



IADC Well Control Committee
Meeting Minutes
14th June 2018
IADC Crown Center
Houston, TX USA

Contractor roundtable

An informal discussion of drilling contractors was held prior to the Well Control Committee meeting. Key topics discussed included the following:

- Upturn in onshore activity
- Difficulty in obtaining crews
- Attention to well control in some operations
- Importance of awareness of the presence of gas
- Pumping gas out of hole
- Use of HAZID
- Shear ram requirement for onshore operations

Well Control Committee Meeting

Welcome & Introductions

Pete Bennett of Pacific Drilling (Committee Chairman) opened the meeting and welcomed the attendees. Steve Kropla of IADC provided a building safety briefing and reminded everyone the meeting was subject to the [IADC Antitrust Policy and Guidelines](#).

Mr. Bennett asked those present to introduce themselves. He then introduced Tim Nedwed of ExxonMobil.

ExxonMobil's Advanced Well Control Research

Mr. Nedwed presented on some new well control tools being explored by ExxonMobil that appear to have upfront benefit and promise: seawater injection and secondary pack off/polymer injection. ExxonMobil believes these will be worthwhile, commercially acceptable technologies if the research they have begun can be completed. They feel they are now at a stage to be tested by other companies, and would like to leverage expertise within the Offshore Operators Committee (OOC) for a JIP.

He said polymer plugs & seawater Injection can provide potential benefits on both sides of the bow tie, as a means of prevention as well as a method of mitigation. The primary aim of these two innovative technologies is to reduce the probability of an uncontrolled release, and to reduce the impact of an uncontrolled release relative to the well capping or relief wells. The high level goal is to reduce worst case discharge from an offshore blowout.

To develop these technologies, ExxonMobil went to the Southwest Research Institute and developed a scaled BOP simulator. Research was there conducted for two years.

Mr. Nedwed played a video showing the speed of polymer gel forming a plug in about three seconds. The reaction time of the gel slows in colder water; the solution is to use a mixing chamber to heat resin.

Another video showed the resin injection system, catalyst system and simulated BOP with a gel plug forming inside of it. This was originally done at low pressure for safety reasons. Since then, the PVC pipe originally used was replaced with casing to allow testing under pressure.

Mr. Nedwed said the seawater injection concept to kill a well would work primarily the same way, with the aim to dynamically control the well with seawater and then introduce kill weight mud. Since seawater is corrosive, more study is under way to determine the effect this process would have on cement pumps and mud pumps.

Forward plans including completing feasibility studies of polymer plug formation under dynamic conditions and high pressure, as well as modeling a well kill while suppressing discharge. ExxonMobil plans to promote industry interest through a paper provided at the SPE ATCE 2017 describing polymer plugs (Paper 187318), as well as through peer-reviewed publications. The JIP is intended to establish wider industry participation to fund and mature the concept.

The project timeline includes obtaining letters of intent by July and signed contracts by September, when a project member organizing meeting is planned. Annual fees will be collected in December of each year until Phase 3 is completed in 2020.

The JIP will have a funding target of \$2 million per year. Of this, \$1.5 million/year is hoped to come from 15 operators, \$375K per year from eight drilling contractors and OEMs, and \$125K/year from service companies.

The Advanced Well Control Concepts (AWCC) JIP package is posted in the Resources section of the OOC website at: <https://www.theooc.org>.

WellSharp Update

Gerardo Barrera gave an update on WellSharp, noting that the number of classes and class sizes in the second quarter of 2018 increased sharply from the first quarter. While Driller level courses were up since the first quarter, the Supervisory level remained the most popular course.

Well Servicing courses were launched on April 1st. Mr. Barrera said that so far, scores and passing rates of the courses given have been high. He said this probably shows that IADC has applied lessons learned from the WellSharp Drilling program, when scores were initially down when the program was introduced.

So far in 2018, 19,668 trainees were assessed for all courses. The average passing rate has been 94.3 percent with an average score of 85. Overall, 102,719 trainees have been tested since WellSharp was introduced in 2015.

Thus far in 2018, 223 instructor exams have been given, with a passing rate of 80.7 and an average score of 90 percent.

Mr. Barrera noted that quite a few international audits are in the process of being performed. Of a total of six auditors, one was planning to do 21 audits by end of year. Overall, there are 729 WellSharp courses given around the world per month.

BSEE Well Control Rule Update

Jim Rocco outlined the revisions that have been proposed in the new BSEE Well Control Rule, which is termed as “WCR 2.0.” He said these revisions focus on well design, well control, cementing, casing, real time monitoring, and subsea containment.

The original Joint Industry Team (JIT) including members of API, OOC, IADC, IPAA, and PESA is reviewing the latest proposed rule. The original work groups that examined the initial WCR have been meeting since the proposed rule was published in April. Those meetings are now complete and the workgroup comments are now being compiled. As with the original rule, the JIT will provide a consolidated set of industry comments to BSEE. The comment period closes on 10th July.

Mr. Rocco said because the areas in which the original rule exceeded API Standard S53 have been reduced, the industry is concerned that there may be a public perception that the proposed new rule is a relaxation of safety requirements.

He added that BSEE Director Scott Angelle had commented that 82 percent of original rule was left untouched in the proposed rule. In addition to the comments to be provided by the JIT, both Mr. Rocco and Mr. Bennett encouraged companies to submit individual comments, and to emphasize that changes to the rule are positive and do not compromise safety.

The group took a short break.

BOPE Removal Following Production Casing and Cementing

Tim Callais, Director of HSE for Sidewinder, gave a presentation on an incident that had occurred in their company. This incident had caused Sidewinder to question the appropriate time to Wait On Cement (WOC) after running production casing in order to safely nipple down BOP equipment. As a result, they had modified their company policy.

A Sidewinder rig had run the production casing string, performed the cement job, bumped the plug to 7,600 psi and held it for five minutes. The crew then released the pressure and monitored the well for 15 minutes to confirm that it was static.

The BOP stack was lifted to set the casing slips six hours after bumping the plug. The well was monitored again and confirmed to be static. The wellhead was installed and a spacer spool was bolted to the wellhead. The BOP was four-bolted to the top of the spacer spool and crews began to break the bolts on the upper pipe rams to change out the variable bore rams.

At this point (nine hours after bumping the plug) the driller noticed flow filling the BOP stack and down the flow line. Upon confirming no other source as being used to fill the stack the flow was directed to the Trip Tank for monitoring.

The well was ultimately controlled and the BOP nipped down five days later. The well was to be fracked at some point, so toe ports were included in the production casing. The toe ports were the suspected point of influx.

Regarding the level of risk, Mr. Callais said potentially this “could have been a land version of Macondo.” In terms of consequences and probability, it carried a significant risk to people and the environment as well as the assets and reputation of both the contractor and operator. As a result, Sidewinder changed its policy to require minimum 12-hour WOC time prior to nipping down. A Management of Change (MOC) is required if an Operator wants to deviate from that policy – this must be approved by the Chief Operating Officer.

Mr. Callais said the 12-hour wait period was set arbitrarily. He acknowledged that a predetermined means of proving the cement barrier is a much safer solution. Without a proven

test in place, however, Sidewinder feels that a 12-hour WOC time followed by confirmation that well is not flowing prior to nipping down the BOP will reduce the risk tremendously.

While studying this issue, Mr. Callais found that in 1995, MMS had issued Notice No. 165 relating to Shallow Gas Flows While Cementing Surface Casing. It reviewed 13 incidents where flow occurred after surface cement jobs. The average time was 4.5 hours and the maximum time was 10.5 hours after the plug was bumped. It gave specific details of four of the incidents; in three of these, the diverters had been partly nipped down in substantially less time than 12 hours after the plug was bumped. It noted that all other casing strings required 12 hour waiting periods with the exception of conductor casing.

The MMS report also noted that a better determination of time required for waiting on cement would be based on lab tests of the cement properties rather than time alone.

Mr. Callais stated that most operators try to resist the new policy. Other onshore contractors present stated they also frequently encounter this. Mr. Humphries said that by having the policy in Sidewinder's operations manual, "we have opened the door for a conversation with operator." Sidewinder remains firm unless the operator can prove the integrity of the cement job.

Mr. Humphries said the company occasionally struggles over defining when waiting time starts – Sidewinder says it begins when bumping the plug, while operators sometimes say the time starts when cement pumping commences. He suggested it might be useful for IADC to develop some guidelines on the matter.

Update on WCC Subcommittees & Workgroups

Well Control Practices Subcommittee: Paul Sonnemann, SafeKick – Mr. Sonnemann reviewed a list of 30 practices that had been identified for review by the Subcommittee. Often what we are saying and teaching is not the best. Would like to have discussion to discuss pros and cons and whether alternative techniques exist. Slow circulation rate practices is one of key items – the group feels there is an alternative and the way it's being done now isn't effective. He stressed that the Subcommittee needs help to package the data into usable form. The groups also like to review the current use of kick sheets, and to review the WellSharp gas migration rate .

Simulator Subcommittee – Michael Arnold, Intertek – Mr. Arnold said the Subcommittee would like a better score sheet for simulator assessment. He noted the group has struggled with attendance and stated he was willing to do a conference call if necessary. He said the Simulator Subcommittee meetings also usually conflict with the Well Control Practices group since both usually meet after the Committee meeting.

Curriculum Subcommittee: Matt Parizi, Chevron – There was no report from this group.

Barriers Subcommittee – Scott Randall, PlusAlpha Risk – There was no report from this group.

Next Meeting

The next Well Control Committee meeting will be at 9 a.m. on Thursday, 13th September 2018 at IADC's Crown Center 1 in Houston. This will take place at IADC's new offices at 3657 Briarpark Drive, Suite 200. The meeting will be preceded by a Drilling Contractors Roundtable from 8 a.m. to 9 a.m.

Attendance:

First Name	Last Name	Company Name
Mohamed	Boukamcha	ABS
sohail	Mohammed	ABS
Mark	Venettozzi	BP
Frank W.	Pearson	CHEVRON
Chuck	Boyd	CS INC
Hector	Moreno	EXCELSYS
Tim	Nedwed	EXXONMOBIL
Steve	Kropla	IADC
Brooke	Polk	IADC
Jim	Rocco	IADC
Gerardo	Barrera	IADC
Michael	Arnold	INTERTEK CONSULTING & TRAINING
Brittnee	Wilcox	INTERTEK CONSULTING & TRAINING
Ken	Mogensen	MAERSK TRAINING
Bill	Murchison	MURCHISON DRILLING SCHOOLS
Richard	Grayson	NABORS DRILLING USA, LP
Joseph	Gomes	OFFSHORE OPERATORS COMMITTEE
Peter D	Bennett	PACIFIC DRILLING
Roger	Sanchez	RIG QA
Tim	Callais	SIDEWINDER DRILLING LLC
Jerry	Morales	SIDEWINDER DRILLING LLC
Bruce	Humphries	SIDEWINDER DRILLING LLC
Joshua	Robnett	SUBSEA SOLUTIONS
Jerome J	Schubert	TEXAS A&M UNIVERSITY IADC STUDENT CHAPTER
Omer	Kaldirim	TEXAS A&M UNIVERSITY IADC STUDENT CHAPTER
Barry J	Cooper	WELL CONTROL SCHOOL-SYSTEM 21
Todd	Roberts	WILD WELL CONTROL INC.
Haris	Qureshi	WILD WELL CONTROL INC.
Kevin	Braggs	XCEL SAFETY TRAINING SOLUTIONS