IADC Well Control Committee Meeting Minutes
Wednesday 16 May 2012
Omni Hotel, Houston TX
Hosted by Rowan Companies

Dan Munoz of Transocean, Committee Chair, welcomed all and introduced hotel staff, who provided building safety information. Attendees introduced themselves and Mr. Munoz called the meeting to order.

IADC Anti-Trust Policy and Guidelines
Mr. Munoz reviewed IADC Anti-Trust Policy and Guidelines, referring attendees to the IADC website for a copy. The latest revision of the Anti-Trust Policy and Guidelines dated March 2009 is available at http://www.iadc.org/antitrust.

IADC Report
Brenda Kelly, IADC

Three WellCAP Bulletins were recently issued. Bulletin 12-01 announced the release of the revised WellCAP Handbook of Accreditation. Bulletin 12-02 imposed an immediate stop on issuing a combined surface/subsea stack qualification certificate to a student completing a Workover/Completion, Wireline, Snubbing, or Coiled Tubing course or any combination thereof. This ban is in effect until such time as subsea curriculum is defined for the well servicing courses and incorporated into the accredited training provider course. An increase in minimum amount of simulation time required in WellCAP courses was announced in Bulletin 12-03. Accredited providers have until 30 July 2012 to comply with this new requirement.

An update on the IADC Knowledge, Skills & Abilities (KSA) project was provided by Mark Denkowski (IADC).

The next WellCAP/WellCAP Plus Facilitator Certification Course is scheduled for 27-30 August. It is not too late to register for this course.

Curriculum Subcommittee Report
Gary Nance, Chevron

1. Drilling Supervisor Curriculum review is complete and now the proposed curriculum is up for vote; deadline for the vote is next Tuesday. Ms. Kelly said few votes have been received so members were encouraged to vote.
2. Drilling Fundamental Curriculum is being reviewed and edited. Glenn Shurtz (Wild Well Control), Cheryl Francis (Statoil) and Matt Mato (Check 6) have volunteered to help with the review. Others may join the review team. The task is expected to be completed by the end of year.
3. Well Servicing Committee – This Committee has identified well control training as a high priority for that Committee's activities. Well Control Committee members need to be engaged with this activity.
4. A workgroup is needed to look at Workover (Supervisor and Fundamental levels) curriculum. It was suggested that a review team be formed from members of the Drilling and Well Services subcommittees.
5. The question, "Do we have subsea issues with Workover/Completion?" was raised. With no Subsea curriculum defined for Workover (WO) and well servicing (WS) courses, we need an emergency subcommittee to review this issue and report back to the Committee. This workgroup needs wellhead equipment provider involvement. Operators are asking for subsea certificate for WO/WS courses. Some members think subsea content for WO/WS is needed, particularly for deeper water. Shell personnel are willing to assist with

curriculum development. Richard Quick, Shell, offered assistance in identifying individuals to help with this review. John Grieve, University of Louisiana, is also interested in participating.

Opinions differed widely on the need for the well servicing subsea curriculum. Several questions were raised challenging the need for the curriculum. What are the issues to drive us to create something that the industry isn't necessarily wanting or needing at this time?

Testing Subcommittee Report
Paul Sonnemann, Safekick

The object of this subcommittee has been to improve content instead of methodology or procedural issues. Since this subcommittee has been inactive for a couple of years, there was nothing new to report. Mr. Sonnemann indicated he would be willing to continue participation in the subcommittee if Committee members identify a specific objective they wish to see the subcommittee address. None was identified at this time.

Simulator Subcommittee Report
Steve Vorenkamp, Wild Well Control

The Simulator Subcommittee is discussing ways to make current WellCAP simulator exercises and assessment better. The Subcommittee plans to develop recommendations for enhancements after the current curriculum revisions are approved. It was suggested that the Simulator Subcommittee work with the Curriculum Subcommittee to identify critical skills that should be enhanced using a simulator and then build simulator exercises to facilitate those skills development.

Simulator requirements for Snubbing and Coiled Tubing have not been required in the past because of unavailability of appropriate simulator equipment. Now that simulator equipment is more widely available, simulators capable of performing Coiled Tubing simulator exercises needs to be identified, and exercises developed.

In other discussions, it was requested that more realistic simulations should be encouraged. Current simulator operations are based on constant bottom hole pressure and water-based fluids. Variable bottom hole pressures and fluids other than water-based fluids should be addressed.

Members also suggested other topics for the Subcommittee to consider:

- Measurement of competency using the simulator
- Use of a simulation to:
    - Diagnose well problems
    - Demonstrate curriculum concepts
    - Build confidence of personnel

The Subcommittee anticipates delivering simulator recommendations for the Drilling Supervisory level course by August meeting.

Bullheading Killsheets
Ed Geissler, WCS

The Bullheading Killsheet was designed in 2009 as a standardized training tool for WellCAP to be available to all training providers. The killsheet was placed on the IADC WellCAP website for public comment but never officially approved. Mr. Geissler requested IADC send notice of an additional 30-day comment period and then proceed with vote of approval.

Mr. Geissler indicated that a survey to gain information about killsheet usage had been developed and would be circulated to Committee members for their feedback. Brenda Kelly will distribute the survey. Members are asked to provide feedback.

A discussion of automating killsheets followed. Key points were:

- Automating a killsheet is very costly.
- Training is thought to be more effective if students have to make killsheet calculations by hand.
- Wild Well Control distributes an automated killsheet free of charge to anyone requesting a copy.

One member pointed out that a killsheet appropriate for horizontal wells is not currently available. Committee members may want to pursue development of or modification of current killsheets to include calculations for horizontal well sections.

Action Items:
1. Brenda Kelly to send Killsheet Survey to Committee members and WellCAP-accredited training providers.
2. Brenda Kelly to notify Committee members of request for comments on the proposed Bullheading Killsheet.
3. After 30-day comment period, Brenda Kelly will distribute the Bullheading Killsheet for official vote of approval.

Well Control Roundtable
Dan Munoz, Chevron

Mr. Munoz raised the question, "Should the Well Control Committee organize and offer to IADC members Well Control Roundtables?" To discuss this question, Mr. Munoz had attendees discuss in small groups the benefits of hosting Roundtables and identify topics that would be of interest for Roundtables. The groups reported back the following conclusions.

Roundtables ─ Why do them?

- Learn about technical issues
- Share information on wider venue
- If owner of topic, there is a vested interest
- Critical information needs to feed back to WellCAP
- Roundtable should have an end product
- Focused agenda

What topics would be appropriate for a Roundtable?

- Diverting through mud/gas separator (delete topic)
- Mud/gas separator – used for drilling; has no instrumentation; personnel do not adequately understand; to divert or not divert
- How to achieve well control training that prepares personnel for all scenarios they may encounter?
- Technology to detect kick sooner – technology is common in deepwater, uncommon for land
- Enhancing understanding of simulators and their use
- Unconventional gas resources – would like expert to talk about it; suggested Halliburton
- Real time decision making
- Subsea in context of API recommended practices; with potential dissemination of information (low interest)
- Barriers – experts to give their views (definite topic for Roundtable)
- Bridging documents, Bow-Tie – dull, not suitable for Roundtable discussion
- Air drilling

After topics were listed, those of highest interest for attendees were identified as Barriers and unconventional gas resources. Low interest was shown for diverting through mud/gas separator, bridging documents/Bow Tie, and subsea/ API recommended practices.

Lunch was provided by **Rowan Companies.**

Panel Discussion "Are We Meeting Land Drilling Well Control Challenges"

Moderator – Paul Sonnemann
Panel Speakers

Land Drilling Issues – Mike Garvin, Patterson UTI
Land Operations – Frank Merendino, Encana
Incidents Seen – Steve Vorenkamp
Training Issues – Benny Mason, Talisman
Equipment Inspection & Personnel Competency – Ron Crotzer, Bladestone

Mr. Sonnemann opened the Panel session by saying this discussion had been organized response to members' concern that recent committee efforts have been largely focused on offshore operations, while several members had suggested a growing need to consider land operations issues, particularly in light of major onshore activity in the United States.

Mike Garvin, Patterson UTI, identified several areas that he considers big challenges our land drilling industry is facing. He prefaced his issues discussion by citing land rig count and land drilling activity levels. The land rig count has increased from 829 to 1921 in the last 3 years, with more than 40,000 wells drilled in 2010 alone. Among the issues of particular concern for land drilling operations are workforce development, the role of the Driller in well control, current WellCAP training requirements (i.e., the 70% passing score), and restructuring WellCAP to focus on competence.

With the large number of wells being drilled onshore U.S. and the number of new employees needed to keep pace with onshore expansion, Mr. Garvin sees the "onboarding" of new employees as crucial.

Mr. Garvin reported that investigations of well control incidents suggest that, while all personnel involved held WellCAP certification, they were not competent in primary well control. He contends that current WellCAP training primarily focuses on secondary well control, not primary well control. He challenged members to reconsider the focus of WellCAP training, suggesting that, by its very nature, well control implies prevention, detection and containment or shut-in. It does not have as its focus well kill. He recommended restructuring WellCAP to focus on demonstrating competency in prevention, detection and shut-in.

Mr. Garvin further emphasized the importance of the Driller to onshore well control operations. When comparing onshore operations to offshore operations, he noted that a well control team is present offshore to respond to well control events, whereas onshore the Driller is often the only responder available. He recommended well control drills to practice the essential skills, and ongoing auditing to reinforce that the drills are achieving the desired results.

Frank Merendino, Encana, described the well control training program Encana initiated. He recommended enhancements to WellCAP to address appropriate response to well control events, including shut-in the well if that is your responsibility.

Steve Vorenkamp, Wild Well Control, provided incident statistics for events to which his company has responded. He indicated that the number of incidents is going up. One hundred and twenty incidents were investigated by Wild Well last year. Of those, 15 % were due to equipment failure, and fewer than 20% had unknown cause. The events were about equally divided between drilling and production operations. In 85% of the events, a protocol was missed. Furthermore, primary well control was not executed in a majority of the events.

Benny Mason talked about training and student assessment, noting that training does not take the place of experience/time on the rig. Mr. Mason recommended apprenticeship programs as a means of building experience. He further recommended that skills assessments need to be performed on the rig with results reported back to IADC for consideration in revising WellCAP training. He also strongly encouraged auditing of programs, indicating that "you will get what you expect".

Ron Crotzer discussed positional competency versus well control competency. In his view, WellCAP works well for high permeability formation kicks, but not for shale kicks. Shale kicks are difficult to see coming to surface. Other topics discussed by Mr. Crotzer were well control for air drilling, development of checklists for well control equipment inspection, auditing well control operations, and the importance of repetitive training. He too called attention to the need for more emphasis on primary well control.

Next Meeting will be hosted by **Wild Well Control, 15 August 2012.**

Potential meeting topics identified:

- non-conventional drilling
- "non-standard operations" (i.e., MPD, UBD, HPHT and Ultra-deep water)

Action Items:

- Form workgroup to review issue of subsea curriculum for well servicing courses
- Form workgroup to review WellCAP Workover/Completion curriculums
- Brenda Kelly to send Killsheet Survey to Committee members and WellCAP-accredited training providers.
- Brenda Kelly to notify Committee members of request for comments on the proposed Bullheading Killsheet.
- After 30-day comment period, Brenda Kelly will distribute the Bullheading Killsheet for official vote of approval.

Meeting adjourned at 2:30 p.m.

Attendance:

Name		Company Name
Jeffrey	Glattly	**ABCO Subsea**
Lesley	McBride	**Aberdeen Drilling School**
Ron	Crotzer	**Bladestone**
Michael	Schulenberg	**Check 6 Training Systems**
Matt	Mato	**Check 6 Training Systems**
Adam	Kieda	**Check 6 Training Systems**
Gary	Nance	**Chevron**
Allen	Kelly	**Chevron**
Bill	Rau	**Chevron**
Chuck	Boyd	**CS Inc.**
Bhavesh	Ranka	**Cudd Well Control**
Clive	Battisby	**Drilling Systems (UK) Ltd**
Frank	Merendino	**Encana**

Andy	Erwin	**Falck Alford**
Jeremy	Conner	**Felderhoff Brothers Drilling**
Bill	Holloway	**Felderhoff Brothers Drilling**
Brock	Fisher	**Helmerich & Payne**
David	Moyer	**Helmerich & Payne**
Brenda	Kelly	**IADC**
Mark	Denkowsky	**IADC**
Elfriede	Neidert	**IADC**
Joe	Hurt	**IADC**
Paul	Breaux	**IADC**
Marlene	Diaz	**IADC**
Steve	Kropla	**IADC**
Larry	Schmermund	**Intertek Consulting & Training**
Jim	Borthwick	**KCA Deutag**
Hal	Kendall	**Kenda Enterprises**
Richard	Grayson	**Nabors Offshore Corp.**
Chris	Nelson	**Newfield Exploration**
John	Griffin	**Nicholls State University**
John	Bottrell	**Nomac Drilling, LLC**
Mike	Garvin	**Patterson UTI**
Scott	Randall	**PlusAlpha Risk Management**
Zamir	Abdullaev	**PNG Drilling Co. Ltd.**
Victor	Fleming	**Rowan Companies**
Paul	Sonnemann	**SafeKick**
Gabe	Gibson	**Shell International E&P**
Richard	Quick	**Shell International E&P**
Keith	Davidson	**SPT Group (A Schlumberger Company)**
Cheryl	Francis	**Statoil**
Benny	Mason	**Talisman Energy USA**
Charles	Tatum	**Transocean**
Dan	Munoz	**Transocean**
Ed	Geissler	**Well Control School**
Glenn	Shurtz	**Wild Well Control**
Steve	Vorenkamp	**Wild Well Control**
Bob	Shetti	**Zentech-USA Inc**