m1 DEPARTMENT OF
NATURAL RESOURCES

Minnesota Mineral Resources Database User Guide

This guide provides information to assist users with effective search of collections and documents contained within the Minnesota Mineral Resources Database (MMRD).

MMRD purpose and description

The MMRD was created by the Minnesota Department of Natural Resources (DNR) and Minnesota IT Services (MNIT) to preserve, curate, and distribute mineral exploration and other mineral resource-related documents. MMRD is a continuously growing archive, featuring thousands of never-before digitized public documents as well as the entire collection of its predecessor database, Minarchive.

MMRD offers search and retrieval of historical and contemporary documents including (but not limited to) exploration reports, economic analyses, geophysical maps, geospatial data, drill logs, and assays. These public documents provide a rich source of information for future exploration, environmental research, and historical minerals research. For many areas of the state, they contain the only view of bedrock terrain, buried by glacial material. Many of the drilling-related documents are tied to physical materials stored in the MN DNR Drill Core Library, and many to most curated documents are stored at the DNR Lands and Minerals facility in Hibbing.

Application user guide

The MMRD provides a multi-faceted search application that offers users a way to identify and retrieve documents by attributes and keywords, such as mineral commodity, region, time period, and other specific geoscientific content.

The MMRD runs in web browsers on desktop or mobile devices. There are no special hardware or computing requirements. Access is free and open to the public, with no account or other requirements for access.

See also: MMRD Tipsheet for Minarchive users

Launch page and initial search screen

The MMRD launch page offers several search options to get started, along with help documents and hyperlinks to additional related resources. See Figure 1 for navigation and search highlights.
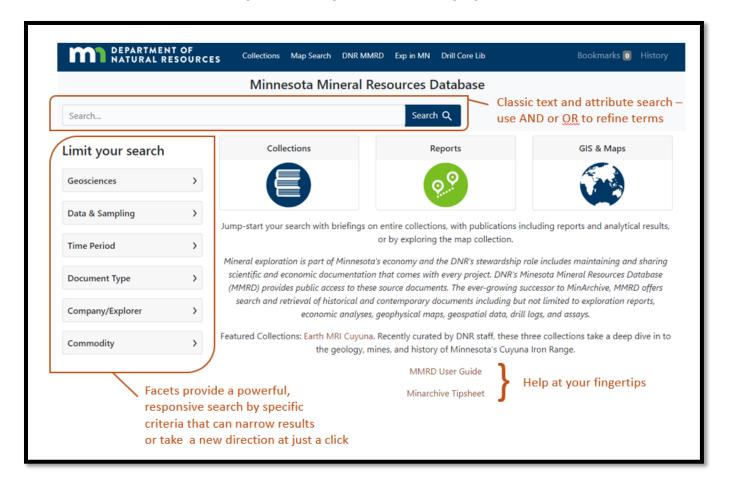

Figure 1: MMRD launch page with notes

Search results and refine screen

Users will be taken to the results screen once they make a selection on a search facet or enter a search term. Results show documents matching the initial criteria that include a title, attributes, and thumbnail image for each result. Search facets displayed will adjust as a search is refined to reflect material available in the database. See Figure 2 for more highlights on search options and navigation of the information available at this screen.
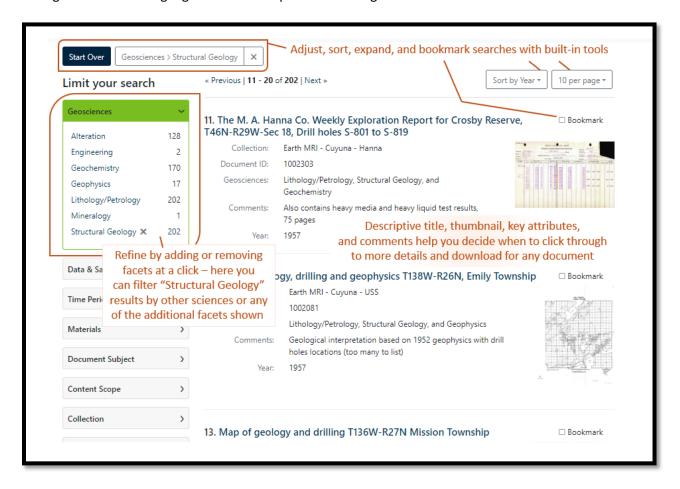

Figure 2: MMRD search results screen

Document detail screen

Clicking through individual listings on the search screen will bring users to a detailed document screen. Here, users can bookmark the document, view the extended list of attributes describing its content and origin, and click through highlighted attributes to find additional related items (tip – try clicking a highlighted "Collection"). Options are provided at the top of the page to return to the current search or start over.
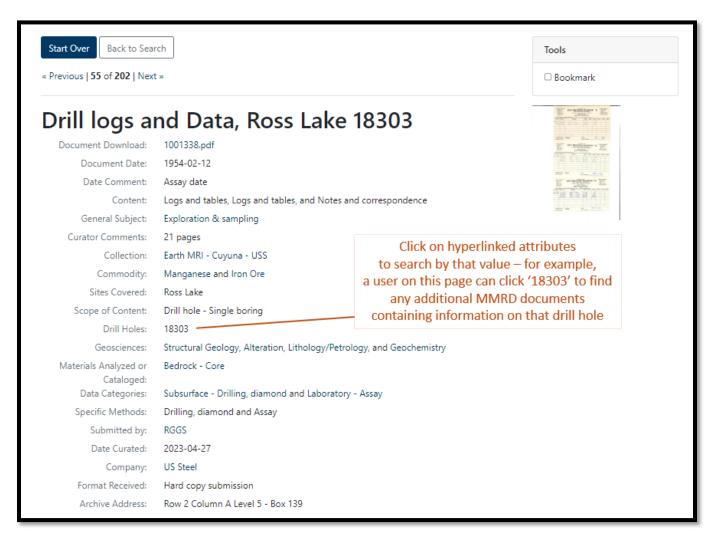

Figure 3: MMRD item detail page

Documents and formats

MMRD provides documents in three file types:

- Portable Document Format (PDF)
  - PDFs have been processed for accessibility and tagged with metadata reflecting their MMRD attributes. The vast majority of MMRD documents are PDFs.
- Excel spreadsheets (XLSX)
  - Tabular data received in a digital format or transcribed from hard copy tables have been provided in a workable tabular format, when available.
- Compressed files (ZIP)
  - ZIP files are used to provide multiple files of like material including aggregated Collections, GIS data (such as for shapefiles or geodatabases consisting of numerous individual file parts), and data submitted to DNR in ZIP format.

Attribute metadata

Brief descriptions of the attributes used in the MMRD. Not all documents carry a value for all possible attributes, and empty values are not shown in the MMRD's interface.

Attribute Name	Description
Title/description	A descriptive title taken from the source document, if available, or given by DNR curation staff. For Minarchive documents, the entire title corresponds to the Minarchive database source document – they are titled with the prefix "MNA-" and their numeric digits begin with PLS location.
Document download	Direct link to database-numbered source document
Document date	The actual date printed on the document, publication date, or most recent known date of content. May be partial, with year or month and year only.
Content	A broad categorical descriptor of document's contents
General subject	A broad categorical descriptor of the document's subject matter. Most are 'exploration' related
Curator comments	Descriptive notes, typically about the physical source document's condition or other notation not captured elsewhere

Attribute Name	Description
Collection	Collections are documents grouped by source submission, exploration project, company and prospect, or other combinations of attributes such as time and/or content values.
Commodity	Mineral commodity or project related to the document or the collection of which the document is part
Sites covered	Lists any defined sites, subdivisions of a Collection, for which content exists in the document
Scope of content	Indicates how broad the document's content spans - from larger-scales like 'statewide' or 'regional,' to smaller-scales in the 'vicinity' of some locality or a specific 'site'. From largest to smallest, scope is categorized as Statewide, Regional, Site and Vicinity, and Drill Hole.
Geosciences	Broad geoscientific disciplines represented within the document
Materials analyzed or catalogued	Geologic or other natural materials assessed, tested, or otherwise referenced in the document
Data categories	Indicates the broad category or type of data, if the document contains data
Specific methods	Detailed data collection or analysis techniques or sensors
Submitted by	Entity from which DNR received the document originally
Date curated	Date the document was curated to MMRD or imported from Minarchive
Company	Company or other entity that conducted the work and/or authored or reproduced the document
Format received	Indicates whether a document was received as a hard copy, digital format, or was created by DNR
Archive address	Location of physical document within the DNR's LAM Hibbing archives

Table 1 – Metadata for MMRD document attributes