



January 2011 | Gushor Inc. | (403) 210-7594

Gushor Inc. Newsletter



Revolution in Quantitative Geochemical Analysis!

By: BARRY BENNETT, DIRECTOR OF GEOSCIENCES – GUSHOR INC.

Dr. Barry Bennett, Director of Geoscience at Gushor Inc. recommends that you take part in the revolution in quantitative oil and bitumen geochemical analysis – Q² comp.

Over the past four years of business with Gushor Inc. and with a background of over 20 years R&D in petroleum geochemistry (beginning with a Master's project on "the biodegradation of alkylbenzenes and alkyltoluenes when I was a young man!"), I have seen how the extra mile is attained when quantitative data is employed to support exploration and production activities in the oil industry. Geochemistry is now routinely employed for geochemistry-viscosity correlations, cold and thermal recovery production allocation, preproduction detection of fluid flow barriers in oil sands reservoirs, as well as for assessing optimal well placement or for determining where casing leakage occurs. We have also found that variations in oil composition in SAGD reservoirs can be used to identify geological barriers that are difficult to identify on geophysical logs. Many of these applications are discussed on our website at <http://www.gushor.com>.

Successful geochemical applications for the heavy oil and bitumen industry require the ability to handle notoriously difficult samples while at the same time achieving rapid and reproducible accurate and precise quantitative data. Classical laboratory methods developed previously for the recovery of hydrocarbons from conventional crude oils are simply unable to achieve the same level of separation with heavy oil and bitumen which are rich in non-hydrocarbons. Gushor Inc. has developed innovative analytical methods that are able to handle the range of sample types found in Alberta. Sample materials include, heavy oil and bitumen from the oil sands and carbonate bitumen reservoirs with viscosities ranging from 100 cP to several ten's of million cP (measured at 20°C) and API gravities ranging from 4 to 35°API +, supplied as cores or cuttings, oils produced via cold or thermal extraction methods or as clay and water containing emulsions. Our quantitative data is accurate to the levels necessary to use oil composition as the preferred tool to assess recovery process design and monitor actual production when it takes place. We have developed the methods and pioneered the applications that are now in wide use worldwide.

To continue reading this article please either visit our Gushor [blog](#) or a more detailed report on our [website](#). For more information regarding quantitative geochemical analysis, or any of our other services Gushor offers please contact us at info@gushor.com.

Gushor Inc. Teams Up with Weatherford Laboratories!

Gushor Inc. and Weatherford Laboratories are teaming up to conduct a joint industry project to evaluate the effect of McMurray bitumen properties and saturation levels on low temperature water mobility and oil recovery during SAGD, steam drive, and cyclic steam processes.

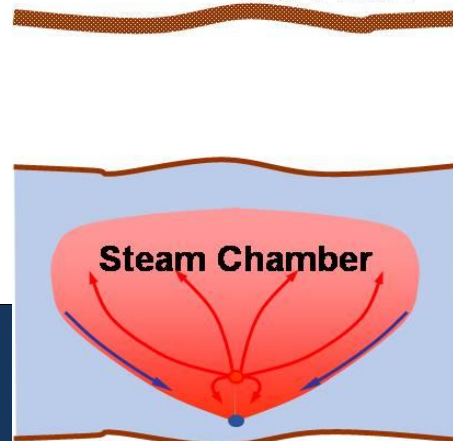
Over the next few months Gushor Inc. and Weatherford Laboratories will be jointly marketing this joint industry project to interested organizations in the heavy oil and oil sands industry. If your company wishes to have Gushor Inc. and Weatherford Laboratories present this project to your organization then please contact us at info@gushor.com or general@hycal.com.



www.gushor.com

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SURFACE



Gushor Inc. Services

Geosciences Solutions

- **Petroleum Systems Analysis**
 - Exploration
 - Development
 - Production
- **Analytical Services**
 - Heavy & Conventional Oil
 - Water Chemistry
 - Gas Analysis
 - Geochemistry
- **Geosciences Software**
 - GNAWD Pre-drill API/Viscosity

Technology Applications

- **Plunger™**
 - Laboratory
 - Field
- **GVisc™**
 - Solvent Extracted Viscosity
- **ProxVisc™**
 - Viscosity Estimation
- **Carbonates**
 - Mechanical Extraction

Unconventional Wisdom

- Reduced Emission Recovery
- Carbon Management
- Biodegradation
- Fluid Mobility
- Heavy Oil Recovery

Gushor Education



APPEGA Accredited

Gushor Inc. is pleased to announce that Dr. Barry Bennett has received his accreditation from APEGGA as a Professional Geologist.

"The Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) has regulated the practice of engineering, geology and geophysics in Alberta since 1920. The Association's authority is derived from provincial statute" (APEGGA). www.apegga.ca

Barry received his M.Sc. in Organic Petrology and Organic Geochemistry from the University of Newcastle upon Tyne and his PhD in Organic Geochemistry from the University of Bristol, and is currently the Director of Geosciences at Gushor Inc.



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Geosolutions for Unconventional Systems & Heavy Oil Recovery

Find us on the Web: www.gushor.com

Having Trouble Obtaining High Volumes Of Oil From Core?

One question that Gushor Inc. is regularly asked from clients is, "how do I extract enough oil for PVT or assay analysis"? Gushor's proprietary mechanical extraction device labeled, Plunger™, is capable of extracting large volumes of oil (up to several liters if necessary) from frozen core in a relatively short period of time for use in PVT and assay analysis. As a sealed pressure driven system all light ends are conserved while clay and water are separated. Other methods may result in large scale loss of the PVT critical light ends which greatly affect sample restoration protocols. For PVT sampling of bitumen and heavy oil, P for PVT = P for Plunger!

If you require more information on this capability please contact us at info@gushor.com.

Gushor Now Offers Field Geochemical Sampling Services!

Have you ever wondered how your geochemical samples have been handled from core retrieval until viscosity and geochemical analysis is complete? Well if not, Gushor has thought about this for you, and has now begun offering field geochemical sampling of cores at the well site. This will ensure that your geochemical samples are sampled, packaged, tracked, and analyzed in a fast and consistent manner to ensure the utmost accuracy in viscosity and geochemical data. This service is in addition to our already existing mobile field laboratory where we can perform viscosity analysis on well site to allow for quick and accurate viscosity measurements in the field.

If you have noticed inconsistency in your current legacy laboratory data then sample handling and storage could be the reason for this, let Gushor take this inconsistency out of the picture for you. No more wondering if samples sat out on a bench to thaw before performing viscosity or geochemical analysis on them!

If you require more information on this service or any other service that Gushor provides please contact us at info@gushor.com.

Technology is the key to unlocking the oil sands!

As conventional oil becomes a resource of the past, all eyes will be on the vast heavy oil resources around the world. As most heavy oil companies can attest to, one of the biggest challenges of chasing this valuable resource is the ability to extract it from the reservoir. Whether it's those frustrating not quite cold flow oils in the 100K cP region (at reservoir conditions) or difficulties on SAGD startup due to vertical and lateral oil viscosity gradients technology is the answer. SAGD seems to be struggling in the more complex reservoirs companies are developing today and that's where Gushor comes into the picture. With our extensive heavy oil experience around the world we have developed a variety of technologies to aid in lower emission oil recovery from heavy oil and bitumen reservoirs and one technology called **BRUTUS™**, we believe can be revolutionary in its ability to reduce heavy oil viscosity before production, using mobile water to carry reagents throughout the reservoir to decrease viscosity, create solution gas drive or ameliorate adverse production factors therefore reducing costs and emissions and increasing the production capabilities of these heavy oil resources.

BRUTUS™ is a reservoir preconditioning process that use water films and residual water or bottom, top, or middle water zones in the reservoir as a conduit for injection and movement of aqueous or non-aqueous fluids loaded with a preconditioning agent or agents through the reservoir prior to cold or thermal heavy oil and oil sand bitumen recovery techniques.

Gushor is actively looking for technologically oriented industry partners to test this concept in a pilot well stimulation project and would welcome the opportunity to discuss this possibility. If your company or one that you know of might be interested in having Gushor come in and discuss this exciting opportunity, then please contact us at info@gushor.com.

Gushor Introduces Social Network Links!

Gushor has recently set up an interactive blog as well as a LinkedIn and Facebook pages where individuals are able to comment on recent articles in our newsletters as well as other technical topics.

Feel free to follow us at the links below:



GUSHOR BLOG



LINKEDIN



FACEBOOK

www.gushor.com