

**Mr. Bill Kappel
(USGS)**

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15 September 2021 Virtual Meeting– 6:00 PM

Mr. Bill Kappel (USGS) will present:

Return to Retsof – Surface Geophysics Strikes Back

The Retsof salt mine experienced roof failure in 1994 that resulted in groundwater inflow from the basal unconsolidated aquifer and upper bedrock zones through two bedrock rubble ‘chimneys’. The mine subsequently filled with saturated brine due to solutioning of residual salt pillars in the mine cavity.

Since the early 2000s, except for a period of remedial pumping in 2006 to 2013, high-salinity water has migrated upward through the rubble chimneys into the basal part the aquifer system. The extent of saline-water migration within the basal aquifer system had not been evaluated since the end of remedial pumping when all the monitoring wells were grouted and abandoned.

An investigation of the current extent of saline water in the aquifer system began in the fall 2016 and the fall of 2017 by the U.S. Geological Survey in cooperation with the New York State Department of Environmental Conservation. During the two data collection periods, USGS collected time-domain electromagnetic and passive seismic soundings at 105 sites along 13 cross-valley transects north and south of the mine-collapse area, east of Piffard, New York, and further north on the Fowlerville Moraine in the Genesee River valley.

An integrated analysis of the time-domain electromagnetic soundings with the passive seismic depth-to-bedrock estimates, well logs, and past chloride-monitoring data suggests the presence of a zone of high electrical conductivity associated with saline water in the confined basal valley-fill aquifer system that extends from the mine-collapse area northward for more than 2.5 miles. Saline water flowing upward through the bedrock-rubble chimneys mixes with northward groundwater flow in the thalweg of the bedrock valley where the basal confined aquifer is located.

The northern extent of the high-conductivity zone is unclear because of the presence of what appears to be highly saline water that was delineated by time-domain electromagnetic soundings in the basal confined aquifer and uppermost bedrock in the area east of the hamlet of Piffard. This additional source of high conductivity water is probably associated with historic salt-solution wells in Piffard, or possibly sourced from natural brine pools, or from the upward migration of pressurized brine at the northern extent of the former salt mine within the Genesee Valley.

***This is a FREE virtual event—Please register through the CNYAPG website
Zoom access instructions will be provided via email to registered attendees on the day of the
presentation***

Next virtual meeting - October 2021

CNYAPG Newsletter

The CNYAPG Newsletter is a monthly publication of the Central New York Association of Professional Geologists dedicated to sharing upcoming events, delivering regular articles of interest and providing the Membership a forum for discussion.

The newsletter is prepared by the Officers and Board of Directors of CNYAPG (listed below).

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President's Message— September 2021

As President of the Central New York Association of Professional Geologists (CNYAPG), I want to welcome everyone to our 2021-2022 season, and on behalf of the CNYAPG board of directors, I would like to say that we all hope you and your family and loved ones are still well and we wish you all the best. It goes without saying that the Covid situation we have all been living under for the past year and a half has not ended. Yes, it has gotten better, but we are still not in the place we all want to be. Faced with the current conditions, CNYAPG will, for the next few months at least, continue to hold our monthly gatherings virtual via zoom. They will continue to be on the 3rd Wednesday of the month.

Thanks to the great work of our Vice President, Sean Pepling, we have several great speakers lined up for this season. Starting the season off will be Bill Kappel, formerly with the USGS, who will be presenting this month on the 15th. As most of you know, Bill has given several outstanding talks to our group in the past. In October we will be having Karen Harp from Colgate University as our featured speaker. I hope all of you can attend and I am sure there will be a lively discussion after both presentations.

Given the uncertainties of Covid, other Geoscience events and activities that are planned for the near future: On September 24 thru the 26th the New York State Geological Association (NYSGA) is planning to host its 2021 Field Conference at Buffalo State in Buffalo; On September 25th and 26th the Gem and Mineral Society of Syracuse is planning a show at the Ramada Inn in Liverpool; On October 2nd Erie County is planning to host an Earth Science Day at Penn Dixie Fossil Park and Nature Preserve; and the Eastern Section of the AAPG is planning to host its 50th Annual Convention on October 2 thru the 6th in Pittsburgh, PA. If you noticed I intentionally use the word “Planning” for as we all are aware over the last year, plans change.

As I did throughout last season, I encourage all of you to both stay safe and to stay involved in the Geosciences Community. When possible, participate in local library science events and science fairs (online or in-person) and continue to engage our community at any level you are comfortable with. Use social media to post and discuss topics in the geosciences online or just post cool images of outcrops and hiking photos on Facebook and Instagram. Lastly, someone quoted some writer to me the other day, who I had never heard of before. However, I found the quote to be both fitting and Gandhi-ish, so I will paraphrase it: “Everything we do is infused with the energy with which we do it. If we’re frantic, life will be frantic. If we’re peaceful, life will be peaceful. The goal is to have peace in all things.”

Stay well, stay safe, and let’s get this season off the ground with a great start.

Calvin K. Prothro, P.G.
President of CNYAPG

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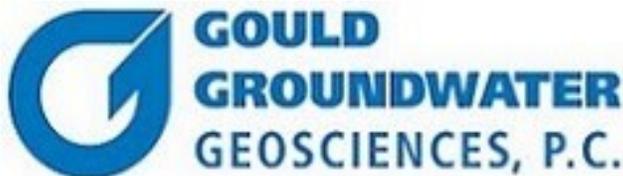
We characterize the mineralogy/chemistry, porosity, texture, structure, and organic matter content of rock, soil, or sediment samples to assist and enhance environmental investigation

- ❖ Optical Microscopy
- ❖ Scanning Electron Microscopy/Energy Dispersive Spectroscopy
- ❖ X-Ray Powder Diffraction

Geochemistry/Chemical Hydrogeology

We emphasize evaluation techniques focused on the chemical properties of water and its interactions with geological materials as a compliment to standard hydrogeology techniques, which often focus primarily on the physical properties and/or available quantity of water (i.e., flow paths and/or flow rates)

- ❖ Chemical Extraction
- ❖ Mapping/Graphical Data Analysis
- ❖ Geostatistical Analysis
- ❖ Geochemical Modeling



CNYAPG Governance

Membership Renewal

CNYAPG's membership period follows the CNYAPG meeting year from September through August. Renewals are due in September. To renew or become a new member, simply complete the membership form, available on our website at www.cnyapg.org. Membership is only \$25 per year and all money received is used in support of our organization.

Join CNYAPG at our social networking groups on [Facebook](#) and [LinkedIn](#). These sites (always under development) will provide online forums for discussion, as well as another way to inform our members and networking opportunities. For more information about our social media sites e-mail us at admin@cnyapg.org.

The CNYAPG was founded in 1993 to strengthen and advance the geological sciences. CNYAPG conducts regular meetings on the third Wednesday of each month from September to May. Meetings feature dinner and distinguished speakers whose presentations invite comment and discussion.



www.cnyapg.org
www.twitter.com/cnyapg

Programming Note & Upcoming Events

As noted previously, CNYAPG has temporarily transitioned to a virtual Zoom platform beginning with the October 2020 meeting.

September 15, 2021 6:00 PM– CNYAPG– *Return to Retsof Surface Geophysics Strikes Back*

Mr. Bill Kappel– USGS

Virtual Meeting– www.cnyapg.org

October 20, 2021 6:00 PM– CNYAPG– *Topic TBD*

Dr. Karen Harpp– Colgate University

Virtual Meeting– www.cnyapg.org

November 17, 2021 6:00 PM– CNYAPG– *Topic TBD*

Dr. David Eckhardt– USGS

Virtual Meeting– www.cnyapg.org

December 15, 2021 6:00 PM– CNYAPG– *Topic TBD*

Dr. David Valentino– SUNY Oswego

Virtual Meeting– www.cnyapg.org

January 19, 2022 6:00 PM– CNYAPG– *Topic TBD*

Dr. Robert Titus– Hartwick College

Virtual Meeting– www.cnyapg.org

February 16, 2022 6:00 PM– CNYAPG– *Topic TBD*

Dr. Robert Darling– SUNY Cortland

Virtual Meeting– www.cnyapg.org

March 16, 2022 6:00 PM– CNYAPG– *Topic TBD*

Mr. Andy Kozlowski– NYSGS

Virtual Meeting– www.cnyapg.org

April 20, 2022 6:00 PM– CNYAPG– *Topic TBD*

Dr. Paul Harnick– Colgate University

Virtual Meeting– www.cnyapg.org

May 18, 2022 6:00 PM– CNYAPG– *Topic TBD*

Dr. Rachel Lee– SUNY Oswego

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