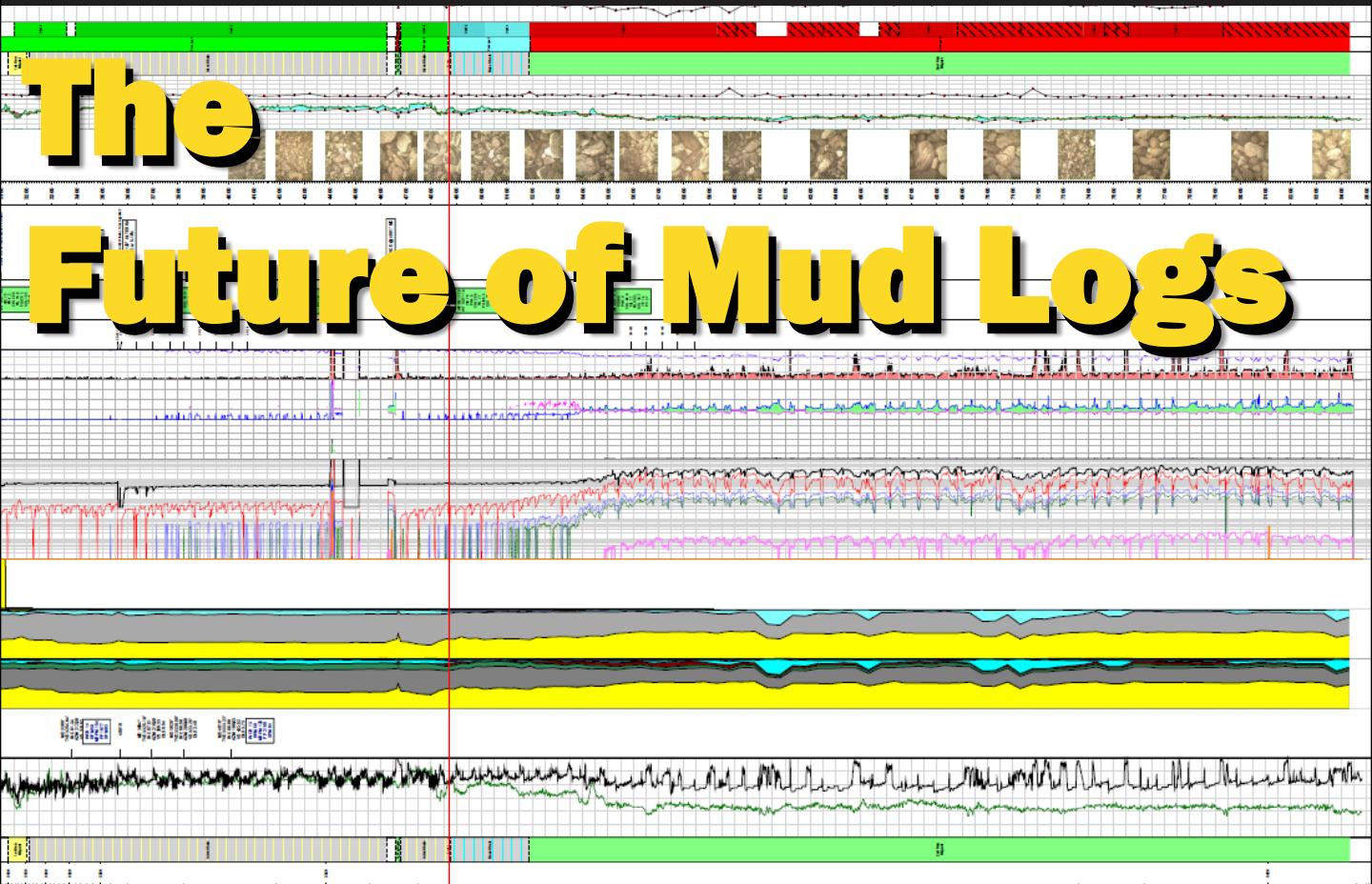




DIVERSIFIED

WELL LOGGING, LLC

711 West 10th Street,
Reserve, Louisiana, 70084
1-800-280-2096
info@dwl-usa.com



The Future of Mud Logs

Diversified Well Logging brings formation evaluation back to the surface.

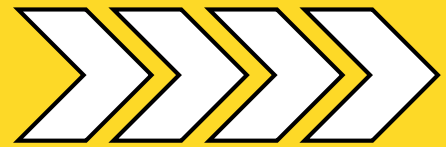
- Realtime quantitative cuttings analysis
 - Chemostratigraphy
 - Modelled mineralogy
 - Modelled lithology
- Geomechanical property derivation
- Realtime quality controlled formation gas evaluation
- Realtime data integration for Geosteering – Chemosteering
- DATA YOU CAN USE!

SURFACE MEASUREMENT WHILE DRILLING™



Hybrid Mud Logging

Surface Measurement While Drilling (SMWD)



UNCONVENTIONAL CHALLENGES

- Variable ROP in the 'same' formation
- Variable hole stability in the 'same' formation
- Uncertainty of being in the correct target zone
- Variable stimulation performance between wells
- Variable production between wells
- Well spacing and 'Parent/Child' well interference

OVERCOMING THE CHALLENGES

For all of these challenges there is one overriding solution; the acquisition of more geological data to better understand what is happening. Data for geologic and A.I. modelling, well correlation, trend observation, and well planning.

CURRENT SOLUTIONS

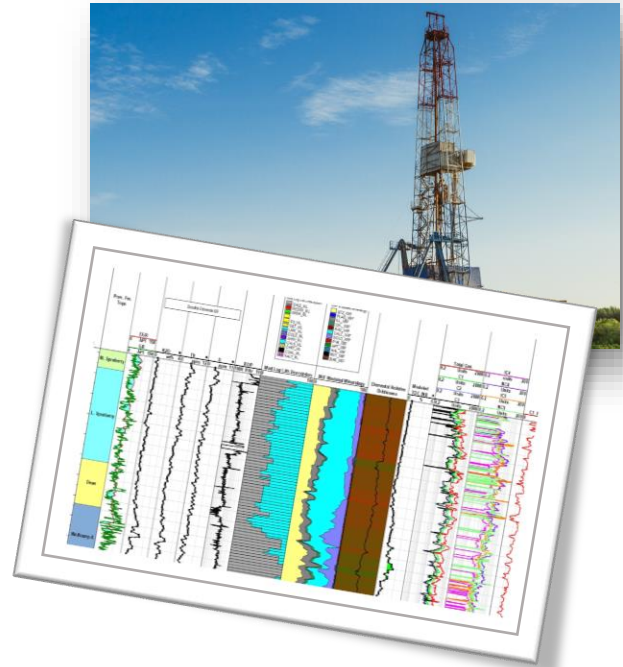
- Seismic – poor resolution for geosteering
- MWD – limited geologic value through GR
- LWD – expensive with risk of tool loss
- Wireline – costly with limited use in horizontals
- Coring – excellent data but costly and slow
- Mud Logging – qualitative data only but economical

ACCEPTING THE STATUS QUO?

The current solutions are either inadequate for in-depth, field-wide analysis or are far too expensive in today's cost-challenged environment to be used extensively. But is accepting the status quo the only answer?

THE DIVERSIFIED SOLUTION

- Hybrid Mud Logging
- A Surface Measurement While Drilling service
- A true step change in sample processing
- Quantitative rock data for every sample
- Quantitative data for every well
- Quantitative data for the very best price
- Realtime geological certainty
- The end of unconventional challenges
- No more accepting the status quo



Hybrid Mud Logging Delivers

- Quantitative elemental XRF data – consistent and comparable data from well to well
- Reliably modelled lithology as standard – no more subjective %'s and descriptions
- Digital images of rock samples – images taken pre-analysis
- Up to fifty samples caught and analyzed with XRF per day
- Realtime total gas and chromatograph data as standard
- Digital twice daily reports and logs
- Reduction in personnel onsite (compared to full onsite XRF/Mudlogging)
- Reduction in HSE risk