

CHICAGO SECTION NEWSLETTER

November 2007



Newsletter of the Chicago Section of the Society for Mining, Metallurgy, and Exploration, Inc. - Founded Spring 1987 – www.chicagosme.org

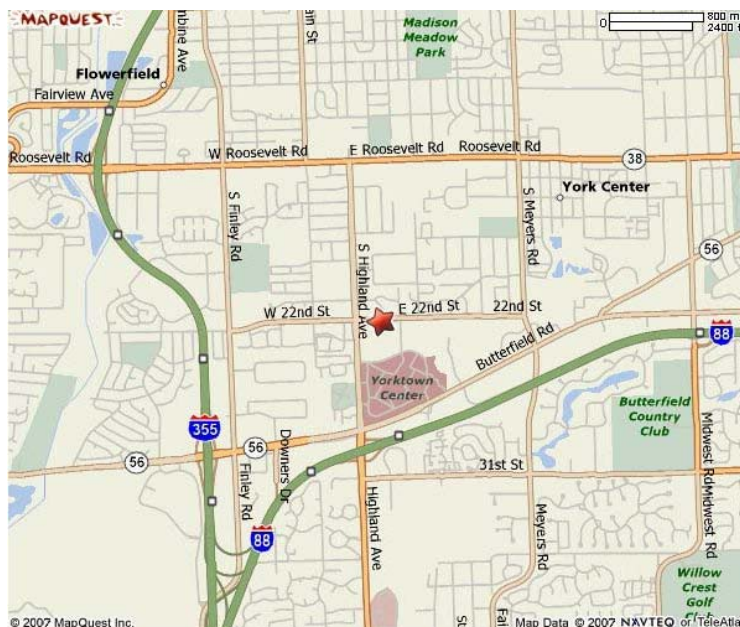
MEETING: Thursday, November 29, 2007

Topic: *Drilling Rock with High Power Lasers*

Guest Speaker: Brian C. Gahan, Laser Rock Technologies, LLC, Cary, IL.

Time: 5:30 PM Social Hour
6:00 PM Luncheon and Program

Meeting Location: Greek Islands Restaurant
300 E. 22nd St., Lombard, Illinois



Directions: I-88 to Highland Ave. exit, Downers Grove; turn north on Highland Ave. and follow it to 22nd St. in Lombard (about three stoplights); turn right on 22nd St.; Greek Islands is on the left at the bottom of the hill.

Menu: Service will be family style and consist of gyros, dolmades (stuffed grape leaves), lamb, moussaka, and meat balls with Greek potatoes, rice, saganaki and taramosalata. All dinners will come with bread and butter or olive oil, a choice of pastries, and a choice of coffee, decaf and hot tea. A vegetarian plate is available on request.

Cost: \$32 for luncheon/meeting/tour for Members, \$35 for Non-Members
Science teachers or professors are considered guests of the Section and will get dinner free.
Students' dinners are \$5.

If you plan to attend, RSVP; PLEASE before Monday, November 26, 2007 with choice of entrée. Call or email Agapito Associates, Inc. at either 630-792-1520 (office), 630-544-7821 (Joe Crawford's cell) or jcrawford@agapito.com.

From the Program Chairman Next Meeting: Drilling Rock with High Power Laser by

**Brian C. Gahan, Laser Rock
Technologies, LLC, Cary, IL.**

Abstract: Oil and Gas industry experts in the 1960's and 1970's considered the use of photonic energy in well construction, however the technical application of lasers was dismissed as energy intensive and inefficient. Their conclusions from 40 years ago continue to influence misperceptions of laser applications, despite massive developments in laser systems and applications.

Over the past decade, several military and industrial laser systems have been investigated for possible use as an alternative means to break and remove rock for well construction and completions. Initial research results held that these lasers were capable of breaking, melting, or vaporizing rock, penetrating rock more rapidly than conventional drilling, and even increasing the permeability of rock.

New breakthroughs in laser technology have addressed efficiency, portability and reliability issues required for successful commercial field applications. Fiber laser technology – first used in the 1980s and 1990s as low-power optical amplifiers for the telecom industry, is now capable of delivering multiple kilowatts of power from an efficient, compact laser source with excellent beam quality, reliability and long life.

In 2003, research performed with a 5.34 kW fiber laser system have proven the capability of high power lasers to efficiently tunnel into rock at standard and in-situ conditions. Depths of penetration reached at least 12 inches into sandstone and carbonate reservoir rock types while improving permeability. Most recently, wellbore perforation was tested successfully at in-situ pressure conditions using a modified triaxial pressure cell.

This presentation will review laser applications research program for well construction and completion and discuss the advantages of high power fiber laser technology as a significant step forward in realizing a range of on-site applications, including hard rock mining, tunneling, pavement cutting and rock drilling.

Speaker Bio: Brian C. Gahan is founder and president of Laser Rock Technologies, LLC in Cary, IL. Laser

Rock Technologies provides engineering and research expertise for high-power laser applications to rock and Earth materials, including drilling, cutting and tunneling.

Gahan is a former Senior Scientist and Section Manager in the Exploration & Production Research Group for Gas Technology Institute (GTI) in Des Plaines, Illinois. Beginning in 2000, he was the principal investigator for GTI's laser drilling and completion research program with partners from the U.S. Department of Energy and Halliburton Energy Services. The program investigated the technical feasibility and prototype design of a high-powered laser drilling system for oil and natural gas well construction and completion.

Prior to joining GTI in 1991, Mr. Gahan served as Petroleum Engineering Officer for Pittsburgh National Bank, providing reservoir and production engineering expertise to their commercial lending division. Mr. Gahan has also worked for Conoco on offshore oil and gas production facilities in the Gulf of Mexico, and with Amerada Hess in the Williston Basin, North Dakota.

Gahan, a registered professional engineer in Ohio and Illinois, earned a BS in Petroleum Engineering from Marietta College; an MBA from the Katz Graduate School of Business, University of Pittsburgh; and a Master of Chemical Engineering from Illinois Institute of Technology. He has authored more than 40 technical papers and publications and has been selected to serve as a 2008-2009 Distinguished Lecturer for the Society of Petroleum Engineers. Mr. Gahan is also an active member of the American Association of Petroleum Geologists, the American Institute of Chemical Engineers, and the Laser Institute of America.

The Last Meeting:

The last Chicago Section Meeting, on Thursday October 4, 2007, consisted of a luncheon at the Kishwaukee Country Club in DeKalb followed by a tour of the



Elmer Larson LLC quarry operations in nearby Sycamore, IL.

Mike Larson, a grandson of company Founder Elmer Larson, gave a very informative presentation at the luncheon and Dan Larson, a great-grandson of the Founder, escorted the group around the quarry. Mike's presentation was very thorough and provided information on, among other things, drilling patterns, equipment sizes and quantities, and products produced by the quarry. It was explained, for example, that Elmer Larson produces Class D stone from the upper 30 ft of the Scales, which consists of interbedded shale and limestone that is difficult to separate, Shale and that the remaining 60 ft of Scales is sold locally for road and runway fill.

It was also explained that the abortive underground operation started in 1981 was abandoned as a result of a rainstorm that filled the sinking cut with 47 ft of water in just 36 hours. After pumping out 2 billion gallons of water in just 60 days, the company concluded that going underground might be more risky and costly than they had anticipated, and decided to abandon the idea.

Contributed by the Editor

Looking for Speakers for This Year:

The Chicago SME is in the process of scheduling speakers for this year. If you have a subject you are interested in hearing presented, know of someone you would like to have speak to our group, or would like to give a talk yourself, please contact our program chair, **Frank Kendorski at 630-792-1520** or you can e-mail him at frank@agapito.com.

UPCOMING MEETINGS & EVENTS

For your schedules:

January 29, 2008: Howard Engineering, St. Louis, MO on Storage and Freezer Plants in Stone Mines.

February 21, 2008: Former Chicago SME member Rich Budinger, Fairmount Minerals, on The New Menomonie, Wisconsin Silica Sand Mine and Fairmount Corporate Philosophy.

Locations to be announced.

2006-2007 Chicago Section SME Officers

Chairman	H. John Head Continental Placer, Inc. Wheaton, IL 630-407-0800 x 103 Fax 630-407-0799 jhead@continentalplacer.com	Program Chairman	Frank Kendorski Agapito Associates, Inc. Lombard, IL 630-792-1520 Fax 630-792-1580 frankatagapito@comcast.net
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Secretary	Steve Tivy Petroliance, Inc. Elgin, IL 847-741-2577 Fax 847-741-2590 svtivy@comcast.net	Website Coordinator	Rudy Stein Continental Placer, Inc. Wheaton, IL 630-407-0800 x 103 Fax 630-407-0799 rstein@cecinc.com
Treasurer	Brad Renwick Civil & Engineering Consultants, Inc. Downers Grove, IL 630-963-6026 Fax 630-963-6027 brenwick@cecinc.com	SME Section Representative :	John Magyar International Mining Services Belvidere, IL 815-547-9211 Fax 815-547-8552 imsjjm@aol.com
Membership	vacant	GEM Coordinator	Anne Leslie Raimonde Drilling, Inc. Chicago, IL rdcdrill@rdc-drill.com

SME Chicago Section Membership Dues Form - NOTE: You do not need to be a national member to join the local section. To become a member of SME at the national level, please join at www.smenet.org or get an application from Gordie Stevens.

NAME: _____

AFFILIATION: _____

ADDRESS: _____

E-MAIL: _____ @ _____

DAYTIME TEL. NUMBER: _____

SPONSOR'S NAME: _____

STUDENT _____ **RETIRED** _____

Make Check for \$20.00 (\$10.00 for Student or Retired) out to “**Chicago Section – SME**” and mail to: Brad Renwick, Treasurer, Chicago Section SME, Civil & Environmental Consultants., 3041 Woodcreek Drive. Suite 210, Downers Grove, IL 60515

NEXT MEETING
Thursday, November 29, 2007, 11:00 AM

Topic: Drilling Rock with High Power Lasers

Guest Speaker:
Brian C. Gahan
Laser Rock Technologies, LLC
Cary, IL.

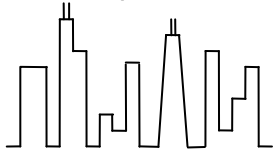
at
Greek Islands Restaurant

Located at
300 East 22nd Street,
Lombard, IL.

Doug Hambley
Newsletter Editor, Chicago Section SME
Agapito Associates, Inc.
2 East 22nd St., Suite 307
Lombard, IL 60148

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MEETING ANNOUNCEMENT ENCLOSED**

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