FIELD TRIP ANNOUNCEMENT AND ITINERARY

ASSOCIATION OF ENVIRONMENTAL AND ENGINEERING GEOLOGISTS
New York – Philadelphia Section

Remediation of Recalcitrant DNAPL Contamination in Fractured Bedrock
at USGS NAWC Research Site in West Trenton, NJ

Sunday, June 8, 2014 at the Naval Air Warfare Center, near Trenton New Jersey

Presented by
Pierre Lacombe, U.S. Geological Survey

Naval Air Warfare Center, view to the West towards Mercer County Airport.

Time: 10:00 am – 3:30 pm (Assemble at 10 am to view outcrops at Stop 1, near Office Park at 810 Bear Tavern Road, West Trenton, New Jersey 08628.)

Place: Naval Air Warfare Center, near Trenton New Jersey

RSVP: Registration form and payment must be received by Tuesday, June 3, 2014. Make check payable to AEG. Please mail a completed registration and liability form along with check made out to AEG NYP to Curt Schmidt, AEG-NYP Treasurer, at 612 Hayward Street, Bound Brook, NJ 08805.

Cost: $65 for members; $85 for non-members and $105 Membership Drive discount. $25 Students and Young Professionals. Advanced reservations only. Limit 50 people.

CECs: Four professional development hours (pdh) for continuing education credit (CEC) will be awarded.

LSRP technical credits pending
**ABSTRACT**
Most in the environmental field consider groundwater contamination in fractured bedrock to be one of the greatest challenges for remediation. The US Geological Survey has addressed this challenge with the development of the USGS Toxics Substances Hydrology Program to investigate remediation issues in fractured bedrock. The Naval Air Warfare Center (NAWC) near Trenton NJ is a former military base where thousands of gallons of trichloroethylene (TCE) leaked or were disposed of during the period from 1953 to 1990. The NAWC site overlies fractured mudstones of the Newark Basin.

Research on contamination in fractured bedrock by governmental, academic, and industrial scientists has been conducted at NAWC since 1992. Investigations include the geology, hydrogeology, hydrology, water chemistry, rock chemistry, biotic and abiotic degradation, biostimulation, surface and borehole geophysics, fate and transport issues, adsorption, volatilization of groundwater discharge, pump and treat systems, monitored natural attenuation, dig and haul options, aquifer modeling, thermal conductive heating (TCH), diffusion samplers, passive flux meters, electrical tomography and many other methods, techniques, and tools.

The common theme for all research is the fact that the hydrogeologic framework at NAWC has been well-studied, and the site itself is a natural laboratory with an extensive historic data base focusing on long term water-level and water-quality data.

The goal of this fieldtrip is to present the development of the hydrogeologic framework for this site, and show how the framework has been applied in the multifaceted research conducted here, and to consider the applicability of such a framework in other similar gently dipping fractured sedimentary bedrock hydrogeologic settings.

**SPEAKER BIOGRAPHY**
Pierre Lacombe is a Research Hydrologist with the US Geological Survey (USGS) and has worked with the Survey for 30 plus years. Pierre has an MS from Boston College and a BS from SUNY New Paltz, NY. He has investigated and published extensively on: Water levels in the major confined aquifers of the NJ Coastal Plain; Saltwater intrusion issues in Cape May County NJ; and the Impacts of hydrogeologic framework on recalcitrant compounds in fractured bedrock.

**FIELD TRIP GUIDE**
Print and bring along your own Field Trip Guide:  
https://www.dropbox.com/s/57v8wa49ogqv6un/AEG%27s%20NWAC%20Field%20Trip%20Guide.pdf

**ADDITIONAL REFERENCES**

ITINERARY

10:00 am  Assemble at Office Park, 810 Bear Tavern Road (Route 579), West Trenton NJ 08628 (SW corner of parking lot.)  Sign in, forms, orientation, don safety vests.

10:00-11:00  **STOP 1:** Walk to outcrop along road cut for I-95 exit ramp. Observe upper part of Prahls Island Member of Lockatong Formation, showing chemically altered micro-fractures, differentially-weathered strata of Van Houten cycles, strata-bound joints, fissile versus indurated strata, mudcracks, desiccation breccias, and punctuated flow paths in fissile, water-bearing strata.

11:00 – 12:00  **LUNCH:** Picnic lunch at Bear Tavern Rd (provided.)  Discuss primary and secondary porosity, groundwater flow and other hydrologic and geochemical features observed.

12:00  **TRAVEL:** Drive 1.3 miles to Naval Air Warfare Center, off Parkway Avenue.

12:00–3:00  **STOP 2:** Start tour of NAWC, visit up to 20 demonstration stations.

12:00-1:00  REVIEW site use history, core laboratory, hydrogeologic framework development.

1:00-2:00  **VIEW** Monitor Well network, pump and treat system, water level and WQ data.

2:00-3:00  **OBSERVE** applied remediation tools and technologies at work (see Field Trip Guide.)

3:00 – 3:30  **WRAP UP:** Closing remarks, Question and Answer Session. LSRP Sign out, Speaker Evaluation Forms, CE Certificates.

DIRECTIONS

**STOP 1:**
Mountain View Office Park, 810 Bear Tavern Road (Route 579), West Trenton NJ 08628
https://maps.google.com/maps?f=q&hl=en&geocode=&q=820+Bear+Tavern+Road,+Suite+304+West+Trenton,+NJ+08628+US

From I-95 South, exit 2 Bear Tavern Road, turn north (L) on Bear Tavern Road, drive 500 feet and turn R at first red light, into Mountain View Business Park, Turn R towards Bldg 810.
From I-95 North, exit 2 Bear Tavern Road, turn north (L) on Bear Tavern Road, cross over highway and turn R at red light, into Mountain View Business Park, Turn R towards Bldg 810.

**STOP 2:**
NAWC, Parkway Ave and Jack Stephan Way, Ewing Township, NJ 08628

From Stop 1, turn Left onto Bear Tavern Road (579) drive one mile south to light and turn Left onto Parkway Ave (West Upper Ferry Road).  (See 7-11 on the right, Lukoil and Dunkin Donuts across.)  Drive one-third mile to the intersection of Parkway and Decou on Right (Haley’s lunch place on far R).  Turn Left turn onto Jack Stephan Way.  Drive 100 feet and pull into gravel parking lot on the right.

**GEAR ETC.**
Wear closed toe and closed heel shoes and long pants.  One restroom at NAWC, one at Haley’s.
NOTES FROM THE CHAIR May 2014
Loren Lasky, PG, NJDEP

Field Trip:
Join us on Sunday June 8th, 2014, for the New York Philadelphia Section’s annual field trip, this one focusing on the ongoing remediation of a DNAPL plume in fractured bedrock.

The Naval Air Warfare Command station in West Trenton is a working laboratory of applied remediation technologies. TCE use here dates back to the 1950’s when the Jet Propulsion Laboratory (JPL) used the site to test jet engines. TCE was used as the heat transfer agent----to chill the intake air and fuel----in order to simulate high altitude flight conditions.

We will start our field trip by viewing an offsite rock outcrop, where lithologies similar to those in the subsurface at the NAWC site are exposed, and later will contrast the more massive, indurated exposed mudstones in the outcrop with the more fissile strata found at the NAWC center.

Then we will proceed to the NAWC site and spend three hours touring and viewing demonstration stations covering all phases of the investigations and remediations performed here, including both well-known and experimental tools and technologies. See the Field Trip Guide for details.

Mid Year Board Meeting:
In April, I represented the New York Philadelphia Section at AEG’s Board of Directors (BOD) meeting in Golden, Colorado, along with the chairman of most of AEG’s approximately 25 other sections from around the country. Several progressive changes were approved by the BOD in order to streamline and modernize the way AEG as an organization does business, including the redrawing of section boundaries, the inclusion of chapters independent of sections, and the election of regional representatives instead of section chairman to attend BOD meetings.

Plans for Next Year:
We have heard requests to include more engineering-oriented presentations next year, to complement our typically remediation-heavy slate of topics, and that we can certainly do. How about a future field trip to the glauconite sand pit in Mantua Township NJ where an important fossil marker bed is located. It is believed to mark the extinction of the dinosaurs---but may soon be covered by urban sprawl. Drexel Geology Professor Ken Lacovara related that saga to a fascinated audience at the RE3 Remediation Conference in Philly last January. And AEG NYP will certainly participate in RE3 again next year. We’d also like to cohost some functions for students and young professionals with the LSRP Association.

Section Business:
I am both happy and sad to announce that after four years I will finally be stepping down as chairman of the New York Philadelphia Section at the end of this season. This will the last time I write up the AEG news in the ‘Notes from the Chair.’ In August, we will hold a Business Meeting to elect a new Chairman (August 7, 2014 at 6:30 at the La Quinta in Somerset, NJ.) EVERYBODY WELCOME. Fortunately, I am happy to say that our Succession Plan will follow the natural order of things, and long-time Section Treasurer Curt Schmidt will serve as our next chairman. Long-time Section Secretary Rose DeLorenzo will rise to Treasurer, and we welcome Amanda Forsburg as our new Secretary. I want to thank everyone who volunteered their time, then or now, and say I have had a blast serving as the NYP chairman, and now it’s time for some new blood.

Thanks everybody-----Loren.
UPCOMING AEG NATIONAL MEETINGS

Arizona 2014:
This year’s Annual Meeting will be held in the beautiful Sonoran Desert in Scottsdale Arizona, from September 22nd to 28th, and of course it includes field trips to the Grand Canyon and the huge ASARCO Ray open-pit copper mine, as well as 3 days of technical talks, short courses and special events. It’s always a great time, and a fun family vacation, and the absolute best way to visit a new city---- through the eyes of the geologists who live and work there.

Pittsburgh 2015:
Next year’s Annual Meeting will be hosted by our neighbors to the west in the Allegheny-Ohio Section, and held in Pittsburgh, Pennsylvania in September 2015. Great for us because it’s drivable, but also because it gives us a chance to gear up and provide financial support to help local students from our area attend next year.

MEMBERSHIP APPLICATION
Join or Renew at http://aegweb.org or https://www.dropbox.com/s/oo57dyv7c95buo/Membership%20Application.pdf

STUDENT/YOUNG PROFESSIONAL MEMBERSHIP APPLICATION
Student Membership Application
https://www.dropbox.com/s/iz5kzu836x1ul6/Student_Membership_Application.pdf

LinkedIn join our discussions on Linked In at

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We love to hear from you........Please contact us with your suggestions at:
aeg_section_chair@verizon.net