



# Survey QAQC Activity Report

Phil Harbidge

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Phil Harbidge - Independent - Kuala Lumpur

23 years Wellbore Positioning

Well Placement, CA, Risk Assessment, Survey QAQC & Optimization

ISCWSA Webmaster and Survey QAQC Sub-committee Chair,

Drilling Data Quality and Uncertainty Description Sub-Committee

Work : **EXPRO :**            **Technical Sales Well Construction**  
**Intercept, Relief Well, P&A, Wellplacement, Survey Management,**  
                                 **Advanced Survey Corrections, Software Setup,**  
                                 **Database Audits, Training and more**

Worked :

**Sperry-Sun, Baker Hughes INTEQ and Schlumberger :        DD Service Companies**  
**Marine Surveyor and Civil Engineer and the Planetary Space Science Research Institute**





# Agenda: Wed 18th October 1-3pm room : San Antonio

- 25 minutes edit **Gyro document**
- 25 minutes, Mike Calkins “**Survey Uncertainty Quantification in R**”
- 25 minutes edit the **MWD document**
- 20 minutes Chad – EM Validation Process “**Are you using the correct EOU?**”
- 5 minutes to plan / **agree on actions** for the next online meetings
- Hybrid meetings TEAMS – need conference speaker and mic for ISCWSA in person meetings
- Share the working documents to the QAQC SC, TEAMS file / folder for remotely editing and sharing
- 29 In Person
- 1 Online Participants
- 6 weekly 1.5 hours TEAMS sessions to finish MWD, Gyro, Depth and DSR chapters



# Largest Attendance to date

Mahmoud Elgizawy – K&M SLB

Mike Calkins – Three Sigma Well Design

Erik Blake Icefield Tools Corp.

Timothy Paton SQC

Josh Alrbright SQC

Chad Hanak SQC

Ryan KirbySQC

Nicholas Zachman K&M SLB

Josh Albright SQC

Brett VanSteenwyk Uni of Washington

Joel Dunn SQC

Ryan GuntarSQC

Mallore SchurrSQC

Ayush R Srivastava XOM

Onyemelem Jegbefume SLB

Francisco Huitron SLB

Roger WatsonTDT

Inge Edvardsen BH

Andreas Hueper BH

Tyler Longean RoundLAB

**Georgy Rassadkin** Gunnar  
Energyservices

Maria French HAL

Kevin McClard Winsurv3D

Ben Hawkinson

Andrew Pare H&P

Rustum Rakhmangulov SLB

## **TEAMS - Online**

Harald Bolt Depth Solutions

## **NEW Recruits**

Matt Weber Shell

Nasikul Islam Al Driller



# Activity

Compile the API RP-78 word documents into a single document for publishing on the ISCWSA.net website

- e-book chapter documents :
  - MWD - Chad 22 pages long 80% completed
  - Gyro – Ben 19 pages long 80% completed
  - DSR – not produced, use a sanitised version of the API document or use the minimum data requirements document
  - Depth – Harald 39 pages long edited 13<sup>th</sup> Oct 2023 – Finished – Final Review by QAQC SC before sending for Manual publishing
- Request from 5 service companies and USA + International QAQC example documents for MWD, Gyro and Drilling Survey Records for inclusion into the public access QAQC E-book
- SLB / GD Mahmoud // SDI Ben, Laura // BH? // HAL?? // WFD??



# Activity II

- 1a. **Add introductions to each chapter**
- Use existing intros content in API document, condense/re-word for eBook DRAFT version Phil and Gary made a while ago :
- *“The intention is for this document to form an operationally focused guidance document to help users achieve minimum industry recommended practice requirements.*
- *This is a non commercial document, which has been written in response to industry needs and has been authored by members of the Industry Steering Committee on Wellbore Survey Accuracy – Quality Control and Quality Assurance Sub-Committee and is a public access document. Please contact ISCWSA Education Committee Chair Mahmoud ElGizawy for suggested changes or additions to this document. “*



# Activity II continued

- **State the intended audience :**
  - a. *Survey sensor and calibration facility manufacturers*
  - b. *Survey data service providers and data users*
  - c. *Oil, gas and water operating companies*
  - d. *Government authority employees*
  - e. *MORE??*
- “
- **1b. Assess the "must" statements in the documentation (see attached)**
  - "Must" statements not conducive for educational material for general audience, so change out the “Must” and “Shall” statements to “should” and “may”
- **1c. Turn DSR document into e-Book content (check list)**



## Activity III

**API RP-78 docs update?**

**ISCWSA QAQC SC docs were submitted to the API team any further action?**

**Jonathan & New API RP-78 lead (Insert Name & e-mail address)**





## Further Work

- QAQC Parameters Survey Related to New WPTS Error Model (s)
  - FAC – EM SC
  - Some of the gross errors captured, not capturing all
  - Validation at different levels Accuracy of Corrections as per claimed accuracy for EM used
    - SuperiorQC – Chad Hanak QAQC Software testing project
  - Three Sigma – Mike Calkins Chi SQ Test & Relative Instrument Performance model tests
  - Total Energies - Hans Dreisig Tie-On logic & more
  - Planned CA – EM & QAQC Sub-committee mega meeting in 2024



# Drilling Data Quality and Uncertainty Description Subcommittee Activity Report

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## SPE Affiliated “DDQU” - (DSATS - DUPTS - WPTS Subcommittees)

- Standardize the Industry
  - Drilling Data Quality and Uncertainty Description – Four SPE publications:
- Published [SPE-208754-MS](#) Peer Reviewed
- Analysis of the Sources of Uncertainty in Geopressure Estimation While Drilling, SPE-214962 (in preparation) 2023
- SPE-217668-MS, The Role Of Semantic Networks In Mitigating Risk During Data Exchange In Multi-disciplinary Well Construction
- SPE-208754-MS A Framework to Capture the Relationships in Drilling Data and the Propagation of Uncertainty, Galveston, Texas, (USA)
- Publish use cases [DSABOK](#) & SPE Paper use cases worked up into Semantic Graph and Data Lake etc.
- github <https://github.com/SPE-DDQUD/DDQUD/tree/main/Meetings>



## Thanks to

Manufacturer & Calibration Experts: BenchTree, Scientific Drilling, HAL, SLB, BH, Weatherford, JAE

Operator Experts: Shell, Chevron, Oxy, ConocoPhillips, BP, Total, Devon Energy, ExxonMobil ....

Service Company Experts: BH, HAL, Depth Solutions, K&M SLB, Weatherford, Scientific Drilling, Mostar Drilling, SuperiorQC, Independent Consultants, Winsurv3D, AI Driller, Three Sigma Well Design, EOG Resources, Pacesetter Directional, PathControl, Washington Uni, Gunnar Energy Services, H&P, TDT, EXPRO



# Questions?