

# MRD395 METADATA

## GENERAL INFORMATION

### Title

Pyrrhotite Distribution in Ontario: Near-Surface Occurrences and Discussion of Deleterious Effects in Concrete

### Alternate Title

MRD395

### Author(s)

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### Date of Publication

December 17, 2021

### Abstract

This digital data release provides the results of a project studying the distribution of pyrrhotite in Ontario. The mineral pyrrhotite is considered deleterious when present in aggregate that is used to produce concrete. Several examples of premature concrete failure or excessive damage resulting from the presence of pyrrhotite in aggregate have been documented in North America, although to date (mid-2021), this problem has not occurred in Ontario. A study was undertaken, using the Ontario Geological Survey's Mineral Deposit Inventory\* (MDI) database, to map the known occurrences of the mineral pyrrhotite in Ontario. The MDI database contains 3843 unique records of the mineral pyrrhotite. Of these records, 2981 were assessed to contain enough accurate information to be included on a map of pyrrhotite occurrences (using point locations) in Ontario. Pyrrhotite occurs near surface at 562 locations, whereas 2419 locations were deemed as "other" (i.e., either occurring at depth, or the data point did not include enough information to classify as "near surface"). The files are provided in a compressed (.zip) file that contains a report (as a portable document format (.pdf) file) and an accompanying digital map (as an ESRI® ArcMap® (.mxd) document and geodatabase (.gdb)). The digital map includes additional information for point locations described in the report, as well as hyperlinks to the original MDI records.

[\*The Mineral Deposit Inventory (MDI) has been renamed to the Ontario Mineral Inventory (OMI). This digital data release was compiled prior to the update. All OMI records retain the original MDI identifying numbers (e.g., MDI52N04SW00033). For the purpose of this data release, original MDI nomenclature and definitions are retained.]

Additional information can be found within a readme file provided with the product.

### Purpose or Objective

The purpose of this report is to provide information to users and producers of aggregate to enable better decision making. This MRD 1) documents broad geographic trends in the distribution of the mineral pyrrhotite in Ontario; 2) broadly highlights the rock types that typically contain some amount of the mineral pyrrhotite; and 3) provides general information to the user about individual pyrrhotite occurrences, based on the Ontario Geological Survey's Mineral Deposit Inventory (MDI) database. This document provides a summary of the deleterious nature of pyrrhotite in aggregate used for concrete and provides a map of pyrrhotite occurrences near or at surface across Ontario. It

is not intended to be a substitute for site-specific studies and/or aggregate testing.

The objective of this product is to collect and disseminate geoscience information for Ontario.

**Keywords**

Geological Survey  
Geology  
Ministry of Northern Development, Mines, Natural Resources and Forestry  
NDMNRF  
Ontario Geological Survey  
OGS  
Miscellaneous Release—Data  
MRD  
Aggregate Resources  
Bedrock Geology, General  
Land Use Planning  
Mineral Deposit Inventory  
Quarry Quarries  
Precambrian Bedrock Geology  
Minerals  
Mineral Occurrences  
Industrial Minerals Including Stone

**Business Themes**

Geological Survey  
Geology

**GEOGRAPHIC INFORMATION**

**Geographic bounding box (decimal degrees)**

<b>North bounding latitude:</b>	57.3210°
<b>West bounding longitude:</b>	-95.8380°
<b>East bounding longitude:</b>	-73.9010°
<b>South bounding latitude:</b>	41.3580°

**Description of Completeness:** irregularly shaped study area - completeness not available

## MAPPING INFORMATION:

<b>Grid Coordinate System Used:</b>	Geographic (Lat, Long)
<b>Map Projection:</b>	Lambert Conformal Conic
<b>Horizontal Geodetic Datum:</b>	NAD83
<b>Vertical Datum:</b>	Not Applicable
<b>Horizontal Position Accuracy of Features:</b>	Unknown
<b>Vertical Position Accuracy of Features:</b>	Not Applicable
<b>Spatial Data Qualifier(s):</b>	Pan-provincial. Horizontal Accuracy: Approximate, ±500 m (according to the MDI metadata).

## DATA SOURCE INFORMATION

### Data Source Type and Description

Includes Bibliographic Information: Product includes references to other sources of information

### Data Source Type and Description

Compiled Data: Data compiled from Mineral Deposit Inventory (MDI; Ontario Geological Survey, online database, version May 2021).

**Current Status of the Data:** Complete

**Frequency of Changes or Additions to be made to the Data:** Not Planned

## CONSTRAINTS FOR USING THE DATA

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**The Language in which Data are Distributed:** English

## **CONTACT INFORMATION**

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## **METADATA**

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