

### Agenda on Thursday June 20th, 2019

Time	Outside	Conference Room	Cafeteria
8:00 AM – 9:00 AM	Welcome to Geotech Field Days – Coffee & Snacks		
9:00 AM – 10:30 AM	<p><b>Jassen Savoie from Geotech. The First Ever Field Tech's Guide to Water Quality Monitoring Strategies.</b> This presentation introduces noteworthy and leading technology that encompasses environmental sampling, monitoring and filtration innovation and smart use combinations which overcome data collection hurdles.</p>	<p><b>Dr. Julie Foster with Horiba. Multi Water Quality Meter Training and Demo</b></p>	<p><b>Deblyn Palella from Geotech. Maximize Operational Efficiency and Cost-Effectiveness with Bruker Elemental Analyzers.</b> If your business relies on verifying or identifying materials, you can increase operational efficiency and throughput, with fast, highly accurate Bruker Handheld XRF Analyzers. Bruker Handhelds can quickly, easily, and accurately identify:</p> <ul style="list-style-type: none"> <li>• alloy grade, including precious metals and less common alloy types</li> <li>• environmental contaminants such as lead, arsenic, and others in soil, consumer products, and other matrices</li> <li>• elements of interest or tramp elements in rock, ore, rock wall, prepared samples, and tailings</li> <li>• elements from magnesium and up on the periodic table in almost any matrix.</li> </ul>
10:30 AM – 10:45 AM	Break in Exhibit Area		
10:45 AM – 12:00 PM	<p><b>Adam Willingham – Systems Sales Engineer. YSI Remote Monitoring and Integrated Systems.</b> This presentation will provide an introduction to remote monitoring and integrated systems for environmental monitoring. Content will include a live demonstration set up of an EXO3 Multiparameter Water Quality Sonde and Storm3 data logger for unattended water quality sampling and remote monitoring. Additional topics will include YSI's unmanned vehicle offering for field data collection, buoys, profiling platforms, stream gauging and acoustic flow monitoring.</p>	<p><b>Paul Shultz from Seametrics. Incorporating Sustainability into Sensor Procurement.</b> Most corporations and public entities have sustainability goals. When selecting sensors for monitoring needs, selecting sensors that have a positive environmental message is both good for the environment and contributes to the end client's sustainability goals. Selecting electronic equipment at work should be no different than selecting electronic equipment at home. One should ask, how many home electronic devices do they own where the power source is not either replaceable or rechargeable? Purchasing requirements based on product lifecycle, not the lifecycle of the power source are environmentally responsible purchasing requirements and the very definition of sustainable purchasing practices.</p>	<p><b>Sue Skorheim with Defiant. Saving Time, Money and Resources with the FROG-5000, the World's Smallest Gas Chromatograph.</b> Learn how to run samples of air, water or soil on the FROG-5000 to identify and quantify Volatile Organic Compounds. This instrument provides lab quality analysis in the field, in real time. Have you ever had a PID alarm for a compound but have the lab report Non-Detect? See how the FROG's separation of compounds provides meaningful information in the field to allow for more efficient deployment of large equipment. Experience "Screening with Meaning".</p>
12:00 PM – 1:30 PM	Lunch in Exhibit Area	<p><b>CGWA: Marcus Donaldson. Borehole Magnetic Resonance for aquifer characterization and quantification of flow properties.</b> Magnetic resonance logging is a non-invasive, radiation-free technique that allows for direct quantification of aquifer characteristics including porosity, specific yield and retention, and hydraulic conductivity. This talk focuses on the technique's growing use in groundwater studies and explains the principles of the measurement. Case studies will be presented to demonstrate the capabilities and avoidable pitfalls of borehole magnetic resonance. Technical considerations that should be undertaken when proposing the technology and interpreting the data will also be discussed.</p>	<p><b>CEMS: Tom Harp. Remediation Risk Reduction, LLC. Rapid Site Closure of large gas plant using bio-remediation technology in low-permeability soil and fractured bedrock. CLE Accredited</b> Natural-gas condensate and other natural-gas liquids released to the subsurface from a large gas-processing plant generated a petroleum-hydrocarbon plume approximately 30 acres in area. An in-situ, carbon-based injection program was implemented to expedite remediation for a pending property sale. The remedy was a granular, activated carbon injectate inoculated with cultured microbes (consortia of facultative microorganisms), electron acceptors (nitrate and sulfate), and nutrients (phosphorus and nitrogen) designed to quickly biodegrade BTEX compounds. Following 24 months of post-treatment groundwater monitoring, a No Further Action determination was issued by the Railroad Commission of Texas.</p>
1:30 PM – 3:00 PM	<p><b>Rachel Bean with EnoScientific. Monitoring Groundwater Levels Using Sound Waves.</b> Yes, there are options when it comes to water level monitoring. Come learn how you can obtain quick and accurate groundwater level readings using a low frequency sound wave. This non contact method of monitoring provides readings down to 7000 ft. in seconds. There is no risk of cross contamination or NSF certification since the sensors don't break the plane of the sanitary seal. This sonic sensor opens opportunities for wells that were previously limiting. Sound waves can monitor in any direction, around corners and in small spaces. Find out why this is the next tool to add in your toolbox!</p>	<p><b>Andrew Lindemann from Geotech on Characterization of Groundwater Flow by Identifying Preferential Flow.</b> Accurately measuring groundwater flow velocity is important, particularly with the increased emphasis on subsurface transport processes at hazardous waste sites. The colloidal bore-scope provides a direct field measurement of the water velocity in a well. It is possible to relate flow in a well bore to the surrounding porous media. By plotting the trajectory and speed of a colloidal particle relative flow direction can be determined. The equipment for doing this type of characterization will be discussed. Equipment will be demonstrated and available for hands-on viewing.</p>	<p><b>Jeff Nimmo with Geotech. Top 10 Mistakes in Groundwater Remediation.</b> Environmental engineers are often confronted with difficult decisions about how best to address requirements for remediation and/or compliance. The engineer is responsible for determining the appropriate technical course to undertake in defining an acceptable level of residual contamination, identifying appropriate contractors, and assessing final reports and work efforts. The environmental engineer is responsible to identify which of these tools is most appropriate to the specific conditions found at the site. This presentation covers the ten biggest mistakes in groundwater remediation as identified by industry experts. Ways to avoid these mistakes will be reviewed and discussed.</p>
3:00 PM – 3:30 PM	Break in Exhibit Area		

*More Thursday Agenda Times on the Back*

## Thursday, June 20th Agenda Continued

Time	Outside	Conference Room	Cafeteria
3:30 PM – 4:30 PM	<p><b>Sanford L. Britt, PG, CHG with ProHydro, LLC. The Snap Sampler for Passive Groundwater Sampling.</b> The Snap Sampler is a dedicated passive sampling system for long term monitoring. This cost-saving approach eliminates purging and waste water production and improves data quality through consistency and samples sealed downhole. The Snap Sampler method is simple, quick, and is an acceptable replacement technology for low flow and volume-based purge sampling methods. The session will include a demonstration of the sampler assembly and preparation for deployment. It will include a mock sample collection and preparation of bottles for lab submittal. Attendees will see the sampling process from beginning to end and come away with a sense of what it takes to collect Snap Sampler passive groundwater samples. Live Q&amp;A with the developer of the technology will provide the very best chance to see if this sampling technology will fit your sampling requirements.</p>	<p><b>Blake Piritz from Ion Science. Ion Science PID &amp; Dedicated Product Line.</b> Ion Science is the largest manufacturer of the Photoionization Detection (PID) sensors. Our patented fence electrode technology is trusted by major gas detection manufacturers around the world. Ion Science manufactures a full range of wearable, handheld and fixed instruments for fast, accurate detection of VOCs. Our Cub, Tiger and Falco series are based on the PID, while our GasCheck series leak detectors are the industry standard for the most miniscule leaks. Our Titan Benzene specific monitor samples every 60 seconds for defensible data over a wide range of conditions. The Ion Science GasClam is an innovative ground gas monitor. We will demonstrate out of the box start up and software set up for these instruments.</p>	<p><b>Eric Hadden with Laval Underground. Laval Underground Surveys Product Portfolio – Maximizing Value.</b> This course will cover the entire portfolio of Laval Underground Surveys, underground camera systems and accessories. We will start with a brief history of Laval Underground Surveys, discuss the company in its current incarnation, transition into an overview of our camera product portfolio. Within the camera system product segment the following topics will be covered:</p> <ul style="list-style-type: none"> <li>• Currently available camera systems.</li> <li>• Product descriptions and detailed operational instructions for each camera system, with significant attention paid to the SC-350/500 camera system.</li> <li>• Available camera system accessories.</li> <li>• Common Use cases for camera systems.</li> <li>• After Sales/Service support offered by Laval.</li> <li>• Methods for integrating a camera system into your existing business model.</li> </ul>
4:30 PM – 7:00 PM	<b>Exhibit Area (Happy Hour)</b>		

## Agenda on Friday June 21st, 2019

Time	Outside	Conference Room	Cafeteria
8:00 AM – 9:00 AM	<b>Exhibit Area (Welcome with Coffee &amp; Snacks)</b>		
9:00 AM – 10:30 AM	<p><b>Christine Van Beest with Gasmot. Measurement of Greenhouse Gas Fluxes from Soils using Static Chambers: The Need for Trace Multi-Gas Analyzers.</b> As society strives to better manage anthropogenic contributions to the greenhouse effect, it is critical we understand both human influenced and natural landscapes greenhouse gas (GHG) contributions to the atmosphere. A majority of GHG emissions are coming from landscape sources (i.e. agricultural fields, landfills, barnyards, wetlands, and forest floors) with potent GHG of interest including carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>). Measurement of GHG fluxes between soil and the atmosphere in managed, restored, and natural ecosystems is key to better understanding of the biogeochemical drivers of climate change and strategies for GHG mitigation strategies.</p>	<p><b>Sanford L. Britt, PG, CHG with ProHydro, LLC. Well Flow Dynamics During Groundwater Sampling: Comparison of Purge and Passive Sampling Approaches.</b> Passive sampling approaches regularly yield similar results without purging, but care is necessary to understand whether stratification in the aquifer is maintained or homogenized in the unpurged well, or if stratification is partially maintained. Determination of these effects requires substantial effort and is probably not warranted for standard monitoring. However, the study is informative in that it explains some of the dynamics associated with why passive and active samples often yield similar chemical results, and illustrates why practitioners still must always pay attention to seemingly unimportant details such as slow purge parameter drift.</p>	<p><b>Dave Rich with Geotech Computer Systems. Managing Environmental Data from the Field to the Map.</b> This presentation follows the data through the data management process from the field to the final uses of the data. It covers the various steps in the process, from preparing for a field event, gathering field data, interaction with laboratories, data import, checking and validation, data selection, reporting, and GIS mapping, using both local and cloud systems. It also discusses problem areas and pitfalls in running a data management project, and addresses how to overcome them. We will pay particular attention to the specific problems of managing laboratory data, as well as to issues related to mapping groundwater and related data. Cost savings of 50% or more can be documented resulting from more efficient data management and display, and these savings can result in a high return on investment for software purchases, staff training, and data conversion.</p>
10:30 AM – 10:45 AM	<b>Exhibit Area (Break with Coffee &amp; Snacks)</b>		
10:45 AM – 12:00 PM	<p><b>Zac Mott with Geotech. Introduction and flight demonstration of the new Remo-M fixed wing unmanned aircraft system (or Drone).</b> The Remo-M is widely used unmanned aircraft system built for mobility, rapid deployment, and aerial mapping applications. Featuring a one-of-a-kind deep-stall vertical landing feature, the Remo-M only requires a 15 meter radius landing area. Users benefit from the simplicity of flight planning software and intuitive user interface. Oblique images with roll axis gimbal for intelligent 3D modeling. The Remo-M is the most advanced fixed-wing UAV in its class, delivering greater efficiency, flight mission flexibility and simplicity.</p>	<p><b>Diego Davis YSI Sales Manager with Xylem. YSI Water Quality Meter Maintenance and Calibration Workshop.</b> This workshop will cover the fundamentals of YSI Multi-parameter water quality field instruments for measuring temperature, conductivity, pH, dissolved oxygen, turbidity and algae. Live instruction will include best practices for system maintenance, sensor calibration, system configuration, data collection and data export.</p>	<p><b>Deblyn Palella from Geotech: Viken Detection (formerly Heuresis) Pb200i: Advancement in XRF Technology for HUD/EPA Compliant Lead Paint Analysis.</b> The first advancement in onsite Lead Paint Analysis in 15 years, this presentation delves into Lead Paint Analysis solutions that arm Lead Paint Inspectors with the latest technology in order to avoid ever having to take a Paint chip sample again. Learn how the Heuresis XRF technology works and how it can be used to identify lead in paint, how to customize reports as well as pertinent regulatory compliance information. This presentation provides Certification from Viken Detection for use of the Pb200i in all 50 states.</p>
12:00 PM – 1:30 PM	<b>Lunch in Exhibit Area</b>	<p><b>Carlos Bielicki &amp; Chase Holton. Overview of the Durrigge RAD7 Continuous Radon/Thoron Monitor and a Vapor Intrusion Case Study.</b> Learn about the RAD7, a professional scientific-grade instrument with accessories for measuring radon and thoron in air, water, and soil gas. Made in the USA and with over 5,000 units sold, the RAD7 is a standard used worldwide in applications as diverse as geology (radon as an environmental tracer for groundwater flows into rivers and coastal areas), environmental remediation/compliance (vapor intrusion), indoor air quality, and many others. The RAD7 overview will be followed by a case study from Geosyntec Consultants.</p>	<p><b>Charlie Liu with the Colorado School of Mines. Per and polyfluoroalkyl substances (PFAS): Case studies focusing on PFAS separation and destruction in pilot-scale systems.</b> Per- and polyfluoroalkyl substances (PFAS) are a class of man-made chemicals that are widely used across different industries including textile stain repellants, grease repellants, coatings, firefighting foams, and more. However, once PFASs are released into the environment, they are resilient to environmental degradation and harmful to human health. Remediation technologies for PFASs involve destructive technologies like UV reductive processes, separation technologies like high-pressure membranes (i.e., nanofiltration or reverse osmosis), and adsorption technologies like granular activated carbon (GAC). This presentation will focus on case-studies involving PFAS separation using GAC and high-pressure membranes as well as PFAS destructive techniques using UV reductive processes. In addition, the presentation will also present an overview of the extensive PFAS research being performed at the Colorado School of Mines.</p>
1:30 PM – 2:00 PM	<b>Exhibit Area (Break with Coffee &amp; Snacks)</b>		
2:00 PM – 4:00 PM		<p><b>RMUASP &amp; UAS Colorado Meet-Up:</b> Join the local unmanned aircraft (drones) and robotics community for an afternoon of technology and application presentations and discussion. The event will include educational content, networking, and forum for collaboration.</p>	
4:00 PM – 5:00 PM	<b>Networking Happy Hour</b>		