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Day Two: Survey of 15 North American Emerging Shale Plays

Thursday, January 12, 2012

7:00 – 8:00 Continental Breakfast and Registration

8:00 – 8:15 Opening Remarks by Chair
Scott D. Whitby, *Partner*, MacPherson Leslie & Tyerman LLP

8:15 – 9:00 **Flyover of Leading U.S. Unconventional Resource Plays**

- Overview of unconventional plays that are leading shale growth and development
- What is current shale activity and what is expected in the near future?
- Who are the leading players and new entrants in specific regions?
- What are the metrics driving shale development and business?
- What is the road ahead? What does 2012 look like?

Don Warlick, *President*, Warlick International

9:00 – 10:00 **Utica Shale Land Rush**
Many oil and gas experts believe that Utica will be a major shale play in the U.S. as it is expected that this area will see tremendous drilling activity over the next 5-10 years. Geologists have been saying that Utica shale formation might hold enormous oil and natural-gas reserves and this promise has oil-and-gas companies spending a lot of money to snap up mineral rights to land. Ohio didn't get very much action when landmen were leasing the Marcellus; however, now that the Utica Shale is getting attention, leasing activity in eastern

Ohio is finally taking off. The area has abundant water, which is useful for fracking; it has an existing transportation system and it has a large base of experienced workers in the region. Chesapeake's Utica acreage is worth anywhere from \$15 billion to \$20 billion and having achieved successful results from recent drilling activities in eastern Ohio, Chesapeake has announced the discovery of a major new liquids-rich play in the Utica Shale. There are other players with exposure to the Utica shale as well, such as large-cap companies like Range Resources, Consol Energy, and XTO. Each of these companies will benefit from this huge shale discovery and it will attract additional smaller companies, which will line up to buy acreage in the producing shale area. This presentation will discuss potential land, legal and regulatory issues that will present challenges to development of the Utica activity in Ohio.

Robert Campbell, *Energy Markets Columnist*, Reuters
Neal Pierce, *Of Counsel*, Steptoe & Johnson PLLC

10:00 – 10:30 Networking Break

10:30 – 11:00 **Parameters that Signify Onset of the Oil Window in the Middle Bakken Shale Member**

- Depositional system of the Upper, Middle, and Lower Bakken Shale Members and that of the Sanish Sand
- Middle Bakken Shale Member that is located in Parshall Area, Williston Basin
- Rock Pyrolysis evaluation of potentially producible Middle Bakken oil and condensates
- Timing of organic porosity development vis-a-vis that of generation and expulsion of hydrocarbons in Parshall Field Area Middle Bakken Shale
- Organic porosity development and onset of the oil window in the Middle Bakken Shale
- Hydrogen Index values indicative of onset of the oil window in the Middle Bakken Shale
- Contrast of microfractures system in an immature Bakken Shale kerogen with the microfractures system at the onset of the oil window in the Middle Bakken Shale

Albert Maende, *Applications Geochemist/Geologist*, Wildcat Technologies, LLC

11:00 – 11:30 **The Monterey Formation “California’s Sleeping Giant” Is Awakening Again**

- What is the Monterey Formation and what are the major attributes of a world class petroleum system?
- The exploration and development history of the Monterey
- The newest Monterey shale play
- The competitive landscape and Venoco's strategy

Mike Wracher, *Vice President of Exploration & Sacramento Basin*, Venoco, Inc.

11:30 – 1:00 Group Luncheon

1:00 – 1:30 **North Texas/Oklahoma Shales**

In North Texas, the Barnett Shale has gone “oily” in the “Combo” play. The liquids-rich Cana Woodford Shale in the Anadarko Basin of Oklahoma is extending to the northwest and the Ardmore Woodford shale is developing in the south. In the Texas Panhandle and western Oklahoma, the liquids-rich Granite Wash, Tonkawa and Mississippi Lime tight sands have taken off after benefitting from technologies developed in the shales. This presentation will study the costs and economics of each play and review the important players that are actively involved in each play.

James W. Spann, *Managing Partner & CCO*, Energy Spectrum

1:30 – 2:00 **South Texas Shale: Eagle Ford Expansion**

While new shale plays are capturing headlines across North America, emerging liquids-rich plays such as the Bakken, Niobrara, and portions of the Marcellus and Eagle Ford are particularly exciting. Historically high oil/gas price ratios and NGL/gas frac spreads are driving industry investment in oil-producing and NGL-producing windows, respectively. Massive new midstream infrastructure investment is required from the wellhead to the burner tip in each of these shale plays. Geographically isolated shales such as the Bakken and Eagle Ford are also driving additional investment in basic infrastructure such as utilities, roads and social infrastructure that challenges the abilities of local communities. This presentation will present a more detailed examination of these drivers and the spectrum of emerging business opportunities with respect to the Eagle Ford Shale in South Texas.

Jeffrey J. Spearman, *Vice President, Oil, Gas & Chemicals*, SAIC Energy, Environment & Infrastructure, LLC

2:00 – 2:30 **West Texas/New Mexico Shale: New Life of Permian Basin With Shale Oil Development**

- Overview of the unconventional plays in West Texas/New Mexico: Wolfberry, Wolfbone, Bone Springs, Avalon and Wolfork
- Status report on leasing, permitting, rigs, and production activity trends in the area
- What are the benefits and limitations of operator benchmarking of drilling and completions operations
- What are current best practices that can be applied to other similar oil and gas plays
- Conclusions: EUR and economic evaluations

Jason Simmons, *Senior Research Analyst*, Drilling Info, Inc.

2:30 – 3:00 Networking Break

3:00 – 3:30 **Tuscaloosa Marine Shale**

The Tuscaloosa Marine Shale (TMS) play is an unconventional, source rock shale play that is currently active in Louisiana, estimated by a 1997 Louisiana State University/Basin Research Institute study to contain possibly as much as 7 billion barrels of oil reserves. The Louisiana Office of Conservation is proactive in the regulatory aspect of the TMS play, conducting well permitting, unitization hearings and being directly involved in the water usage issues, in a similar manner to the Haynesville Shale play in northwestern Louisiana. To date only a handful of wells have been drilled since the original tests in the 1970's and recent wells drilled to the TMS in the trend are still being evaluated and the play is still in its infancy. The current exploration techniques appear to center around utilizing the latest horizontal well drilling, fracturing and completion technologies available to the industry. This presentation will give you an overview of primary operators active in the TMS play, reported leasing activity in the trend and estimated production rates to help you determine the success of this play.

James H. Welsh, *Commissioner of Conservation*, Louisiana Office of Conservation

3:30 – 4:00 **Mowry**

This presentation will discuss the potential of the Mowry Shale. At depth greater than 8,000 ± 1,000 feet in Wyoming Laramide basins, the Mowry Shale typically meets all USGS requirements for a potential shale gas prospect. Thermal maturation modeling suggests that for each gram of total organic carbon (TOC) in the Mowry Shale, about 80 milligrams (mg) of gas was generated, 18 mg of gas was expelled, and 62 mg of gas remains in the shale. Study of the Mowry Shale suggests that other Cretaceous organic-rich shale intervals may have significant shale gas potential, particularly in the anomalously pressured and gas-charged portions of the Laramide basins.

Ronald Surdam, *Director, Carbon Management Institute*, University of Wyoming

4:00 – 4:30 **Opportunities in Quebec's Shale Gas Plays**

- Available results from the unconventional shale gas play in southern Quebec: the Upper Ordovician Utica
- A liquid-domain in the Utica
- Preliminary data on the unconventional resource play in eastern Quebec (Anticosti Island): the Upper Ordovician Macasty
- Preliminary considerations on other shale targets in southern Quebec; Lower Ordovician and Lower Devonian black shales

Denis Lavoie Ph.D., *Research Scientist*, Geological Survey of Canada - Quebec Office

4:30 – 5:00 **The Alberta Basin Bakken Resource Play: Same Name, New Learning Curve**

Three hundred fifty miles west of the Williston Basin, a new Bakken horizontal play is quietly emerging in the Alberta Basin, which straddles the U.S./Canadian border. Newfield, Rosetta, and Anschutz are leading the way in this play in northwest Montana, with each company having drilled 10-15 wells in Glacier County, over the last two years. Crescent Point and Shell-Canada are among the Canadian side-players. Recent estimates by Wood/Mackenzie place the recoverable reserves of this shallower shale-oil play at 2.6 billion barrels of oil. This presentation delivered by a petroleum geologist will provide you with useful information about this emerging play.

William B. Hansen, MSc, Consulting Petroleum Geologist, JIREH CONSULTING SERVICES

5:00 – 5:30 **Alberta Bakken: Some Methods of Unconventional Exploration in a Basin-Wide Geologic Context**

- Basement brittle-fault and fracture patterns are elucidated with gravity and magnetic data, on scales both basin-wide and local
- Adequate gravity and magnetic data are commonly available at zero cost from government sources; the data are processed to highlight linear features
- Identified gravity and magnetic lineaments may or may not all be fault and fracture zones; they should be compared with surface topography as well as subsurface seismic images and geological well information

Dr. Henry Lyatsky, P.Geoph., P.Geol., Lyatsky Geoscience Research & Consulting Ltd.