

**Recreation in or around inactive mine sites is extremely dangerous and can result in serious injury or death. Stay out and stay alive!**

## **What is the Mineral Information Layer-Release 2 for Oregon?**

The Oregon Department of Geology and Mineral Industries (DOGAMI) is publishing the Mineral Information Layer for Oregon (MILO-Release 2) database in its Digital Data Series. MILO-Release 2 is the definitive database for information about Oregon's mineral occurrences, prospects, and mines and includes a new map-based way to access and search the database. The data set contains information for the following commodities: metals (elements, metallic, and oxides), industrial minerals (non-metallic minerals and materials, including gemstones), mineral fuel (coal and oil shale), and aggregate (sand & gravel and stone).

### **Purpose**

MILO-Release 2 updates Oregon's mineral resource inventory and integrates the results into a comprehensive spatial database. Its goal is two-fold: 1) to be the primary way in which the State of Oregon extracts, researches, and displays its available historic mining and mineral resource information and 2) to provide reference material supporting mineral resource and environmental assessments on local- to statewide-scale.

### **Objective(s)**

- Establish an updated statewide mineral database, both tabular and spatial, drawing on the legacy of Oregon's available mineral-related published and unpublished data,
- Graphically show the location of mineral occurrences, prospects, and mines statewide,
- Allow database queries,
- Provide data on-line.

### **Background/Outcome**

The predecessor and foundation for this release is the database called MILOC (Mineral Information Layer for Oregon by County). DOGAMI published the database in 1993 to provide the state with a mineral resource database (Gray, 1993). It was subsequently converted to a GIS format and renamed MILO (also known as MILO-Release 1). However, DOGAMI did not release the first version of MILO to the public.

MILOC was originally published in dBASE III+ format, within which was information for location, commodity, and other data for an estimated 7,899 mineral occurrences, prospects, and mines. MILO-Release 2 lists 21,101 mineral occurrences, prospects, and mines. As in MILOC, these sites are linked to available commodity information such as metals (elements, metallic, and oxides), industrial minerals (non-metallic minerals and materials, including gemstones), mineral fuel (coal and oil shale), and construction aggregate (sand & gravel and stone). The substantial increase in sites, nearly three-fold, can be attributed partly to data "pulls" from the following sources:

- A data "pull" off of the U.S. Geological Survey's Mineral Resources Data System (MRDS) and Computerized Resources Information Bank (CRIB) and U.S. Bureau of Mines' Mineral Industry Location Subsystem (MILS) main frame databases resulted in the addition of approximately 700 records missed in MILO-Release 1 (U.S. Geological Survey, 2005);
- Two unpublished data sets from the Oregon Department of Transportation listing aggregate sources and quality tests revealed that about 2,000 aggregate sources were not listed in MILO-Release 1.

Furthermore, each of Oregon's 1:24,000-scale topographic quadrangle maps was inspected for mining-related marks/symbols, e.g., aggregate site(s) (borrow pits, quarries, and gravel pits) and mine/prospect site(s). This effort added a substantial number of new sites, nearly 9,000, to MILO-Release 2.

Although the data for MILO-Release 2 are statewide in extent, coverage varies from county to county. The attribute table for MILO-Release 2 may contain some errors, but care has been taken to prevent duplications and omissions within the table and between the databases compiled for it, so far as possible. Additionally, mineral-related data are subject to change as new data are obtained; therefore, updates to the database are expected.

### **Impact/Technical Merit**

MILO-Release 2 serves not only as a source of Oregon's important mineral background information, but also (1) facilitates study of potential mineral resource; (2) enhances our ability to test hypotheses using GIS analysis; and (3) supports modeling, such as efforts to locate "hidden" hydrothermal systems. MILO-Release 2 is also relevant for anyone interested in environmental studies in Oregon, including researchers, developers, and policy makers.

MILO-Release 2 answers the fundamental question: where are mineral resources found in Oregon? It also supports hazard studies because certain undesirable health outcomes are known to be associated with long-term exposure to a variety of different naturally "occurring" minerals and their compounds e.g., asbestiform asbestos. If disturbed, crushed, or exposed to natural weathering and erosion, or to human activities that create dust, these minerals and/or compounds could pose a potential risk to human health.

### **Disclaimer**

One of the concerns about releasing mineral occurrence, prospect, and mine data is that the general public will have ready access to their locations. **Recreation in or around inactive mine sites is extremely dangerous and can result in serious injury or death. Stay out and stay alive!**

Although the data have been processed successfully on a computer system at the Oregon Department of Geology and Mineral Industries no warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies

both to individual use of the data and aggregate use with other data. We also urge you to pay careful attention to the contents of the metadata file associated with these data and to the compilation process and limitations described therein. The Oregon Department of Geology and Mineral Industries shall not be held liable for improper or incorrect use of the data described and/or contained herein. **Data are not intended for site-specific investigations.**

## **Acknowledgment**

Many DOGAMI geologists and reporters have contributed to the present understanding of Oregon's mineral wealth. This release of MILO owes much of its utility to Jerry Gray, a former economic geologist of DOGAMI.

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## **References**

Gray, J.J., 1993, Mineral Information Layer for Oregon by County: Oregon Department of Geology and Mineral Industries Open-File Report O-93-08, 18 p.

U.S. Geological Survey, 2005, Mineral Resources Data System, Mineral Resources On-line Spatial Data: <http://tin.er.usgs.gov/mrds/>