



Snow covered Sierra Blanca Mountains, Van Horn , TX, John Fisco

PBS-SEPM NEWSLETTER

November 2019

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KEY DATES For November & December 2019, and January 2020

NOVEMBER 2019

- **11: Veteran's Day**, A HUGE THANK YOU TO ALL OUR VETERANS, WE APPRECIATE WHAT YOU HAVE DONE FOR THIS COUNTRY AND ITS PEOPLE
- **14: WTGS Fall Social**, Kessler's Hall, 5:00pm—9:00pm
- **20: SIPES Luncheon**, Midland Country Club, 11:15am-1:00pm, Dwayne Purvis, Reading the Signs of Shale Declines
- **26: PBS-SEPM Luncheon**, Midland Country Club, 11:30am– 1pm, Dr. Miles A. Henderson
- **28: HAPPY THANKSGIVING**

DECEMBER 2019

- **06: WTGS-PBGS-SEPM-SPWLA Christmas Party**, Ron Bianco's Residence, 6:00pm
- **10: WTGS Luncheon**, Midland Country Club, 11:30am-1pm, Joel D. Walls, Integration and Comparison of Physical and Digital Rock Properties from a Delaware Basin Well

JANUARY 2020

- **21: PBS-SEPM Luncheon**, Bush Convention Center, 11:30am-1pm, Cory Hoffman, Carbonate Log Analysis
- **28: SPWLA Luncheon**, Carrasco Rm, 11:30am-1pm, TBD

President's Column

Happy Holidays my fellow members! It has been a tough few months here in the Permian, as some of us are experiencing changes within our company or the sad fact of no longer belonging to a company. As we all know the oil and gas industry is a cyclic business, it is important to remember in the low times such as these, that we are all a part of a supportive community and to rely on the Permian Basin Section to bring relief to our weariness in the form of learning luncheons and events.

PBS-SEPM has finally updated the website to a more secure and user-friendly format. A huge thank you to Frank Fullbright for helping us out on all our requests and doing them as quickly as possible. The new features include: an online sign up for luncheons and upcoming events; a forum tab for open discussions about the speaker talks, field trips, core workshops, or job posts; the newsletter archive; shopping for publications; and donating/sponsoring. Please check it out and send us your thoughts, either through calling or emailing. We appreciate your insight. Another update is that we have found access to the Permian Basin Section SEPM LinkedIn page, and will be using that forum to post upcoming luncheons and events as well.

Speaking of upcoming events, we are excited to share with you that we will be partnering with WTGS-PBGS-SPWLA in a Multi Society Christmas Party. We want to share the joys of the holiday as a unified group of geologists, geophysicists, petrophysicists, petroleum engineers, and whatever you proudly call yourself. There will be food, drinks, potluck desserts, games, and prizes. We are currently looking for sponsors to help fund this event, and whatever is not used will become a donation to the local charities: Casa de Amigos, Family Promise of Midland, Midland Humane Coalition, and the Safe Place of the Permian Basin, as they are in constant need of community outreach. Please see page 6 for more information about these charities. Any size of donation is appreciated, and we would love for y'all to join us in the festivities.

We are wrapping up the summer & fall season of luncheon speakers. We appreciate those that were able to join us and grant our speakers a captivated audience. For the winter & spring season, we are still seeking a chairperson and committee member to help Dan Scott with recruiting lecturers with trending topics to speak at our luncheon lectures. We will have our very own Cory Hoffman sharing the updates on his software program, Carbonate Log Analysis Spreadsheet, v.5, as the January speaker.

We look forward to seeing you all at the next luncheon, Tuesday, November 26th, at the Midland Country Club. Have a Thoughtful Thanksgiving, a Cozy Christmas, and a happy start to the New Year.

Sandra Elliott

PBS-SEPM President 2019-2020

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Folded Andes Mountains GSA Field Trip 01/2002, Ross
& Barney C McCasland



PBS-SEPM Luncheon Talk – October 29, 2019

Greg Salter

“Pressure-Dependent Permeability of Shale Reservoirs and Implications for Estimated Ultimate Recovery”

Vice President

Integrated Reservoir Solutions Division at Core Laboratories

Tuesday, October 29th, 2019 - [Midland Country Club](#), 11:30 a.m.

Abstract

The bulk permeability of shale reservoirs has contributions from matrix, open natural fractures (if present), un-propped hydraulic fractures, and propped hydraulic fractures to varying degrees. Through the joint industry projects conducted by Core Laboratories, the permeability and/or conductivity for these have been measured. These data have all demonstrated a decline to varying degrees with increasing overburden pressure, which can be a proxy for drawdown and pore pressure depletion and has significant implications on well performance. The presentation will review case history comparisons of open-choke and restricted-rate wells and its effect on EUR and whether the initial permeability loss due to high drawdown is reversible and what would happen if an open-choke well is later rate-restricted.

Biography



Greg Salter has been employed by Core Laboratories for over 39 years serving in a number of different capacities and geographic areas. Over 20 years of this service was in the Petroleum Services Division either working in, or directing, laboratory operations including approximately 10 years of international service. He is currently serving as Vice-President of the Integrated Reservoir Solutions Division of Core Laboratories where he is responsible for project management and technical review of all data and resulting interpretations utilized in the various Joint Industry Projects offered by the company. He has most recently focused on the development of core analysis technologies for shales and mudstones and their application and holds a BS in Mathematics from the University of Houston (1985).

THANK YOU ALL WHO CAME OUT!





PBS-SEPM Publication Carbonate Log Analysis Spreadsheet v. 5.0

COMING SOON

By: Cory L. Hoffman

Designed for Microsoft Office Excel 2013



Carbonate Log Analysis Tool

NEW AND IMPROVED!

- Analyze up to 7500 data rows (depths)
- Color-code up to 5 different series of data points on plots
- GR, Sw, and porosity filters hide unwanted points on plots and analyses
- Quick Rt, Quick Rxo, Sonic Porosity, Total Porosity from raw input data
- Input data plotted: GR, N/D/Sonic/Total porosity, Rxo and Rt
- Performs 12 carbonate log analysis techniques simultaneously:
 - Secondary porosity using sonic or resistivity data
 - Archie Sw, PRI, Ratio Water Saturation, MHI, BVW
 - Variable 'm' Sw (Nugent, Borai, Focke&Munn, Shell, or user-defined)
 - Uses Rz technique if no Rxo device present
- Interprets results & highlights potential pay zones meeting user cutoffs
- Generates interpretive plots: Dew, Buckles (BVW), Pickett
- Includes guide to interpreting log analysis results

Core Data Analysis Tool

- Integrates capillary pressure and core perm/porosity data
- Winland R35 and K/Φ methods (pore size) for rock quality
- Plots up to 20 capillary pressure curves
- Plots depth profiles of porosity, permeability
- Plot multiwell logs subsea to surface
- Includes guide to interpreting log analysis results

Core Analysis Tabs:

- *NEW*** Visually adjust core to log depths using GR or Porosity data
- *NEW*** Added BVW, RQI, Lucia apparent rock fabric number calculations from core data
- *NEW*** Advanced Height above FWL inputs / calculators
- *NEW*** Height above FWL plots (oil-brine / gas-brine systems)

Carbonate Log Analysis Tabs:

- *NEW*** User-customizable sonic inputs for sonic porosity calculations
- *NEW*** M-N Mineral ID plot
- *NEW*** Rw Apparent technique to estimate Rw
- Improved Rxo / Rt correction logic

INTRODUCTORY PRICE: \$50 (all proceeds go directly to PBS-SEPM)

- Get 2 tools for 1 low price — spreadsheet includes carbonate log analysis AND core data analysis tools
- Flash drive contains current version (Excel 2013; v. 4.0) and previous version (Excel 2010; v. 3.2) of spreadsheet
- Price includes free upgrades within version class (v. 3, v.4, etc.) for each registered user

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PBS-SEPM Luncheon Talk – November 26th, 2019

Dr. Miles Henderson

“Investigating redox conditions of the early Paleozoic Ocean: Isotopic and elemental constraints from the Middle Ordovician Argentine Precordillera”

Assistant Professor of Geology
Department of Geosciences at The University of Texas Permian Basin
Tuesday, November 26th, 2019 - [Midland Country Club](#), 11:30 a.m.

Abstract

Greenhouse conditions of the early Paleozoic contributed to increased ocean stratification and the development of widespread deep-water anoxia. An expanding geochemical dataset from marine sedimentary rocks from the Argentine Precordillera suggests changing nutrient availability under fluctuating climatic conditions during the Middle Ordovician. Changes in ocean circulation patterns resulting from global cooling in the Middle-Late Ordovician would have led to the disruption of stratified ocean waters characteristic of early Paleozoic greenhouse environmental conditions, upwelling of nutrient-rich deep water, and perturbations in oceanic nutrient budgets. Evidence for such oceanographic change is found worldwide in the C- and S-isotope records of marine carbonate in the Middle Ordovician as the Middle Darriwilian isotope carbon excursion (MDICE) and large changes to the marine sulfur cycle recorded in carbonate associated sulfate (CAS) and pyrite (PY).

Carbon isotope compositions of early Darriwilian strata from the Argentine Precordillera suggest differentiated surficial and deep-water reservoirs characteristic of greenhouse environmental conditions. This is consistent with previously reported $\delta^{34}\text{S}$ patterns observed in early Ordovician strata suggesting growth of the marine sulfate reservoir and the persistence of deep-water anoxia. The S-isotope compositions of CAS and pyrite in the Ordovician has been explained by a dual reservoir model with oxidized surface and deep-water (anoxic) reservoirs that permit isolation of redox reactions between reservoirs. Disruption to stratified ocean conditions associated with progressive ventilation of deep-water environments via enhanced ocean circulation should be reflected as a stepwise change in the $\delta^{34}\text{S}$ values of coeval pyrite and sulfate between shallow and deeper water environments. Further constraints on the redox conditions during the middle Ordovician are provided with Fe-speciation and trace metal data from basinal black shale.

Biography



Dr. Miles Henderson is an Assistant Professor of Geology at UT Permian Basin. He earned his Ph.D. in Geology in 2018 from the University of Tennessee, Knoxville working on reconstructing oceanographic events from Middle Ordovician carbonates and black shale. He previously worked as a geologist in environmental consulting after earning his M.S. in Geology in 2008 at the University of Tennessee, Knoxville working on the biogenicity of the Precambrian macrofossil *Grypania spiralis*. He completed a B.S. Geology at the University of Georgia in 2008.

**“You must never be
fearful about what
you are doing when
it is right.”**

–Rosa Parks
(1913–2005)
Civil Rights Activist



2ND ANNUAL MULTI-SOCIETY CHRISTMAS PARTY

WTGS – PBGS – PBS-SEPM – SPWLA-PB ... AND COUNTING



SAVE THE DATE

Proceeds to benefit the following charities:

~Casa de Amigos~

We provide comprehensive services in four main areas: Adult and Youth Education, Social Services, Health & Wellness, and Senior Services. We provide direct services, casework, mentoring, and assistance navigating referrals to other appropriate services.

~Family Promise of Midland~

Works in partnership with local congregations and volunteers to provide shelter, meals and support services to families needing assistance achieving sustainable independence. Once reached a steady state, we further assist and support families who pay a monthly fee for a home that is owned and maintained by Family Promise of Midland. Nonprofit financial empowerment loan program that helps Family Promise of Midland guest families move to greater levels of self-sufficiency through financial education and reliable transportation

~Midland Humane Coalition~

We work with Midland Animal Services and other local rescue groups to select healthy & adoptable pets, pull them from the euthanasia list and take them under our wing so we can find them new homes.

~Safe Place of the Permian Basin~

The mission of Safe Place is to break the cycle of family violence by empowering individuals to make safe and healthy choices through awareness, counseling, advocacy and shelter, while promoting hope, healing and dignity.

Send an email to info@pbs-sepm.org if you are interested in a sponsor form or making a small donation.

PBS-SEPM Publications



PBS-SEPM Symposia And Core Workshops on 3 DVDs



This is your opportunity to have the entire PBS-SEPM publication library (1955 – 2007) at your finger tips. There is a fully searchable Table of Contents—find a topic or author just by typing in the word(s). All publications are in Adobe PDF with all major articles being bookmarked, and all the figures are linked in the text for quick reference. Those areas that are off limits to geologists like the Glass Mountains or Sierra Diablos have been written up in these publications. Numerous out-of-print publications and figures and/or plates not published in the original guidebooks are now available in this library.

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DVD III - Core Workshops (82, 83, 85, 98) & Special Publications (A, 88-28, 96-39, 84)

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PBS-SEPM Executive Board (2019-2020)

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*Do you have an idea for an **interesting luncheon talk?** Have a **core work-shop** you'd like to present? Have some **suggestions** on how PBS-SEPM can better serve the geologic community? **Send us an e-mail to share your idea,** your PBS-SEPM Executive Board wants to hear from you!*

Corporate Sponsorships (2019-2020) - PBS-SEPM is grateful for the generosity of these fine corporate sponsors !



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***My country
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world, and
my religion
is to do
good.***

**-Thomas Paine
(1737-1809)**

**Political Activist,
Philosopher,
Revolutionary**

If you are interested in a sponsorship opportunity, please call PBS-SEPM for more details at (432) 279-1360 or e-mail info@pbs-sepm.org.



Sponsorship Information (2019-2020)

This year we plan on zealously pursuing sponsors to offset the cost of the luncheons, workshops, and field trips. We have revamped our sponsorship contribution into three categories and will run the same as the membership year, June 1st to May 31st each year.

Gold: \$1000.00: company logo on all PBS-SEPM events, newsletters, the website and new publications

Silver: \$750.00: company logo on all PBS-SEPM events, newsletters, and the website

Bronze: \$500.00: company logo on all PBS-SEPM luncheons, newsletters, and the website

We are compiling a list of industry companies, vendors, and local businesses to send out our sponsorship request. We believe encompassing the Midland businesses, such as grocery stores, restaurants, hardware stores, etc, that all play a role in keeping the Permian Basin area up and running should also be considered as potential sponsors for our events.

Individual Sponsors of PBS-SEPM (2019-2020)

Individual sponsors are advertised on the PBS-SEPM website and each newsletter. Cost is \$85/year. If you are interested in a sponsorship opportunity, please call PBS-SEPM for more details at (432) 279-1360 or email info@pbs-sepm.org.

Your Business Card Could be here!

Your card will be in every newsletter for one year from August to May, on the PBS-SEPM Website, and on the PowerPoint shown prior to every luncheon.

“Every good act is charity. A man’s true wealth hereafter is the good that he does in this world to his fellows,”

-Jean-Baptiste Poquelin
(1622-1673)
French playwright, actor, & poet



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If you are interested in a sponsorship opportunity, please call PBS-SEPM for more details at (432) 279-1360 or e-mail info@pbs-sepm.org.

“It’s not how much we give but how much love we put into giving,”

**-Mother Teresa
(1910-1997)**

**Albanian-Indian Ro-
man Catholic nun and
missionary**

PBS-SEPM is the Permian Basin Section of SEPM—the Society for Sedimentary Geology. However, you do not need to be a SEPM member or a geologist to join PBS-SEPM.

Our non-profit society relies entirely upon the efforts of dedicated volunteers to serve the geological community—primarily through educational events. These events include monthly luncheon talks, core workshops, annual field trips, and special geological publications. Additionally, we are involved on the college campuses—reaching out to future earth scientists through scholarships, discounted memberships, and offering full-time geology students the ability to participate in professional-grade field trips at little to no cost.

If you would like to join PBS-SEPM, you may visit our website (www.pbs-sepm.org) to learn more about us, download a membership form, and learn how to get involved.

Scholarship and Distinguished Speaker Events (2019-2020)

Wendell J. Stewart Fund: so named for the famous sequence stratigrapher, was initially funded by the family, and then later through PBS-SEPM members who have contributed over the years. In the past, the scholarship was established to award high school students intending to pursue a college education in the geoscience field (declared major), and had evolved to include college students actively pursuing a geology degree when there were no other qualified candidates. Funding for this scholarship has waxed and waned over the years with the changes of the petroleum industry and because this scholarship is set up in such a manner that only the interest can be used to distribute funds, most scholarships in the last 30 years have been awarded through the PBS-SEPM main budget and not the scholarship fund.

Robert Read Distinguished Lecturer Fund: was founded to honor a bright, young geologist who had been an active member of both PBS-SEPM and WTGS and was tragically killed by a drunk driver. Donations from various members of both societies contributed to a membership donation fund that both encourages our continuing education efforts by helping offset the cost of bringing in a distinguished lecturer, usually in geosciences, but not required. However, since its creation, PBS-SEPM has never used the funds to bring in a lecturer. This year we plan on bringing a speaker in for an event in early spring. *Lee Krystinik, past president and distinguished lecturer of the AAPG, will be joining us in March at the Bush Convention Center for a talk regarding climate change. He hope y'all can join us for our inaugural event.*