

ReSciColl Documentation Ecosystem

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USGS National Geological and Geophysical Data Preservation Program (NGGDPP)

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USGS NGGDPP

Ted Habermann, *Co-founder & Chief Game Changer*

Metadata Game Changers



METADATA
GAME CHANGERS

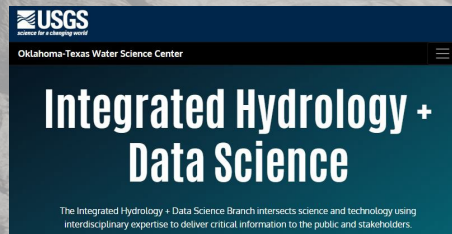
metadatagamechangers.com

Acknowledgements:

Deanna Eames, *Section Chief, Data Science Applications*

USGS Integrated Hydrology + Data Science

2023 January ESIP Meeting
January 25, 2023



webapps.usgs.gov

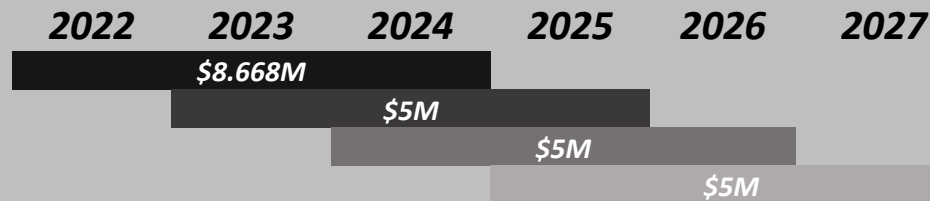
National Geological and Geophysical Data Preservation Program

Total BIL funding: \$23.668M

Energy Policy Act 2005 established the NGGDPP with directives to:

- archive geologic, geophysical, and engineering data, maps, well logs, and samples;
- provide a national catalog of such archival material;
- provide technical and financial assistance related to the archival material; and
- *provide for preservation of samples to track geochemical signatures from critical mineral ore bodies for use in provenance tracking frameworks (BIL (Public Law 117-58)))*

And support for Critical Minerals data integration



FAIR Principles

(Findable, Accessible, Interoperable, and Reusable)

NGGDPP's vision is a world where all public domain physical samples and geological resources are readily discoverable, accessible and re-usable.

ReSciColl – Registry of Scientific Collections – Why?

Benefits

- Improved discoverability
 - Vocabulary
 - Search and map interface
- Simplified access to data and samples
- Connections between publications, people, organizations, and samples
- Enable reuse in new research
- Tracking metrics



ReSciColl Documentation Ecosystem: Roadmap

Where are we now?

1. ReSciColl mongoDB and API
2. ReSciColl Map (BETA)
3. ReSciColl Dashboard (NDC Dashboard)

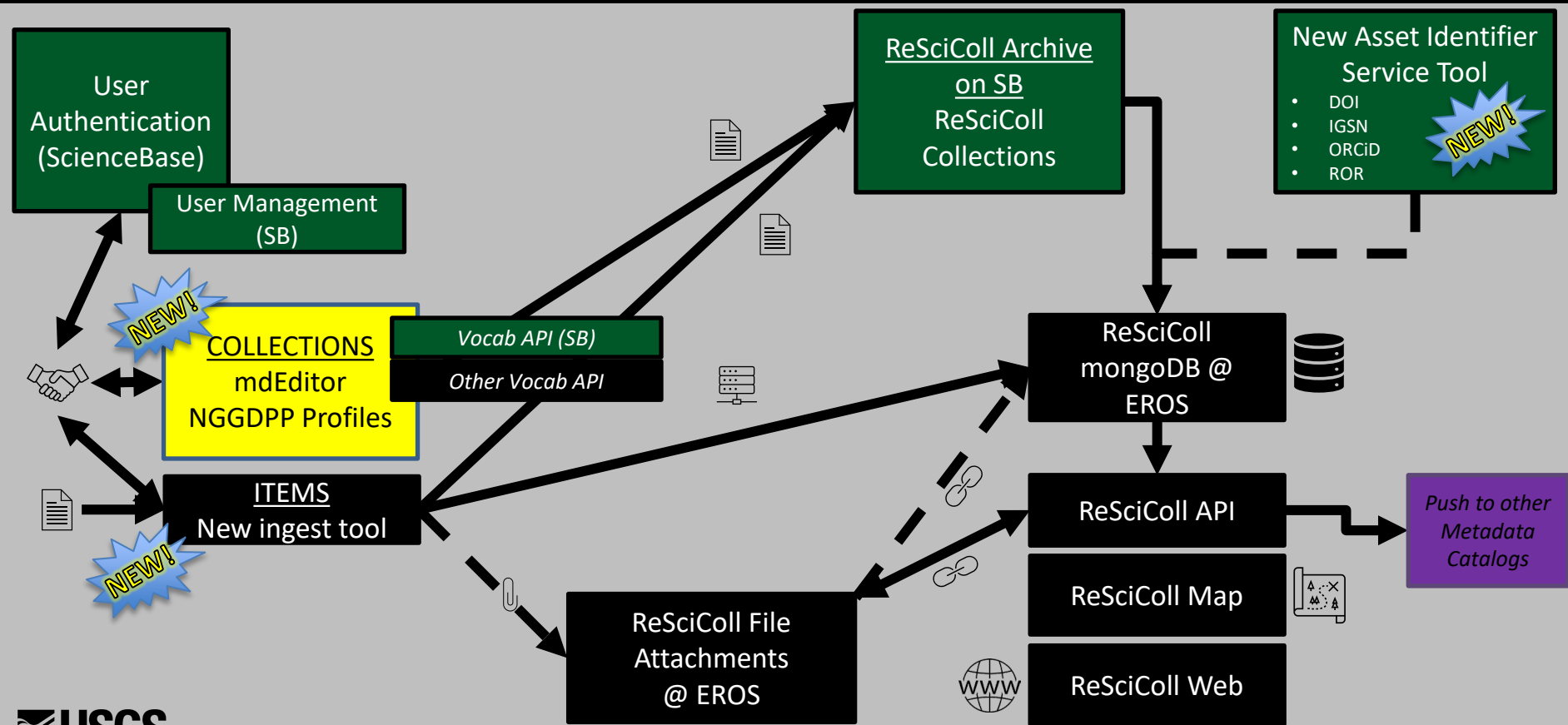
Where are we going?

1. Collections documentation in mdEditor
2. Embedded vocabulary in mdEditor
3. Items-level ingest tool
4. Guidance and training
5. ReSciColl Map

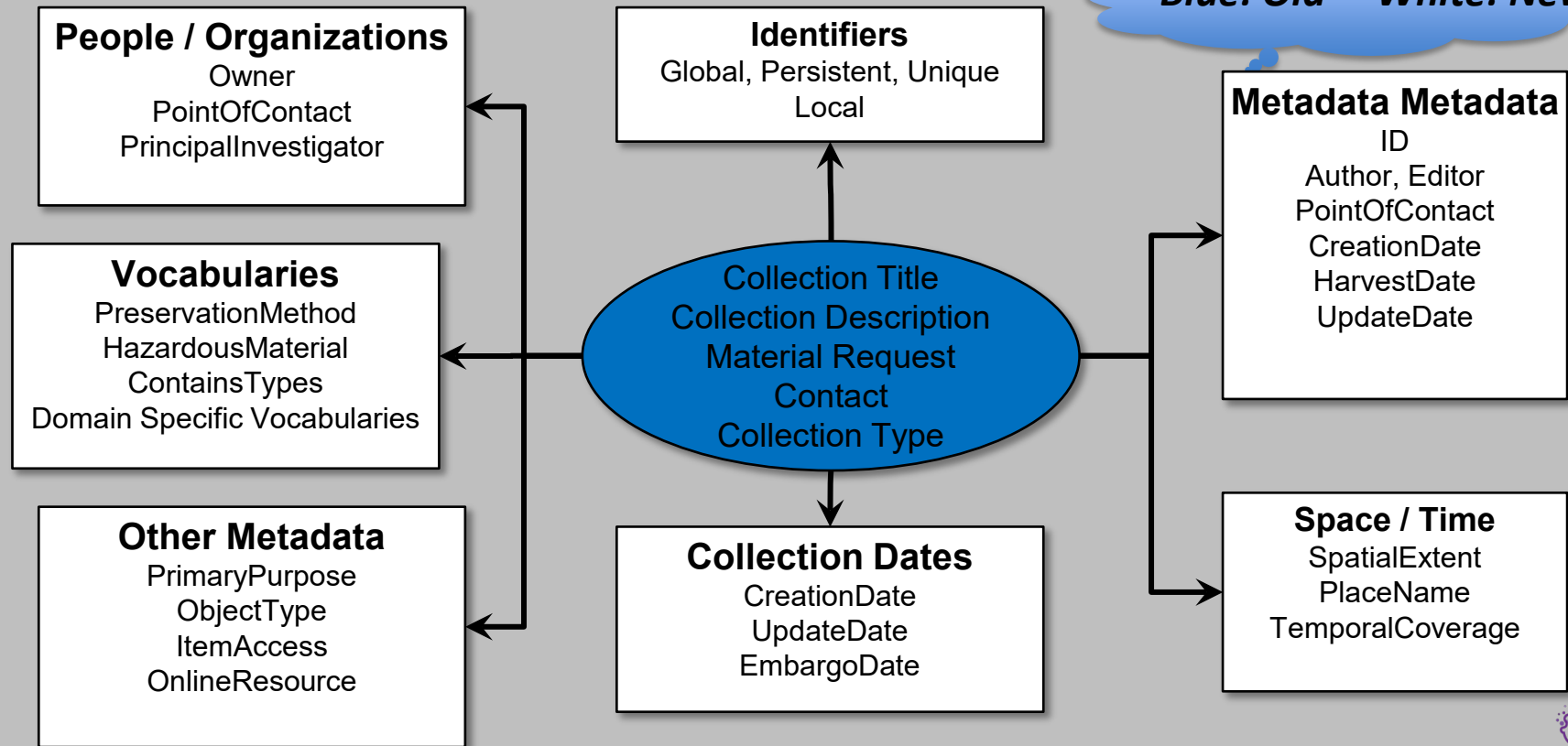
NEW!



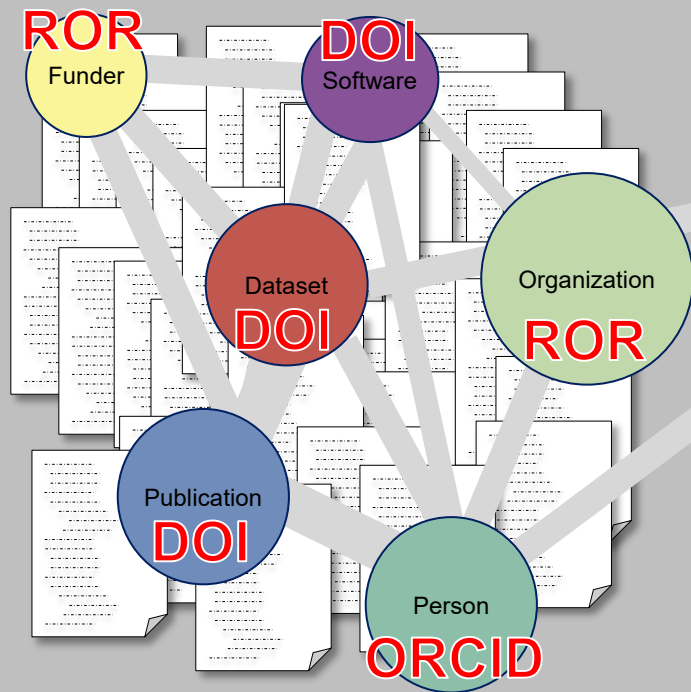
ReSciColl Documentation Ecosystem: Goals



New Documentation Opportunities: Richer Metadata



Identifiers and Connections



ReSciColl Home Page: Map, Inventory, Guidance



<https://webapps.usgs.gov/rescicoll/index.html>

National Geological and Geophysical Data Preservation Program

MAP ABOUT CONTACT

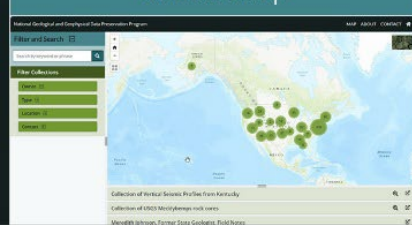
ReSciColl

Registry of Scientific Collections

Started in 2007, ReSciColl contains more than 3.5 million items.

ReSciColl promotes discovery and reuse of scientific assets. ReSciColl includes metadata records describing geological, geophysical, and biological collections and data managed by state geological surveys and the U.S. Geological Survey. These collections include rock samples, thin sections, field notebooks, photographs, maps, datasets, and more. Collections are described using metadata elements that assist users in discovering, understanding, accessing, and using physical collections.

Collections Map



Inventory



Collections Management

NGGDPP is developing enhanced scientific collections and items metadata profiles, with new tools and guidance. While in development the NDC collections management tools, including the NDC Dashboard remain the required tools. The ReSciColl Dashboard is planned to be sunsetted when the expanded documentation and tools are fully operational. Training will be provided by NGGDPP staff on the new documentation tools.

[Submission Guidance](#)



ReSciColl Collection Metadata Management: mdEditor



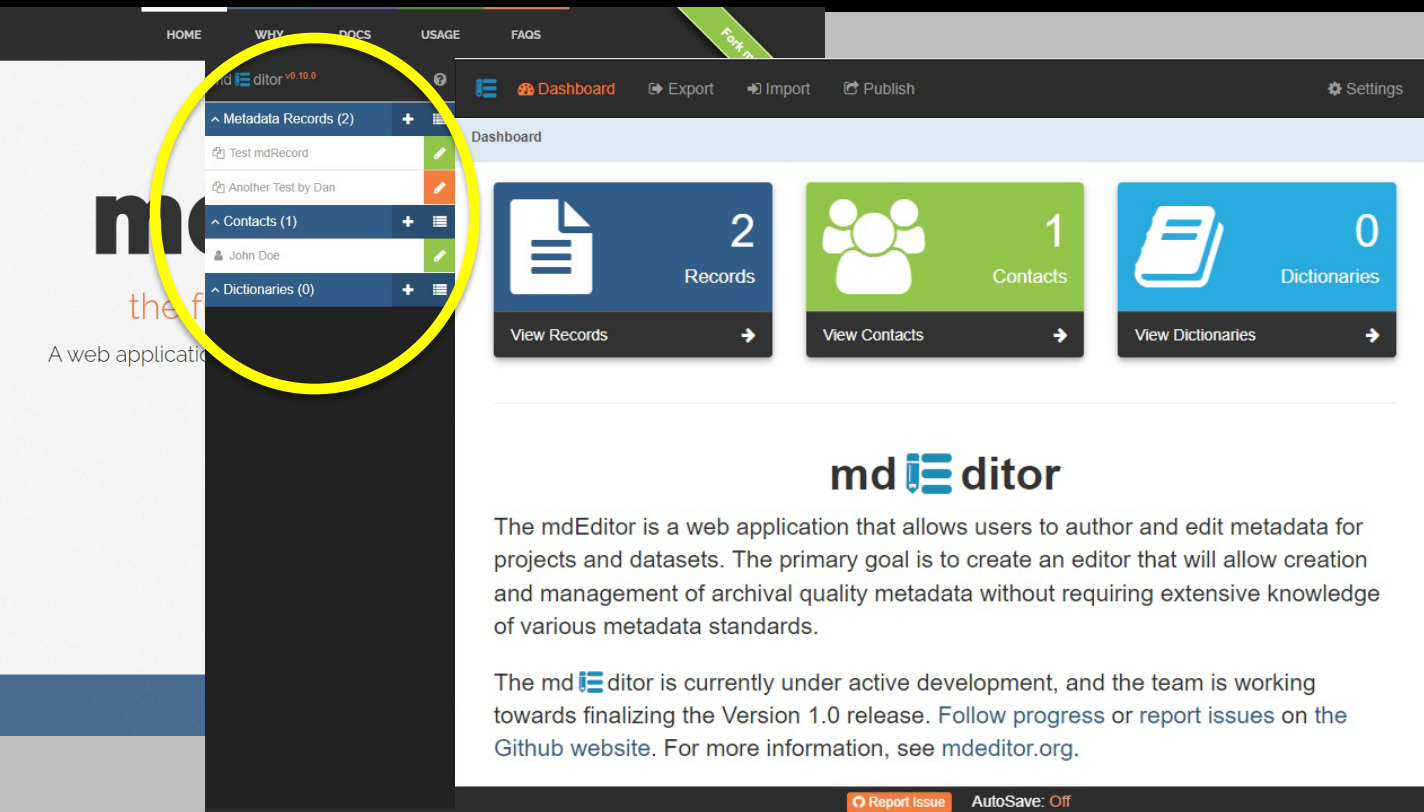
<https://www.mdeditor.org/>



- Developed by the Alaska Data Integration Working Group (ADIwg)
- Open-Source
- GUI
- Browser-Based (Stores Metadata Locally Until Published)
- Customizable Views/Forms via Profiles/Extensions



ReSciColl Collection Metadata Management: mdEditor



The screenshot displays the mdEditor web application interface. A yellow circle highlights the left-hand navigation menu, which includes the following items:

- md editor v0.10.0
- Metadata Records (2)
 - Test mdRecord
 - Another Test by Dan
- Contacts (1)
 - John Doe
- Dictionaries (0)

The main dashboard area features three large tiles:

- Records**: 2 records, with a 'View Records' link.
- Contacts**: 1 contact, with a 'View Contacts' link.
- Dictionaries**: 0 dictionaries, with a 'View Dictionaries' link.

Below the tiles, the mdEditor logo is displayed, followed by a description: "The mdEditor is a web application that allows users to author and edit metadata for projects and datasets. The primary goal is to create an editor that will allow creation and management of archival quality metadata without requiring extensive knowledge of various metadata standards."

Further down, it states: "The mdEditor is currently under active development, and the team is working towards finalizing the Version 1.0 release. Follow [progress](#) or [report issues](#) on the Github website. For more information, see [mdeditor.org](#)."

At the bottom of the dashboard, there are links for "Report Issue" and "AutoSave: Off".

mdEditor Dashboard – Showing Menu

ReSciColl Collection Metadata Management: mdEditor

The screenshot displays the mdEditor web application interface. The top navigation bar includes links for HOME, WHY, DOCS, USAGE, and FAQs. The main header features icons for Dashboard, Export, Import, Publish, Translate, and Settings. The left sidebar shows a list of Metadata Records (2) and Contacts (1). The main content area displays the 'Viewing Record: Test mdRecord' page. The record details include:

- Record Id:** ed087fef-75c4-4c07-8eef-a4b02c596dfb
- Record Title:** Test mdRecord
- Status:** tentative
- Contact Instructions:** Not Defined
- Resource Type(s):** collection: Test Collection mdRecord

The record is categorized by Default Resource Locale, Character Set (UTF-8), Country (USA), and Language (eng). The record is viewed in the 'Main' tab, which shows the abstract: 'This is a test metadata collection record. This is only a test.' The 'Short Abstract' is not provided. The 'Geographic Extent' section shows 'No geographic extents found.' The right sidebar contains buttons for Copy, Delete, Edit, and Show List, along with a list of tabs: Main, Abstract, Short Abstract, Geographic Extent, and Extent.



ReSciColl Collection Metadata Management: mdEditor

Edit Record View

Two ways to populate collection metadata records:

1. Edit record
2. Import JSON or XML

The screenshot displays the 'mdEditor' web application interface for editing a metadata record. The top navigation bar includes links for Dashboard, Export, Import (highlighted with a yellow circle), Publish, Translate, Profile, and Settings. The main content area is titled 'Editing Test mdRecord' and features a sidebar with various metadata sections. The 'Basic Information' section is expanded, showing fields for Record ID, Title, Status, Default Locale, Language, Character Set, and Country. The 'Record ID' field contains the value 'ed087fef-75c4-4c07-8eef-a4b02c596dfb'. The 'Title' field contains 'Test mdRecord'. The 'Status' field is set to 'tentative'. The 'Default Locale' field is set to 'eng'. The 'Language' field is set to 'eng'. The 'Character Set' field is set to 'UTF-8'. The 'Country' field is set to 'USA'. The 'Resource Types' section is also visible at the bottom of the form.

ReSciColl Collection Metadata Management: mdEditor

Profiles:

- AKA Views
- Limits visible metadata fields (all are still present in the record, but hidden)
- 4 Always Available:
 - Basic
 - Full
 - Product
 - Project
- NGGDPP Mandatory Core
- 4 Extensions for Domains (TBA):
 - Rock
 - Vertebrate
 - Invertebrate
 - Image

A screenshot of the mdEditor web application interface. The top navigation bar includes links for Dashboard, Export, Import, Publish, Translate, Profile, and Settings. The 'Profile' dropdown menu is open, showing options: Basic, Full, Product, and Project. The 'Full' option is highlighted with a yellow circle. Below the navigation bar, the breadcrumb trail shows 'Record / Test mdRecord / Edit / Main'. The main content area is titled 'Editing Test mdRecord' and contains a form with sections: 'Basic Information' (containing Record ID, Title, Status, and Default Locale) and 'Resource Types'. The 'Record ID' field contains 'ed087fef-75c4-4c07-8eef-a4b02c596dfb'. The 'Title' field contains 'Test mdRecord'. The 'Status' field is set to 'tentative'. The 'Default Locale' section includes 'Language' (eng), 'Character Set' (UTF-8), and 'Country' (USA). The 'Resource Types' section is currently empty. On the right side, there is a sidebar with a list of metadata fields: Basic Information, Record ID, Title, Status, Resource Types, Point Of Contact, Citation, Description, Time Period, Maintenance, Graphic Overview, and Credit. At the bottom right, there are 'Save' and 'Cancel' buttons. The bottom status bar shows 'Report Issue' and 'AutoSave: Off'.

ReSciColl Collection Metadata Management: mdEditor

Controlled Vocabularies:

- Currently in development
- Will initially be linked to vocabularies on ScienceBase. Others in future.
- Add to record via Keywords -> Add Thesaurus.
- Goal: Choose via picklist from specific vocabularies available by profile/view.







The screenshot shows the mdEditor v0.10.0 interface. The top navigation bar includes links for Dashboard, Export, Import, Publish, Translate, Profile (set to Full), and Settings. The main content area is titled 'Record / This is a Test New Record / Edit / Keywords'. The 'Keywords' tab is highlighted with a yellow oval. Below the tabs, the text 'Editing Keywords' is followed by a warning icon. A message states 'No keywords found.' with a '+ Add Thesaurus' button. On the right, there are 'Save' and 'Cancel' buttons, and another '+ Add Thesaurus' button at the bottom right. The left sidebar shows a list of records, with 'This is a Test New Record' selected.

ReSciColl Collection Metadata Management: mdEditor

Controlled Vocabularies:

- NGGDPP Vocabulary thesaurus currently connected to NGGDPP Vocabularies folder on ScienceBase.

Editing Keywords  

Thesaurus #0  

GCMD Platforms

GCMD Instruments

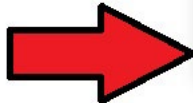
ISO Topic Category

LCC Project Category

LCC Deliverable Types

LCC End User Types


NGGDPP Vocabulary


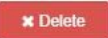


ReSciColl Collection Metadata Management: mdEditor



Controlled Vocabularies:


- NGGDPP Vocabulary thesaurus currently connected to NGGDPP Vocabularies folder on ScienceBase.

Editing Keywords 

^ Thesaurus #0 NGGDPP Vocabulary  

Title* NGGDPP


Date 2022-09-01  Date Type revision 

Type NGGDPPkeywords 

Edition ISO 19115-2:2020

URL <https://www.sciencebase.gov/vocab/category/4f4e475ee4b07f02db47df09>

Add some keywords.



ReSciColl Collection Metadata Management: mdEditor

Controlled Vocabularies:

- Hover mouse over “?” for definition/additional info
- Click term to add...



Editing Thesaurus #0 NGGDPP

Tree

Search

+ collection	
+ Collection health	?
+ Collection Theme	?
+ DataCite	
- GeoSciML	?
+ Alterationtype	
- Boreholedrillingmethod	
air core	?
auger	?
box core	?
cable tool drilling	?
cone penetrometer test probe	?
conventional core	?
core drilling	?

Selected Keywords

Add some keywords.

Air core drilling and related methods use hardened steel or tungsten blades to bore a hole into unconsolidated ground. The drill bit has three blades arranged around the bit head, which cut the unconsolidated ground. The rods are hollow and contain an inner tube which sits inside the hollow outer rod barrel. The drill cuttings are removed by injection of compressed air into the hole via the annular area between the innertube and the drill rod. The cuttings are then blown back to surface up the inner tube where they pass through the sample separating system and are collected if needed. Drilling continues with the addition of rods to the top of the drill string. Air core drilling can occasionally produce small chunks of cored rock.



ReSciColl Collection Metadata Management: mdEditor

Controlled Vocabularies:

Editing Thesaurus #0 NGGDPP

Tree	Search
<div>+ collection</div>	
<div>+ Collection health ?</div>	
<div>+ Collection Theme ?</div>	
<div>+ DataCite</div>	
<div>- GeoSciML ?</div>	
<div>+ Alterationtype</div>	
<div>- Boreholedrillingmethod</div>	
<div>air core ?</div>	
<div>auger ?</div>	
<div>box core ?</div>	

Selected Keywords

☒ Full Path

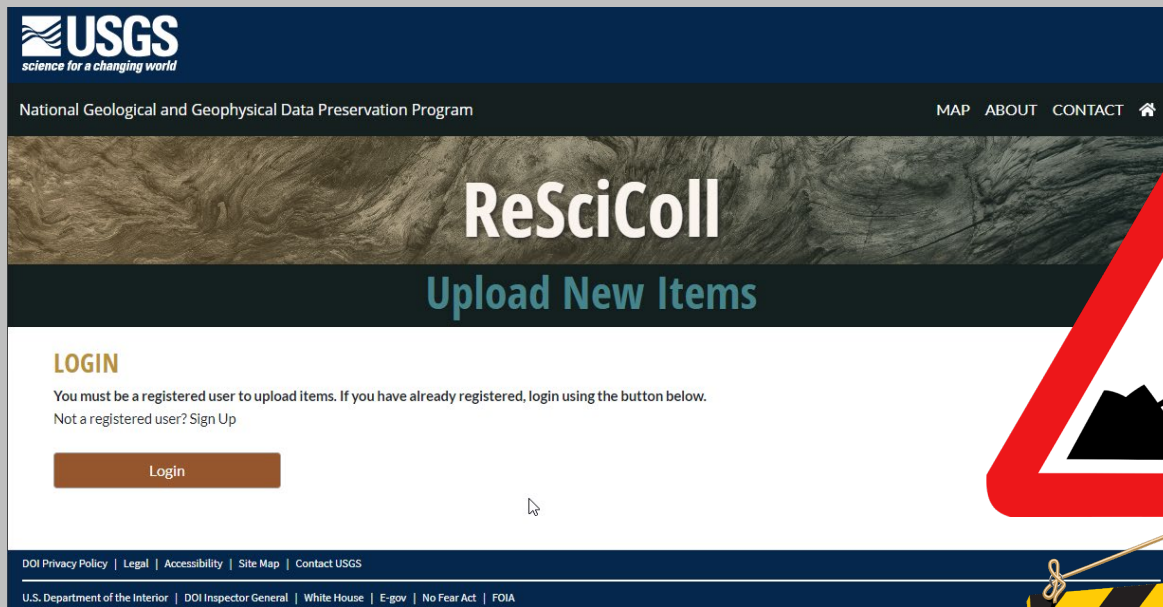
GeoSciML > Boreholedrillingmethod > air core

☒ Delete



ReSciColl Collection Items Management

Item Upload/Ingest Tool:




Items: Individual Members of a Collection



ReSciColl Collection Items Management

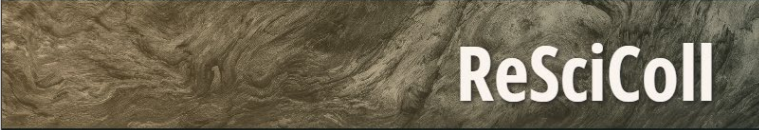
Item Upload/Ingest Tool:



science for a changing world

National Geological and Geophysical Data Preservation Program

MAP ABOUT CONTACT



ReSciColl

Upload New Items

LOGIN

You must be a registered user to upload items. If you have already registered, login using the button below.
Not a registered user? Sign Up

Login

DOI Privacy Policy | Legal | Accessibility | Site Map | Contact USGS

U.S. Department of the Interior | DOI Inspector General | White House | E-gov | No Fear Act | FOIA

ReSciColl Login

Email address



Password



Login

Need an account?

DOI Users: [Request an Account](#)

Non-DOI Users: [Request an Account](#)

Users outside the Department of Interior must be sponsored by a USGS employee.



ReSciColl Collection Items Management

Item Upload/Ingest Tool:

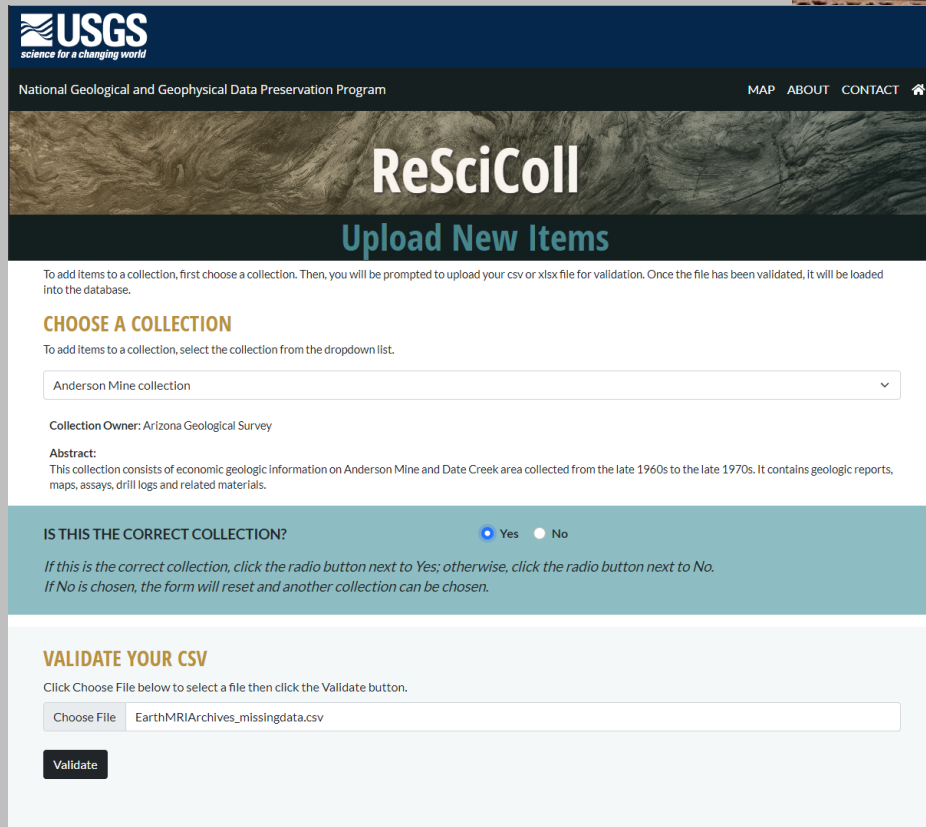
- Parent Collection Must Already Exist in ReSciColl
- Organization Connected to User Account Determines Accessible Collections for Item Ingest
- Items Listed in CSV (Format Template Available) for Ingest

A screenshot of the ReSciColl web application's "Upload New Items" page. The page has a dark blue header with the USGS logo and tagline "science for a changing world". Below the header, it says "National Geological and Geophysical Data Preservation Program" and has links for "MAP", "ABOUT", "CONTACT", and a home icon. The main content area has a dark background with the text "ReSciColl" and "Upload New Items" in large white and teal letters. Below this, there is a section titled "CHOOSE A COLLECTION" with instructions: "To add items to a collection, first choose a collection. Then, you will be prompted to upload your csv or.xlsx file for validation. Once the file has been validated, it will be loaded into the database." and "To add items to a collection, select the collection from the dropdown list." A dropdown menu shows "Anderson Mine collection". Below the dropdown, it says "Collection Owner: Arizona Geological Survey". There is an "Abstract:" section with text: "This collection consists of economic geologic information on Anderson Mine and Date Creek area collected from the late 1960s to the late 1970s. It contains geologic reports, maps, assays, drill logs and related materials." At the bottom, there is a teal section titled "IS THIS THE CORRECT COLLECTION?" with two radio buttons, "Yes" and "No". Below the radio buttons, there is a note: "If this is the correct collection, click the radio button next to Yes; otherwise, click the radio button next to No. If No is chosen, the form will reset and another collection can be chosen." The footer contains links for "DOI Privacy Policy", "Legal", "Accessibility", "Site Map", and "Contact USGS", and a row of links for "U.S. Department of the Interior", "DOI Inspector General", "White House", "E-gov", "No Fear Act", and "FOIA".

ReSciColl Collection Items Management

Item Upload/Ingest Tool:

- ReSciColl will validate the CSV for correct format.



The screenshot shows the ReSciColl web interface for uploading new items. At the top is the USGS logo and navigation links. The main heading is 'ReSciColl' with a sub-heading 'Upload New Items'. The form includes a dropdown menu for selecting a collection, an abstract text area, a confirmation section with radio buttons for 'Yes' or 'No', and a file upload section with a 'Validate' button.

USGS
science for a changing world

National Geological and Geophysical Data Preservation Program

MAP ABOUT CONTACT

ReSciColl

Upload New Items

To add items to a collection, first choose a collection. Then, you will be prompted to upload your csv or xlsx file for validation. Once the file has been validated, it will be loaded into the database.

CHOOSE A COLLECTION

To add items to a collection, select the collection from the dropdown list.

Anderson Mine collection

Collection Owner: Arizona Geological Survey

Abstract:
This collection consists of economic geologic information on Anderson Mine and Date Creek area collected from the late 1960s to the late 1970s. It contains geologic reports, maps, assays, drill logs and related materials.

IS THIS THE CORRECT COLLECTION? ☒ Yes ☐ No

If this is the correct collection, click the radio button next to Yes; otherwise, click the radio button next to No. If No is chosen, the form will reset and another collection can be chosen.

VALIDATE YOUR CSV

Click Choose File below to select a file then click the Validate button.

Choose File EarthMRIArchives_missingdata.csv

Validate

ReSciColl Map



<https://webapps.usgs.gov/rescoll/viewer/index.html>

National Geological and Geophysical Data Preservation Program

MAP ABOUT CONTACT

ReSciColl Map

BETA



Welcome to the ReSciColl Map

Explore Geo and Bio Scientific Collections



Click on a green marker to zoom into map and select a collection.

Enter search criteria & Apply preset filters



Enter keywords or use the filter checkboxes to narrow results.

Access Collections and Items



Clicking on a collection in the bottom pane lists the items in that collection.

Download search results table

This feature will be available soon.

View Data

Disclaimer: Collections shown below do not always have items. Collections may have an external link to items through an organization database or web application. Collections items may only be available upon request by contacting the organization. If a collection has no location available it will show in this list but not on the map.

2020 Critical Minerals of Nevada Draft Publication

3DEP mapped areas

Filter and Search

keyword or phrase

collections

ization

braska) Conservation and Survey Division
(D)

ka Division of Geological & Geophysical
veys

ona Geological Survey

ansas Geological Survey

ornia Geological Survey

prado Geological Survey

onnecticut Geological Survey

Clear All

type

- ☐ collection
- ☐ dataset
- ☐ map
- ☐ photographicImage
- ☐ publication
- ☐ sample
- ☐ website

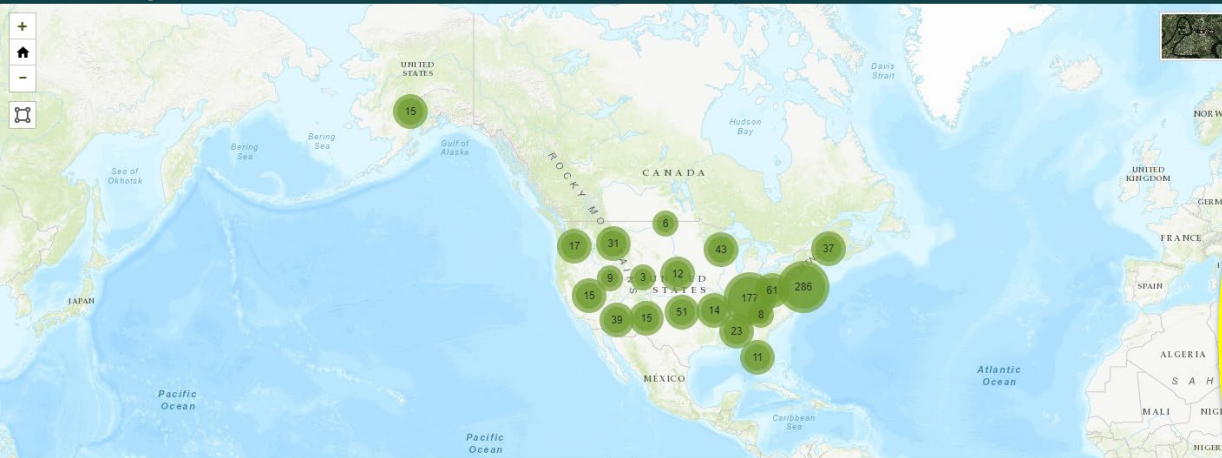
ReSciColl Map



<https://webapps.usgs.gov/rescicoll/viewer/index.html>

National Geological and Geophysical Data Preservation Program

ReSciColl Map



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2020 Critical Minerals of Nevada Draft Publication

3DEP mapped areas

Filters

BETA

Filter and Search

Search by keyword or phrase

Filter Collections

Organization

- ☐ (Nebraska) Conservation and Survey Division (CSD) 12
- ☐ Alaska Division of Geological & Geophysical Surveys 18
- ☐ Arizona Geological Survey 39
- ☐ Arkansas Geological Survey 10
- ☐ California Geological Survey 5
- ☐ Colorado Geological Survey 6
- ☐ Connecticut Geological Survey 16
- ☐ Delaware Geological Survey 1

Clear All

Type

- ☐ collection 14
- ☐ dataset 244
- ☐ map 5
- ☐ photographicImage 3
- ☐ publication 1
- ☐ sample 69
- ☐ website 2



<https://webapps.usgs.gov/rescicoll/viewer/index.html>

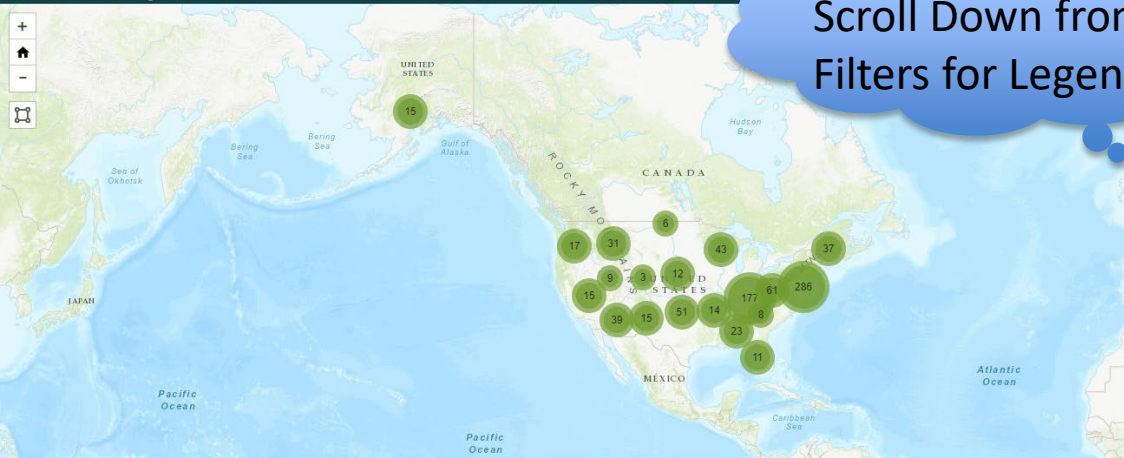
ReSciColl Map



<https://webapps.usgs.gov/rescoll/viewer/index.html>

National Geological and Geophysical Data Preservation Program

ReSciColl Map



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2020 Critical Minerals of Nevada Draft Publication

3DEP mapped areas

Legend



Collections

Number of collections on marker specifies how many collections are in each cluster. Zoom in further or click on collection clusters to disperse.

Source: NGGDPP



Extent

Hover over collections to view its extent. The extent of clustered collections is accumulated.

Source: NGGDPP



Items

Number of items on marker specifies how many items are in each cluster. Zoom in further or click on item clusters to disperse.

Source: NGGDPP



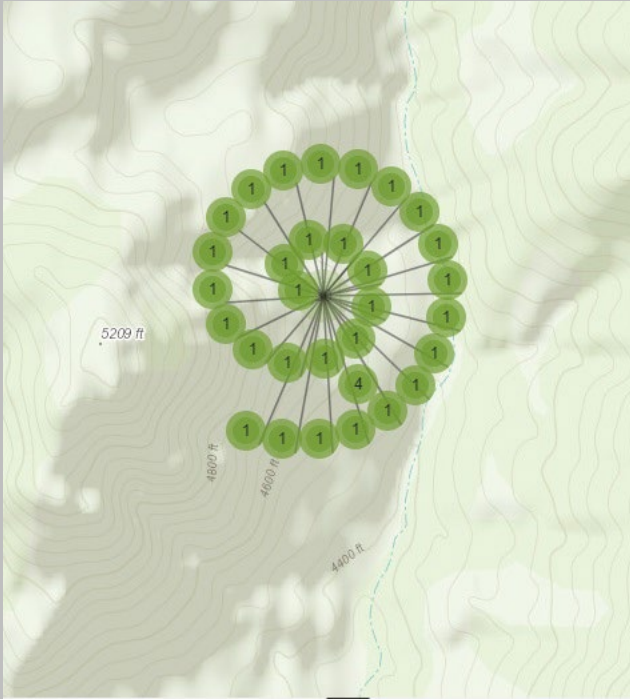
Topographic Base Map

This base map includes administrative boundaries, cities, water features, physiographic features, parks, landmarks, highways, roads, railways, and airports.

Source: ESRI ArcGIS Online



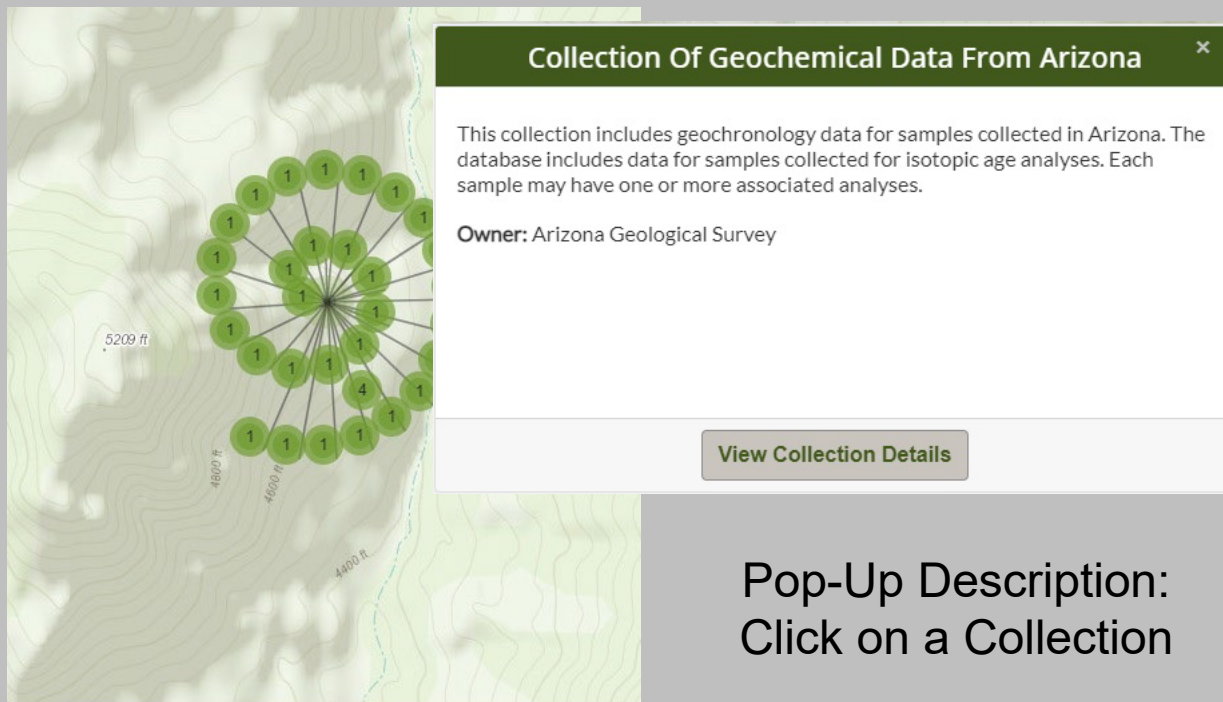
<https://webapps.usgs.gov/rescicoll/viewer/index.html>



Zoomed-In View of a
Group of Collections in
Arizona with Geospatial
Metadata Link to Single
Location

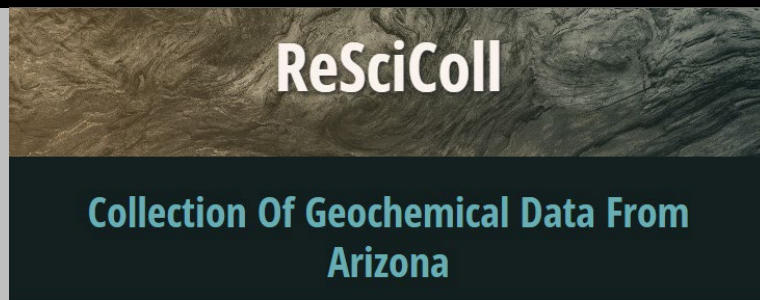


<https://webapps.usgs.gov/rescicoll/viewer/index.html>



Pop-Up Description:
Click on a Collection





This collection includes geochronology data for samples collected in Arizona. The database includes data for samples collected for isotopic age analyses. Each sample may have one or more associated analyses.

[See the Collection](#)

COLLECTION ITEMS (2174)

Arizona geochronological sample: 2-18-86-3
Arizona geochronological sample: FS-300
Arizona geochronological sample: FX-181
Arizona geochronological sample: J-3-5-97-1
Arizona geochronological sample: KA-1236
Arizona geochronological sample: PED-01-64
Arizona geochronological sample: PEL-12
Arizona geochronological sample: PEL-13
Arizona geochronological sample: PEL-21



ReSciColl Collection Page

Scroll to See:

- [Show More Items](#)
- [Location \(Extent Map\)](#)
- [Collection Owner Contact Info](#)
- [Collection Details](#)
- [Ordering Information](#)
- [Similar Collections](#)



ReSciColl

Arizona Geochronological Sample: PEL-21

Description

Geochronologic sample location with analysis. Results summary: KA-wr:21.6 \pm 0.4; Location: Loc Tag: Pel; #B on Richter and others, 1983 Arizona, Whitlock Mts. (quad sheet DRY MOUNTAIN); Citation: Richter, D.H., Houser, B.B., and Damon, P.E., 1983, Geologic map of the Guthrie quadrangle, Graham and Greenlee Counties, Arizona: USGS Miscellaneous Investigations Series Map I-1455, 1 sheet, scale 1:48,000. #B; Sample description: Rhyodacite flow; overlies Big Red latite and Turkey Track porphyry in Slickrock area

Item Information

Date Created: 09/15/2010

Date Updated: 06/21/2014

Type: Geochemical Data

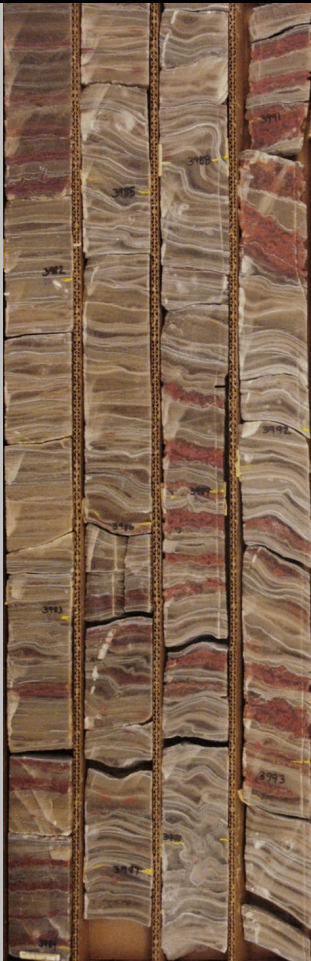
Collection: Collection of geochemical data from Arizona

Archive: ScienceBase

Keywords: No keywords available

Location

ReSciColl
Item Page



ReSciColl Documentation Ecosystem: THANK YOU!!

Questions? Contact Us:

Dan K. Arthur – darthur@usgs.gov

Interdisciplinary Scientist

USGS National Geological and Geophysical Data Preservation Program

Michaela R. Johnson – mrjohns@usgs.gov

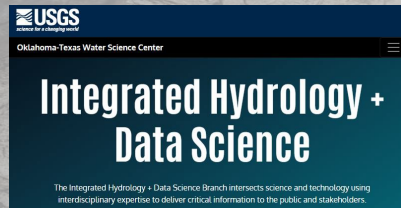
Associate Program Coordinator

USGS National Geological and Geophysical Data Preservation Program

Ted Habermann – ted@metadatagamechangers.com

Co-founder & Chief Game Changer

Metadata Game Changers



webapps.usgs.gov



METADATA
GAME CHANGERS

metadatagamechangers.com

