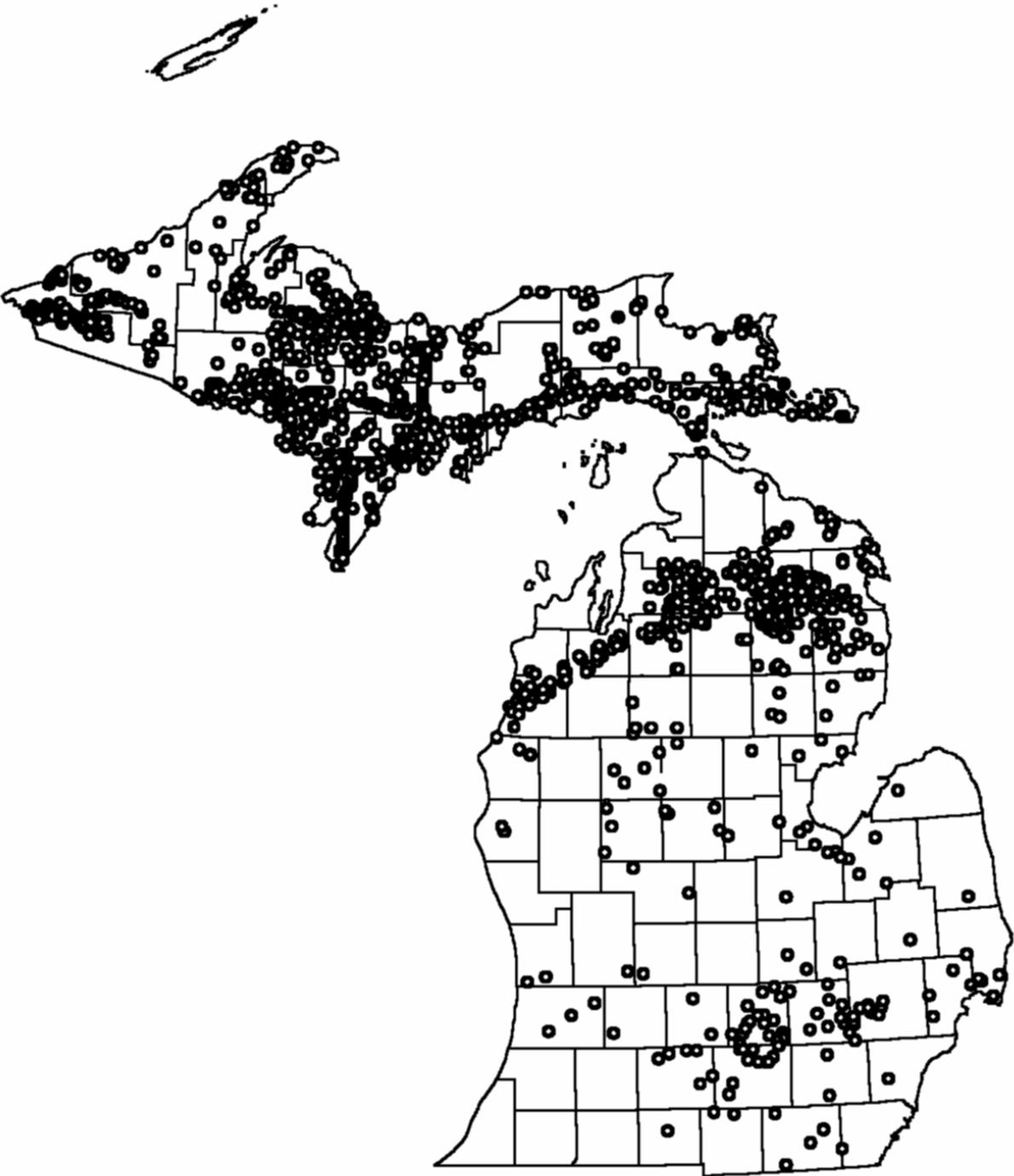


Michigan Geologic Core

Sample Repository & Inventory



General Information and User Guidelines

The Geological Core and Sample Repository holds a collection of drill core and cuttings from 67 counties in Michigan, including all 15 counties from the Upper Peninsula. The purpose of the collection is to act as a "rock library" and make the collected material available to individual researchers and industry for geologic study. It is hoped that the collection will lead to increased mineral and fuel exploration and development in various parts of Michigan. Both the local and state economies may benefit by more jobs being created. It has been stated that for every mining job created, three additional jobs develop. Oil and Gas discoveries have similar economic impacts.

Other states and provinces have demonstrated the usefulness of similar facilities. Ontario has several repositories located throughout the province. Ontario claims that the study of rock core in one of their facilities led to the opening of a new gold mine a few years ago. Minnesota's facility continues to expand and is heavily used by numerous visiting researchers.

The Repository

As of January 1, 2006, 903 drill holes containing almost 300,000 feet of actual core are stored in the repository. Another 124,000 feet are represented by an abbreviated core in 1,757 boxes. Also, 54,903 feet are represented by cuttings in 521 boxes. Most cores and cuttings are classified as non-confidential and are open-filed for viewing. The core storage inventory consists primarily of rock core drilled during mineral exploration on private and state mineral leases. Included in the collection is over 10,000 feet of Oil & Gas exploration drill cores and selected Oil & Gas cuttings representing over 900,000 feet from 520 wells. The collection also includes a small number of rock cuttings, chips, outcrop and pipeline samples, and core from the two Superconducting Super Collider sites.

Two large acquisitions of mineral exploration and mine core are from the M.A. Hanna-Groveland collection and the U.S. Bureau of Mines-Michigan collection obtained in 1989. The M.A. Hanna-Groveland collection consists of cores from many cross sections of the old Groveland open-pit iron

mine and core from numerous iron exploration projects. The U.S. Bureau of Mines-Michigan collection consists of thousands of boxes of Michigan exploration and mine core formerly housed at the U.S. Bureau of Mines Repository at Minneapolis, Minnesota. We are pleased for the opportunity to include these materials in our collection.

Acquisitions in 1993 include exploration drill core from Marquette and Iron Counties donated by Kerr McGee Corp. and Callahan Mining Corp. Also Resource Exploration has donated exploration drill core from Marquette and Gogebic Counties including core from the western syncline project along with pulps, second splits, assays and numerous soil and outcrop samples.

One of the more significant additions to the Core Repository was the early release of confidentiality of the deepest all-cored mineral well in March, 1995. AMOCO Production Company released the confidentiality on the core, well logs and file data for their St. Amour #1-29 and # 1-29R test wells. The 1-29R is a 7,238 foot hole that was drilled in late 1987 to learn more about the Mid-continent Rift. It was located southeast of Munising, near Wetmore, in Alger County in the Upper Peninsula. The hole went through 110 feet of glacial drift and entered bedrock in the Paleozoic aged AuTrain Formation of Ordovician time. The hole ended in Precambrian aged Portage Lake Volcanics of Keweenawan time. This core should be of interest to geologists from academia, the oil and gas and the mineral exploration industry.

New to the collection in 1998 are cuttings from over 600 selected water wells including the drillers logs of ALL water wells drilled from the Upper Peninsula.

Core and drill cuttings are required to be submitted from State mineral exploration leases. We also encourage donations of drill core and cuttings from Michigan projects drilled on private lands. Additional cores expand the coverage of our open-file collection and help increase the knowledge of the state's geology.

The OGS's metallic mine and data collection is also stored at the repository. This includes thousands of surface and underground maps from early to more recent mines from the western one-half of the Upper Peninsula. Reports and other miscellaneous information is also available from this same area. This collection helps in the understanding of the

geology and mineral resource potential of the state, as well as being an aid to public safety and land use planning. It is a record of potential mine subsidence areas of the state which should be avoided when construction is planned.

The facility occupies two separate buildings. The first building is 4,000 square feet with electricity and a heated examination room. Examination equipment includes a binocular microscope, hydraulic core splitter and trim saw. The second building contains 3,200 square feet of storage space and is adjacent to the first building. Retrieval, replacement, splitting and slabbing of material is provided by staff.

Use of the Collection

The facility is open by appointment, Monday through Friday, 8:00 a.m. to 4:30 p.m., Eastern Time. For appointment or more information call Melanie Humphrey at (906) 346-8566. Currently there are no user fees.

Visitors are to use extreme care when handling drill core so that the sequence of the core in the boxes is not disturbed. In order to maintain an accurate record of the core for future use, every effort is to be made to replace the core exactly as it was found in the core box.

With prior approval some limited sampling of materials is allowed. Some core may be loaned out under special arrangements. No sampling of core will be allowed where $\frac{1}{4}$ or less of the full diameter core exists. No more sample than is reasonably needed is to be removed. This is to preserve the core as much as possible. After testing, any remaining sample pieces, cuttings, or pulps, etc. are to be returned to the Office of Geological Survey (OGS).

A form, provided by the Office of Geological Survey, must be completed which includes a list of all samples collected; including drill hole number, footage, sample number, and proposed use of the material. Also any core removed for sampling must be replaced with a marker showing the name of the sampler, organization, date, and footage of core removed.

The Office of Geological Survey is to receive a copy of all research results, data, reports, publications,

interpretations, assays, logs, thin sections etc., from samples taken at the repository. This information will become part of the public record.

Most test wells have some type of lithologic logs which have been placed on open file. However, there are test wells with lithologic logs which are held confidential under Michigan State Law-Act No. 451, PA 1994, as amended, Part 625 Mineral Well Act (formerly Act 315, P.A. of 1969). Some confidential lithologic logs may be obtained by contacting the company that provided the core and obtaining written permission to have the lithologic log released.

University students borrowing core and samples for use in reports, research or theses, sign a special use agreement form. They must have their major professors take full responsibility, in writing, to see that all materials are returned in good condition and all necessary reports, research, etc. are submitted to the Geological Survey Division in a timely manner.

Inventory List

The heading "Source" in the inventory list refers to the company, governmental body, university or individual which owned, drilled or donated the core, cuttings or samples to the Office of Geological Survey. Location information for each well is given by township, range and section. Some wells have more precise locations given on the lithologic logs. The footage shown for each well is the footage of core we have in storage. Occasionally, we only have a portion of the total core or cuttings from the hole that was drilled. The Office of Geological Survey requests corrections, additions, missing information and comments from you, the user. We need your help to keep the core and sample inventory list as accurate as possible. The Inventory list is available on-line.

Core Repository Inventory List

A separate list of the cores and samples is available on line as part of the Digital Geology Library. The Digital Geology Library can be access from <http://www.michigan.gov/deggeologyinmichigan> (*deg geology in michigan - all lowercase - no spaces*).

Additional Collections

The OGS also maintains oil and gas well cuttings from over 10,000 wells drilled prior to 1994 and over 50,000 drillers' logs and thousands of geophysical logs. Contact the Petroleum Geology and Production Unit in Lansing for more information at (517) 241-1509. The Departments of Geology at several of the State Universities have well cuttings and cores available for study. Contact them individually for more information.

The map on the front cover shows the distribution of samples available from across Michigan that are available at the Marquette facility. Additional collections have further materials available.

Abbreviations Used

Abv	Abbreviated
MI	Michigan
ACNC	American Copper & Nickel Co.
MTU	Michigan Technological University
Avail	Available
OFR	Open File Report
Bx	Box/Boxes
OSM	Office of Surface Mining
Co	Company
Pc	Precambrian
Congl	Conglomerate
Per #	Permit Number
Corp	Corporation
Qtz	Quartz/Quartzite
Dept	Department
Rej	Reject
Dist	District
SCSC	Superconducting Supercollider
DEQ	Department of Environmental Quality
Sh	Shale
DNR	Department of Natural Resources
Ss	Sandstone/Second Split
EIR	Escanaba Iron Range Co.
St	State
ERD	Environmental Response Division
TD	Total Depth
Expl	Exploration
TVA	Tennessee Valley Authority
Fm	Formation
Undergrd	Underground
OGS	Office of Geological Survey
US	United States
Lith	Lithologic
USX	United States Steel
WICO	Wakefield Iron Company
W/	With