AIPG GEORGIA SECTION

November 2020

SOME WEBINAR OPPORTUNITIES

PRESIDENT'S MESSAGE

I've been busy contacting our student chapters to get the names of the officers and contacting the different departments to find out the name of their scholarship winner. With the compressed semester I'm trying to get this completed as soon as possible. I have received the names of four scholarship winners and have mailed letters to each student congratulating them. As part of their award we pay for a one-year subscription to the TPG.

This month I gave a career talk at University of West Georgia. I was surprised with the number of students attended and they filmed the presentation so other students could see later. I also visited Berry College where I taught a three-hour lab using data from an underground storage tank release. The students used the data presented and constructed groundwater flow maps and benzene iso-concentration maps. If other universities are interested, please contact me. I also have a few talks on environmental cleanup of UST sites. Also, this month I made a presentation to two classes of fifth graders on minerals and their importance showing what minerals and rocks are used in houses, cars, cell phones and Navy Seals. I also showed some of the careers geologists go into besides looking at rocks and looking for fossils, which is what I heard from the students.

AIPG Oklahoma Section asked me to give a Zoom presentation to AIPG students at Oklahoma State and University of Tulsa on environmental careers. We will be using AIPG National to set this up for us. If this works, I'll check with our student chapters to see if they would like me to present it to them.

AIPG National had their annual executive meeting virtual on October 17, 2020, and the election of the four advisers to the Executive Committee. Our newest member Dr. Randy Kath was elected as one of the advisers.

Below is the announcement of six upcoming free webinars being sponsored by AST Environmental and RPI Group. The second webinar announcement is at the end of this newsletter titled: "Responding to societal needs with 3D geology: An international perspective". There are two webinars on November 17, and 19, 2020 at 10:00 AM to 11:45 AM. The World Community of Geological Surveys is the sponsor.

AST ENVIRONMENTAL, INC. AND RPI GROUP

Bill Brab with AIPG Kentucky Section has put together six free webinars starting on Thursday November 5, 2020. They are all on a Thursday from 11:30 Am to 12:30 PM. Registration and schedule is below.

https://www.trapandtreat.com/2020-webinar-conference-schedule/

November 5th, 2020: ***What's Our Secret? 19 Years of Remediation Success with the Trap & Treat Approach***

This training will introduce activated AC-based technologies that have been utilized for projects in many states and internationally. This class of technologies is increasingly popular for overburden and bedrock applications, yet design and application of these technologies remain unfamiliar to audiences everywhere, due to their physical properties (slurry). The attendees will leave with a comprehensive introduction to selecting AC technologies (when to use, when not to use, and how to use), why AC-based products must have a treatment mechanism working in tandem with them, and be able to apply this knowledge to future projects. https://attendee.gotowebinar.com/register/4923346298286975760

November 12th, 2020: ***Drilling down on the Trap and Treat Approach Part 1 – Solvent Remediation***

This is the second installment in that series, and it focuses on utilizing the power of activated carbon(AC)-based technologies to accelerate remediation in the subsurface, handle DNAPL sites, manage dilute plumes, and evaluate performance of the installation. Comparisons and performance considerations between commodity and specialized iron amendments will be discussed, notably iron-demand and longevity. Project examples will be used to describe product selection and loading, plus injection techniques.

This training will introduce activated carbon-based technologies that have been utilized for projects in many states and internationally. This class of technologies is increasingly popular for overburden and bedrock applications, yet design and application of these technologies remain unfamiliar to audiences everywhere, due to their physical properties (slurry). This unit focuses on degradation of Chlorinated Volatile Organic Compounds (CVOCs) using food-grade, virgin AC impregnated with metallic iron. This unique combination leverages the properties of both AC and iron, creating a synergistic effect in the subsurface- rapidly destroying DNAPL, managing plumes, and providing immediate and lasting contaminant trapping and treatment. Discussion of groundwater geochemistry will be expounded upon, since these reagents work irrespective of pH, ORP, etc.
https://attendee.gotowebinar.com/register/6449292515780285200

November 19th, 2020: ***Drilling down on the Trap and Treat Approach Part 2 – Petroleum Hydrocarbons Remediation***

This is the third installment in that series, and it focuses on activated carbon (AC)-based in situ remediation of petroleum hydrocarbons and related oils and solvents. Food-grade AC inoculated with a specific microbial consortium (plus electron acceptors and nutrients) can expedite remediation of dissolved/sorbed mass and reduce or eliminate LNAPL. This technology functions irrespective of high salinity or TDS.

This training will introduce AC-based technologies that have been utilized for projects in many states and internationally. This class of technologies is increasingly popular for overburden and bedrock applications, yet design and application of these technologies remain unfamiliar to audiences everywhere, due to their physical properties (slurry). AC for degradation of petroleum hydrocarbons, LNAPL, fuel oxygenates, alcohols, glycols, and cyclic ethers has grown tremendously worldwide in the past few years. This talk describes the coupling of AC and biological degradation mechanisms to create a synergistic effect that rapidly degrades mass, controls plumes, and does not produce harmful byproducts or create subsurface compatibility concerns (e.g. utilities, building footers).
https://attendee.gotowebinar.com/register/1125073484530814736

December 3rd, 2020: ***Working Smarter, Not Harder, to Characterize Fractured Bedrock***

This is the fourth installment in that series, and it focuses on fractured bedrock remedial design characterization (RDC), which is quite different from overburden RDC processes. We will consider the use of geophysics (surficial and borehole) to select injection well locations, review rock coring (selection, visual observation, and rock matrix sampling), evaluate borehole geophysical logging and discrete samples (18" interval), and review rock cores for design of a site injection program.

Many fractured bedrock sites do not achieve cleanup goals on time or on budget because conventional techniques and technologies to address contaminant flow and bedrock well injection are dated. Most times, the design depicts an incomplete understanding of the location (interval), mass concentration, and mass flux; typically, these are the result of the cost of fractured bedrock site investigation, access difficulties in the subsurface, injection deficiencies in the subsurface, or poor remedy selection. These important characteristics of a fractured bedrock site can be solved. Understanding the geologic controls of a fractured bedrock site, selecting the proper reagent loading, considering reagent persistence, and achieving distribution in the subsurface are key to resolving contaminated fractured rock. This webinar walks through a fractured bedrock RDC process that helps control investigation costs, develops a high-resolution understanding of groundwater and contaminant mass in the subsurface, and refines the final injection plan and equipment necessary to achieve reagent distribution and treatment. Attendees will have a better understanding of the concert of tools critical to understanding a fractured rock environment and have the confidence to speak about and apply these concepts for their clients.
https://attendee.gotowebinar.com/register/2928278051641606928

December 10th, 2020: ***Unlocking the Secrets to Fractured Bedrock Injection***

This is the fifth installment in that series, and it focuses on fractured bedrock injection. The webinar will focus on the specialized equipment designed for high-pressure rock injection, while depicting the considerations, challenges, and expectations of fractured bedrock injection utilizing a narrow-interval straddle packer injection system coupled with high capacity pumps. This technology is different from many conventional bedrock injection programs that use low-flow or diffusion to address groundwater zones, and places reagent surgically in the subsurface based on the Remedial Design Characterization (RDC).

A key to bedrock remediation is to not treat just the highly transmissive zones, but also lower transmissive zones and zones of residual contaminant storage. A combination of custom packers (18" between inflation elements) and a unique bedrock injection unit (flow rates ranging from 50 to 250 gallons per minute and pressure up to 3,000 psi.) allows focused treatment using high energy access to the smaller aperture fracture networks which typically contain more contaminant mass than more transmissive features. Understanding these challenges and concepts has led to the development of custom injection equipment to increase reagent distribution, speed, efficacy, and success for bedrock injection programs. Being able to isolate and treat these zones is a key component to success at difficult fractured bedrock sites. When coupled together with a unique RDC processes and methodology (covered in previous webinar) and high-pressure formational response case histories, there is a higher probability that the design and selected amendments are properly installed into the targeted treatment zones. https://attendee.gotowebinar.com/register/6113718268448204304

December 17th, 2020: ***The Pre-drill Methodology: Overcoming Unconsolidated DPT Refusal***

This is the sixth installment in that series, and it focuses on accessing difficult geologic zones at remediation sites using commonly available drilling equipment. The injection locations are first pre-drilled to the desired depth using sonic or auger rigs and the evacuated borehole is then backfilled with hydrated bentonite chips or pellets to seal the bore wall. Direct Push Technology (DPT) rigs are then used to push through the bentonite to reach the desired injection depth intervals without compromising the bore seal.

This training will introduce attendees to the Pre-Drill methodology, pioneered by RPI Group over a decade ago. Pre-Drill (pre-drilling injection locations) technique is used to bypass zones or achieve depths where DPT refusal occurs in the subsurface, allowing access to these vertical depths with DPT rigs after completion. Examples of zones that benefit from this installation process include gravel/cobble, glacial till, chert layers, caliche layers, breccia layers, stiff clays, weathered bedrock, urban fill, and more. The Pre-Drill process involves advancing sonic or HSA/SSA rigs to targeted depths and then backfilling with a hydrated bentonite-based mixture. Once the backfill has set up, a DPT rig can be pushed through the bentonite mix column and high-pressure injection intervals can commence. This technique has been used all over the United States by AST.
https://attendee.gotowebinar.com/register/8433917600985794832

MEMBERSHIP MILESTONE
A letter and certificate will be mailed to our following members
20 years - Robert Patchett
10 years - Jack Wintle

We thank these members for their commitment to AIPG.

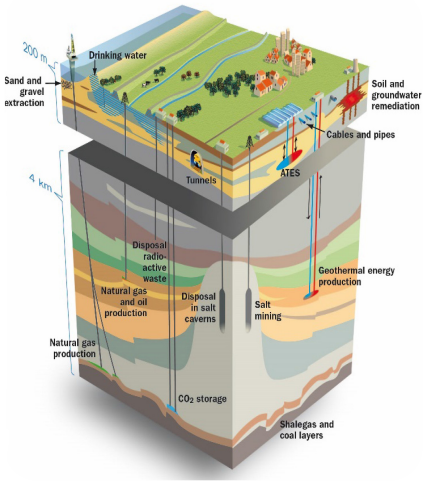
AIPG recognized additional Georgia Section members for their years of membership:

45 years – James Furlow and Fred Heivilin
40 years – Joel Warner
35 years – Steven Stokowski
20 years – James Ashworth
15 years – Rebecca Ferguson and Rick Ricci
10 years – Mark Hall, Justin Johnson, Susan Kite, and David Smoak
5 years – Mark Faas, Michael Meares, Matthew Toro, and Lauren Carter

Teaching a lab at Berry College on constructing potentiometric surface maps and benzene iso-concentration maps

Responding to societal needs with 3D geology: An international perspective

November 17 & 19, 2020, 10h00-11h45 EST/ 16h00-17h45 CET



Geological Survey Organizations (GSOs) have been helping society face economic and environmental challenges for over 150 years. The technological transformation of geoscience is presenting new opportunities for GSOs, and the wider geoscience community, to respond to the societal challenges of our time, and lay the foundation for a sustainable future. Three-dimensional geological modelling is providing a valuable tool for informed decision making and risk reduction – from planning urban infrastructure, managing ground water resources, and sourcing renewable energy. To capitalize on this capability, new data infrastructures are required to share and integrate information across government and the private sector.

This two-part webinar will feature leaders in the field, presenting the latest developments, and will be of interest to students, academics, private sector practitioners, and other government agencies.

Geological Survey Organizations support societal needs: 3D geoscience

November 17, 2020
10h00–11h45 EST / 16h00–17h45 CET

Moderator
H. Thorleifson, Director, Minnesota Geological Survey, MN

Presenters
Past, Present, and Future of Geological Modeling of the Subsurface, Keith Turner, Colorado School of Mines, CO, USA

An Overview of Current 3D Modelling Activities at GSOs, Kelsey MacCormack, Alberta Geological Survey/Alberta Energy Regulator, AB, CA

Unlocking Value from Geospatial Data Beyond GSOs, Holger Kessler, Geospatial Commission, Cabinet Office, UK

Enabling Societal Access and Use of Geoscience Data, Michiel van der Meulen, TNO, Geological Survey of the Netherlands, NL

Geological Survey Organizations support societal needs: 21st Century Challenges

November 19, 2020,
10h00–11h45 EST / 16h00–17h45 CET

Moderators
K. MacCormack (Alberta Geological Survey/Alberta Energy Regulator, Canada)
H. Kessler (Geospatial Commission, Cabinet Office, UK)

Panelists
Environmental Modelling, Edward Sudicky, Aquanty Inc, Waterloo, ON, CA

Engineering Geology, Helen Reeves, Jacobs, Leeds, UK

3D Methods and Visualization, Roland Baumberger, Swiss Geological Survey, CH

Urban Applications, Scott Kuykendall, McHenry County Department of Planning and Development, Woodstock, IL, USA

Groundwater Resources, Michael Kehinde, Groundwater and Hydrology Team, Environment Agency, Hertfordshire and North London Area, UK

Register at www.americangeosciences.org/webinars/responding-societal-needs-3d-geology

Sponsored by the World Community of Geological Surveys (WCOGS).
Please contact Hazen Russell at hazen.russell@canada.ca with any questions you may have about this workshop.
Organized by the Geological Survey of Canada, Illinois State Geological Survey, British Geological Survey, Alberta Geological Survey, Minnesota Geological Survey, TNO, Geological Survey of the Netherlands. Hosted by the American Geosciences Institute.