

Upcoming Events

**Tuesday 24th
January 2017**
9:00am - 5.00pm
“New Technology”
One Day Seminar

**Monday 27th
February 2017**
6:30pm—7:30pm
“Advanced Fractal
Modelling of
Heterogeneous and
Anisotropic
Reservoirs.”
Paul Glover,
University of Leeds
Evening Lecture

Author: E. R. (Ross) Crain, P.Eng, Calgary, Alberta, Canada

Well logging was only 35 and the word *Petrophysics* was only 12 years old when I started logging in 1962. Much has changed over the years and vast quantities of data have been amassed. It is useful to assess how all that data has been used and abused, and how we can do a better job with it.

We use the term *Integrated Petrophysics* to suggest that we do not merely perform log analysis, in isolation, but also integrate core analysis, geochemical, XRD, XRF, and a host of other geoscience and engineering data along with the well logs. I did my first integrated project in 1973, showing core porosity and permeability on top of Saraband computer-aided log analysis depth plots. People were amazed, although I sincerely doubt I was the first ever to do this. I still see results today from clients who have not done even this simple task to compare their diverse data sets.

Why not? We have only ourselves to blame. Unless we can convince management to both acquire and also use the data needed to perform this level of professional analysis, we will continue to wave our arms in a wilderness of unknowns.

Good detectives would take the time to gather all the evidence, assess it, test it, discard the meaningless, reconcile the discrepancies, and then come to a conclusion that is both defensible and as close to the truth as possible. Good petrophysics is an evidence based business and our skill is aided by a careful assessment of the facts. Sir Arthur Cona Doyle wrote in his Sherlock Holmes novels “Eliminate the impossible: whatever remains, however improbable, is the solution” (or words to that effect). If we honour this tradition, we will do a better job.

But we do need to gather as much evidence as is helpful. This will vary with the project – there is no simple checklist. If we don’t know what is needed, we must learn from others. Learning is work, and the exigencies of our day-time job may not leave much time for the research and discussion required to get up to speed. This is especially true of the people who expect us to perform the miracle of petrophysical analysis – we have to educate management and other disciplines on the team to our data needs. We don’t want just tools like adequate software; we need ground truth to calibrate the numerical results, and to help eliminate spurious evidence.

We have been gathering petrophysical data around the world for 90 years. That’s Big Data. So far, we have not used it well, leaving it to moulder in dusty file cabinets, damp warehouses, and cold data vaults, never to be looked at again. Google, Facebook, and Amazon have taught us what can be done with Big Data – make money. It’s time to start doing the same data-mining operations as they do. There is “gold in them thar hills” - ,called Bypassed Pay, Shale Gas, or Shale Oil. The cheapest oil and gas you will ever find is already in your well files. Put your detective skills to work and find it.

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**Tuesday 4th
April 2017**
6:30pm-7:30pm
“Looking ahead of the
bit while drilling: from
vision to reality”
Monica Vik
Constable, Statoil
Evening Lecture

I have yet to see a VP Petrophysics or a CPO (Chief Petrophysical Officer).

We are uniquely positioned for the task of integrating all the geoscience and engineering data, just as the CFO assimilates and understands all the financial data. We know enough physics and chemistry; we have a good background in geology, geophysics, reservoir engineering, stimulation design, reservoir simulation, and production to assume this role. Big Data coupled with logical detective traits will change the way we do our work, and cause a cosmic shift in how companies manage

**ABOUT THE AUTHOR**

E. R. (Ross) Crain, P.Eng. is a retired Consulting Petrophysicist and Professional Engineer, with over 50 years of experience in reservoir description, petrophysical analysis, and management. He is a specialist in the integration of well log analysis and petrophysics with geophysical, geological, engineering, stimulation, and simulation phases of the oil and gas industry, with wide-