AS awarded SURF installation contract by Statoil for Maria development

DeepOcean AS, a subsidiary of DeepOcean Group Holding BV, has been awarded the riser installation contract for the Kristin and Heidrun platforms by Statoil. The modification of these platforms is required in preparation of a possible tie-back from the near-by Maria development in the Norwegian Sea that is operated by Wintershall.

The offshore work includes the installation of risers as well as dynamic umbilical and cable. The installation operations will be performed by the new build construction and installation vessel Edda Freya that is scheduled to join the DeepOcean fleet in the first quarter of 2016. Additional support will be provided by a light construction vessel from the company’s fleet for the offshore campaign.

The offshore work, scheduled for the third quarter of 2016, includes the preparation of subsea infrastructure and installation of a dynamic control umbilical, a direct electrical heating (DEH) cable and optional change-out of a production riser on Kristin semisubmersible platform. A water injection riser will be installed on the Heidrun Tension Leg Platform.

“This project success relies on timely execution of complicated installation within close proximity of the Kristin and Heidrun Floating Production Units. The planned operations within the intricate existing riser configuration demand high precision and operational reliability. We are appreciative of Statoil again recognising DeepOcean’s ingenuity and cost-efficient solutions in times of strong cost focus across the subsea value chain”, says Ottar Mæland, DeepOcean’s EVP, Greater North Sea.

INPEX finds oil in Malaysia deepwater

INPEX CORPORATION has announced an oil discovery at the Bestari-1 exploration well in Deepwater Block R (the Block) where preliminary findings point to an approximately 70 m column of oil-bearing sands across multiple horizons. The company has a participating interest in the Block through its wholly-owned subsidiary, INPEX Offshore South West Sabah, Ltd.

The Block located offshore East Malaysia covers an area of 672 km² with a water depth ranging from 100 to 1400 m. INPEX currently owns a 27.5% participating interest in the block, where it conducts exploration activities alongside operator JX Nippon Oil & Gas Exploration, PETRONAS CARIGALI Sdn. Bhd., a subsidiary of Petronas, and Santos Sabah Block R Limited, which own interests of 27.5%, 25% and 20%, respectively.

Offshore Technology Conference 2015: Spotlight on New Technology Award winners

The Offshore Technology Conference recognises innovative technologies each year with the Spotlight on New Technology Award. This awards programme is exclusively for OTC exhibitors and showcases the latest and most advanced technologies that are leading the industry into the future.

The following is a list of the winners for 2015:

- Baker Hughes: MultiNode™ all-electric intelligent well system.
- Cameron: Mark IV High-Availability (HA) BOP Control System.
- Fishbones: Dreamliner.
- FMC Technologies: Annulus Monitoring System.
- Halliburton: RezConnect™ Well Testing System.
- Oceaneering: Deepwater Pile Dredge and Magna Subsea Inspection System™.
- OneSubsea®: Multiphase Compressor.
- SBM Offshore: ARCA Chain Connector.
- Schlumberger: GeoSphere reservoir mapping while-drilling service and Quanta Geo photorealistic reservoir geology service.
- Tracerco: Discovery™.
- Versabar: Versacutter.
- Weatherford: Red Eye™ Subsea Water-Cut Meter and Total Vibration Monitor with Angular Rate Gyro.
- Welltec: Welltec® Annular Barrier (WAB®).
- WiSub: Maelstrom™ Pinless Subsea Wet-Mate Connector.

Wood Group wins major Total contract

Wood Group has been awarded a five year, multi-million dollar contract by Total, which includes the option for two, one year extensions. Under the contract Wood Group PSN (WGPSN) will deliver engineering, procurement, construction and commissioning services to four offshore assets and two onshore facilities in the UK continental shelf (UKCS).

The contract, effective immediately, continues WGPSN’s 12 year history of providing these services to the Alywn, Dunbar, Elgin and Franklin platforms and the St Fergus Gas Terminal. It also covers support for the Shetland Gas Plant (SGP), the onshore receiving facility for Laggan Tormore, which will start production later this year.

Dave Stewart, UK Managing Director said, “Our strong commitment to working safely, collaboratively, innovatively and efficiently to maximise productivity of these assets, helped us to secure this contract.”

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KORY KINNEY AND CINNAMON ODELL, IHS, REVEAL THE US GULF OF MEXICO DEEPWATER REMAINS ACTIVE DESPITE OIL PRICE CONCERNS.

Despite the precipitous decline in oil prices over the past several months, the US Gulf of Mexico is expected to remain a strong market in both the near and long-term. Several major projects are in the development phase, such as Hess’ Stampede field and Anadarko’s Heidelberg field. Furthermore, a number of new deepwater discoveries were made last year, including Shell’s Kaikias, Rydberg and Gettysburg West successes and Chevron’s Guadalupe find. Rydberg and Gettysburg West are located in the Appomattox development area, which Shell recently confirmed as now having total resource potential of over 700 million bbls.

Meanwhile, Chevron has included the Guadalupe discovery in its collaboration project with BP and ConocoPhillips. The trio has agreed to work together on the exploration and appraisal phases of 24 leases in the northwest part of the Keathley Canyon area and will
also evaluate the potential for using a centralised production facility. Guadalupe is one of the discoveries being considered for potential inclusion, should the plan for a centralised facility move forward.

Offshore drilling rig market
Within the offshore drilling rig market, the US Gulf of Mexico has been trending towards deeper waters for the past several years. This is reflected in operators’ rig choices and the makeup of the region’s rig fleet. Looking back to 2005, the floating rig supply averaged 37 units, made up of 31 semisubmersibles and six drillships. Fast forward to 2015, and the supply has grown by nearly 59% to a current year-to-date average of 63 units, comprised of 24 semis and 39 drillships.

The preference for drillships over semis in the Gulf of Mexico will be maintained, as another six drillships are currently scheduled to
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commence mobilisation from other regions sometime this year, while only one will be leaving. No semis are scheduled to be added to the region in 2015; however, two units already in the area have upcoming contracts in place in other regions, and will depart later this year.

While the overall trend is one of continued growth, the outlook for the next couple of years is not entirely rosy. Rigs due to roll off contract in 2015 are increasingly unlikely to find work here again this year. The number of operators looking to secure rig time in 2015 has dropped considerably, and these are only sourcing rigs for one- or two-well opportunities. With so many rigs around the world seeking work, including some recently delivered newbuilds and others that are nearing the end of construction, competition for any drilling project with a near-term start is expected to be intense.

At present, the US Gulf has 12 floating rigs that are either cold stacked and not being actively marketed for work, or hot stacked, which means idle and actively seeking work.

Contracted utilisation has dropped from 100% in January 2014 – meaning all marketed rigs in the region had a contract in place – to 90% in January 2015. In general, rig contractors aim to keep marketed utilisation above 85% within their own fleets when times start getting tough. To give some additional perspective to those numbers, the total supply in January 2014 averaged 51.6 units, while the marketed count averaged 45.6. Turning to January of this year, the total supply had grown to an average of 63.5 for the month, with the marketed supply averaging 57.4. This shows that over the course of the year, a net 12 floating rigs were added to the fleet.

Prioritising existing production

Once a discovery is made, the project moves into the development phase. This year there is a decline in large-scale developments in the US Gulf of Mexico. Previous projects such as Jack/St. Malo, Lucius and Tubular Bells have begun production and now operators seem more interested in boosting production from already installed production facilities. This is bringing about a spate of subsea tie-backs in both new and old fields. With several large projects from the past few years either recently online or nearing first production, combined with the current state of the market, one can see considerable thought being put into the next round of large projects before operators reach a final investment decision (FID).

One project that recently reached FID is Hess’ Stampede project. Made up of the Knotty Head field in Green Canyon Block 512 and the Pony field in Green Canyon 468, Hess has decided for a TLP-based development scheme. Contracting activity for the project ramped up throughout 2014. Modec was awarded a pre-sanction engineering, procurement, construction, and management contract for the hull and mooring systems and then sub-contracted out the hull construction to Samsung. Topsides for the TLP have been awarded to Kiewit Offshore Services. Production from the project is anticipated to begin during the first half of 2018.

Hess has also chartered two ultra-deepwater rigs for the programme. The operator signed multi-year contracts for Diamond Offshore newbuild drillships Ocean BlackLion and

Figure 1. Gulf of Mexico production (image courtesy of Anadarko).
**Subsea tie-back projects**

A number of notable subsea tie-backs are also progressing in the US Gulf of Mexico. Subsea tie-backs are attractive in that they often represent lower cost development solutions which can utilise existing production facilities. If the production facility has extra capacity, operators will work to use it to its full potential. Subsea tie-backs are also great options for field development given their quick discovery-to-production time frames. Notable subsea tie-backs that are set to ramp up this year are Noble’s Big Bend and Dantzler fields in Mississippi Canyon Blocks 698 and 782, respectively. The operator recently signed a Production Handling Agreement with SBM Offshore to host the tie-backs at the Thunder Hawk semisubmersible production platform in Mississippi Canyon Block 736. Big Bend is expected to start production in the fourth quarter of 2015, while Dantzler is expected to begin in late 2015. EMAS AMC’s newbuild derrick pipelay vessel Lewek Constellation is set to begin pipelay operations for the projects later this year along with Noble’s Gunflint project in Mississippi Canyon Blocks 904, 948, 949, 992 and 993.

Drillship Atwood Advantage recently conducted completion work on a couple of wells in the Dantzler field. Next up, the rig will move to the Gunflint field for additional development work. Noble recently indicated that first production from Big Bend is expected in the fourth quarter of 2015, to be followed by Dantzler by the end of the year, then Gunflint in mid-2016. Atwood Advantage is firmly committed to Noble until April 2017.

Another notable subsea tie-back being constructed in the US Gulf of Mexico is Deep Gulf Energy’s Kodiak field in Mississippi Canyon Blocks 771 and 727. Originally discovered by BP in 2008, the discovery well logged 500 net ft of hydrocarbon bearing sands in Middle and Lower Miocene reservoirs. Production from the tie-back development is expected to begin during the first half of 2016. Deep Gulf Energy awarded Technip an engineering, procurement, installation and construction contract in September of 2014 covering the project management, fabrication and installation of over 7.5 miles (12 km) of reeled pipeline and risers, and installation of a 6.8 mile (11 km) umbilical with associated terminations and flying leads. The contractor is expected to utilise its Deep Blue pipelay vessel to undertake the installation scope. Development drilling is currently ongoing using semi Noble Danny Adkins, which Deep Gulf has under contract until June. Kodiak is planned to be tied into the Devil’s Tower spar facility in Mississippi Canyon Block 773.

In an attempt to increase production from already producing fields, operators are also planning and carrying out subsea expansion projects. At least half a dozen expansions of already proven fields are scheduled to come on stream this year. Given oil is currently priced at around US$50/bbl for WTI, expanding on already proven reserves is a very smart move. Two such expansions belong to operator BHP Billiton – Shenzi and Neptune. Newbuild Transocean drillship Deepwater Invictus began a three-year programme with BHP Billiton in mid-2014 and has already conducted development work on both projects.

**Maximising production**

Shenzi has already undergone frequent additional work in order to boost production via water injection and expansion on the field’s northern portion. The new Shenzi expansion consists of seven water injectors being added as well as five development wells. These are expected to come online between now and 2019. The Neptune expansion is a single-well subsea tie-back to the Neptune TLP.

Another upcoming project is the Shell-operated Phase Two expansion on the Coulomb field in Mississippi Canyon Block 657. Coulomb is being developed via subsea wells tied back to the Na Kika semisubmersible production facility. Shell is currently planning a two-well expansion tied into existing subsea infrastructure. The FID for the project was announced late in the fourth quarter of 2014, and production is anticipated to begin in the latter part of the third quarter of this year.

These are just a few of the deepwater projects scheduled to move forward in the US Gulf of Mexico over the next few years. While some have been delayed until commodity prices rise to acceptable levels, most are proceeding due to the long-term nature of both the development process and the length of time a field is expected to produce. As technology improves, enabling production from challenging reservoirs, and shallower resources are depleted, deepwater projects should be expected to remain a priority over the long term.
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