

Association of Energy Service Companies

Wireline Unit Market Survey Results and Possible Impact of Chemical Source Replacement

Kenny Jordan

Association of Energy Service Companies

Executive Director

Houston, Tx



The Association of Energy Service Companies (AESC)

- Founded in 1956, the AESC is the largest trade association of energy service companies in the US. Many of our member companies are small to mid-size wireline/well logging companies.
- Our membership includes both companies (and their employees) who provide essential services and products to the oil and gas industry. We have approx. 400 member companies and are active in 34 states.

The mission of the AESC is to promote the interests of the membership in representing the energy service industry to its customers, employees, governmental agencies and the general public.

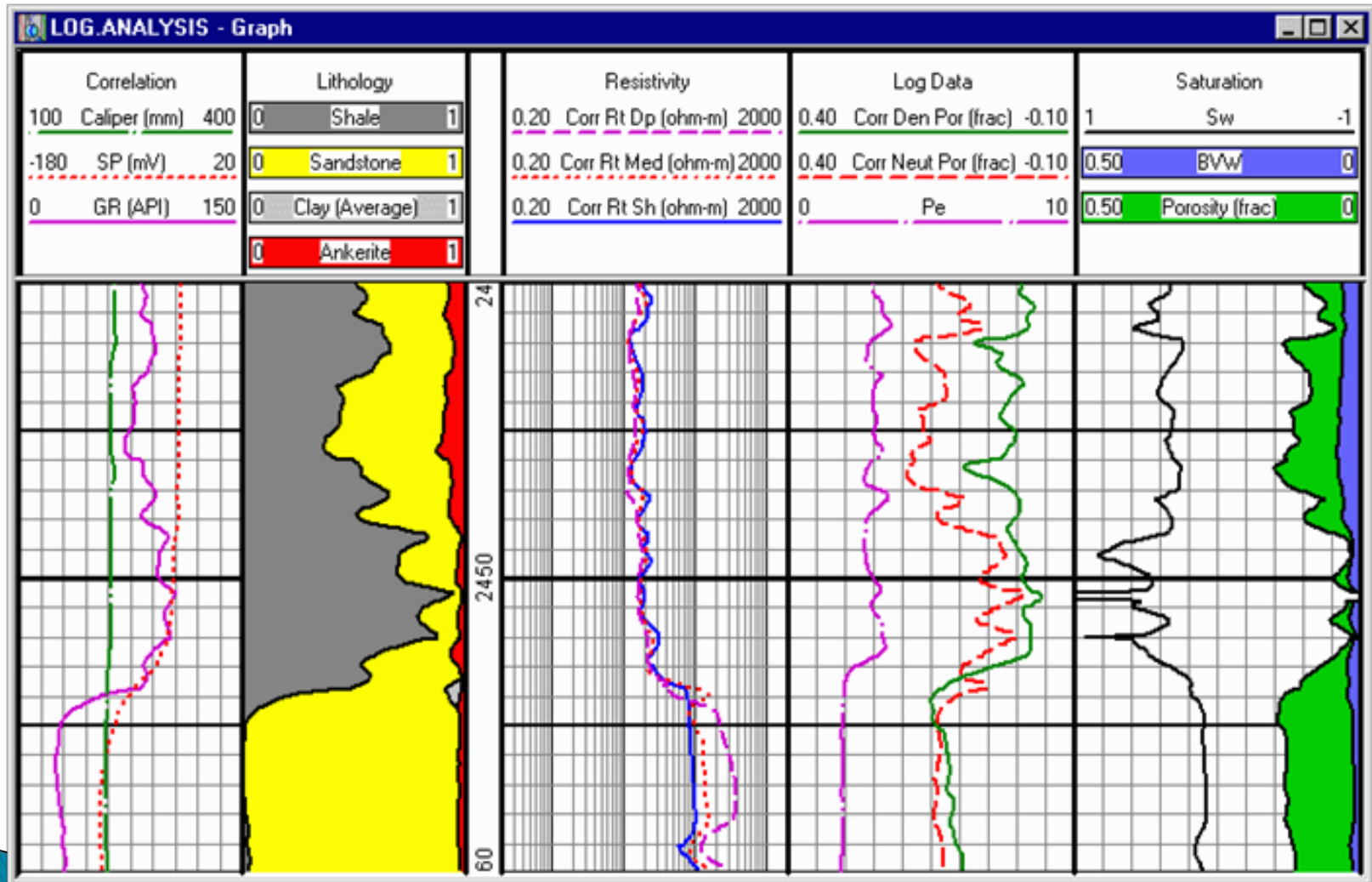


Well Logging

- Well Logging – Vertical and Horizontal
- Density Logs – the Gold Standard for porosity (utilizes a Cs137 chemical source)
- Neutron Logs – more than just porosity (utilizes either a AmBe241 or Cf252 chemical source, or a pulsed neutron source in cased hole applications)
- Spectral Gamma Ray – natural occurring gamma radiation from the formation (by element, i.e., Uranium, Potassium, Thorium), small calibration sources are required for this service
- Frac-Tagging Operations – optimizing the completion (numerous short half life isotopes utilized)
- Tracer and Production Logging – checking the “health” of well



What Does Well Log Look Like?



Market Overview

- Original survey of number of companies in the US involved in the well logging business was conducted by Texas A&M Aggies in Business program in conjunction with AESC.
- Total of 225 separate wireline/well logging companies identified within the survey. Number of acquisitions/closures since the survey, however, when one closes, another starts.
- One of the Big 4 companies has completely exited the US market in terms of servicing model (selling their units and providing some services as a third party to other companies).



Market Overview

- Due to current pricing of oil and gas, these companies are facing extreme pricing and equipment utilization pressure in the market, utilization is down 50–60% and pricing pressures in terms of deep discounting is also prevalent in the industry.
- Contraction by companies of 50–60% layoffs due to COVID and oil pricing 2020. Bankruptcies and “going out of business” are pervasive in the industry at this time.
- Any additional capital purchases or changes in technology would not be feasible for companies in the current market environment. They are in SURVIVAL MODE!
- All of the small to midsize companies operate under the same rules and regulations as the major companies (NRC/DOT regs, employee background checks, inspection and reporting criteria, etc.) , and are security conscious with their source assets, they are all very aware that their future depends on the security of their sources.



Large-Small Company Breakdown

- It is our estimate that small to mid-size wireline companies makeup over 90% of the wireline market (this includes mechanical services and logging)
- Not all companies possess or use sources in their current businesses



How Does this Impact the Chemical Source Replacement Issue?

- Large multi-national major logging companies have multi-million dollar R&D budgets for alternative technologies.
- Technology **IS NOT** available to smaller companies as there are no companies with sufficient capital or R&D budgets.
- Additionally, well logging tool providers will not make the investment in alternative source technologies as they are under the same constraints as the small to midsize independent logging companies. Now, they have no market to even sell to.
- Potential for only 3 or 4 major multi-national companies left to provide neutron & gamma density services to industry.



Impact on the industry

- Small business closures/job losses
- Much higher cost for services for ALL E&P companies.
- Loss of geophysical logging capabilities
 - Government
 - Education
 - Mineral
 - Water
 - Geotechnical



Potential Solutions

- **Source tracking**
 - LLNL project underway, field tests complete
 - Neutron generator tubes may also require tracking
- **Technology transfers from national labs at a commercially affordable replacement price**
 - Technology must be viable before this happens (environmental constraints of pressure/temperature)
 - The issue of 60+ years of history with chemical sources and current porosity and density corrections must be maintained with a change to any new replacement source.
 - Even if new source replacements were provided at no costs, these new tools would not be compatible with existing platforms (power and telemetry). Small companies have zero capital to invest in that transition.

(Currently there are correction charts for such things as mud thickness, etc. These charts would have to be redone requiring a re-characterization of the geology of each area with the new source. These charts are necessary to make accurate porosity calculations which impact reserve calculations and ultimately oil valuations.)



CONCLUSIONS

- Small to midsize logging companies compose the majority of the wireline market in the US.
- Any changes to their ability to access and utilize chemical sources at this time will have a devastating impact on their ability to do business.
- The entire oil and gas industry would change appreciably without chemical sources (in terms of utilization, participation by service companies, pricing structure to exploration companies, etc.)
- These companies have demonstrated their ability to operate and safely utilize their chemical source assets throughout the US.
- At this time, we know of no commercially available or financially viable technology for these small/mid size companies

Contact Information

Association of Energy Service Companies

121 E. Magnolia, Ste 103

Friendswood, TX 77546

PH: 713-781-0758

FAX: 713-781-7542

Kenny Jordan

Executive Director

kjordan@aesc.net

