

MINERALS DATA AND INFORMATION RESCUE IN ALASKA (MDIRA)

2005 ANNUAL REPORT



Participating organizations:

U.S. Geological Survey (USGS)

U.S. Bureau of Land Management (BLM)

U.S. Forest Service (USFS)

Alaska Division of Geological & Geophysical Surveys (DGGS)

Alaska Land Records Information Section (LRIS)

University of Alaska (UA)

Alaska Federation of Natives (AFN)

Alaska Miners Association (AMA)

And numerous other individuals, companies, professional organizations,
and government agencies

Prepared for Congress by
MDIRA Liaison Committee
March 2005

EXECUTIVE SUMMARY

The goal of the Minerals Data and Information Rescue in Alaska (MDIRA) program is to recover and make easily available the full body of Alaska mineral information through a coordinated system that provides efficient access or indices to all minerals related files, documents, and physical samples held in the public domain. This body of information includes geologic data now out of print as well as data collections from agency and private-sector geologists that was never published, geophysical data, state and federal mining claim information, geochemical data sets, and M.S. and Ph.D. dissertations on Alaska geology that exist in the obscurity of university libraries across the nation.

Congress initiated the MDIRA program in response to recognition of the importance of Alaska's mineral resources to the nation and a concern that decades of important Alaska minerals information were being lost, or were in imminent danger of being lost. Much information has become unavailable to the public, industry, and even the government agencies that generated it. Recent downsizing of both federal and state geological agencies has left large volumes of data stranded in unorganized files that, almost surely, will be disposed of as institutional memory of their significance is lost through continued personnel attrition.

The FY 1997 U.S. Geological Survey's appropriation bill stated:

"The [Senate Appropriations] Committee expects the [U.S. Geological] Survey to report to the Committee no later than March 31, 1997, on the full scope of the geophysical, geologic, and natural resource data collection and storage issues in Alaska. The Survey should work with the University of Alaska, the State of Alaska, the Alaska Federation of Natives, and other interested parties."

Subsequently the U.S. Geological Survey, in cooperation with a multiagency Alaska liaison committee, prepared a report to Congress in March 1997 identifying five major issues regarding Alaska mineral data. That report provided specific objectives toward the goal of making all Alaska minerals information accessible to the public via computer technology as well as in traditional formats in state and federal repositories in Anchorage, Fairbanks, and Juneau.

The five issues identified during a thorough canvass of Alaska's geological mineral resource private-sector, state and federal agency, and academic communities were:

1. *Library resources:* Network the existing libraries; prepare a guide to geologic and minerals information; and catalog all the major collections of geology and minerals information.
2. *Databases:* Develop up-to-date digital databases of Alaska mineral deposits, geologic literature, and geochemistry data.
3. *Physical Samples:* Provide for the physical preservation of core and other physical samples collected in the field; in particular, need to ensure the continued existence of the Geologic Materials Center.

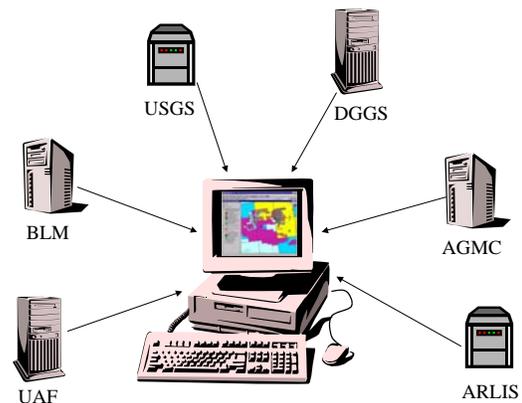
4. *Mining claim information:* Develop an authoritative, digital, claim information system to include both State and Federal claims, including a business process that would keep it up to date.
5. *New Information:* Provide for development, archival, management, and dissemination of new geologic maps and minerals information. This proposed component of the program was not funded.

Pervading all of these issues was the recognition that if the data and information recovered were to be kept safe from again slipping into obscurity and loss, they would have to be made more accessible to the public. Data that are used are data that are valued and protected. Therefore, all five of the above issues embody a commitment to convert as much of the information as appropriate to digital form accessible via the World Wide Web. In those instances where that is impossible, for example physical mineral samples, indices of the archival holdings will be made available online.

Beginning in fiscal year 1998, Congress has provided annual appropriations for MDIRA through the U.S. Geological Survey and U.S. Bureau of Land Management. Final appropriation for MDIRA was in fiscal year 2004. A liaison committee consisting of representatives from stakeholder organizations in state government, the University of Alaska, Native organizations, and the private sector oversees program planning, budgeting, and reporting.

Under MDIRA, a tremendous volume of information has been recovered and converted to digital data files since 1997. Many of these files are now accessible via the World Wide Web through links to the participating organizations that are assembled on a single Web site, <http://akgeology.info/>. Information at these linked sites must still be searched individually, requiring users to be familiar with their holdings. This situation falls short of the original goals of the program in that easy access to the data through a single portal has not yet been achieved. This deficiency is now a primary focus of the MDIRA program with its final funding allocation in federal fiscal year 2004.

The liaison committee projects that development and loading of the large organizational databases and implementation of an interagency distribution system to seamlessly serve these data online will be completed by the end of 2006. By that time, the last of the original data and information files identified as being at risk will be recovered in physical or digital form and an interagency database management system will be in place that will allow for maintaining the historical data and updating the database as new information becomes available.



PROGRAM STATUS

In compliance with the original Congressional mandate that established the MDIRA program, the liaison committee meets regularly to review the progress being made by the funded agencies. These meetings are attended by staff from the Alaska Department of Natural Resources, the University of Alaska, the Alaska Resource Library Information System and other state libraries, the Alaska Federation of Natives, the Alaska Miners Association, and at various times, other interested members of Alaska's mining community. U.S. Geological Survey and U.S. Bureau of Land Management representatives are invited to these meetings to provide progress reports on the many tasks comprising the MDIRA program and to listen to Alaska stakeholder comments and concerns relevant to the ongoing and scheduled work.

The following is a brief summary of major milestones and accomplishments achieved by MDIRA in each of the five program areas since its inception in 1997:

Library resources

- Guide to Information: Originally published the *Guide to Alaska Geologic and Mineral Information* in 1998. The updated version of the guide was published and made available to the public in printed form and online in November, 2004.
- Digital conversion of DGGS publications: Completed conversion of all Alaska Division of Geological & Geophysical Surveys (DGGS) publications to digital files and made them available online via the DGGS Web site (<http://www.dggs.dnr.state.ak.us>).
- Digital conversion of USGS publications: Scanned 95 percent of U.S. Geological Survey (USGS) Bulletins and Professional Papers on Alaska geology. Report texts and maps are viewable in Adobe PDF format. Bibliographic indexing, including links to text, is searchable on the DGGS website and the MDIRA interagency bibliography on <http://akgeology.info>. Initiated digitization of USGS Alaska Open-File Reports, folio maps, and other short-series publications, to be completed December 2006.
- Metadata for legacy DGGS geospatial data: Commenced recovering, reconstructing, and documenting legacy DGGS geospatial data. This project will be completed in Spring 2006, after which the data will be available on the DGGS Web site.
- DGGS legacy field project data index: Initiated indexing of unpublished DGGS project information. Data will be made accessible online upon project completion approximately December 2006.
- Index of unpublished USGS data: Indexed and made accessible Project History files (geologic notebooks, field map files, paleontology files, and petrographic collection) and Geologic Subject files (notes, unpublished reports, speeches and lectures, correspondence, reprints, and historical materials) in the USGS Alaska Technical Data Unit research collection.
- Library catalogs of minerals information: Cataloged library materials and produced Internet catalogs for minerals libraries in Anchorage, Fairbanks and Juneau. The materials circulate to the public.
- Anaconda data index: Indexed and made accessible the private Anaconda minerals data collection (a \$30 million exploration project throughout Alaska never before in public domain).

- *Index of unpublished USGS data:* Indexed and made accessible on the Internet unpublished USGS information on Alaska. Initiated scanning and microfilming of USGS field notebooks.
- *Index of unpublished DGGs data:* Initiated indexing of unpublished DGGs geologic information on Alaska. Data will be made accessible on the Internet by December 2006.
- *Topographic map index:* Indexed historical Alaska topographic maps available at libraries.
- *Index of theses and dissertations:* Collected and indexed approximately 1,500 university theses and dissertations about Alaska geology and mining. Geographic indexing by quadrangle will be completed by December 2005.
- *Alaska Minerals Industry Data Index:* Completed the Alaska Minerals Industry Data Index (AKMIDI), a Bureau of Land Management (BLM) inventory of minerals data held by industry. The inventory is awaiting completion of an application of internet searching and access of the data. Currently developing an application for internet searching and data access.

Databases

- *Alaska Resource Data File:* Completed Alaska Resource Data File (ARDF) compilations of information on mines, prospects, and mineral occurrences for 111 of the 155 quadrangles in Alaska (1:250,000 scale). Of the remaining 44, nine quadrangles are now in progress and 35 have no known mineral occurrences.
- *Alaska Geology Map Index:* Released the first version of an application that portrays the locations of Alaska geologic maps from all state and federal agencies in a single, interactive, Internet-accessible location. The site, accessible online at <http://maps.akgeology.info/>, currently contains about 300 citations and outlines for DGGs-authored geologic maps. Geophysical maps and USGS geologic maps will be added to the map index by December 2006.
- *DGGs enterprise database:* Established an enterprise database management system for DGGs and began populating it with existing Alaska minerals and geologic data.
- *FGDC-compliant metadata for DGGs data:* Established a process for regular and consistent documentation and archiving of new DGGs geospatial data, bringing the data into compliance with Federal Geospatial Digital Committee (FGDC) Metadata Standard.
- *Upgraded DGGs publications bibliography:* Completed upgrade of DGGs publications bibliography with inclusion of digital map and report image files for all publications and loaded the bibliography into the central database system.
- *Web-based distribution of DGGs publications:* Developed a Web-based system utilizing the central DGGs database management system for online public distribution of publications in digital form. The system was posted online in April 2004, and now includes scanned USGS Professional Reports and Bulletins.
- *Web-based DGGs geochemical data system:* Developed a Web-based system for searching and displaying DGGs geochemical sample analysis data by geographical area; deployment is expected by April 2005. Published and nonpublished DGGs rock chemistry data for Alaska and associated resource datasets will be available via this system.
- *Upgrade and digital release of mineral-access corridor maps:* Converted 376 legacy GIS-based geologic, geologic-materials, hazards, and data quality maps of proposed access corridors in 78 quadrangles to modern GIS format, completed metadata, and made the maps

available to the public in hard-copy. Georeferenced map image files will be made accessible online in 2005 via the DGGs Web site.

- Web-based delivery of DGGs geospatial digital data: Commenced development of a Web-based system utilizing the central DGGs database-management system for distribution of current and legacy DGGs digital data. Expected delivery of this system is early 2006.
- USGS geochemistry database: Compiled USGS geochemical data for 390,784 rock, stream-sediment, soil, organic material, and water samples from Alaska in searchable database format. A DVD-ROM of the final compilation was released at the 2004 Alaska Miners Association Annual Convention.
- USGS fossil database: Completed database design and began data entry of georeferenced Alaska macrofossil information that is important for constraining the ages of mineral deposits. Approximately 5,400 of an estimated 14,000 fossil localities have been entered to date. The database is accessible at <http://www.alaskafossil.org/>.
- Multi-agency geologic bibliography: Completed development of a multi-agency bibliography system for Alaska that will allow users to select a geographic area of the state and access all agency geologic research papers and maps related to that area. The application includes online tools for agencies to maintain their bibliographic index information.
- Bibliography and electronic conversion of USFS geological publications: Completed a bibliography of all published and unpublished Alaska geological and geotechnical reports in the U.S. Forest Service (USFS) Forest Sciences Library in Juneau, Alaska. All recovered documents and data were digitally scanned and georeferenced according to established MDIRA criteria.
- Alaska Minerals Information System (AMIS): Developed the Alaska Minerals Information System to make the former U.S. Bureau of Mines (USBM) minerals data available to the public. Database was converted to Informix and updated. A consistency audit is scheduled for 2005, after which the database will be made available to the public via the Internet.
- Conversion of USBM files and maps to electronic format: Information will be released to the public after indexing is complete and sensitive documents have been removed.
- Conversion of BLM and USBM analytical data to digital: Digitized sample locations, sample cards, and analytical geochemistry data from BLM and USBM mineral assessment investigations. Remaining work resolving sample location problems and data gaps will be completed by September 2005.
- Digital release of BLM and USFS minerals reports: Converted BLM and U.S. Forest Service (USFS) minerals reports to digital format and scanned unpublished or out-of-print reports. Previously published reports are being made available on the Internet. Unpublished reports will go through BLM review process and be released as open file reports.
- Multi-agency digital data integration: Commenced development of a multi-agency digital data integration system, to comprise three components including a map-based search facility to display data sets rescued through the MDIRA program in a single web-based interface. Completion expected by December 2006.

Physical samples

- *Indexing of BLM minerals samples:* Developed a database system for the BLM mineral pulp-sample and surface/near-surface rock-sample collections at the DGGs Geologic Materials Center (GMC). Indexing of the entire hard-rock minerals collection was completed in 2005 and will be made available online.
- *GMC Mineral Sample Storage & Retrieval Database System:* Expansion of the mineral-sample database system and indexing of the entire remaining hard-rock minerals collection will be initiated in mid-2005 and will be made available online by mid-2007.

Mining claim information

- *Mining claims on-line:* Developed an improved, spatially referenced mining-claims records system, available online at <http://akmining.info/>, and platted claims (pre-made maps), available at <http://plats.landrecords.info>. These sites generate 2000+ visits per month. On the basis of customer requests, future plans include simplifying land status interpretation, accessing geophysical-survey data to view with claims; portraying ownership blocks by common customer; and allowing users to extract selected GIS data.
- *Recorded mining documents on-line:* Recorded mining documents from July 1, 2001, are available on-line for the public at <http://akrecorder.info/>. Work is in progress to add mining documents prior to July 2001. About three quarters of all recorded surveys are now available on-line.
- *Minerals-property database and update system:* Developed a joint federal-state geospatial minerals-property Oracle database with streamlined updating processes to assure current information. The system is designed to allow a user to determine if a particular area in the state is open or closed to mineral claim staking.
- *Multi-agency minerals resources & land records web portal:* A preliminary product was completed and delivered to the mining community via the <http://akgeology.info/> web site (see following page). This site provides a high-level location for accessing a wide variety of the information resources produced by the MDIRA initiative and other related programs in recent years. Advanced searches being developed will span agencies' databases based on criteria of geography, subject area, and author.

New information

This proposed component of MDIRA was not funded by Congress. However, MDIRA tasks are undertaken and completed with a view toward preserving both existing and future minerals information. As participating organizations develop methodologies for recovering, managing, and making available the legacy Alaska minerals information, they are building many of these methodologies into their ongoing business processes. This approach ensures that, following termination of this program, the large body of recovered information is preserved and maintained in a dynamic fashion whereby newly generated information is continually added and made available to the public.

ALASKA MINERALS & GEOLOGIC INFORMATION ONLINE

Alaska minerals data and information that have been made publicly available as a result of the MDIRA program are now accessible through a single Web site, <http://akgeology.info> (see below). Currently this site consists of links to the various agency sites where these data are maintained. With MDIRA support, the participating agencies are developing a prototype interagency online portal through which all recovered Alaska minerals and geologic data as well as new agency data will be available through an enterprise system that will retrieve information from the distributed databases through a single search engine.

[USGS](#) [BLM](#) [DNR/DGGS](#) [DNR/LRIS](#) [USFS](#) [LANDRECORDS.info](#) [AKMINING.info](#) [AKRECORDER.info](#)

AKGeology.info







Minerals
Data
Information
Rescue in
Alaska

Welcome to MDIRA Portal Home page. This new site will evolve from a collection of links pertaining to geology, minerals, and land records in Alaska into a integrated system which allows the user to combine this information in ways which promote minerals exploration in Alaska. Additional information about this project can be obtained from the [Interagency Minerals Coordinating Group](#) website. Please note that not all of the links on this page are part of the MDIRA program, but are directly related and thus are included here.

<p>Land Records</p> <ul style="list-style-type: none"> ▶ plats.LandRecords.info BLM and DNR Plats & Surveys ▶ las.LandRecords.info Live DNR Case-file information ▶ www.ak.blm.gov/alis BLM Alaska Land Information System ▶ www.gloreords.blm.gov BLM General Land Office ▶ akrecorder.info State Recorder's Office documents ▶ akucc.info Uniform Commercial Code documents ▶ akmining.info Federal and State mining claims via an interactive map 	<p>Maps/Publications</p> <ul style="list-style-type: none"> ▶ Guide to Alaska Geologic and Mineral Information All known sources geologic and minerals information. 13MB download. ▶ Alaska Geology Map Indexer Downloadable maps ▶ Alaska Interagency Bibliography Downloadable publications ▶ DGGS Publications On-Line Downloadable publications ▶ DNR Map Library More downloadable maps ▶ IMCG Digital Index of Geologic Information Bibliography of many agency publications ▶ Alaska Resource Data Files Summary descriptions of known mineral occurrences ▶ USGS Publications (off-line) 	<p>Geology/Data</p> <ul style="list-style-type: none"> ▶ RASS, PLUTO Geochemistry Summary of non-rock USGS geo-chemistry ▶ NURE Data National Uranium Resource data ▶ Alaska Minerals Locations DB Locations of Alaska Minerals Data (MAS/MILS) <p>Libraries/Archives</p> <ul style="list-style-type: none"> ▶ AKMIDI Alaska Mineral Industry Data Index ▶ ARLIS Minerals Library Catalog Print copies of minerals information ▶ UAF Library Catalog Print copies of minerals information ▶ Alaska Historical Collections They have donations of mining materials ▶ John Rishel Mineral Information Center BLM Minerals Collection Catalog ▶ USGS Alaska Tech Data Unit Index of unpublished USGS materials on Alaska
<p>Payments/Compliance</p> <ul style="list-style-type: none"> ▶ dnrpayment.LandRecords.info Make a State mining claim payment ▶ http://www.dnr.state.ak.us/mlw/mining DNR DML&W Mining Section ▶ http://www.dnr.state.ak.us/mlw/forms/ State Mining claim-related forms ▶ http://www.ak.blm.gov/ak940/index.html BLM Division of Energy & Solid Minerals ▶ http://www.ak.blm.gov/ak940/forms/forms.html BLM Mining-Related Forms 		

Minerals Data and Information Rescue in Alaska
Spending Plan and Milestones FY 2002–2004
Dollar amounts in thousands

Tasks	Project Lead ¹	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status
LIBRARIES								
a) Interlibrary communication	ARLIS	10			5		5	*
b) Guide to minerals information & update	DGGS	20			40	Update *		
c) ARLIS, USGS, AKTDU, BLM/Juneau, collection catalogue		90			100		25	*
ARLIS USGS Collection	ARLIS			*				
USGS Alaska TDU	USGS					*		
Juneau BLM minerals information	ARLIS					*		
Alaska geologic thesis acquisition	UAF							*
d) Internet accessible indexes for private mineral property files, legacy public property files,			475					*
USDA-FS & BLM file indexing	USFS BLM					*		
Inventory private-sector minerals data - AKMIDI	ARLIS							*
Archive unpublished agency and private-sector field data	DGGS USGS							*
Index of bedrock & surficial geologic maps	DGGS							*
Index of geophysical maps	DGGS							*
e) Convert priority maps & reports to digital files		300	400		160	*		
Scan DGGS maps & reports	DGGS					*		
Mineral access corridor map conversion	DGGS					*		
Scan BLM mineral information files	BLM							*
Archive unpublished agency and private-sector field data	DGGS USGS							*
Release unpublished digital geologic maps and metadata	DGGS							*

* Completed or scheduled for completion with funding through the indicated fiscal year

Continued

Tasks	Project Lead ¹	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status
DATABASES								
a) Geochemistry Data		175	400		100	*		
Non-rock geochemistry sample data	USGS					*		
Major/Minor oxides	USGS DGGS					*		
USBLM geochemistry	BLM					*		
Geochemistry reference dataset	DGGS					*		
b) Mineral deposits and occurrences	USGS BLM	50	100		270		120	*
Alaska Resource Data Files (ARDF)	USGS DGGS							*
Alaska Mineral Information System (AMIS)	BLM					*		
INTERAGENCY MINERAL INFORMATION DELIVERY SYSTEM								
a) USGS/BLM Alaska Minerals Information Delivery System (MIDS)	USGS BLM	300					400	*
b) DGGS Alaska Minerals Information Delivery System		400			350		330	*
Analysis, design, core system	DGGS							*
DGGS/USGS coordination	DGGS							*
Data loading, applications	DGGS							*
Interagency database applications	DGGS							*

* Completed or scheduled for completion with funding through the indicated fiscal year

Continued

¹ **Project lead agencies**

ARLIS – Alaska Resources Library and Information Services
 BLM – U.S. Bureau of Land Management
 DGGS – Alaska Division of Geological & Geophysical Surveys
 USFS – U.S. Forest Service
 USGS – U.S. Geological Survey

Tasks	Project Lead ¹	FFY02 USGS Actual	FFY02 USBLM Actual	FFY02 Status	FFY03 USGS Actual	FFY03 Status	FFY04 USGS Actual	FFY04 Status
c) Alaska minerals information portal interface & public applications	LRIS		300		475		300	*
d) USGS-USBLM-DGGS bibliography	ALL	50	40					*
e) Geochronology database for mineral terranes	DGGS	55						*
f) Macro-fossil database for mineral terranes	DGGS	75						*
g) Interagency Alaska mineral district data update, final report & operations plan	ALL						120	*
PRESERVATION OF PHYSICAL MATERIALS								
a) Geologic Materials Center - compliance upgrade of facilities	DGGS							*
b) Geologic Materials Center-database conversion to access & update	DGGS							*
c) Geologic Materials Center-mineral sample inventory	DGGS		60					*
d) Catalogue USGS rock samples moved to Alaska from Menlo Park, CA	USGS							*
e) GMC interagency mineral sample storage & retrieval database system	DGGS						200	*
TOTAL		1,525	1,775		1,500		1,500	

* Completed or scheduled for completion with funding through the indicated fiscal year

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 BLM – U.S. Bureau of Land Management
 DGGS – Alaska Division of Geological & Geophysical Surveys
 USFS – U.S. Forest Service
 USGS – U.S. Geological Survey

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Cover photo: View of Red Dog Mine support facilities and mill in northwestern Alaska. Red Dog Mine is the world's largest zinc producer. Teck Cominco Ltd. operates the mine in partnership with NANA Regional Corporation. Photo by Ed Fogels, Alaska Department of Natural Resources.