



ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society



2022-2023 Edition 7

www.mbgs.org

March 2023

ANNOUNCEMENTS

MBGS Membership Meeting, March 8th, 2023, 7:00PM: Evangelia (Evie) Murgia, Michigan Geological Survey, will present "Michigan Geological Survey – Tools and Programs at Your Fingertips".

Join Zoom Meeting

<https://us06web.zoom.us/j/89053576903?pwd=T1NtM2tSaGxTN3pWdER1QitEbXpsUT09>

Meeting ID: 890 5357 6903

Passcode: 100966

One tap mobile

+16469313860,,89053576903#,,,,*100966# US

Opportunity for Presenters

MBGS is seeking volunteers to present topics related to Michigan geology for our 2022-2023 membership meetings. If interested, please contact Andrea Muñoz-Hernandez at munozhernandeza@michigan.gov or at (517) 599-7525.

Core Display Educational Tool Available to Members

MBGS has a core display available for use that visually demonstrates permeability/porosity. There are educational posters available for use with the core display. Contact any of the officers to reserve this great educational tool.



LED Field Lens and MBGS Lanyard

The Michigan Basin Geological Society is offering to its members and non- members this geological field hand lens and lanyard (photo attached). The field hand lens is a large 21mm lens with a 20X magnification. A pair of white LEDs provides illumination for all those darkened close-up viewing of rocks, minerals and fossils. A case is provided for the field lens with a key to remove the batteries. Batteries are included. The green lanyard has MICHIGAN BASIN GEOLOGICAL SOCIETY printed on one side of the unfussy 1" wide webbing. This lanyard is designed with a breakaway buckle clip and detachable keychain for versatile use and comfortable wearing. MBGS is offering the Lanyard/LED Hand Lens and Case combo for \$15 each and the Lanyard alone for \$5 each if picked up at a meeting or field trip. If you request to have your purchase mailed, standard



costs for mailing container and postage will apply. *If you purchase one of the combos and you are in need of battery replacement, MBGS will provide replacement batteries at no additional cost. You must bring your MBGS LED field lens and lanyard to a monthly meeting or field trip. We will replace and dispose of the old batteries.* Please contact John Yellich @ john.a.yellich@wmich.edu or Jen Trout @ jennifer.l.trout@wmich.edu to order.

March 2023 MBGS Virtual Membership Meeting

Presentation: Michigan Geological Survey – Tools and Programs at Your Fingertips

Presenter: Evangelia (Evie) Murgia, Michigan Geological Survey

When: March 8th, 2023, 7:00 PM

Join Zoom Meeting:

<https://us06web.zoom.us/j/89053576903?pwd=T1NtM2tSaGxTN3pWdER1QitEbXpsUT09>

Meeting ID: 890 5357 6903

Passcode: 100966

Mobile +16469313860

Abstract: Michigan Geological Survey – Tools and Programs at Your Fingertips

The Michigan Geological Survey (MGS) collects, archives, and disseminates geological information to advance the understanding and responsible use of Michigan's geologic resources. As part of our mission, the MGS YouTube channel serves as a valuable tool for education and outreach efforts to the general public, students, and other stakeholders. The MGS YouTube channel is designed to provide engaging, educational content that highlights the diverse geological features of Michigan and the important role they play in our daily lives. Our videos cover topics such as mineral resources, groundwater, geologic hazards, and Michigan's unique geology and landscapes. The channel also features video tours of the Michigan core repository and laboratory facilities (Michigan Geological Repository for Research and Education), as well as presentations by MGS scientists on their research and findings. In addition to our YouTube channel, MGS is dedicated to improving geoscience accessibility for all. One of our most recent efforts is a pilot program that displays state park and recreation trail maps as 3-dimensional topographic maps. This tool allows visitors to better plan their routes and moderate expectations based on personal limitations by more directly seeing physical obstacles. This product is accomplished by 3-D rendering a georeferenced DNR park trail map to local lidar generated topography maps and is publicly available as an online web application, hosted through ArcGIS. This pilot program enhances accessibility by providing additional tools such as measuring ability, a transparency meter of the park trail map over aerial imagery, and feature layers for potential physical obstacles. This product is available for popular destinations across Michigan, including but not limited to Porcupine Mountains State Wilderness Park, Tahquamenon Falls State Park, Muskegon State Park, and the Pigeon River Country State Forest. Potential future developments of this project include the expansion of state parks and recreation areas to be included in the service, and the addition of a public comment platform for personal sharing of service case usage. The MGS YouTube channel and our pilot program for enhanced accessibility park and recreation maps are two valuable tools for education and outreach. Our YouTube channel provides engaging and informative content, while our pilot program empowers park visitors to better plan their trips with a greater level of knowledge and confidence in their abilities relative to the location. MGS is dedicated to improving geoscience accessibility for all, and we look forward to future developments in this area.

Biographical Sketch: Evangelia (Evie) Murgia

Evangelia (Evie) Murgia is a hydrogeologist and project manager for the Michigan Geological Survey in Kalamazoo, MI. Her work with MGS over the last three years has involved managing multi-phase projects and bringing them to successful completion. Currently, she is overseeing a project that deals with Michigan's statewide water well database. This project includes automation of validation processes using ArcPython, hydrogeologic mapping, and production of educational and training content. Evie earned her Master of Science in Earth Science from Western Michigan University in 2022, studying fracture network modeling of contaminant transport in columnar jointed bedrock, as well as the effectiveness of varying methods for early geoscience professional training. Prior to that, she received her Bachelor of Science in Geology from Western Michigan University in 2019, where her research focused on the fundamental controls of dessication cracks in clay-rich sediments. Through her academic and professional experiences, Evie has developed a strong foundation in hydrogeology, project management, and geoscience education.

FROM THE PRESIDENT'S DESK

A NOTE FROM JEN

I hope you all made it through the storm unscathed! What a weird winter. So, are you ready for spring? We have a speaker from the Michigan Geological Survey this month. I'm looking forward to seeing what Evie is going to present. If you haven't seen our YouTube channel yet, you should check it out. We have 2 presentations up right now and are working on a third.



The results from the survey are in. I'm sad to say that the participation level was very low. We had a total of 16 respondents and I think a fair number of those were from executive committee members. Considering our membership is around 75 that's a measly 21% response rate. Given that the numbers were so low, we will consider the responses to try to better reach out to our members, but not make changes based solely on the survey results. We are really in need of people to step up and take on the roles of VP and Treasurer. There may also be changes in the future if we can't get officers.

We have been given the go-ahead from the Kate Palmer Wildlife Sanctuary to put a historical marker on the property for the mining of coal in the area. If you went on the field trip to Jackson, you'll know what I'm talking about. We will be giving you further updates as we progress through the process. This was only the first step in many that we'll have to go through. And, yes, we will be asking for donations if this is successfully approved! Thanks again to Dave Westjohn and Bennie See who have been working on this for a while.

We are looking forward to May and the GSA meeting in Grand Rapids. We hope to see you there. Come by our MBGS/MGS booth to say "hi"! Please, check out the "Friends of the Pleistocene" field trips the following weekend. We are also working on a future field trip to Hocking Hills State Park in Ohio, possibly in the fall.

What is it?

Do you know what this famous rock is? The first correct answer wins a fabulous prize! Email your answers to Jennifer.L.Trout@wmich.edu



Thanks,

Jen

REFERENCES

We are providing links for your reference. Please visit these sites to learn more about specific events and happenings. If you have an event to share, let us know!



American Institute of Professional Geologist – Michigan Section – <http://mi.aipg.org/newsletters.htm>

Central Michigan Lapidary and Mineral Society - <http://www.michrocks.org/>

Eastern Section AAPG - <https://www.esaapg.org/>

EGLE Calendar of Events - [Calendar \(michigan.gov\)](https://www.michigan.gov/Calendar)

Flint Rock and Gem - <https://flintrockandgem.org/events>

Michigan Association of Environmental Professionals - <https://www.maep.org/>

Michigan Basin Geological Society – www.mbggs.org

Michigan Clean Water Corps - <https://micorps.net/about/>

Michigan Mineralogical Society - <https://www.michmin.org/>

Midwest Mineralogical and Lapidary Society - <http://www.mmls.us/>

Rock Clubs in USA - [All Mineral, Rock, Gem Shows, GeoSites, Rock Clubs in USA \(rockandmineralshows.com\)](http://rockandmineralshows.com)

Society of Petroleum Engineers - <https://www.spe.org/events/calendar/>

EVENTS

April 11-12, 2023: EGLE MI Healthy Climate Conference, [MI Healthy Climate Conference - Michigan Department of Environment, Great Lakes, and Energy \(idloom.events\)](https://www.idloom.com/events/mi-healthy-climate-conference)

June 21-22, 2023: Michigan Environmental Justice Conference [Michigan Environmental Justice Conference - Michigan Department of Environment, Great Lakes, and Energy \(idloom.events\)](https://www.idloom.com/events/michigan-environmental-justice-conference)

ONLINE RESOURCES

- **American Geoscience Institute – Interactive Michigan Geology Maps:** [Interactive map of the geology of Michigan | American Geosciences Institute](https://www.american-geosciences.org/michigan-geology-maps)
- **Digital Geology Library Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2010-01-20_307979_7.pdf
- **GeoWebFace:** [GeoWebFace \(michigan.gov\)](https://www.michigan.gov/GeoWebFace)
- **Digital Geology Library Mining Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2013_06_22_mining_425595_7.pdf
- **Michigan Geological Survey:** [Michigan Geological Survey | Western Michigan University \(wmich.edu\)](https://www.wmich.edu/michigan-geological-survey)
- **USGS Michigan Geological Map Data:** [Michigan geologic map data \(usgs.gov\)](https://www.usgs.gov/michigan-geologic-map-data)
- **CMU, Clarke Historical Library, Michigan Geology:** [https://www.cmich.edu/library/clarke/ResearchResources/Michigan Material Statewide/Michigan Oil and Gas Industry/History of Michigan Oil and Gas/Pages/Michigan-Geology.aspx](https://www.cmich.edu/library/clarke/ResearchResources/Michigan%20Material%20Statewide/Michigan%20Oil%20and%20Gas%20Industry/History%20of%20Michigan%20Oil%20and%20Gas/Pages/Michigan-Geology.aspx)

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PUBLICATIONS: [Open](#)

ELECTRONIC PUBLICATIONS: Please contact an officer for information

WEBMASTER: JOHN ESCH, eschj@michigan.gov

MBGS PUBLICATIONS

<http://www.mbgs.org/publications.html>

Historical publications now available on USB Flash Drives". Each USB Flash Drive is 8GB

Prices include postage, handling and any applicable sales tax.
Orders for publications should be prepaid in U.S. Funds and addressed to:

MBGS — Publications
P.O. Box 14044
Lansing, MI 48901-4044

Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998, 2000, \$15

- The Stratigraphy of Manitoulin Island, Ontario, Canada, June 19-20, 1954
- The Devonian and Silurian Rocks of Parts of Ontario, Canada and Western New York, June 22-23, 1951
- The Traverse Group of the Northern Part of the Southern Peninsula of Michigan, June 16-17, 1949
- The Devonian Strata of the London-Sarnia Area, Southwestern Ontario, Compiled by Erwin C. Stumm, Lewis B. Kellum and Jean Davies Wright, June 9-10, 1956
- The Ordovician Rocks of the Escanaba-Stonington Area, Led by R. C. Hussey, June 2-3, 1950
- The Niagara Escarpment of Peninsular Ontario, Canada, June 18-19, 1955
- Lower Paleozoic and Pleistocene Stratigraphy Across Central Wisconsin, Compiled by C. E. Prouty, Led by L. M. Cline, J. L. Hough and R. F. Black, 1960
- Classic Silurian Reefs of the Chicago Area, by Donald G. Mikulic and Joanne Kluessendorf, June 27, 1998
- Geology of Central Ontario, Canada, 1965

Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991, 2001, \$15

- Copper Country Field Trip, Michigan, June 20-22, 1947
- Geology of Mackinac Island and Lower and Middle Devonian, South of the Straits of Mackinac, June 12-14, 1959
- Tectonics, Structure and Karst in Northern Lower Michigan, August 1983
- Geology of the Pictured Rocks, Upper Peninsula, Michigan, July 11-13, 1991

Historical CD #3: Six out-of-print publications from 1948, 1952, 1990 - 1995, 2001, \$15

- Pleistocene and Early Paleozoic of the Eastern Part of the Northern Peninsula of Michigan, June 18-21, 1948
- Stratigraphy and Structure of the Devonian Rocks in Southeastern MI and Northwestern OH, June 20-21, 1952
- Lower Ordovician and Upper Cambrian of Wisconsin, May 10-12, 1990
- Guidebook to the Precambrian Geology and Metallogeny of the Central Upper Peninsula of Michigan September 12-13, 1991

Historical CD #4: Six out-of-print publications from 1957, 1958, 1961, 1967, 1968 and 1970, 2004, \$15

- Silurian Rocks of the Northern Peninsula of Michigan, 1957
- Cambrian Geology of Parts of Dickinson and Iron Counties, Michigan, June 1958
- Geologic Features of Parts of Houghton, Keweenaw, Baraga and Ontonagon Counties, Michigan, May 19-21, 1961
- Correlation Problems of the Cambrian and Ordovician Outcrops Areas, Northern Peninsula of Michigan 1967
- The Geology of Manitoulin Island, June 1968
- Devonian Strata of Alpena and Presque Isle Counties, Michigan 1970

Historical CD #5: Five out-of-print publications from 1971, 1989, 2001, and Oil & Gas Fields Vol. 1 & 2, 1969 & 1992, 2006, \$50

- Oil & Gas Fields Symposium, Volume 1, April 1969, 200 pp., maps, illus., second printing with updates
- Oil & Gas Fields Manual of the Michigan Basin, Volume 2, 1992, 520 pp., maps, illus.
- Glacial Geology of Southwestern Michigan, 1989, 53 pp. by A. Kehew, L. J. Schmaltz, and W. T. Straw
- Geology of the Lake Erie Islands and Adjacent Shores, 1971, 65pp., maps, illus. by Jane L. Forsyth
- Glacial Geology of Southwestern Michigan, Landforms of the Lake Michigan Lobe, Southwestern Michigan, 2001, AAPG Eastern Section Meeting Field Trip, 32 pp., maps, illus. by A Kehew and A. Kozlowski

Historical CD #6: Six out-of-print publications from 1946, 1953, 1963, 1966, 1978 & 1987 plus the Richfield Challenge, 1952 & Tom Knapp's MS Thesis, 2007 \$15.

- Guidebook for Ordovician Stratigraphy of the Cincinnati, Ohio and Richmond, Indiana Areas, June 12, 13, 1953 by W. H. Shideler and B. T. Sandefur
- Guidebook for Ontario Geological Excursion to Kettle Point – Owen Sound- Waubesa, June 21, 22, 23 1946 by W. A. Roliff, C.S. Evans and J.F. Caley
- Guidebook for the Stratigraphy of the Silurian Rocks in Western Ohio, May 31- June 2, 1963 by C. H. Summerson, Jane L. Forsyth, Karl V. Hoover and J. R. Ulteig
- Guidebook for Cambrian Stratigraphy in Western Wisconsin, May 21, 22, 1966 by Merideth E. Ostrom
- Geology of the Manitoulin Area, Special Papers #3, September 29, 30 and October 1, 1978 by J. T. Sanford and R. E. Mosher
- Middle Devonian Cratonic Carbonates and Shales in Southwestern Ontario, November 14, 1987 by Bruce Wilkinson
- The Richfield Challenge, A Review of the Richfield Developments in Michigan, 1952 by Gordon H. Hautan
- A Theory of Rogers City and Dundee Relationships in Central Michigan, Masters Thesis, 1947 by Tom Knapp

Historical CD #7: Field Guidebooks from 1962, 1969, 1977, 1980, 1985 & 1988, \$15

- Silurian Rocks of the Southern Lake Michigan Area, 1962, James H. Fisher, Chairman, MBGS Annual Field Conference
- Studies of the Precambrian of the Michigan Basin, by Harold B. Stonehouse, 1969
- The Geology of the Marquette District: a Field Guide By F. W. Cambray, 1977
- Ordovician and Silurian Geology of the N. Peninsula of Michigan, 1980, R.B. Votaw, 40 pp., illus., maps
- Special Paper #4: Ordovician and Silurian Rocks of the Michigan Basin and its Margins, 1985 K.R. Cercone and J.M. Budai (eds.), 96 pp., illus.
- Upper Keweenaw Rift-Fill Sequence, Mid-Continent Rift System, Michigan, 1988, P.A. Daniels and R.D. Elmore, M.S. Wollensak, ed., 150 pp., illus., maps

OTHER SPECIAL OFFERS

- **Historical CD Set - # 1 – 7 (detailed above) for a special purchase price of \$95**
- **NE Lower Peninsula Geological Field Conf., 2004, T. Black, M. Wollensak, On CD \$10**
- **Stratigraphic Lexicon for Michigan, 2001, prepared by MBGS and published by DEQ, \$4**
- **Robert E. Mosher Geological Studies** A lifetime of geological research on Silurian Rocks with John T. Sanford. The disks are organized chronologically and include field work in North America and Europe. 2007, 2 CDs \$35.



The 2023 Friends of the Pleistocene Field Conference – Midwest cell

Roscommon, Michigan

May 19-21, 2023



Trip Leader: Randy Schaetzl, Department of Geography, Environment, and Spatial Sciences, Michigan State University soils@msu.edu (517) 648-0207

Trip co-leaders (alphabetical): Alan Arbogast, Chris Baish, Brandon Curry, Kevin Kincare, Ken Lepper, Tom Lowell, Catherine Yansa

The 2023 FOP conference will be held at the Ralph A. MacMullen (RAM) Conference Center, 104 Conservation Drive, Roscommon, Michigan. (MacMullenCenter@Michigan.gov) All registrants must lodge at the RAM Center, on the shore of beautiful Higgins Lake (exceptions can be requested – contact Randy Schaetzl). Registration fees cover lodging, all meals except Friday dinner, refreshments, and busing. Early registrants will be afforded single-occupancy rooms at the RAM Center. Later registrants risk being placed in double-occupancy rooms. Conference participation is limited to 64 persons.

Tentative schedule:

Friday, May 19

4:00 pm. Arrival and check-in.

5:30 pm: Ice-breaker begins. (Dinner is on your own; we will provide a list of restaurants in nearby cities (Roscommon, Houghton Lake, Grayling.) Expect good conversation around the RAM Center's fire pits, right on the Higgins Lake shore.

Saturday, May 20

7:00 am: breakfast.

8:15 am: "Trip overview" presentation in the RAM Center theater. Bus departs at 8:45 sharp.

6:00 pm: arrival back at the RAM Center, and refreshments.

7:30 pm: banquet.

Sunday, May 21

7:15 am: breakfast. Bus and car caravan depart at 8:30 sharp.

2:00 pm: expected return to the RAM Center, and final departure.

IMPORTANT DATES

Feb 1 – Registration opens. Registration fees are due at the time of registration.

April 15 – Last day to withdraw for full refund. (Later withdrawals receive half of their fees back.)

Please contact Randy Schaetzl with questions soils@msu.edu (517) 648-0207

State of Michigan Webinars

March 15, 2023; 4:30 - 6:00 PM

[What Makes EGLE Spatial? How to ask and answer environmental questions with EGLE's Maps and Data Portal](#) Geographic data helps tell a story and create intelligence about the world around us. Join EGLE's Lead Geographic Information Systems (GIS) Analyst to discover how EGLE develops innovative geospatial solutions that analyze and visualize data to inform decisions, streamline workflows, increase productivity, and tell our story in every EGLE Division. Learn how you can access Michigan data from EGLE's Maps and Data portal that will bring environmental issues to life for your students, and how your students can collect, visualize, and analyze data of their own!

State of Michigan Opportunities

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for a Geological Technician 8-E10 position within the Remediation & Redevelopment Division. This position is in Lansing, MI and is open to all applicants. Interested applicants must apply through NEOGOV.

[Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for a Departmental Technician-E (7-E9) position within the Data Applications and Support Unit of the Drinking Water and Environmental Health Division. This position is permanent and located at Constitution Hall, 525 W. Allegan Street, Lansing, MI. This position is open to all and interested applicants must apply through NEOGOV.

[Job Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for **seven** Environmental Quality Analyst 9-P11 positions within the Remediation & Redevelopment Division. This position is in Warren, MI and is open to all applicants. Interested applicants must apply through NEOGOV.

[Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting Geological Technician 8-E10 – Site Assessment & Site Management Unit. This position is in Lansing, MI and is open to all applicants. Interested applicants must apply through NEOGOV.

[Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting Environmental Quality Specialist 13 - Lead Service Line Replacement Specialist. This position is located in Lansing, MI and is open to all applicants. Interested applicants must apply through NEOGOV. [Posting](#)

Retired professionals' skills advance environmental goals

EGLE-backed RETAP to become RESTART Program @ LTU, serving schools, small to midsize businesses, and more

New help is available at no charge to a wide range of Michigan organizations looking to reduce waste and improve sustainability and energy efficiency.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) and Lawrence Technological University in Southfield, Michigan, have partnered to launch the [RESTART Program @ LTU](#). RESTART stands for Retired Engineers, Scientists, Technicians, Administrators, Researchers, and Teachers. The program had been established in the Natural Resources and Environmental Protection Act in 1994 as the Retired Engineers Technical Assistance Program (RETAP).

Under EGLE's guidance, RESTART offers free onsite energy efficiency and sustainability technical assistance and assessments to small and medium-sized commercial businesses headquartered in Michigan with 500 or fewer employees, and public entities including K-12 schools, municipalities, and not-for-profits. The program is now [accepting applications](#). Supported through a \$2.86 million RETAP contract, RESTART also will advance EGLE's energy, sustainability, and climate programs.

The university is recruiting retired professionals to add to a RESTART talent pool expected to number about 20 at any given time. "Michigan's retired professionals bring tremendous skill sets to the table," said Elizabeth Browne, director of EGLE's Materials Management Division. "We're eager to see the state's businesses and public organizations benefit from their experience and expertise."

RESTART's aim is to create and retain jobs, improve marketplace competitiveness, and help Michigan's manufacturing and commercial sectors toward a low-carbon future in line with goals in the [MI Healthy Climate Plan](#). Its business objective is to offer bang for its buck, producing big savings for clients when compared with program expenditures. Offerings include:

- Technical assistance that incorporates advanced, innovative, or expert energy and sustainability systems.
- Approaches and software tools to maximize energy efficiency, reduce energy consumption, promote sustainable manufacturing, and reduce operational costs and environmental impacts.
- Help implementing projects that result from a RESTART assessment, internal assessment, or third-party assessment, serving as an owner representative.
- Special added services for nominal fees.

"EGLE's commitment to the RESTART program is significant in positioning the state of Michigan to be a leader in decarbonizing our businesses and public sector," said LTU President Tarek Sobh. "LTU is grateful to be administering this program with retired engineers, technicians, teachers, and students to have a lasting impact on our environment."

In addition to EGLE, RESTART's [partnering organizations](#) include the Michigan Economic Development Corp., the Michigan Chamber of Commerce, and many others.

RESTART internships

Teaming up with Michigan universities and colleges that have accredited undergraduate programs in chemical, civil, electrical, mechanical, or manufacturing engineering, RESTART is [accepting college students' applications](#) for three-month summer internships. Interns must be juniors or seniors in engineering programs and will be selected through competitive interviews.

32nd Annual 2023 Solid Waste Technical Conference



Training Day: Monday, March 13, 2023

Granger Waste Services Main Office • 16980 Wood Road, Lansing, MI

Conference Day: Tuesday, March 14, 2023

Kellogg Hotel and Conference Center • 55 S. Harrison Road, East Lansing, MI

**THIS CONFERENCE HAS BEEN DESIGNED WITH WASTE MANAGEMENT
AND ENVIRONMENTAL PROFESSIONALS IN MIND.**

Whether you're in private industry, a government employee, consultant, or equipment supplier, this conference will be beneficial to you. It will give you the opportunity to:

- Network with top local specialists and professionals in the solid waste field
- Learn about emerging technologies and regulatory changes affecting the industry
- Gain information from presentations and case studies

For over 32 years, The Engineering Society of Detroit (ESD), in partnership with the Michigan Waste & Recycling Association (MWRA), has hosted this annual conference to focus on cutting-edge technological innovations and solutions related to the solid waste industry. This year's conference will feature experts in waste management practices to help attendees learn about issues related to policy, new technologies, regulatory updates and what the future holds for the solid waste industry.

ACCOMMODATIONS:

Discount overnight accommodations are available at the Kellogg Hotel & Conference Center at the rate of \$140 (plus applicable taxes) per night for Standard Double, Queen or King. To make a reservation please call (517) 432-4000 or 1-800-875-5090 and provide the code 2303ESDSOL to receive the discounted rate. The group reservation rate is based upon availability.

INTERESTED IN SPONSORING OR EXHIBITING?

Sponsorship & exhibit opportunities are available. For information, visit esd.org or contact Leslie A. Smith, CMP @ lsmith@esd.org or 248-353-0735, ext. 152.

EVENT FEES

Conference Day Fees (Full day conference, continental breakfast, lunch, and reception are included in the event pricing.)

\$215	ESD/MWRA Member
\$265	Non-Member
\$125	Government/MEGLE
\$100	Student Rate (applies to undergraduate students only)
\$315	Join ESD at 50% discount and attend the conference

Training Day Fees (Full day training, continental breakfast, and lunch are included in the event pricing.)

\$150	ESD/MWRA Member
\$190	Non-Member
\$100	Government/MEGLE
\$75	Student Rate (applies to undergraduate students only)
\$240	Join ESD at 50% discount and attend the conference

TO REGISTER

Visit esd.org to register online or call 248-353-0735.

Cancellation Policy: All cancellations must be received 72 hours prior to the event in order to receive a refund.



Attendees may be eligible for Continuing Education Credits based on hours of instruction time. Certificates of attendance are available upon request.

2023 Solid Waste Technical Conference

TRAINING DAY

Monday, March 13, 2023

Granger Waste Services Main Office, Lansing

Training day is an opportunity for solid waste professionals to obtain important training in various field sampling methods, experience advanced technological methods, and learn valuable lessons in sample collection and data management. Training day will provide instruction in both the classroom setting as well as applied field demonstrations.

Discussion topics include:

- Safety considerations at active and closed landfill sites.
- Importance of safety at tailgate meetings.
- Collecting representative data; discussion of the media, Clean Water Act, Clean Air Act and compliance with State and Federal rules/statutes.
- Water media sampling; sampling protocols, digital tools and evolving toolbox to comply with monitoring to comply with State and Federal requirements (Part 115, MPART, NPDES, IPP).
- Air and landfill gas compliance data gathering in order to comply with State and Federal requirements. SEM monitoring, Draeger Tube sampling; NSPS Method 25C, Perimeter Gas monitoring and wellfield balancing.
- Waste characterization and representative sampling from the perspective of a landfill operator. What a landfill will look for when reviewing wastes for acceptance and things a generator should consider when characterizing waste.
- The implications of poor data quality and techniques to ensure sampled representatives and laboratory quality assurance.
- Expectations and standards for data quality.
- Concepts for obtaining high quality information, rather than data to benefit operations.

Hands-on demonstration sessions include:

- Demonstrating the collection of representative ground water samples using flow-through cells to obtain stabilized field parameters, and collect samples representative of groundwater. Best practice techniques and lessons learned will also be demonstrated. Surface water and wastewater sampling techniques will also be discussed.
- Demonstrating the use of various gas monitoring instruments to evaluate compliance with gas migration through the subsurface (perimeter monitoring), as well as the surface emissions monitoring inspection methods. Best practices and lessons learned will be discussed.

Sessions and demonstrations will be led by the following industry experts:

- Andre Allen, Sniffer Robotics
- Kelly Cratsenburg, TRC
- Graham Crockford, TRC
- Joshua Kindy, Granger Waste Services
- Art Mohr, Sniffer Robotics
- PJ Nolan, WSP

- Jason Schmuecker, WSP
- Serenity Skillman, Granger Waste Services
- Chris Ulrich, EDL
- Kent Walters, MI EGLE
- Brian Yelen, TRC

Trainees should bring a high-vis vest and safety shoes and bring a clean pair of shoes for the training room.

8:30 am – 9:00 am

Registration and Continental Breakfast

9:00 am – 10:15 am

Educational Sessions

10:15 am – 10:30 am

Networking Break

10:30 am – 11:30 am

Educational Sessions

11:30 am – 12:00 pm

Lunch

12:00 pm – 1:25 pm

Breakout Sessions

1:25 pm – 1:35 pm

Networking Break

1:35 pm – 3:00 pm

Breakout Sessions

3:00 pm – 3:15 pm

Networking Break

3:15 pm – 4:30 pm

Educational Sessions and Wrap-Up

CONFERENCE DAY

Tuesday, March 14, 2023

Kellogg Hotel & Conference Center, East Lansing

Building on the success of previous conferences, there will be an all-day exhibit area to provide manufacturers and suppliers with the unique opportunity to interact and explore some of the latest achievements in the solid waste and environmental industries.

7:30 am – 8:30 am

Registration, Continental Breakfast and Visit with Exhibitors

8:30 am – 8:35 am

Welcome

Speaker: Adam Larky, PE, Sr. Director – Engineering and Project Management, NW Natural Renewables

8:35 am – 9:20 am

Building a Strong Safety Culture

This session will discuss how to build and establish a strong and sustainable safety culture.

Speakers: Jeff Schultz, Corporate Safety Officer, Ryan Incorporated Central and Jeff Gaulden, Corporate Safety Coordinator, Ryan Incorporated Central

9:20 am – 10:05 am

Snapshot and Outlook for the US Biogas Industry

During 2021, the number of operational biogas facilities producing renewable natural gas increased by 47%. That same year, while dozens of projects ceased construction to become operational, still the number of projects under construction increased by 41%. So far at least the RNG sector, we have not just been seeing super-strong, double-digit growth, but an acceleration of growth. And that was before 2022 when the Inflation Reduction Act was passed and EPA announced they would finally make positive changes to the Renewable Fuel Standard to help RNG, electricity, and food waste-related biogas systems. Join us to learn where the US biogas industry is in 2023, where it's headed, and the new opportunities for the solid waste industry.

Speaker: Patrick Serfass, Executive Director, American Biogas Council

10:05 am – 10:30 am

Networking Break / Visit with Exhibitors

10:30 am – 11:15 am

Effectiveness of Composite Liners to Contain PFAS in Municipal Solid Waste Landfills

This presentation will discuss the effectiveness of Subtitle D municipal solid waste (MSW) landfills to contain PFAS present within the waste and in leachate. The sources and characteristics of PFAS will be discussed, and findings from laboratory and field studies regarding PFAS transport in modern lining systems will be presented. The findings indicate that modern Subtitle D MSW landfills with composite liners are highly effective in containing PFAS, and can serve as effective repositories for sequestration of PFAS.

Speaker: Craig H. Benson, Wisconsin Distinguished Professor Emeritus, University of Wisconsin-Madison

11:15 am – 12:00 pm

EGLE Solid Waste Update

With the enactment of the eight bills amending Michigan's solid waste statute there is a significant amount of activity preparing both agency staff, local governments and the regulated community for the upcoming changes. For some this will be the first time they have been regulated by MMD. For others, there are new requirements to learn and incorporate into their procedures. The counties and their local communities will also have changes to how they evaluate the management of materials in their localities and new opportunities for collaboration and growth.

Speaker: Liz Browne, Director, Materials Management Division, MI Department of Environment, Great Lakes, and Energy (EGLE)

12:05 pm – 1:15 pm

Luncheon and Networking

1:25 pm – 1:55 pm

Track A: A Case for Collecting Supplemental Groundwater Data to Demonstrate Compliance at Solid Waste Management Facilities

There are many factors to consider when managing groundwater compliance programs at solid waste facilities. Expecting the unexpected can be very advantageous. Developing a proactive strategy for collecting supplemental groundwater data that may not be explicitly required in a monitoring program can provide substantial benefits that allow facilities to quickly evaluate and understand unexpected results or data trends and promptly respond, as necessary.

Speaker: Kelly Cratsenburg, Project Manager, TRC

Track B: Part 115 Gas Regulations

A description of the changes to landfill gas regulations in the Part 115 amendments.

Speaker: Timothy Unseld, Landfill Gas Engineering Specialist, Michigan Department of Environment, Great Lakes and Energy (EGLE)

2:05 pm – 2:35 pm

Track A: PFAS: Tomorrow's Challenge Today

In the PFAS Roadmap, USEPA has outlined a path and schedule for studying, developing, and implementing regulations for several industries identified to be discharging PFAS at substantial levels. Of the listed industries, landfills stand out: they do not produce or use PFAS. In Plan No. 15 USEPA recognizes that the solid waste industry is an essential utility that is a passive receiver of PFAS containing waste. The acknowledgement is unlikely to translate into favorable effluent discharge limits. Neither will research demonstrating that landfills sequester. State regulators, delegated facilities, and the USEPA will set discharge limits that will require landfill to treat their discharges. Plan No. 15 identifies two established and commercially available treatment technologies: adsorptive media filtration and reverse osmosis. Established, biological processes that are widely used to reduce conventional leachate constituents are of limited use for removing PFAS. Press releases are circulated among practitioners on an almost daily cycle promoting 'novel methods' for cleaning PFAS contaminated water. The objective of this presentation is to provide current information, a review of viable technologies, and provide direction for the industry.

Speaker: Arie P. Kremen, PhD, Client Manager, Practice Lead Leachate Management, TetraTech

Track B: Opportunities to Add New Sources of Revenue through use of Real Time Data and Control Technology for Landfill Gas Collection to Increase Methane Capture, and to Reduce Emissions

Landfills are the most concentrated source of man-made methane emissions, and are the third largest source methane emissions overall. Since 1996, landfill gas collection system design, operation, and management has been based on Federal Regulations. Gas collection has relied historically on manual measurements and valve

adjustments on a once per month frequency. According to the EPA, landfill gas system collection efficiency overall is under 60%.

LoCI Controls has commercialized real time data and control technology that has demonstrated according to third party, peer reviewed results, a 13%-24% increase in methane captured at four landfills which were using LoCI's real time data and control system to improve gas collection operations. Employing real time data and control is one of the fastest, lowest cost, largest impact opportunities to reduce methane emissions at a very large scale.

This presentation will also describe new opportunities for landfills to leverage voluntary, state, and federal carbon credit policies linked to emission reduction at landfills through the use of real time data and control technology.

Speaker: Peter Quigley, CEO/Chairman, LoCI Controls, Inc.

2:35 pm – 2:55 pm

Networking Break / Visit with Exhibitors

2:55 pm – 3:25 pm

Track A: A Case for Updating Conceptual Site Models to Understand Commingled Volatile Organic Compounds and Per-and Polyfluoroalkyl Substances

Conceptual site models are a key tool for understanding and mitigating groundwater impacts at solid waste disposal facilities. They should be and often are updated as new information is gathered about a site or conditions change, including identification of new and/or emerging contaminants. Differences in the fate and transport properties between volatile organic compounds (VOCs) and per- and polyfluoroalkyl substances (PFAS) are well understood and should be thoroughly considered in conceptual site models at solid waste disposal facilities. This is a presentation of a case study highlighting the importance of up-to-date hydrogeologic conceptual site models in understanding PFAS impacts and how monitoring networks and treatment systems designed for VOC impacts should be reevaluated in the context of PFAS impacts.

Speaker: Katy Lindstrom, Senior Environmental Engineer, Barr Engineering Co.

Track B: Emit Less. Earn More. Emissions Monitoring

According to the US EPA, Michigan's forty-nine MSW landfills emitted 3.9 Million Metric Tons (MMT) of GHG CO₂e in 2021. These emissions, vetted to the atmosphere, represent more than \$200 million in lost revenue to the industry. Capturing this revenue can make good business sense - representing an opportunity that should change how the industry detects leak sources using surface emissions monitoring. The speaker will present a drone-based method for emissions monitoring useful for study purposes helpful in assessing site emissions. The speaker will also present details of using the method for NSPS quarterly compliance as specified in the US EPA's recently approved alternative test method (OTM-51 / ALT-150).

Speaker: Art Mohr, CEO, Sniffer Robotics

3:35 pm – 4:05 pm

Track A: PFAS Sequestration in Landfills

Examination of the processes of PFAS fate and transport in a landfill environment. Talk will focus on PFAS Mass flux to landfills, sequestration and removal mechanisms.

Speaker: Terry Johnson, Sr. Director, Groundwater and Technical Programs, WM

Track B: Reducing Maintenance Costs with Self Cleaning Pumps for LFG Well Dewatering

Managing liquids in landfill gas wells is a major factor in managing a gas collection system. At many sites, pneumatic submersible pumps are used to remove the liquid and keep the perforations open to increase the gas flow and improve collection efficiency, both for energy value and control of LFG emissions and odors. The liquid in gas wells can be very difficult to pump and solids that build up inside the pump can clog the pump, causing it to stop working. Keeping the pumps running requires routine maintenance, and challenging wells can require pump pulling and cleaning as frequently as monthly or weekly. Recently, a new pump design with a unique self-cleaning action has proven to extend pump run time and reduce O&M cost. The new design incorporates a vortex generator which creates swirling action in the liquid that helps to clean the internal components and keep the pump running longer.

This presentation will:

- Examine the new technology
- Share some customer success stories
- Look at the economics of improved gas recovery efficiencies

Speaker: Brad Peake, Vice President, QED Environmental Systems, Inc.

4:05 pm

Conference Adjourns

4:05 pm – 5:30 pm

Exhibitor Reception / Networking

THANK YOU to the Conference Planning Committee:

Adam Larky, PE (Chair), NW Natural Renewables

Jennifer Bowyer, PE, Tetra Tech

Richard Burns, NTH Consultants, Ltd.

Graham Crockford, TRC Solutions

Douglas M. Gatrell, PE, GHD

Nicole Green, WM

Debora Johnston, WM

Milind Khire, The University of North Carolina, Charlotte

Bryan Marks, Great Lakes Fusion

Art Mohr, Sniffer Robotics

Christina Pearse, Republic Services, Inc.

Dawn Prell, WSP

Bobby Reese, Republic Services

Margie Ring, Michigan Department of

Environment, Great Lakes, and Energy

Ibraheem Shunnar, Mannik & Smith

Serenity Skillman, Granger Waste Services

Chris Ulrich, EDL

32nd Annual 2023 Solid Waste Technical Conference



Training Day: **Monday, March 13, 2023**

Granger Waste Services Main Office • 16980 Wood Road, Lansing, MI

Conference Day: **Tuesday, March 14, 2023**

Kellogg Hotel and Conference Center • 55 S. Harrison Road, East Lansing, MI

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