



ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society



2019-2020 Edition 5

www.mbgs.org

January 2020

ANNOUNCEMENTS

MBGS Membership “Family Night” Dinner Meeting, January 8th, 2020: Michigan Basin Geologic Society meeting will be hosted at Coral Gables Restaurant in East Lansing, Michigan. Members are welcome to bring guests, as this is a family friendly event. Arlene Anderson-Vincent, Nestlé Waters North America, will present “Nestlé Water North America in Michigan – Healthy Hydration – The Nestlé Perspective”. Meeting starts at 5:30PM, dinner will be served at 5:45PM, and presentation will be after dinner. \$25/plate. Cash bar will be available.

RSVP to Jennifer Trout jennifer.l.trout@wmich.edu by January 6th, 2020.

MBGS Vice President Election

Please join us in congratulating our new Vice President, Chris Christensen. Chris will serve as Vice President (2019-2020) and President (2020-2021). *Congratulations Chris* – we are happy to have you on the board.

MBGS Scholarship

For many years, MBGS has presented Michigan geology students with scholarships. To honor a long-term active member of MBGS, who was lost in 2019, the scholarship will be renamed the “Emanuel (EZ) Manos Memorial Scholarship”. Information on how to apply for the scholarship will be coming soon.

MBGS Membership Dues

It is time to submit the 2019-2020 MBGS membership dues. Annual membership is \$25 for members and \$10 for students. Please fill out the appropriate membership form (included) and mail in with payment before January 30th, 2020.

OTHER NEWS

LED Field Lens and MBGS Lanyards Available

The Michigan Basin Geological Society is offering geological field hand lens and lanyards. 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 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. Please contact Mark Wollensak at wollensak@att.net to order.



January 2020 MBGS Membership Meeting

Arlene Anderson-Vincent, Nestlé Waters North America

presenting

“Nestlé Water North America in Michigan – Healthy Hydration– The Nestlé Perspective”

When: January 8th, 2020. Meeting at 5:30 PM. Buffet dinner at 5:45PM, presentation after dinner.

RSVP to Jennifer Trout jennifer.l.trout@wmich.edu **by January 6th, 2020.**

Where: Coral Gables, 2838 E Grand River Ave, East Lansing, MI 48823, (517) 355-4470

Cost: \$25 per plate. Dinner included. Caesar salad, roasted sliced breast of turkey with stuffing, mashed potatoes, baked spinach lasagna, broccoli, rolls/butter, soft drink or coffee/tea. Cash bar will be available.

Who: MBGS Friends and family are welcome to attend this meeting. Feel free to bring a guest.

Abstract

Controversy began as early as 2000, when Nestlé Waters North America (NWNA) first started evaluating central Michigan as a location for its Ice Mountain Natural Spring Water Brand. After many scientific evaluations and studies which supported the long-term sustainability of a bottling operation in Michigan, NWNA applied for and was granted the necessary permits to allow them to open their doors in 2002.

After nearly 20 years of operations in Michigan, NWNA has invested over \$300M in the State, pays over \$1.3M in annual taxes and directly employs over 250 Michigan residents. NWNA invests in the communities where it operates and has built long-term relationships with local stakeholders through its commitment to the environment and local area. NWNA produces multiple bottled water products at its Stanwood, Michigan facility that are primarily sold to customers in the Midwest.

In 2016, bottle water sales surpassed carbonated beverages as America's #1 beverage choice. With an increase in customer demand, NWNA applied to increase the permitted withdrawal capacity of one water supply well that supports its Michigan operation. On the heels of the Flint Water Crisis, the permit request again invoked controversy but was ultimately approved.

Learn about NWNA operations in Michigan including the economics, the environmental monitoring programs, the 2016 groundwater withdrawal permit process, and Michigan groundwater withdrawal laws specific to water bottlers.

Biography

Arlene Anderson-Vincent (CPG) is the Natural Resource Manager for Nestle Waters North America (NWNA) for the Midwest region. Since 2010, Arlene has worked at the NWNA Ice Mountain bottling facility located in Stanwood, Michigan. Arlene graduated from Michigan State University with a degree in Geologic Sciences. Much of Arlene's career has been focused on water supply development and sustainability projects in Midwest region.

Arlene's primary job responsibility consists of the development and management of sustainable water supplies but also extends into bringing geologic and hydrogeologic principles to the public. This is accomplished through community outreach, engagement and media interactions. The community outreach helps remove the mystery surrounding groundwater and alleviate fears associated groundwater withdrawals.

Arlene has been active for many years in the Michigan Basin Geological Society and was on the board of directors for the Mid-Michigan Honor Flight program. She is a member of the National Groundwater Association and American Institute of Professional Geologist. In her free time, she enjoys volunteering at the local animal shelters, traveling, visiting National Parks, hiking, camping and spending time anywhere on Lake Michigan.

EVENTS

January 8th, 2020: Michigan Basin Geological Society membership meeting, www.mbgs.org

February 12th, 2020: Michigan Basin Geological Society membership meeting, Lansing, www.mbgs.org

March 12th, 2020: Michigan Basin Geological Society membership meeting, Lansing, www.mbgs.org

April 8th, 2020: Michigan Basin Geological Society membership meeting, Michigan Geological Repository for Research and Education (MGRRE) Kalamazoo, www.mbgs.org

EGLE Calendar of Training and Workshops

https://www.michigan.gov/egle/0,9429,7-135-3308_3333---,00.html

ONLINE RESOURCES

- **Michigan Geology Maps Available:** <https://www.michigan.gov/deq/0,4561,7-135-3304-116670---,00.html>
- **Digital Geology Library Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2010-01-20_307979_7.pdf
- **GeoWebFace:** https://www.michigan.gov/deq/0,4561,7-135-3311_60700---,00.html
- **Digital Geology Library Mining Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2013_06_22_mining_425595_7.pdf
- **Michigan Geological Survey:** <https://wmich.edu/geologysurvey>
- **USGS Michigan Geological Map Data:** <https://mrdata.usgs.gov/geology/state/state.php?state=MI>
- **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



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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.

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