

# **Navigating the RadNet Central Data Exchange (CDX) Website**

## **User Manual**



August 2019

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## Selecting Customized View Options in the RadNet Query Builder

Query Builder allows the user to select from a list of options that allow the creation of a customized report. The types of options include\*:

- Monitor type (fixed or deployable)
- Monitor location
- Gamma ROI (counts of gamma radiation within eight ranges of energies numbered 2–9)\*\*
- Measurement start date/time
- Measurement end date/time
- Monitor ID (each monitor numbered uniquely)

*\* Some options are not available for deployable monitors due to the differences in their capabilities.*

*\*\* Since gamma ROI 1 is only used by scientists to stabilize detector operations, this range is not available through this online tool.*

Start by selecting either of the two radio buttons marked “Fixed Monitor List” or “Deployable Monitor List.” See Figure 1 below.



Figure 1

## Selecting Available Columns

The RadNet database stores the data the monitors gather as part of each measurement. When you query the system, you can limit the types of data presented to you. All of the selected data types will appear in a column where you will be able to individually select items for your query.

After selecting the *Monitor Type* as “*Fixed Monitor List*” or “*Deployable Monitor List*,” choose from the list of items under *Fixed Columns* or *Deployable Columns*, respectively. There are differences in the parameters between the *Fixed Monitors* and *Deployable Monitors* lists. See *Figure 2* below.

Fixed Columns	Deployable Columns
Click on item or items you want to include in your query.	Click on item or items you want to include in your query.
Measurement Start Date/Time	Average Gamma Exposure Rate(mR/hr)
Measurement End Date/Time	Location Description
Dose Equivalent Rate(nSv/h)	Measurement Date/Time
Gamma Channel Range 2 Gross(CPM)	
Gamma Channel Range 3 Gross(CPM)	
Gamma Channel Range 4 Gross(CPM)	
Gamma Channel Range 5 Gross(CPM)	
Gamma Channel Range 6 Gross(CPM)	
Gamma Channel Range 7 Gross(CPM)	
Gamma Channel Range 8 Gross(CPM)	
Gamma Channel Range 9 Gross(CPM)	

**Figure 2**

To make your selection(s), move your cursor to the desired item you want to include in your query and left click. A single check mark will appear on the left side of the item box. See *Figure 3* below. A user can select more than one item by repeating these steps. Hint: Most queries for data will be enhanced if evaluated against time, so it is recommended that “*Measurement Date/Time*” remains selected.

### Fixed Columns

Click on item or items you want to include in your query.

<input checked="" type="checkbox"/>	Measurement Start Date/Time
<input checked="" type="checkbox"/>	Measurement End Date/Time
<input type="checkbox"/>	Dose Equivalent Rate(nSv/h)
<input checked="" type="checkbox"/>	Gamma Channel Range 2 Gross(CPM)

**Figure 3**

To remove a selected item from your query, simply move your cursor to the item you want to remove and left click.

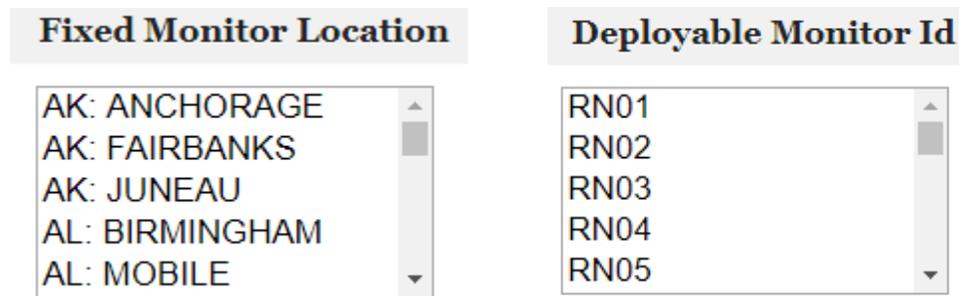
## Establishing Monitor ID and Location Criteria

These are selected the same way you did above. See *Figure 4* to view selection options.

If you want to select more than one location listed, you can select one location item, scroll to the next location item, press and hold the Ctrl key, then left click to select any number of other location items.

If you want to select all the locations listed, select the first location item, scroll to the bottom of the list, press and hold the Shift key, and select the final location item. Alternatively, select any location, then press and hold the Ctrl key and press A.

Monitor numbers with the *RN* preface are deployable monitors. The *Deployable Monitor Id* list will be selectable only after choosing the *Monitor Type* of “*Deployable Monitor List*” (see *Figure 1*).

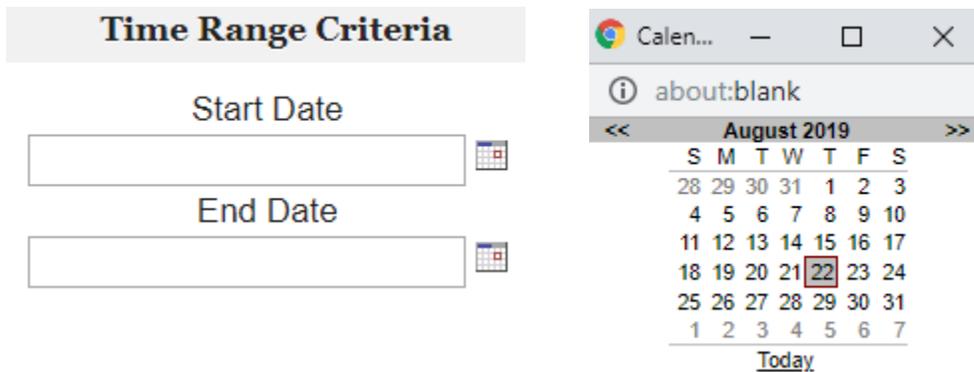


**Figure 4**

Note: For practical purposes, most users will not know the *Deployable Monitor Id* and will instead make selections under *Fixed Monitor Location* after selecting the *Monitor Type* of “*Fixed Monitor List*.”

## Establishing Time Range Criteria and Submitting Your Query

Select a *Start Date* and *End Date* using the *Time Range Criteria* box. Clicking on the calendar icon on the right side of each line will cause a pop-up calendar to appear for your use. See *Figure 5* below.



**Figure 5**

If you do not make selections under *Time Range Criteria*, the system will default to the data available on the current day and display the 10,000 most recent data entries.

When you have finished entering your desired criteria, click on the *Submit* button. If you would like to restart your query entries, click on the *Reset* button. See *Figure 6* below.



**Figure 6**

## Understanding Query Results

Figure 7 below is an example of a RadNet Query Result. Note that the Query Parameters the user entered—Location, Start Date, End Date—are listed above the data table.

### Query Parameters:

<b>Location Names:</b>	IA: DES MOINES,
<b>Query Start Date:</b>	08/15/2019
<b>Query End Date:</b>	08/22/2019

Fixed data selected.

Query Result for monitoring location IA: DES MOINES. Total Number of Records: 132

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Please adjust paper orientation to Landscape in the browser print dialog before printing.

Note: click on a column header to sort results appropriately

Measurement Start Date/Time	Measurement End Date/Time	Gamma Channel Range 2 Gross(CPM)	Gamma Channel Range 3 Gross(CPM)	Gamma Channel Range 9 Gross(CPM)	
2019-08-14 23:12:27	2019-08-15 00:12:35	1791	1190	41	
2019-08-15 00:12:39	2019-08-15 01:12:47	1791	1182	40	
2019-08-15 01:12:51	2019-08-15 02:12:59	1794	1179	39	
2019-08-15 02:13:03	2019-08-15 03:13:11	1812	1203	41	
2019-08-15 03:13:15	2019-08-15 04:13:23	1817	1237	42	
2019-08-15 04:13:28	2019-08-15 05:13:36	1804	1212	43	
2019-08-15 05:13:40	2019-08-15 06:13:48	1843	1243	43	

**Figure 7**

Depending on the amount of data requested and the user's computer screen size, it may be necessary to scroll—both horizontally and vertically—in order to view all the data.

## Downloading and Printing Data

Two icons marked "Download" and "Printer-Friendly" are located toward the upper left corner of the table. See *Figure 7* above. *Download* opens a new window and downloads the RadNet Query Result in Microsoft Excel (.xls) format. *Printer-Friendly* opens a separate window that allows the user to directly print the RadNet Query Result.

## A Sample Query

*The sample query listed below is presented for example purposes only, and, as such, the location and other parameters chosen are arbitrary.*

Suppose you live in Des Moines, Iowa, and you want to analyze local gamma radiation that falls within *Gamma Channel Range 2 Gross (CPM)*.

Since it's not helpful to compare one monitor site to another due to each location having its own typical ranges dependent on local factors, you decide you should look at a week's worth of data from the fixed monitor located in Des Moines. You choose the week of August 15–22, 2019.

In the RadNet Query Builder, you select *"Fixed Monitor List"* as the *Monitor Type*, and you choose *"Measurement Start Date/Time," "Measurement End Date/Time"* and *"Gamma Channel Range 2 Gross (CPM)"* as the *Fixed Columns*. You will need to choose *"IA: DES MOINES"* as the *Fixed Monitor Location*, and you set the *Time Range Criteria* to start at *"08/15/2019"* and end on *"08/22/2019."* These selections are displayed below in *Figure 8*.

### RadNet Query Builder

Monitor Type:  Fixed Monitor List  Deployable Monitor List

#### Fixed Columns

Click on item or items you want to include in your query.

<input checked="" type="checkbox"/>	Measurement Start Date/Time
<input checked="" type="checkbox"/>	Measurement End Date/Time
<input type="checkbox"/>	Dose Equivalent Rate(nSv/h)
<input checked="" type="checkbox"/>	Gamma Channel Range 2 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 3 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 4 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 5 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 6 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 7 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 8 Gross(CPM)
<input type="checkbox"/>	Gamma Channel Range 9 Gross(CPM)

#### Fixed Monitor Location

GA: AUGUSTA	▲
HI: HONOLULU	
IA: DES MOINES	■
IA: FORT MADISON	
IA: MASON CITY	▼
IA: ROCKY HILL	

#### Time Range Criteria

Start Date  
 

End Date  
 

Figure 8

When you submit this query, you receive the results shown below in *Figure 9*.

**Query Parameters:**

<b>Location Names:</b>	IA: DES MOINES,
<b>Query Start Date:</b>	08/15/2019
<b>Query End Date:</b>	08/22/2019

Fixed data selected.

**Query Result for monitoring location IA: DES MOINES. Total Number of Records: 132**

 [Download](#)  [Printer-Friendly](#)

Please adjust paper orientation to Landscape in the browser print dialog before printing.

Note: click on a column header to sort results appropriately

Measurement Start Date/Time	Measurement End Date/Time	Gamma Channel Range 2 Gross(CPM)
2019-08-14 23:12:27	2019-08-15 00:12:35	1791
2019-08-15 00:12:39	2019-08-15 01:12:47	1791
2019-08-15 01:12:51	2019-08-15 02:12:59	1794
2019-08-15 02:13:03	2019-08-15 03:13:11	1812
2019-08-15 03:13:15	2019-08-15 04:13:23	1817
2019-08-15 04:13:28	2019-08-15 05:13:36	1804
2019-08-15 05:13:40	2019-08-15 06:13:48	1843
2019-08-15 06:13:52	2019-08-15 07:14:00	1899
2019-08-15 07:14:04	2019-08-15 08:14:12	1962
2019-08-15 08:14:16	2019-08-15 09:14:24	2053

**Figure 9**

As indicated in the Query Result heading above the table, 132 records are shown for the Des Moines monitor between the days August 15, 2019, and August 22, 2019. By default, the data are listed in chronological order from the time that the measurements were recorded.

## Glossary

**Counts Per Minute (CPM):** The number of decays of radioactive material that are detected by a radiation detector in one minute.

**Deployable Monitor:** Mobile RadNet monitors that can be moved for use during drills, alerts or an emergency event. These monitors are significantly different than the Fixed (Stationary) RadNet Air Monitors.

**Fixed (or Stationary) Monitor:** Also referred to as Fixed Monitor. Permanently positioned and continuously operating monitors that sample particulates in the air and obtain gamma radioactivity spectra in real-time.

**Gamma Channel Range:** A specific range of gamma energies (See Gamma Radiation, below). The fixed RadNet monitors' computer system breaks the gamma energy spectrum into eight contiguous gamma energy ranges.

**Gamma Radiation:** Weightless packets of energy, gamma rays often accompany the emission of alpha or beta particles from a nucleus. They have neither a charge nor a mass and are very penetrating. One source of gamma rays in the environment is naturally-occurring potassium-40. Man-made sources include cobalt-60 and cesium-137. Gamma rays from specific nuclides are emitted in discrete energies which may be used as a "fingerprint" to identify the source of the gamma rays.

**Gross:** Combined or total sum.

**RadNet:** The EPA's comprehensive network for monitoring radioactivity and ionizing radiation in the environment with 140 near-real-time air monitors nationwide. Formerly known as the Environmental Radiation Ambient Monitoring System (ERAMS), RadNet has continuously monitored multiple media, including air, precipitation, drinking water, and milk since its inception in 1973. Information and monitoring data is available at [www.epa.gov/radnet](http://www.epa.gov/radnet).