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President's Remarks



President John A. Harder

Welcome to the first In-Site of the year 2000.

What a time to be in the Oil and Gas Business! Gas prices are setting record highs and oil is still very strong, but the common shares of many junior companies are trading at remarkably low multiples. Year end earnings of most producers should be fabulous. Any day now we will be 'discovered' by the investment community.

CWLS elections are upon us again, although they may be a little tame compared to the US and Canadian federal elections. Nominations are open at the time of writing, and I would encourage you to volunteer in some capacity. If an executive position does not appeal to you there are numerous committees that need help. I certainly have found my involvement to be educational and worthwhile.

This winter promises to be exceptionally busy. Rig counts are already very high, with more rigs being added. This sometimes translates to less time available for Society work. I want to thank all the people who contributed to this issue and encourage our membership to continue supporting the CWLS.

I will close by wishing you a Merry Christmas.

John A. Harder
President, CWLS



CWLS Digital Formation Resistivity Factor Catalogue

The CWLS plans to provide a new service to its members in the form of a digitized Formation Resistivity Factor (FRF) catalogue. Currently, all FRF data is in microfiche format at the AEUB. Guidebook G-14 contains an alphabetical listing, by formation name, of all FRF data submitted to the AEUB. At this time, we ask all members to submit "forgotten" or recent special core data to the AEUB and to the FRF committee. Michael Cheng and myself have started working on the data format. In addition, both ambient and stressed FRF, resistivity index (RI), porosity and permeability data will be included.

The need for a digital FRF catalogue is obvious. To improve our daily evaluations of SW and reserves of complex reservoirs a digital catalogue would be invaluable. Archie's equation still forms the basis of many SW calculations with FRF being a very significant parameter. Two important steps involving FRF are necessary in the proper calculation of SW. First FRF is determined using the familiar $FRF = f - m$ equation. The cementation exponent 'm' is widely variable in carbonates and many of the pore type changes are not adequately captured when log-derived methods such as Pickett plots are used. For example, a Pickett plot

($\log R_a$ versus $\log f$) might result in a slope of $m = -2.2$ when in fact laboratory measured values show a range from -1.8 to -2.6 . Secondly, after a proper determination of FRF, the next step can be completed where R_o , or the resistivity of the rock 100% saturated with formation brine is determined ($R_o = FRF \times R_w$). With an accurate R_o value, the petrophysicist is well on the way to an accurate estimate of S_w as well as reserves.

Again, we welcome any volunteers and suggestions for the upcoming digitized FRF and special core catalogue. Plans are to produce a floppy or CD with an Excel style of data that will be reasonably priced for members. We will start with the Alberta special core database, move next to British Columbia and then finish with Saskatchewan. Michael Cheng and I can be reached via E-mail mike.cheng@canpet.com and taras.dziuba@chel.com, or by phone at 234-6921 and 260-1667.

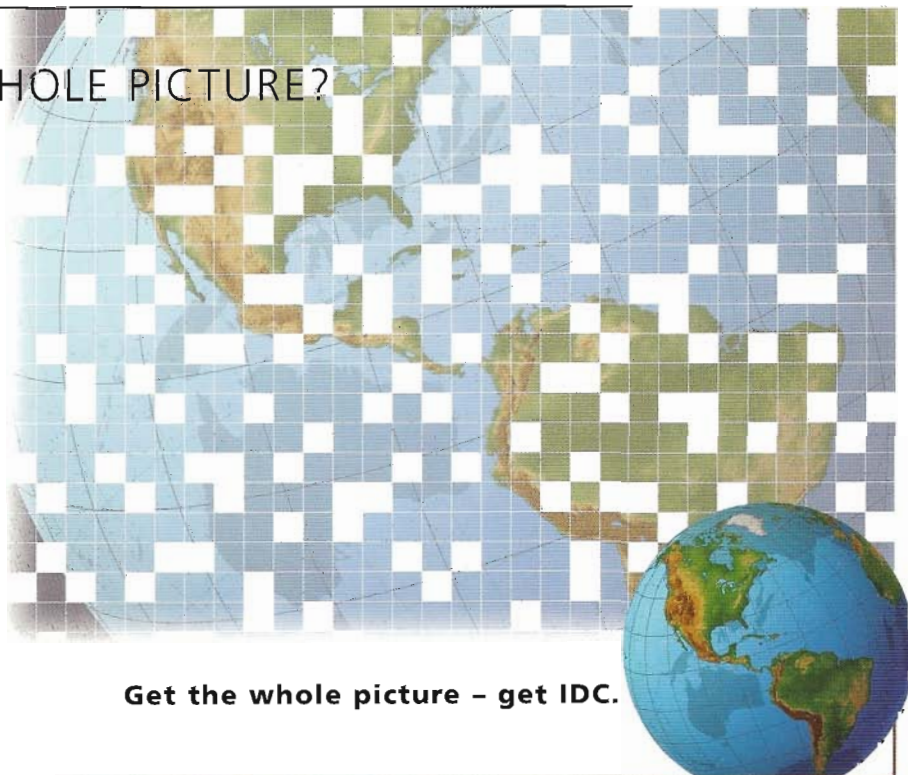
Taras T. Dziuba

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LAS 3.0. – An ASCII format for the New Millennium

Kenneth Heslop – Oakrock Ltd., Calgary
 Jim Karst – Schlumberger Data and Consulting Services, Calgary
 Stephen Prenskey – Consultant, Silver Spring, MD
 Dennis Schmitt – Texaco Upstream Technology, Houston

Introduction

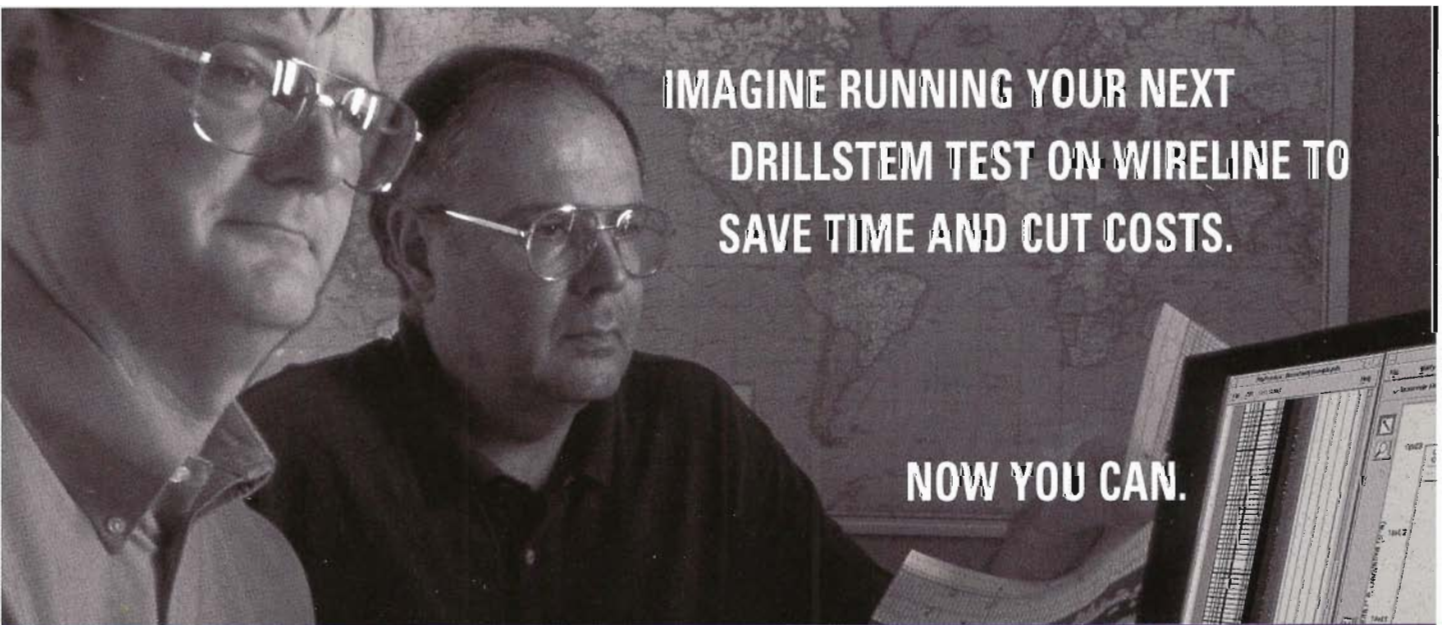
Some say it's hard to improve on a good thing (LAS 2.0) but it has happened. In response to user input, the LAS standard has been expanded to incorporate new data types and enhance well data exchange between users. From the outset, the LAS Committee was determined to keep the founding principles of LAS alive. The result is a small, transportable, well described and user friendly format. In most cases we have only added to the previous specification, seldom taking away.

The LAS Committee would like to thank both the CWLS and the PPDM for their sponsorship and support of the project.

See www.cwls.org/las_info.htm and www.ppdm.org/las30_info.html for current LAS 3.0 documentation.

What's New

- Well location data has been improved.
- The specification has been extended to officially include five new well data types and can be extended to include others. Core, Drilling, Formation Tops, Inclination and Test data sections have been defined. Suggested minimum content is also included for each new section.
- The ability to have multiple instances of any section or data. Multiple runs are now easy to include.
- Handling of multi-index (such as waveform) data.
- Referencing, where one parameter can now be "connected" to another.
- Ability to specify zoning of parameters or channels.
- Additional data formats are now supported. Floating point, Text, Integer, Exponential, Date and Time are defined.
- New delimiters (Tab and comma) to enhance the usability of LAS.
- Tilde section naming and order are now controlled.
- Consideration for a new Log Codes structure to replace API codes.
- WRAP Yes structure and the entire ~ Other section has been dropped. (continued on page 4)



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Most Version 2.0 LAS files can be converted to Ver 3.0 by adding five parameter lines (one to ~Version and four to ~Well), making sure the WRAP structure is NO and changing the VERS value to 3.0. This will make upgrading current LAS writing systems to Ver 3 (for log data only files) as easy as possible.

Industry Exposure/Adoption

We have significant industry interest already. Here is a summary:

- **PPDM.** Working with the PPDM staff, we have created a PPDM to LAS 3.0 conversion mapping. This will be shared with all PPDM members at the PPDM AGM in October.
- ***Eastern Canada Standards Workgroup.** This consortium of Canadian East coast operators and regulatory agencies is considering adopting LAS 3.0 as their preferred data exchange and regulatory submission format.
- **SPE paper.** A paper was submitted to SPE last spring. See SPE 55690
- **GeoCanada 2000 Poster session.** A poster session paper was presented in May at GeoCanada 2000.
- Schlumbergers' next release of their popular "Log Data Toolbox" will include a DLIS to LAS

converter software that writes LAS 3.0 format for log data. They will also distribute the new LAS Certify program.

Structure vs. Content

The standard is now defined in two distinct parts—**Structure** and **Content**.

Structure relates to how to format the sections, lines and individual data items within a LAS 3.0 file. The location and usage of delimiting characters within lines is an example of a **Structure** rule. The LAS 3.0 standards documentation for **Structure** is what is currently completed and released.

Content relates to the specific mnemonics, formats, units, sections, etc that are used when generating a LAS 3.0 file for a specific purpose. The current LAS submission requirements of the Energy Utility Board (EUB) for Alberta that state that a specific list of ~Parameter section mnemonics must exist is an example of a **Content** rule.

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It was very tempting to stop at the Structure portion, but it was recognized that assisting the industry to meet content requirements benefits all parties. Currently many LAS suppliers struggle to keep up with LAS content requirements of their many customers. It is hoped that a public forum for sharing these content requirements will improve satisfaction for both the suppliers and the end users.

Thus a Content document will follow. That document will be constantly revised as various governmental and industry groups develop their own minimum content requirements. The Energy Utilities Board requirements will be the first to appear, as they affect users immediately.

To further enhance this aspect, new Certification software for Version 3.0 is now being developed (LAS Certify, Windows 95 and up). It will check both Structure and Content rules. It will determine not only that an LAS file complies to the Structure specifications, but also that it is compliant with a selected Content rule set as well. This program will also check LAS Ver 1.2 and 2.0 files and is intended to supercede the old DOS Certify as the "standard" certification program.

Any group is welcome to supply its content specifications to the LAS Committee. We will convert this to an electronic form that LAS Certify will be able to read. The resulting specifications file could then be distributed to interested parties and the LAS Certify program used to check for compliance to the Content rules. The latest definition files will always be accessible from the LAS web site.

Proposed Seminar/WorkShop

We feel there is a need to hold a workshop for those who have an interest in learning the details of LAS 3.0. The objective is to help those who will be handling, using or creating LAS 3.0 data by getting all involved parties on common ground.

We need to hear from those who would like to attend such a workshop and to provide feedback on what they would like to see covered. Please contact Kenn Heslop at kenneth.heslop@oakrock.ab.ca and let us know.



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Publication Committee Remarks

Welcome to the first in site for 2000.

Starting with this issue, we will be publishing a list of curve mnemonics commonly used by service companies for their different measurements. We realize that most of this information is available from other sources, but it is not always handy. The intention is to create a concise list of the most commonly used curve names for each of the service companies in order to make dealing with digital data a little easier.



2000 CWLS Executive
(standing, left to right) P. Miller, M. Ducheck, S. Corti, M. Howard, R. Badry, B. Menard, J. Earley
(seated, left to right) J. Harder, R. MacPherson,

In Memorial

Leo Vladicka, passed away in Calgary on Tuesday, September 19, 2000 at the age of 82 years. Leo was well-known in the petroleum industry as a consulting engineer and was a life member of APEGGA. He served as CWLS president in 1962, and was treasurer for the society during 1956.

Committee Members

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Rob Badry
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Members on the Move

Member	Previous Location	New Location	City	Phone
Reigh MacPherson	Mobil	Anderson Exploration	Calgary	403-232-7605
Jim Hayward	Suncor	Husky Energy	Calgary	403-298-7196
Simon Corti	Schlumberger (Calgary)	Schlumberger	Brooks	403-362-3437

2000 C.W.L.S Executive

Position	Name	Company	Phone	Fax Number
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Past President	Reigh MacPherson	Anderson Exploration	232-7605	232-5597
Vice-President	Max Howard	Computalog Ltd.	298-3816	298-3880
Secretary	Jim Earley	AEC Oil & Gas	261-2596	716-2596
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Chairman of Committees	Mark Ducheck	Tucker Wireline Services	232-1713	264-2118
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