CMR Specify User Manual (Sample Search)

Contents

1 Introduction

Several methods are available to find relevant samples in the CMR Specify system, as summarised in Table 1 below. Figure 1 illustrates the links to access them. The top right search box behaves the same way as a simple search.

Table 1. Summary of search methods available in CMR Specify.

Search Type	Description	Advantages	Limitations
Simple Search	A keyword-based search that returns broader search results, i.e., any records matching your search terms. Search results are most effective when using a wildcard (*). The search is always **case insensitive.**	Fast and easy to use. You can search using individual terms or phrases.	The search results are restricted to metadata fields that are indexed in the system.
Query Builder	Flexible user interface to define search and filter results based on metadata fields. The search is always **case insensitive.**	Extensive search that returns more precise results. The search results can be used to generate Record Sets or Reports.	Users should be familiar with search fields and search operators to effectively refine their searches.
Storage Tree	Storage is visually displayed in a hierarchical structure (e.g., building > room..), allowing users to find samples based on a container.	A quick way to locate all samples stored within a container.	Search is only possible by the storage tree hierarchy.

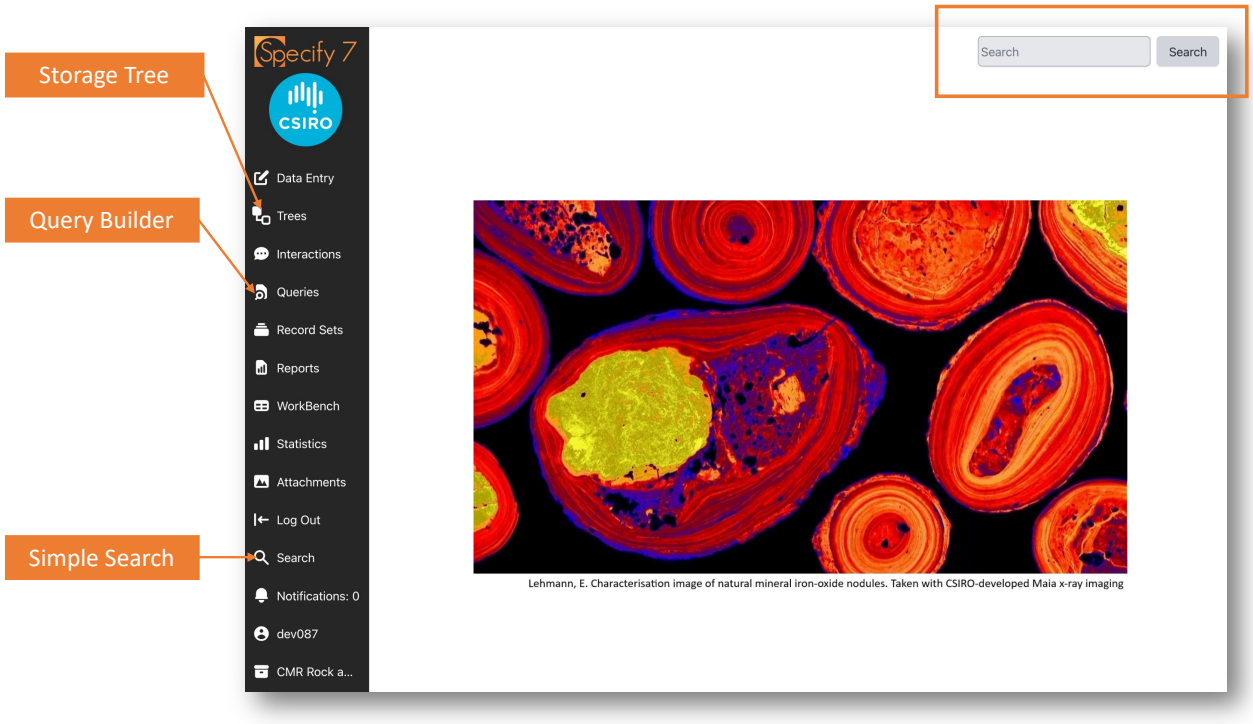


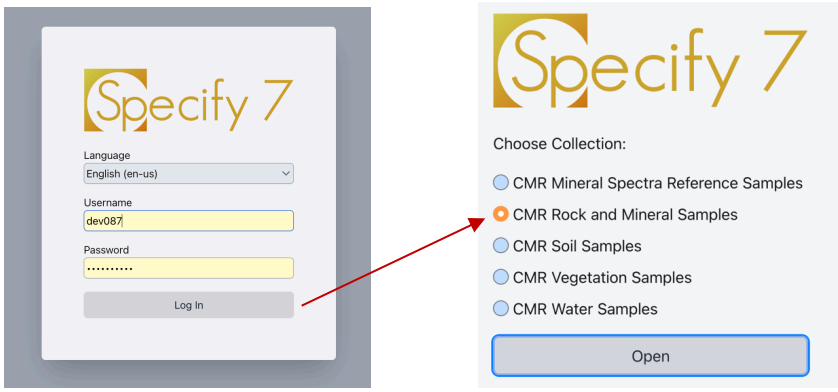
Figure 1. Types of searches in CMR Specify.

2 Login into the System

In Sections 3, 4, and 5, we will apply the three search methods outlined in Table 1 to find rock and mineral samples.

> **Important:** Access to system features is restricted based on user roles. You **must log in** to use all available search methods—such as Simple Search, Query Builder, and Storage Tree. Without logging in, you will only have access to the Simple Search and limited records browsing.

1. Log in to the CMR Specify system using your username and the password provided. If you don't have an account to access the system yet, please contact us.
2. Choose the **CMR Rock and Mineral Samples**.



3 Simple Search

Simple searches in Specify are configured by default to search metadata fields indexed in the system (see Table 2). This means the system will return results when your search term(s) match the values of those metadata fields. This search type eliminates the need for structured, field-by-field queries for common and straightforward searches.

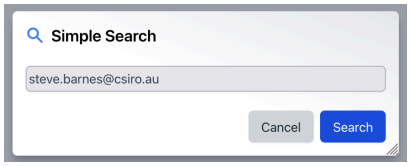
Important: The simple search is always **case insensitive.**

Table 2. Search fields configured in CMR Specify.

Table	Indexed Metadata Fields
Collection Object	Catalogue Number, Cataloged Date, Sample Number, Alt. Sample Number, Field Sample Number, IGSN, Project Identifier, Project Short Name, Drill Hole Number, Remarks
Locality	Locality
Storage	Storage including Building, Room, Aisle, Cabinet, Shelf, Pallet and Container
Agent	First Name, Last Name, Email
Project	Project Identifier, Project Name

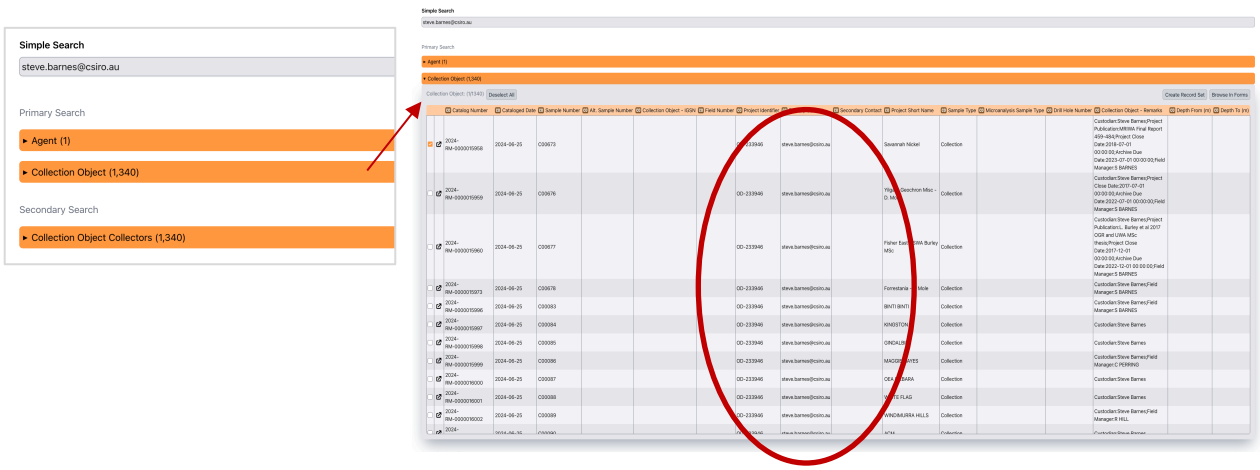
3.1 Find Samples via Simple Search

a. To perform a simple search, click the **Search** link in the left panel, and enter one or more terms representing your samples of interest. Alternatively, you can enter the search terms in the textbox at the top right of the system (Figure 1). We will search samples by a researcher's email, e.g., steve.barnes@csiro.au.



b. The search results are organised by type (e.g., Collection Object, Agent, Project, etc.), along with the corresponding count. Expand the appropriate categories, e.g., **Collection Object** (samples), to locate the relevant results.

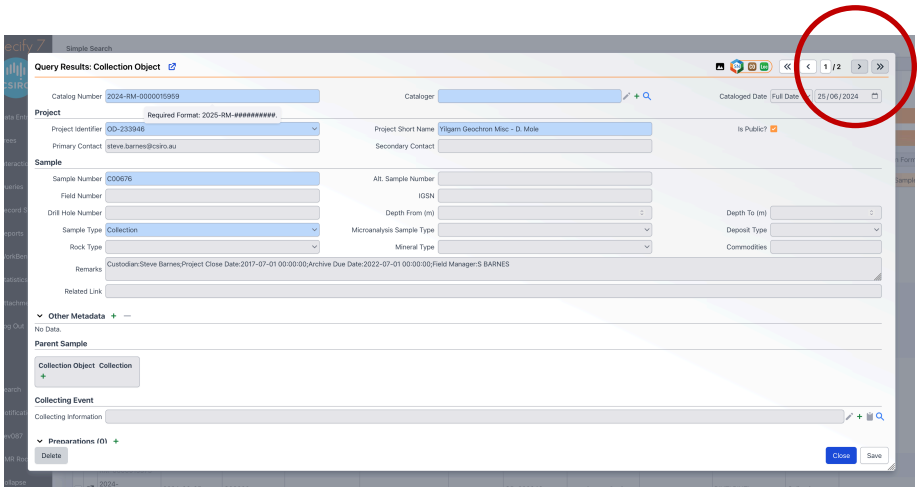
Note: The count reflects the number of records found during the search. This number may change as new records are added to the system.



c. The system will list the records, showing limited metadata in a table format.

- To view detailed information about the samples of interest right away, select the relevant checkboxes and click **Browse in Forms**. If no records are selected, the system will include all records found.
- To save a set of selected samples for later reference, click **Create Record Set**. This will allow you to revisit the samples at any time. **Note**: The button will only appear after you have selected the checkboxes.

d. When you choose **Browse in Forms**, the selected records appear in Form View. You can use the arrow buttons at the top right to navigate the records.



3.2 Simple Search Wildcards

A **wildcard** will help you to find strings that match patterns rather than exact words or phrases. Table 3 lists the wildcard characters supported by the system.

- **% (Percent Sign)** – **Recommended**: The percent sign offers the most flexibility, as it can be used **anywhere** within the search string. It allows for complex pattern matching and can appear multiple times within a search string.
- *** (Asterisk)**: The asterisk helps search substrings that may appear at the **beginning** or **end** of a string. You can place an asterisk at both the start and the end of a query, but it cannot be used between characters, limiting its flexibility compared to other wildcards. If placed within the string, the asterisk will be treated literally.
- **_ (Underscore)**: The underscore represents a **single character** and can be placed **anywhere** within the string. It helps search patterns where individual character is unknown.

Table 3. Wildcard characters.[1]

Wildcard	Description	Placement Restrictions	Usage Examples	Matched Examples
%	Percent sign represents **zero or more** characters	It can be used **anywhere** within the string	%forrest%, %forrest, forrest%, forrest%nic%	forrest%nic% matches "forrestania nickel", but **not** "forrestania", "forrestania-dmole"
*	Asterisk represents **zero or more** characters	It can be used at the **beginning** or **end** of a search string, but **not within** the string itself	*barnes*, *barnes, barnes*	*barnes matches "stephen barnes", "barnes", but **not** "barnes hill".
_	Underscore represents a **single** character	It can be used **anywhere** within the string	pegma__t_	pegma__t_ matches "pegmatite"

Table 4 provides additional examples of combining the recommended wildcard (%), space characters, and quotation marks based on Jundee.

- Any string values **separated by spaces** will be searched as individual terms.
- Enclose the term in **double** or **single quotes** to search for an **exact phrase.**

Table 4. Search with wildcards.

Examples	Description
%Jundee	Returns any string that **ends** with Jundee.
Jundee%	Returns any string that **starts** with Jundee.
%Jundee%	Returns any string that includes Jundee at any position **within** it.
%Jundee Gold%	Returns any string that **ends** with Jundee or **starts** with Gold.
"Jundee Gold", 'Jundee Gold'	Returns any string where Jundee Gold is the **exact match** for the **entire string**.

3.3 Common Examples

This section includes examples of common sample searches for quick reference.

Table 4. Common examples of simple search.

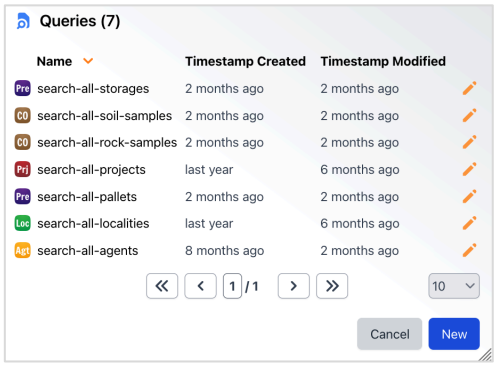
Search Goal	Search String
Find all samples starting with 17KLRC001	17KLRC001% or 17KLRC001*
Find all samples belong to Louise Schoneveld	louise.schoneveld@csiro.au %schoneveld% *schoneveld*
Find all samples collected under the exact project name M452	M452
Find all samples collected under the project with O2D number OD-208678	OD-208678
Find all samples catalogued on 27th May 2024	2024-05-27 (see *)

[1] Modified from https://discourse.specifysoftware.org/t/wildcard/2230/3

*When the search criterion is a four-digit number between 1000 and 3000, and date fields (e.g. Catalogued Date) are included in the search configuration, Simple Search will focus on the **year** portion of all date fields. For example, entering "2024" will return all records with dates within 2024. To find records catalogued on a specific date, you must enter the full date in the format YYYY-MM-DD (e.g., 2024-05-27).

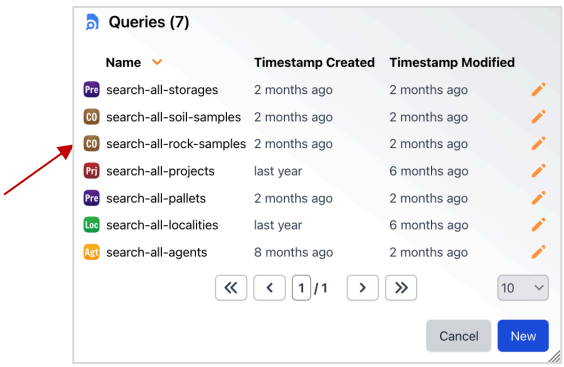
4 Query Builder

The Query Builder offers a flexible search interface for defining and executing searches. Since creating queries using the builder requires familiarity with the search fields, we have included several predefined queries in the system for your convenience.

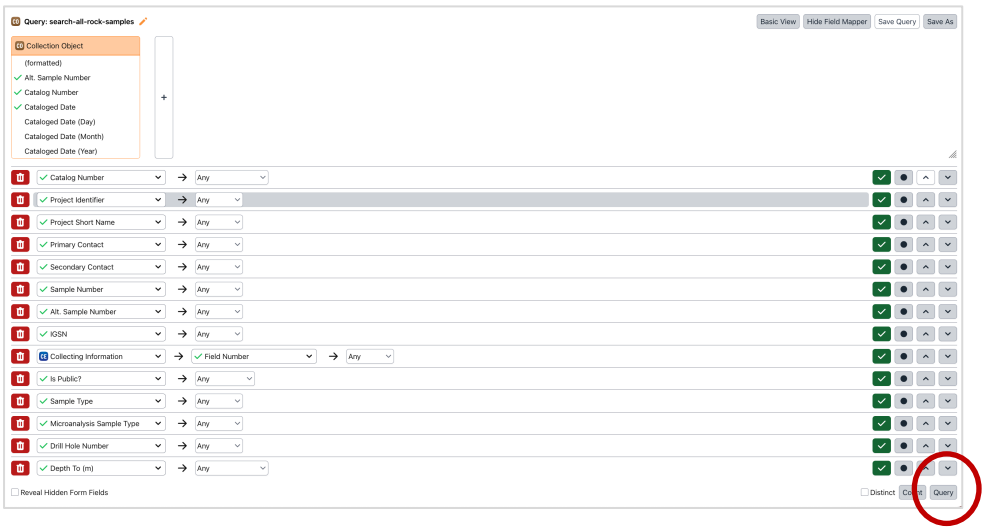


4.1 Find All Samples via Query Builder

1. Select **Queries** from the left panel. You will see the list of predefined queries. Select **search-all-rock-samples.**



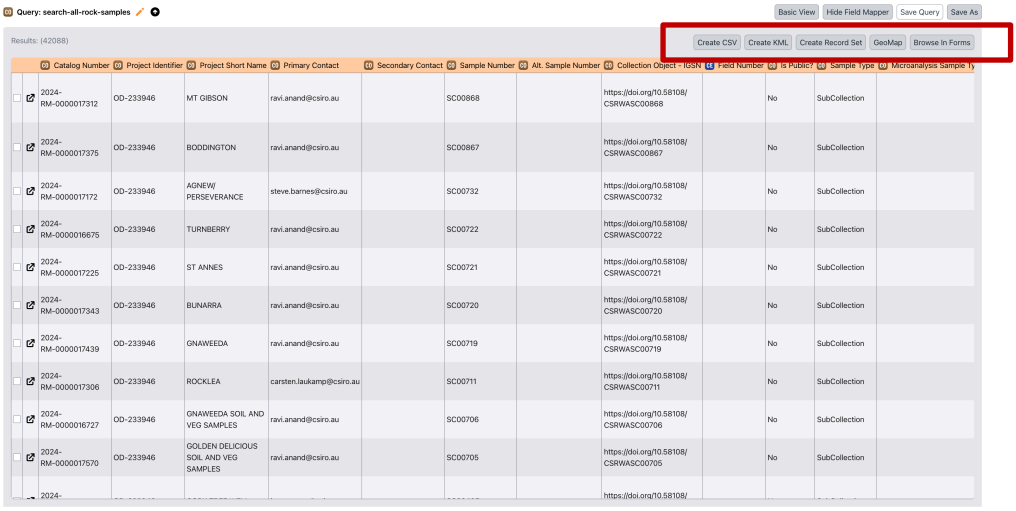
2. You will see the metadata fields that make up the query. Click **Query**.



3. This will return all samples in the Rock and Mineral collection. The following options are available at the top right of the table.

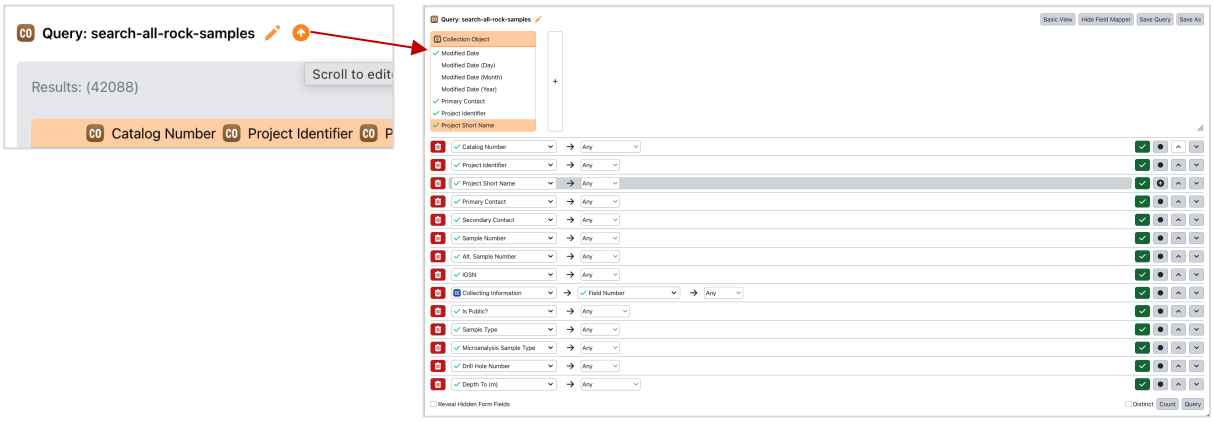
- **Create CSV—**This function exports the results in CSV (comma-separated values) file format, which can be opened in applications like Excel.
- **Create KML—**This function generates a KML (Keyhole Markup Language) file from the results, including geographic data, which can be displayed in applications like Google Earth.
- **Create Record Set** – This function creates a bookmark of the results for easy access and future reference.
- **GeoMap** – This function displays the results on a map.
- **Browse in Forms** – This function views the query results in a form-based layout.

Note: If no records are selected (checkbox not ticked) for any of the options above, all records returned by the search will be included.

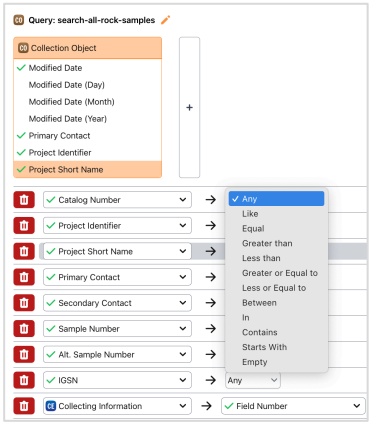


4.2 Custom Search Operators

a. You can also customise the predefined query above by modifying the operators of the sample metadata fields. Click on the **arrow** to see the fields representing the default query.



b. The operators listed below can be used to modify each metadata field. Here are the definitions of the commonly used operators.



- **Any** – Any value from this field will match the query.
- **Like** – You may use the wildcards percent sign (%) or underscore (_) within a field to refine a search using character substitution. These wildcards can be used together. **Note**: the wildcard asterisk (*) is **not supported** in the Query Builder.
    - % represents zero or more characters. For example, if you enter `CBDD022%` in the *Sample Number* field, the query will return all sample numbers that begin with `CBDD022`.

    - _ represents a single character. Unlike %, which can match multiple characters, _ will only match exactly one. For example, if you enter `SC0073_` in the Sample Number field, the query will return all sample numbers that begin with `SC0073` and end with a single character, e.g. `SC00732`, `SC00734`, `SC00736`.

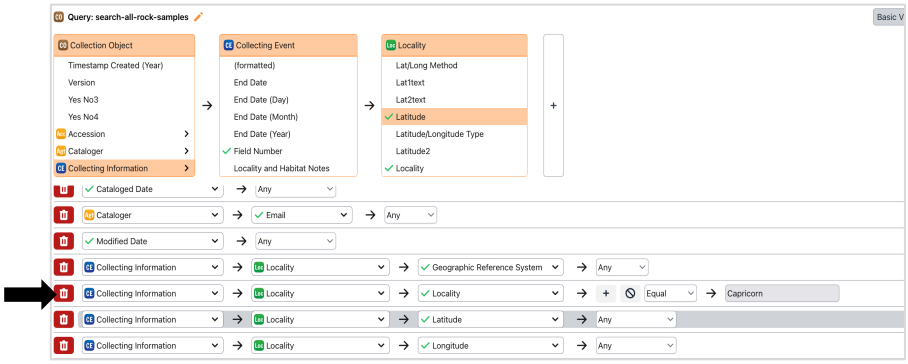
If you want samples starting with `SC007` followed by exactly two characters, you can specify the search string as `SC007__` (with two underscores, without spaces).

- **Equal** – Find records where a field exactly matches a specified value.
- **Between** – Find records where a field's value falls within a specified range. It is commonly used with numerical or date fields to filter results based on a range of values.
- **In** – Specify a list of non-sequential values separated by commas. When using this operator on a field based on controlled terms (e.g. Sample Type and Rock type), hold down **Ctrl** (or ⌘ on Mac) to select multiple items from the list.
- **Contains** – Search for records where a specific field contains a particular substring.

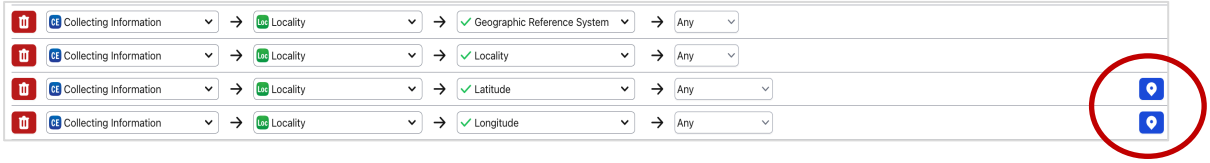
4.3 Custom Search Examples

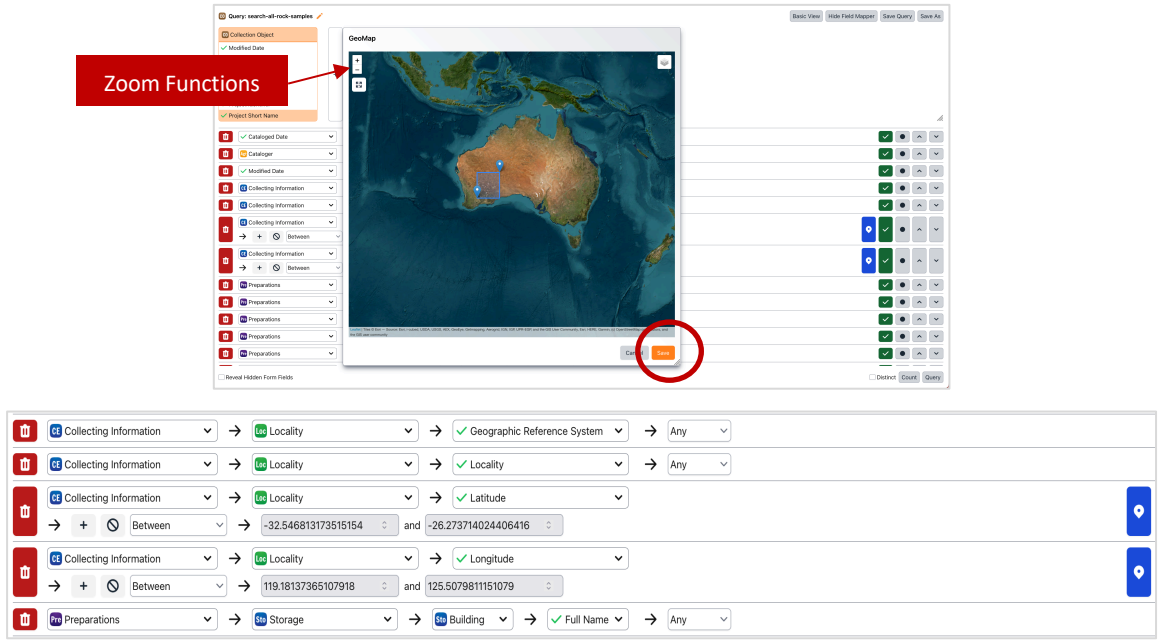
This section will demonstrate applying the search operators to filter the search results from the predefined query **search-all-rock-samples** (Section 4.1). After applying the filters, click **Query**. In Query Builder, searches are performed in a **case-insensitive** manner.

1. Find samples from the **locality** "Capricorn".

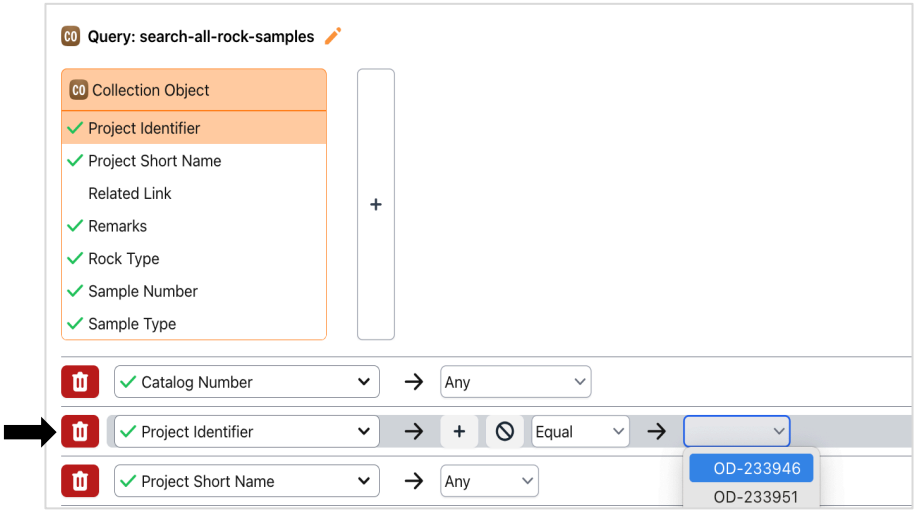


2. Find samples through a **bounding box**.
   - Click on the blue map marker for either the Latitude or Longitude fields.
   - A window with a world map will appear. You can drag the **two blue markers** to adjust the bounding box to your area of interest. For more precision, use the zoom function (located at the top left of the window). When you're ready, click **Save**.
   - The bounding box coordinates will be automatically populated in the Latitude or Longitude fields.

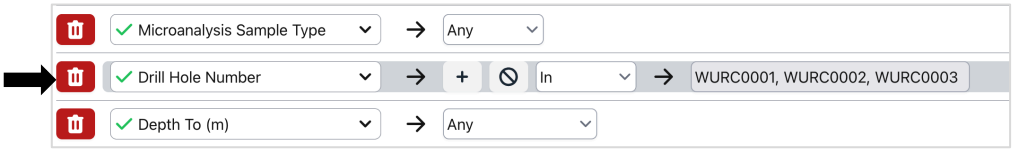




3. Find samples using the **project identifier** “OD-233946”.

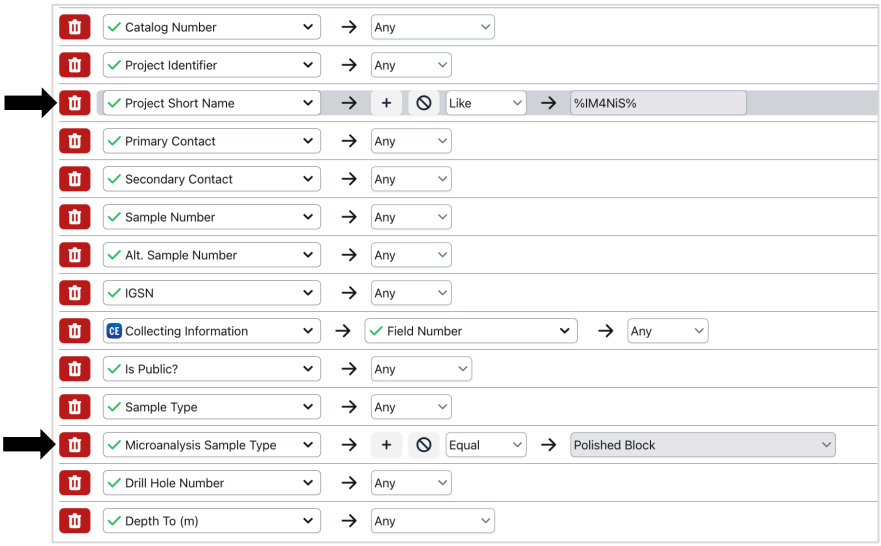


4. Find samples from the **drill holes** “WURC0001”, “WURC0002” and “WURC0003”.



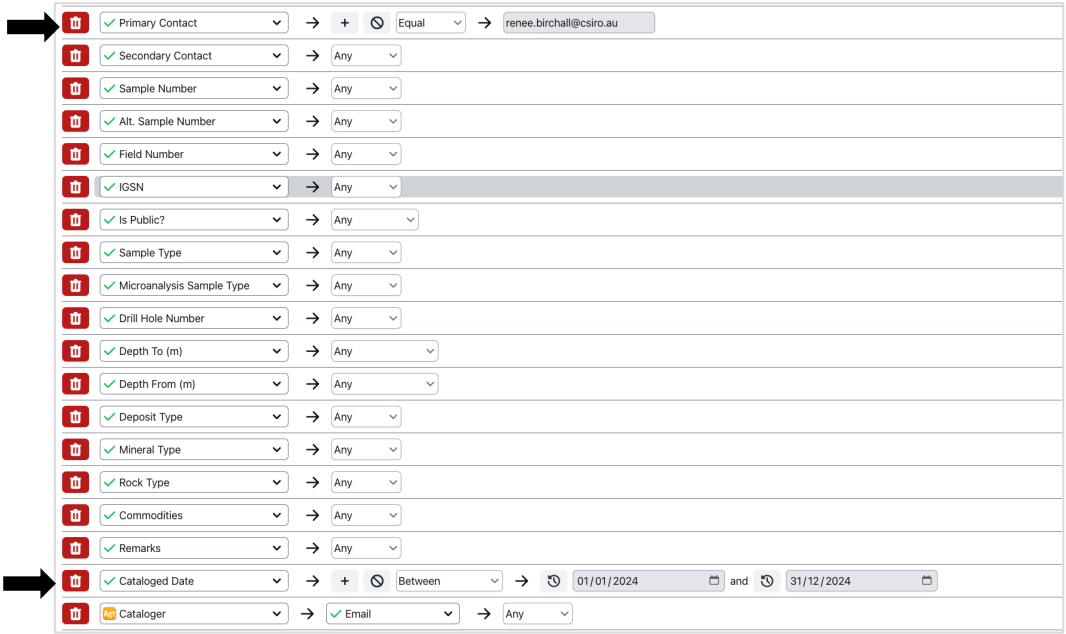
5. Find **polished blocks** from the project “IM4NiS”.

   Note: If you are unsure of the exact name of the project, you can use a wildcard for a broader search, e.g., `%IM4NIS%`.

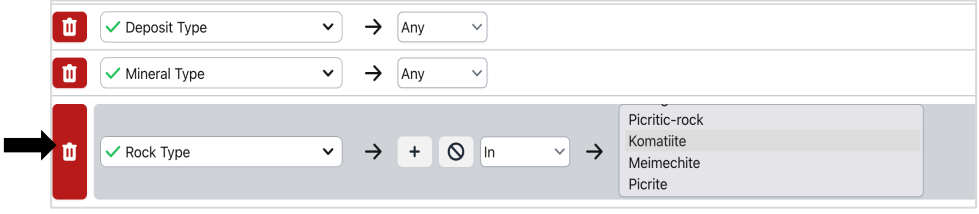


6. Find samples from the **projects led** by “Renee Birchall”, **catalogued** in “2024”.

   Note: The Primary Contact is identified by the sample provider’s email address.

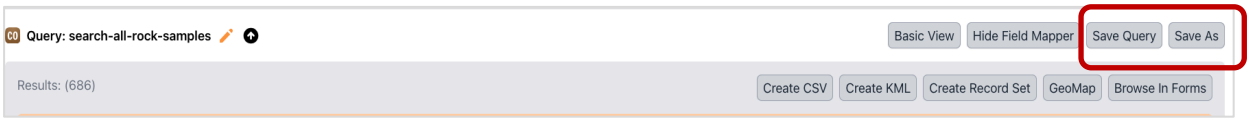


7. Find samples with the **rock type** “Komatiite”. **Note**: You can select an item in the list by typing the first matching letter (e.g. K).



4.4 Save Query

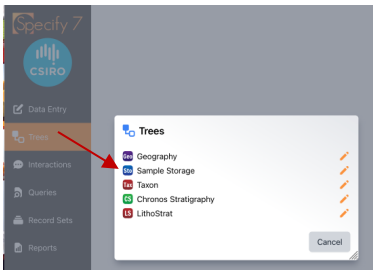
1. **Save As** – **Recommended**. If you modify the default search template (e.g., “search-all-rock-samples”) provided in the system, click **Save As** to save your modified query as a new one for future use. This ensures that the original query remains unchanged.
2. **Save Query** – This will overwrite the existing query with your most recent changes.

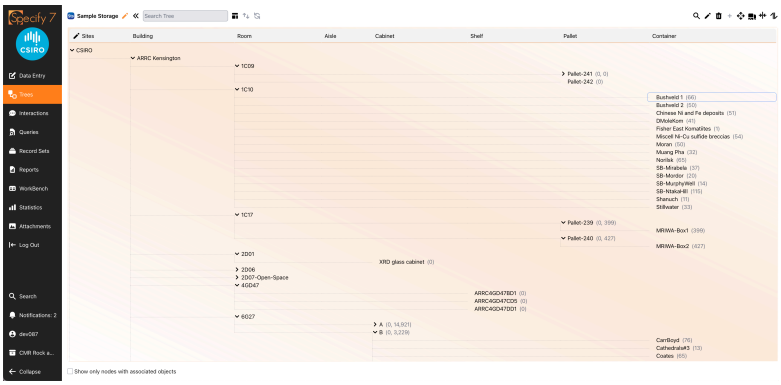


3. **Reset** – The Query Builder does not have a reset button. If you haven't saved your query, refreshing the page will discard any changes. You can refresh the page on Windows by pressing the F5 key or clicking your browser’s reload/refresh icon.

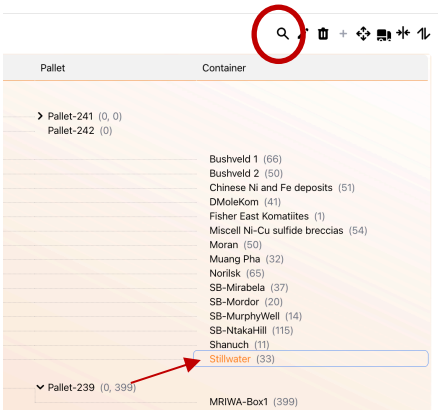
5 Storage Tree

1. Storage information is represented in the hierarchical tree, from Building to Container. When you search via a tree node, only the samples in the **current collection** (e.g., Rock and Mineral) will be retrieved.
2. To view it, click **Trees** on the left panel and select **Sample Storage.** Each node in the tree displays the number of objects it contains, e.g., Stillwater (33)—There are 33 samples are curated in this container.

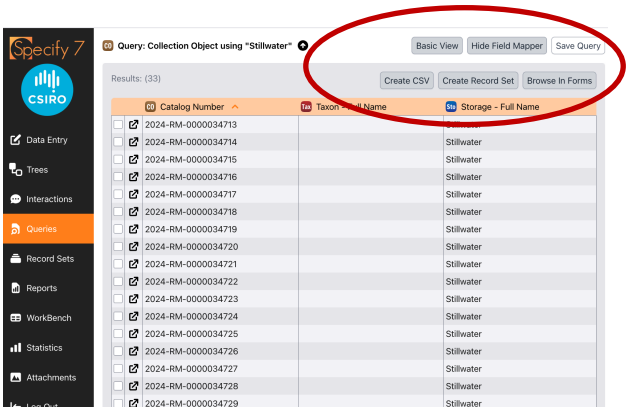




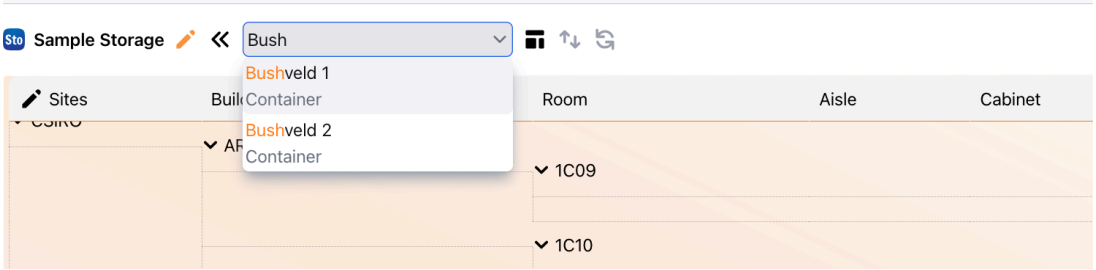
3. Select the tree node representing your container (e.g., Stillwater) and click the **Search** icon in the tools area.



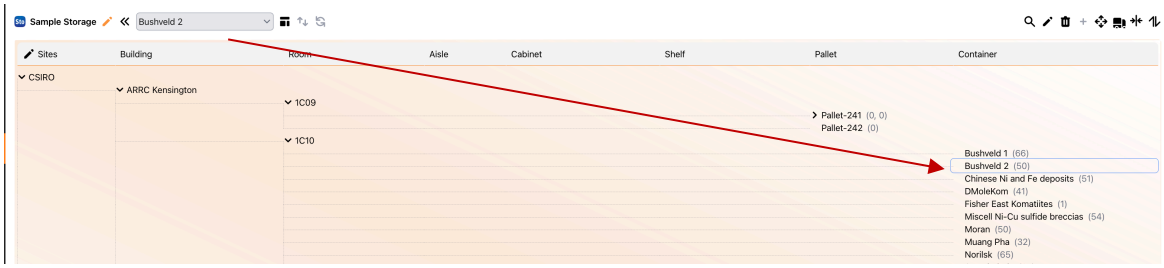
4. The search will return a list of samples under the container “Stillwater”. You can use the options at the top right, e.g. **Browse in Forms** to navigate the samples. For an explanation of the options, see Section 4.1.



5. You can also search for tree nodes using the search box at the top of the tree view. As you type, the system will provide recommendations. The example below demonstrates a search for “Bush”; the system provides all nodes starting with the term.



6. Click “Bushveld 2”. The node will be highlighted in the tree. Then, you can use the **Search** icon on the top right to retrieve the samples stored under the container.



As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

Contact us

1300 363 400
+61 3 9545 2176
csiro.au/contact
csiro.au

For further information

CSIRO Mineral Resources
Dr. Anusuriya Devaraju
anusuriya.devaraju@csiro.au
https://people.csiro.au/d/a/anusuriya-devaraju