

Pools '96: An Outpouring of Oil and Gas Field Data in Calgary

J. S. Bell

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need a national organization to which we all proudly belong and to which our own specialist societies pledge allegiance and support.

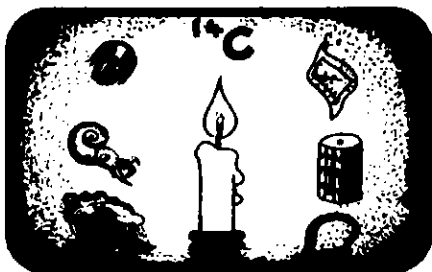
WHO TO DO IT?

I am aware of only one group that has the potential to lead our profession into a national union of earth system scientists and that is our own Geological Association of Canada. Our members hail from coast to coast with strong regional sections active from Newfoundland to British Columbia. We represent all employment sectors with about 50% from

industry, 30% from academia and 20% from government. Our leadership from the beginning was by statesmen such as Duncan Derry and Willis Ambrose who reached out beyond their own disciplines. We are still led by such people if we can judge by presidential addresses of the past few years. The revised format of our annual meetings, the way in which we have embraced essential fringe pursuits such as public awareness of science, and the fact that we have an ad hoc committee producing a 10-year strategic plan are all evidence that our 50 year old GAC is still very

amenable to change. Our association is the logical choice to lead the geoscience community into a national confederation of earth science societies (maybe, but not necessarily, a drastically restructured and rejuvenated CGC) with 10,000 or more individual members. Ironically, if successful, there will no longer be a need for a national GAC, only its regional sections and subject divisions. Our doughty GAC will perish happily while giving birth to an all encompassing union that will better serve the geoscience community, the nation, and the Earth. Amen.

Conference Report



Pools '96: An Outpouring of Oil and Gas Field Data in Calgary

J.S. Bell
Geological Survey of Canada
3303 33rd Street N.W.
Calgary, Alberta T2L 2A7

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Pools '96 is the title of the Canadian Society of Petroleum Geologists Annual Convention held in Calgary 16-20 June 1996. The conference, focussing on oil and gas pools of the Western Canada Sedimentary Basin, was a daring venture for the CSPG because the technical program depended largely on contributions from the oil industry and they could not expect much input from universities or geological surveys. In the event, their confidence was justified. More than 2500 delegates registered at the Calgary Convention Centre, over 70 companies rented booths in the Exhibition Hall, and some 40 industrial sponsors stepped forward.

The Program and Abstracts volume was exactly what such a publication should be: easy to use, thanks to the use of dividers, and full of excellent extended abstracts of the talks arranged in the order of their presentation. The volume was spiced with Peter Harrington's summaries of recent operational

activities in the various regions, came with a pool map, and contained enough blank pages to make note-taking easy.

The technical program involved three concurrent sessions and the majority of the 47 western Canadian pool studies were presented in sessions that were organized geographically. Also included were thematic sessions on environmental geology, international geology, reserves and economics, hydrogeology and all-day poster displays. In all, 93 papers and 29 posters were presented.

In most of the pool studies that this reviewer heard, the emphasis was geological and there were numerous detailed facies analyses presented combining seismic data, core descriptions and log interpretations with reference to depositional models. John Hopkins discussed the Jurassic Medicine River "D" Pool around a superb set of slides that summarized 3-D seismic interpretation of the underlying Palaeozoic incised and karsted carbonates, illustrated the

various clastic facies recognised in cores, summarized waterflooding experience and enabled him to present a convincing case for the field being divided into several reservoir compartments. Doug Cant gave a measured discussion of the nearby basal Mesozoic Gilby Field, showing that its complex trapping configurations were stratigraphically controlled. He, too, presented evidence of sub-Mesozoic karst development and of its apparent effects on the overlying sediments. Rock Creek sands exhibit synsedimentary faulting and slumping as well as a variety of breccia textures. A regional approach was taken by Darcy Greggs, who related basement faulting to facies changes in the entire Phanerozoic section of the Western Canadian Sedimentary Basin. Her contentions apply to the location and nature of reefs as well as to the influence on terrigenous clastic sedimentation.

In the international session, Mark Cooper reviewed the huge Cusiana Trend discoveries in Colombia, showing how the fields are located within complex thrust slices along the eastern margin of the Andes. Tony Tankard gave an overview of Argentinian basins followed by an update on a very low-budget oil exploration program in West Greenland. Liz Aston described Ranger Oil's Pierce Field in the North Sea that is poised for development. The Forties sandstone wraps around two salt diapirs like a double doughnut and contains both gas and oil. Production will be from wrap-around horizontal wells that are planned to embrace the pay and avoid the water legs! She ended with a vivid calendar of elation and dejection as the first of these wells wound in and out of the oil pay. Less appropriate was a stock promotional tour of one company's un-drilled onshore prospects in Europe. The speaker, however, made the point that the fiscal regime there is attractive, as Jean-Claude Beauvilain also emphasized in his discussion of prospects in Permo-Triassic basins of Northern Ireland. However, problems like exploring beneath volcanics challenge the geophysicists.

With three concurrent sessions, there were many talks that one had to miss. However, this was not the case for the poster session, which contained some excellent field and basin studies. Jocelyn Keith and her co-authors mapped the carbonate sand ridges in the Sylvan

Lake Pekisko "B" pool and showed that their scale and configuration are matched closely by present day sand ridges on the east Florida Shelf. Normand Bégin and University of Calgary colleagues demonstrated the complex non-uniform thrust geometry that today's reflection seismic profiling can resolve with the implication that palaeostress orientations varied between sheets.

The huge fragmentation of the Canadian oil industry means that there are now numerous independent geologists who work for themselves or in small consulting groups and who, naturally, wish to attract some attention. The poster session epitomized the quandary of deciding what is science and what is promotion. Alconsult took the high road with their summaries of ongoing East African basin syntheses by presenting posters that were rich in geological and geophysical information and incidentally demonstrated the prowess of their authors. Several other poster presenters chose to display pages from consultant reports, interspersed with sales pitch notices, that might have been better placed in exhibitors' booths. To be fair, though, they were ready to discuss the science behind their work. At the other end of the spectrum, there was a most stimulating "poster" on the application of hydrogeology to oil and gas exploration that adorned the booth of ECD Consultants! It is a difficult issue, not made easier for technical program committees who have to sort through abstracts which may conceal the chief motivation behind a submission. It would do no harm to circulate some guidelines for future conferences.

No such conflicts of interest plagued the exhibitors, who displayed everything from books to the latest 3-D seismic techniques. Huge monitors fed us brightly coloured technical delicacies, while interactive work stations and PCs generated analyses on the spot. It was clear that many good demonstrations took place, useful contacts were made, and much business was enacted.

Usually CSPG conferences end on Wednesdays, but this one did not. They saved the best for last as several hundred delegates crowded the Alberta Energy and Utilities Board's core storage facility in northwest Calgary on Thursday, 20 June, to look at cores and to hear their exhibitors' presentations. Here, finally, we had a front line give-

and-take between practising earth scientists who had thrown off the reticence of the conference hall and who exchanged their experiences with few inhibitions. Noteworthy core displays included Tom Moslow's Montney sandstones in the Valhalla and La Glace fields, for which he presented a closely argued case for turbidite origin. Many of the cores were annotated and the displays augmented with elaborate posters, such as Arnott *et al.*'s Basal Quartz sandstone exhibit. A good number of these posters are represented as short papers in the program. The sandstone reservoirs outnumbered the carbonates by 2:1. There were no core displays of any significant fractured reservoirs or of productive shale units.

My overall impressions were of a lot of case histories that had been well researched. There was much evidence of professional slide preparation, but too many ineffective slides appeared on the screen suffering from defects that should have been obvious to their creators. Technically, no huge insights were shared and no major scientific breakthroughs were presented. Most speakers emphasized hydrocarbon production rate increases, but paid little attention to how much of the original oil or gas-in-place would be recovered from their fields. The few estimates I heard, or obtained, ranged from 10% to 41%. In one field, attractive economic flow rates apparently excused 20% of the wells watering out rapidly. Sadly, the thrust seems to be to recover today as much as we can as quickly as possible, with far less thought for tomorrow. Although ultimate recovery projections are rising for many fields, there is still a disappointingly large amount of oil being left in the ground. Less haste, more enhanced oil recovery, and a greater consideration for the long-term bottom lines of operating companies would serve us better over the long haul. It is to be hoped that gatherings like this will help bring this about. Be that as it may, this was one of the best CSPG conferences in years.