**FEBRUARY 2010**

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**MARCH 2010**

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**President’s Column**

How many of us were ready for the first decade to be over after sailing through those tumultuous financial seas? The Society was no exception and finished the 2009 fiscal year with a dark squall hovering over its books. Wait! Before you turn the page, let me assure you that, while it was a nasty one, the society is managing to weather the storm. You will see in this financial brief that as we enter 2010, the mid-point of our new fiscal year, a few bright spots are beginning to emerge, but it will take a concerted effort by the entire GSH crew (members) to help us realize potential. What are we keeping our eye on as we navigate into the second half of fiscal year 2010? 1. The Endowment Fund (Merrill Lynch account) – a professionally managed investment which acts as our long-term reserve/savings account. 2. The Bank Accounts (checking and savings) – from which we pay day to day operations.

**Technical Luncheon**

Date 1:
Date: February 16, 2010
Time: 11:30 a.m. – 1:30 p.m.
Location 1: Fugro (New Omni Palace)
12121 Westheimer Rd.
Houston, TX 77077

**Technical Breakfast**

Date: February 10, 2010
Time: 7:00 a.m. Social
7:30 a.m. Presentation
8:00 a.m. Q & A

**Announcements**

1. Rock Physics SIG
2. Spring Symposium Registration
3. Welcome Assistant Editor
4. Calendar

**Technical Luncheon continued on page 7.**

**Technical Breakfast continued on page 10.**

**Sign up now for the GSH Spring Symposium! see pages 8 & 9**

**GSH/SEG 2010 Spring Symposium.**
Editor’s Note:
To ensure your information reaches the GSH society members in a timely manner it must appear in the appropriate newsletter issue. Please note the following deadlines and plan your function’s publicity strategy accordingly. Items must be received on or before the corresponding deadline date. Please send any obituary or memorial articles of recently deceased members to Glenn Bear, editor, at glenn.w.bear@exxonmobil.com. If you have any questions please call Glenn Bear at 713/431-6583.

Technical Breakfast
Wed., Feb. 10, 2010

Technical Luncheon @ Pellazio
Tues., Feb. 16, 2010

Technical Luncheon @ PCH
Wed., Feb. 17, 2010

Rock Physics SIG
Wed., Feb. 17, 2010

ATTENTION GEOPHYSICAL WIVES!
HPAC is kicking off their 2010 year with a fun Game Day Luncheon. Enjoy a variety of games while enjoying the opportunity to visit with old friends and meet many new, interesting people. For those of you that have not joined the organization you are missing informative programs and fun times with people that have been associated with the Petroleum industry throughout the years. We urge you to join us!

Game Day Luncheon
Monday, February 15, 2010
10:00 a.m. - 2:00 p.m.
Junior League Tea Room, 1811 Briar Oaks

Daisy Wood
Informal Style Show Coordinator, SaraNan Grubb

Committee Members
Linda Dobbins
Kathi Hilterman
Kathy Duncan
Norma Jean Jones
Linnie Edwards
Georgieann Massell
June Harrison
Lois Matuszak
Suzanne Howell
Suzy Stepanek

2010 GSH Newsletter Deadlines
Issue ........................... March 2010
Deadline .................... February 1, 2010
Issue ........................... April 2010
Deadline .................... March 1, 2010

Here’s My Card
Place your Business Card in The GSH Newsletter,
Call Lilly Hargrave for rates and information at 713-463-9477

GSH Membership Report
As of January 4, 2010
Active 802
Associate 167
Emeritus 55
Students 8
Honorary 29
Lifetime 30
Total 1091

Serving The Oil & Gas Industry On The Texas Coast
For More Than 30 Years
We are full spectrum ZNodal technology

February 2010 Geophysical Society of Houston 13

OK, we admit it. We get really excited about nodal data. All kinds of nodal data. From land data acquired in dense urban areas or pristine wilderness to marine data from the shallowest to the deepest regions of the ocean floor. All from our ZNodal Systems. We love to collect it, license it, process it and image it with specialized software we’ve designed to optimize the unique advantages of nodal data.

And we are good at it. We’ve been at this seismic data collection business for over 30 years. In fact, much of our spec data has been shot with cable-less nodal systems that we developed right here at FairfieldNodal. Our ZNodal Systems are cost effective, reliable and available now for your next project anywhere in the world. And, we can assist you with the full spectrum of seismic data services from systems and acquisition through imaging.

We are not the biggest, slickest outfit in the business. We don’t wear designer suits or drink chocolate martinis. But you can depend on FairfieldNodal for the highest quality nodal data systems and information anywhere. It’s what we’re all about.

President’s Column continued from page 11.

GROWING THE BRIGHT SPOTS

There are many ways in which GSH members can help the society. How? Simple. By renewing your membership each year, by letting GSH know of corporate sponsorship opportunities that might exist within your company, by bringing a colleague to the technical luncheons, breakfasts, lectures, courses, social events and symposiums.

In fact, you can start today by making plans to bring a colleague to the GSH/SEG Spring Symposium, which will be held on March 10th and March 11th. The Spring Symposium, which honors seismic pioneers, is the society’s premier technical forum. The technical program will consist of invited and contributed papers on recent advances in data processing theory and algorithms. Information about registration and sponsorship can be found on page 9 or you can visit www.gshtx.org.

Welcome Gabriel Perez
Our New Assistant Editor!

We’ll appreciate your help!

Technical Breakfast continued from page 1.

handle such complexities. Ray-based algorithms cannot easily handle prism wave propagation and one often needs to smooth the velocity model. One-way wave equation migration has steep dip limitations and cannot handle prism waves. As a consequence, in this study we use a reverse time migration (RTM) algorithm in our velocity model building workflow to define the salt geometry.

A key factor in this model building loop is the use of overhang and steep dip salt flood models as early as possible. In sediment flood we take advantage of the turning seismic waves to image very steep dips and overhangs, while during salt floods we take advantage of prism waves to image some areas of the salt walls as well as base of salt. This presentation will show examples of the inabilities of one-way wave equation and Kirchhoff methods to handle prism waves.

Another key factor in this study is the ability to use multi-Z surface interpretation in most stages of the model building. The benefits are: reduction in the number of salt-related migration runs; reduction of the salt building cycle time; simplification of the 3D visualization of the salt body; and inclusion of complex features such as Christmas-trees in the salt body.

The results of this survey show that a careful use of multi-Z surface interpretation and an RTM algorithm takes into account most of the recorded wavefield in a WAZ dataset. In specific areas acoustic forward modeling was used to support interpretation. The forward modeling exercise boosts our confidence in interpreting areas of weak top and base of salt.

Biography:
Elive Menyoli, senior geophysicist with Marathon Oil Corporation, received a Masters Degree in Physics from the University of Goettingen, Germany. He received his PhD (2002) at University of Hamburg, Germany, for work on converted wave prestack depth migration velocity analysis and application of CRS stacking technology. During this time he collaborated with the Ukrainian Academy of Science in Kiev. As a Post Doctoral Fellow (2002-2003) at Applied Geophysical Research Group in Pau, France, he studied surface related multiple suppression methods and post stack stereo-tomography. He later joined TOTAL SA (2003-2007), working in R&D on 3D depth migration and migration velocity analysis.
Killer whales produce whistles, clicks, pulsed calls, low-frequency pops and jaw claps for two overlapping functions—to communicate and echolocate.

For years PGS has been communicating closely with operators in exploration basins worldwide to help locate new prospects, to expand production from existing ones and to lower finding and development costs. Recent significant successes from our depth imaging teams are giving geoscientists clear images by using state-of-the-art migration algorithms and advanced velocity model building workflows. To find out more about the bottom line benefits of PGS data processing, please contact Frank Dumanoir at (281) 509-8354.

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3. The Museum Fund – which supports museum activities.

4. The Fund raising endeavors – that help sustain the society.

First, let me clarify that the figures reflected in this update compare the GSH fiscal year ending June 30th, 2008 with fiscal year ending June 30, 2009.

Secondly, since our current fiscal year will not close until June, 2010, we’ll give you a mid-year update generated from July 1, 2009 (when I assumed the post of Treasurer) up until December 2009, to show where the bright spots are beginning emerge.

Thirdly, we’ll highlight how fund raising endeavors are a vital contributor to GSH’s financial health and help keep the society on its course to advancing geophysics.

THE BALANCE SHEET

At the end of the fiscal year ending June, 2009, despite a nice increase of 39% in accounts receivables, GSH total assets were down by -13.7%. The Endowment Fund (Merrill Lynch) ended at $339,617.94, down from $410,132.04 in 2008 and $449,844 in 2007. The Museum Fund showed an increase of only 0.1%, and our bank accounts were down slightly by -4.1%.

The following mid-year update was run from July 1st, 2009 to December 31st, 2009. You will see that GSH overall assets are up by 10.9%. As of December 2009, the Merrill Lynch account was up 13.6%, compared to the same time in 2008. The Museum Fund is holding steady. The bank accounts are down by -12.9%, but accounts receivables went back up, showing an increase of 256.2% from 2008.

WHERE THE BRIGHT SPOTS ARE

I must thank the GSH office staff, Sandra Babcock, and Lilly Hargrave, along with our accountant, Candy, in assisting me with this update. They are always gracious whenever I need information and data.

The following mid-year update was run from July 1st, 2009 to December 31st, 2009. You will see that GSH overall assets are up by 10.9%. As of December 2009, the Merrill Lynch account was up 13.6%, compared to the same time in 2008. The Museum Fund is holding steady. The bank accounts are down by -12.9%, but accounts receivables went back up, showing an increase of 256.2% from 2008.
put forward describing the relationship of the present day Sigsbee allochthon to the precursor Louann autochthonous salt basins. These models involve a number of intermediate stage allochthonous sheets that developed from the late Mesozoic through the Palaeogene and Neogene. Regional scale models focus on the western and eastern GoM where seismically identified fold belts mark the compressional, distal, ends of the thin-skinned deformation systems. The compressional fold belts link through translational domains to time equivalent up-dip extensional provinces forming “balanced” thin-skinned deformation systems. Less has been written on the central GoM (central Keathley Canyon to central Walker Ridge areas) where although up-dip, shelf and shelf edge extension is seen. The equivalent distal portion of the thin-skinned deformation system is characterised by more enigmatic, and not clearly compressive, tectonic styles. In the central Gulf salt cored folds (which form as a result of both compression and salt withdrawal) are found in association with diapirs and salt walls that in places appear to have formed, or at least partly grew, in extension. Salt bodies are linked by extensional and strike slip fault systems and large early-formed feeders are now occupied by younger mini-basins. Despite the variability in structural style there is a geometric and kinematic coherence to salt related deformation in the central GoM. Using seismic sections, depth structure and isochore maps, salt movement in the south-central Walker ridge is described. Observations made are used to suggest why salt related structural geometries in this area vary from the well defined compressional zones seen further to the west and east. Pre-salt structural relief, original salt thickness and regional and local slope gradients are considered the key factors that control salt movements in this area. Resultant salt geometry reflects the influence of these local controls.

Biography:
Born in Northern Ireland, Rob was educated at Regent House Grammar School before studying geology at Queens University Belfast 1982-86 where he received a B.Sc. Hons degree. In 1986 he moved to the University of Natal, Durban, South Africa where he studied for a M.Sc before joining Consolidated Goldfields and working in minerals exploration for the next 6 years. In 1993 he returned to academia and in 1996 graduated from Southampton Oceanography Centre with a Ph.D in Structural Geology. In 1996 he joined Alastair Beach Associates in Glasgow and worked as a structural geologist before joining Phillips Petroleum Company Norway in 1998 where he worked as both an explorationist and structural geologist serving the Norwegian and UK offices. In 2002 Rob joined Statoil AS in Stavanger as a structural specialist in their Technology division. He joined their Global Exploration group in 2005 and moved to Houston where he worked as part of a Joint Venture team at ExxonMobil. Earlier this year Rob moved back to the Global Exploration Technology division where he has taken the position of Lead Advisor Salt Tectonics. He is currently based in Houston.
Date: Wednesday, February 17, 2010  
Time: 5:30 pm - 6:30 pm  
Location: CGG Veritas - Visualization Center, 3rd Floor, 10200 Town Park Dr, Houston, TX 77072  
Speaker: Ronny Hofmann, Shell  
Title: “Measurements of the Effective Rock Grain Modulus”

Abstract: While measurements for single minerals like Quartz, Calcite, Feldspars, and Oxides are reported and well documented, the properties of composite rocks are rarely measured. Common practice to obtain the rock grain or mineral modulus, which is required for most fluid substitution methods, is to use the results of the XRD (X-ray diffraction) analysis and apply a Voigt or Hill average. In this study several samples with varying mineral composition have been tested to identify the influence of mineral composition on the grain modulus of these rocks. The measured grain modulus can vary substantially from the calculated Voigt-Reuss bounds. In some cases, the clay fraction appears to have a strong influence (Rim SS). On the other hand, when stiff framework minerals are present such as sidelite, clays have a small apparent influence on the average grain modulus.

Biography: Ronny Hofmann received a M.Sc. degree and a PhD in Geophysics from the Colorado School of Mines. Currently he is working in the Exploration Research Team at Shell International E&P. He is interested in rock physics and its application to reservoir characterization and time-lapse seismic. Recently he has been working on properties of shales and shale gas.

For reservations, sponsorships, and latest information visit the GSH website or contact the GSH office: www.gshtx.org  
713-463-9477  
See Registration Information On Page 9.