

International Association of Geosynthetic Installers

IAGI Newsletter

A Note from IAGI's President - Dennis W. O'Brien

Our industry offers opportunities to shine as we do the things at which we excel. I'd like to extend a few of these opportunities to you through programs offered by IAGI.

The first program is IAGI's Certified Welding Technician (CWT) testing. Having your welders achieve CWT status raises the level of professionalism in our industry, proves that your welders have standards of field performance, and rewards your welders with industry recognition of their skills. Your welders are professional and work hard to get jobs completed well – now is the time to take advantage of this valuable program that will heighten the status of your company.

The second program is IAGI's Approved Installation

Contractor (AIC). This program recognizes geosynthetic installation companies that meet a minimum level of professionalism, ethics and business practices. AIC companies must meet requirements in the following areas: corporate history and business practices, insurance verification, safety training, and professional competence and experience. To date, seven companies have achieved AIC status. Is your company up for the AIC challenge? You know it is – take advantage of this valuable opportunity for your company by achieving AIC status in 2008.

As this is my last letter as President of IAGI, I would like to thank those who have worked and supported IAGI, the CWT and AIC program.



Dennis W. O'Brien, IAGI President

Great strides have been made in the last few years in increasing the stature of IAGI.

On behalf of IAGI, Happy Holidays and have many blessings in 2008!.

Dennis W. O'Brien



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Promote your membership by using the IAGI logo

By joining IAGI, you announced to the industry that you want to advance installation and construction technologies and to strengthen knowledge, image and communication within the industry. Join the hundreds of other active IAGI members in promoting

your dedication to the industry by using the IAGI logo in your marketing materials. Members may use the IAGI logo on company stationery including business cards and letterhead. Members also are asked to post the IAGI logo on their company websites with a link to the IAGI web-

site, www.iagi.org. If you need IAGI logo artwork for your promotional materials or website, please contact Jilien Harvey at Jilien@honnigford.com or +1-651-554-1895.

2008/2009 IGI Board Announcement



Members of the International Association of Geosynthetic Installers (IGI) recently voted for IGI's 2008-2009 Board of Directors. Candidates were nominated by the industry and those elected will serve two-year terms on the IGI Board of Directors.

New members elected to the Board of Directors include:

- Bill Shehane, Seaman Corp.
- Nicky Araujo, Servicios de Ingenieria Geosintetica S.A.
- Steve Daniels, Geosynthetics, Inc.

Returning members elected to the Board of Directors include:

- Carl Apicella
- Dennis O'Brien
- Dave McLaury
- John Heap
- Brian McKeown
- Todd Harman

The 2007-2008 IGI Board of Directors will guide several exciting projects planned for the coming year, including increasing participation in the Certified Welding Technican (CWT) and the Approved Installation Contractor (AIC) programs.

"Members of IGI continue to grow and improve this industry," Laurie Honnigford, IGI managing director, said. "Companies are finding value in having their welders achieve CWT status, and AIC companies are setting the industry standard of professionalism. The new IGI Board is committed to advancing the interests of the installers and will continue to respond with solutions for improvement, advancement and growth."

Get to know the IGI Board

Name. Carl Apicella



Current position: President-Elect

Company of Employment: American Environmental Group, LLC

Years on the IGI Board: Five

How did you get into the Geosynthetics Industry?

In January 2002, my partners and I founded AEG with the concept of being a leading service provider to the solid waste industry. At the time, we had a tremendous amount

of experience in the landfill gas sector, however, the geosynthetic division seemed like a perfect compliment to our other services. Most of our clients with landfill gas related needs also required quality geosynthetic installers. Based on that philosophy, I started up and managed the geosynthetic division of the company which now makes up about 50 percent of AEG's business.

Prior to AEG, I was involved with geosynthetic installation in my various positions with BFI both in the United States and in Hong Kong, where I lived for six years while working on the WENT Landfill project.

What do you like best about the work you do?

I like all the people: employees, clients, suppliers, and service providers. It is a very closely knit industry and with that you get to enjoy long term friendships with so many great people.

What is the best advice you can give to a person just starting out in the Geosynthetic Installation industry?

Three things: 1) Have integrity; it is a very small industry and you only have one reputation. 2) Work hard and be totally committed to what you are doing. 3) Enjoy your work.

GSI Offering Continuing Education Short Course Feb. 11, 2008

Geosynthetics in Waste Containment Liner and Cover Design

Goal: This one-day course is focused on the proper design, analysis, and testing of geosynthetics used in liner and cover systems for landfills, surface impoundments and waste piles. Included are the following geosynthetics: geomembranes, geotextiles, geonets, geogrids, geosynthetic clay liners, geocomposites, and geopepe.

Course Benefits: The course provides the latest information on design, analysis, and testing of geosynthetics in solid waste containment. Included are considerations regarding both hazardous and nonhazardous materials. The thrust is design-by-function that leads to the determination of a factor of safety. Numerous examples are utilized to illustrate different design procedures. Thus, a quantitative approach toward proper design of geosynthetics in this important environmental area is presented. Course notes are provided.

Instructors: Bob Koerner, George Koerner, Grace Hsuan

Format of Courses

8:30 Background and Overview
 9:00 Part I
 10:00 Break & Lab Testing
 10:15 Part II
 12:00 Lunch (provided in-house)
 1:00 Part III
 3:00 Break & Lab Testing

3:15 Part IV
 4:30 Summary and Conclusions
 5:00 Adjourn

Dates Offered:

#1 Geosynthetics in Waste Containment Liner and Cover Design
Monday, Feb. 11

#2 Quality Control/Quality Assurance of Geosynthetics Installation
Tuesday, Feb. 12

#3 Examinations for Inspectors Certification
Wednesday, Feb. 13
 Geosynthetics 8:30 to 10:30 a.m.
 Comp. Clay Liners 11:00 a.m. to 12:00 p.m.
[Exam candidates must be pre-approved]

Location for both Courses and Exams:

Geosynthetic Institute
 475 Kedron Avenue
 Folsom, PA 19033-1208
 Phone: +1-610-522-8440
 Fax: +1-610-522-8441

Registration Fee: **\$250**/person for each one day course up to one month prior to course date, **\$300**/person thereafter. (**\$150**/person for GSI members.) Includes notes, lunches, refreshments and lab testing.

Make Check or Purchase Order Payable to: **"Geosynthetic Institute"**

Mail to: **Geosynthetic Education Institute**
 475 Kedron Avenue
 Folsom, PA 19033-1208

Questions: Marilyn Ashley or Paula Koerner

Phone: +1-610-522-8440
 Fax: +1-610-522-8441
 E-mail: mvashley@verizon.net
 Cancellations: There will be a \$25 cancellation fee for refunds requested within one month prior to course date—\$50 thereafter.

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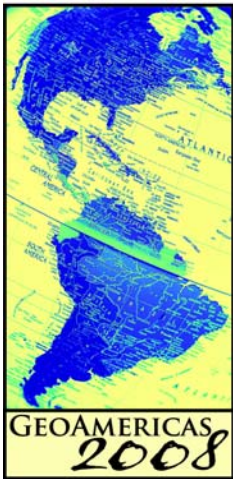
Interesting Industry Challenges



This picture shows a cheetah caught in one of Aquatan's (Pty) Ltd dams lined in Botswana in 2004. As Aquatan's liners are very slippery they had to lower rope ladders into the dam to assist the cheetah in getting out. Once the ladders had been lowered into the dam, it was a waiting game. Fortunately the wait was not too long. The next morning the cheetah had found his way out.

If you have any photos of a project that are interesting, educational or humorous, please send to Jilien Harvey at Jilien@honnigford.com

GeoAmericas 2008 update



GeoAmericas 2008 will be held March 1-5, 2008 in Cancun, Mexico. The conference includes short courses, trade-show, training lectures, technical sessions and many extra curricular activities to enjoy the Mexican culture and scenery.

IAGI is a Strategic Partner for the event and will have a booth at the tradeshow Monday-Wednesday. Please stop by and say hello if you are there.

In addition, IAGI will be presenting a bilingual Training

Lecture entitled "**Lo bueno, Lo malo y Lo Feo: Que Hace un Buen Instalador de Geomembranas?**" Presented by Todd Harman, Hallaton, Dr. Marco Araujo Leal, Soluciones Ambientales Integrales and Nicky Araujo, Servicios de Ingenieria Geosintetica, S.A." In English that translates to "The good, the bad and the ugly: What does good geomembrane installation look like?" The course, presented in Spanish and English, will be held on Wednesday, March 5 from 2:30-4:00p.m.

The IAGI General Assembly will be held in conjunction with the conference on Tuesday, March 4, 2008 at 5:30 p.m. The NAGS General Assembly will immediately follow. Stay tuned for location and additional event information.

IAGI members attending GeoAmericas 2008 will receive a "member discount." Please list IAGI on your registration form under "Strategic Partners."

For more information about the GeoAmericas 2008 Conference, please visit: www.geoamericas.info.

If you would like additional information on the General Assembly or the IAGI Training Lecture, contact Jilien Harvey, IAGI Project Manager at +1-651-554-1895 or Jilien@honnigford.com.



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Industry News

NAGS Update

The next biennial general assembly of the North American Geosynthetic Society will be held in conjunction with the GeoAmericas 2008 Conference in Cancun, Mexico on Tuesday, March 2. The NAGS General Assembly will be held immediately following the IAGI General Assembly. All NAGS members are invited to attend. At this meeting, president-elect Dr. David Elton will assume the presidency. A financial review and other business will also be on the agenda.

For additional information, contact L. David Suits, Executive Director of NAGS at +1-518-869-2917.

CWT Program Update

The CWT program has gained increased popularity worldwide. Currently, there are CWT's in countries ranging from the United States to Australia. IAGI has certified 360 welders to date. In 2008, the program cost will increase from \$225.00 USD/person to \$265.00 USD/person. If a person only needs to retake a segment of the test the cost has increased from \$75.00 USD/person to \$95.00 USD/person.

IAGI is also happy to announce that the much anticipated PVC certification exam will launch in January. Colorado Lining Inter-

national will be hosting a pilot exam in mid-January. Currently, the exam is available in English.

For additional information on the CWT program or to set up testing for your employees, please contact the IAGI office at +1-651-554-1895 or iagi@iagi.org.



Welders Obtain IAGI Certification

Congratulations to **Polliner, and Titan Environmental** who sponsored Certified Welding Technician testing of their employed welding technicians.

IAGI developed a welder's certification program so installers could define standards of proficiency, recognize the knowledge, experience and skills of installers, and reward those who qualify with industry recognition.

Engineers benefit from IAGI's Certified Welding Technicians (CWT) program because it verifies that the welders on their job have experience in welding. Additionally, they can specify that the polyethylene

geomembrane welders are certified for the type of welding they will perform. The CWT program certifies welders for both extrusion and fusion welding methods.

For further information, contact Laurie Honnigford, Managing Director, IAGI at +1-651-554-1895 or e-mail iagi@iagi.org.



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Website: www.beta.kz

LLC "Beta" was established in 2001. Within the years of its business activity it has obtained sufficient experience in manufacturing technologies of waterproofing screens of HDPE geomembrane.

Miller Weldmaster

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News Notes from the IAGI's Executive Director

Good Day IAGI Friends,

I hope 2007 has treated you well. For IAGI our biggest push has been the AIC program. In 2008 IAGI will be reaching out to the owners and specifiers asking them to use AIC designated companies. Sometimes it is hard to keep up on all the things happening that can impact our business but I ran across something that may impact any company that takes credit cards for payment. While I was cleaning and getting caught up on some reading. I read in an August issue of my Kiplinger Letter (yes, I know – that was a while ago) that "credit card companies are on

the warpath." They are ready to slap fines on merchants that don't meet looming security deadlines.

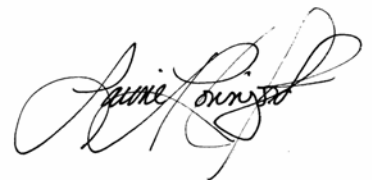
Fines for failing to have the security in place can be stiff – up to \$25,000 per month. More information can be found at www.visa.com/cisp. If you do take credit cards, it pays to keep up on changes happening in this arena.

Speaking of privacy, IAGI has a fiduciary responsibility to protect confidential information. It is IAGI's policy to shred all credit card numbers after they have been run through the ac-

counting system. IAGI does not save documents with confidential information on them to protect our members from having their identity stolen.

IAGI is always looking for ways to help installers refine their business operations. If you have a topic that you think we should cover in the newsletter, please contact me.

Thank you and Happy Holidays!



Geomembrane CQA—Let's poke some holes: Final Installment

by Glenn T. Darilek, P.E.
This installment concludes this series that provided hypotheses related to geomembrane CQA with the invitation to poke holes in these "pincushions." The previous pincushion and the responses are:

Pincushion 12 – Seams essentially never fail in service, and the emphasis on destructive testing of geomembrane seams for strength has focused attention away from the most prevalent and significant problem, which is holes in the installed geomembrane.

Ron Frobel - Fusion and extrusion seams have and will fail in service for a variety of reasons, especially if subjected to stress. Although the percentage of failures is small, it is important to confirm the mechanical integrity of the bond in peel and shear. The frequency of destructive testing can be reduced dependent on the proven quality of trial welds and destructive testing as well as inclusion of leak location survey in the CQA program. Leaks away from the seams can only be detected using Electrical Leak Location methods, which must be included in the final CQA.

Jack McHugh - Geomembrane QA/QC has become the task of satisfying the regulators, back in the day seaming was not as automatic as it is now, so testing rules were set up. No regulator will consider lessening or deleting a long standard test. And many engineers would not question the need for a test and be perceived as they did not care about quality. Destructive testing is quantitative and verifi-

able, so like taxes, will always be there whether you like it or not.

Glenn Darilek – The only function of a geomembrane is to prevent leaks, so it does not make sense to neglect to test for leaks. The misdirected focus is obvious because practically every installed geomembrane is subject to destructive testing, but only a small percentage are tested for leaks. Seams are rarely subject to stress after installation, and those stresses are probably no greater than an order of magnitude less than those used in destructive testing. Even if seams did fail in service, the probability of detecting a defective fusion weld using prescriptive destructive testing is miniscule.

Mark Cadwallader – An initial assessment of "no leaks" might in time not be the case. "Tack welded" seams could initially have no leaks, but could easily relax their mechanical connection as absorbed waste "softened" the plastic liner. This problem originally led to the Film Tear Bond (FTB) (adhesion failure) criteria for destructive testing to ensure thoroughly fused liner seams. Weld strength is really a secondary consideration for destructive testing. Installation personnel also pay better attention to consistent weld quality when they know their seams will be destructively tested. The question is not whether destructive testing is needed, but rather what frequency and locations for destructive testing are proper.

Daren Laine – Fifteen years ago welded seams were considered to be the weak point of a geomembrane installation. This outdated view led to the current mind-set that testing the geomembrane seams is sufficient

for producing a quality geomembrane installation. Although this view may meet current regulations, this testing deemphasizes the true function of the geomembrane, which is to prevent liquids from leaking into the surrounding soils. There is no better way to improve geomembrane performance than to locate and repair holes in the geomembrane liner. Therefore, it is time for the industry to re-evaluate geomembrane testing protocols and move from emphasizing destructive seam testing to emphasizing non-destructive testing of the complete geomembrane liner system.

Richard Thiel - Both the seams and the greater lined area need to be checked for CQA. It is not true that seams do not fail in service. We experience occasional separation of seams in service due to poor welding that was not picked up during normal CQA. HDPE is a very technical material to weld, and it is important to have good skilled people performing the welding, and good oversight (CQA) is often required to make sure that good practices are followed. That being said, we tend to become a little myopic in looking at just seams, and miss the forest for the trees. It is likely true that the biggest bang for the CQA dollar can be achieved using geoelectric methods that cover the entire lined area. A balanced QA program would include elements of both watching the deployment and seaming installation, and final leak surveys.

Thank you to these responders and all the responders for this series. Also thanks go to Jilien Harvey for her capable editing.

Seven IAGI member companies have achieved AIC status



Installation companies interested in applying for what will become an engineer specified designation, AIC, can find complete program details and a submittal form online at www.iagi.org.



AIC Mission Statement

To establish criteria for recognizing the geosynthetic installation companies that meet a minimum level of professionalism, experience and business practices. The program's goal is to promote growth in the geomembrane installation industry and promote better quality workmanship.

American Environmental Group LTD

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Industry News (continued)

Fifty-five years after our inception, Watersaver Co. Inc. is proud to announce the addition of a second Colorado warehouse location to service our Erosion & Sediment Control Product customers. Located in Centennial, the heart of the south Denver suburbs, Watersaver's new warehouse facility is perfectly

positioned to satisfy our E&SC customers' immediate needs for the construction boom that area is experiencing. This brand new warehouse facility will be stocked with temporary erosion control blankets, turf reinforcement mats, hydraulic mulches, straw wattles, silt fence, seed... and much more! All of Water-

saver's E&SC materials are stored in-doors at both Colorado locations to maintain the highest level of product quality our customers demand.

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