Report Generator Help Guide

Report Generator lets you create custom reports from multiple data sources.

Contents
Report Generator Features - Overview2
Create a Single Station Report
Create a Multi-Station Report9
Create a Daily Soil Summary
View Station Information Panel: Select Predefined Reports
Managing Stations
Add a Station25
Remove a Station
Perform an Advanced Station Search26
Define Search Criteria and Filtering28
Managing Columns
Add a Data Element Column
Add a Metadata Column32
Change Column Order32
Remove Columns
Managing Report Types
Select Frequency and Time Period
Select Layout
Frequently-Asked Questions
Announcements and Release Notes

Report Generator Features - Overview

Open the <u>Report Generator</u> application.

A quick overview of the features and capabilities of Report Generator.





Report Generator is a web application developed by the Natural Resources Conservation Service (NRCS) National Water and Climate Center (NWCC).

The application uses long-term snowpack, precipitation, reservoir, streamflow, and soils data from a variety of quality-controlled sources to create reports.

Users can choose from predefined templates or build custom reports.

Data from tabular reports may be exported to different formats, including comma-separated value (CSV) files. Charts can be saved to graphics formats, such as JPG and PNG.

The **Report Generator** network incorporates data from many agency databases. The NRCS snow survey flagship database, the Water and Climate Information System (WCIS), provides a wealth of data, including manually-collected snow course data and information from automated Snow Telemetry (SNOTEL) and Soil Climate Analysis Network (SCAN) stations across the United States.

Report Generator also uses precipitation, streamflow, and reservoir data from the U.S. Army Corps of Engineers (USACE), the U.S. Bureau of Reclamation (BOR), the Applied Climate Information System (ACIS), the U.S. Geological Survey (USGS), various water districts and other entities.



In addition to creating reports, **Report Generator** lets you view information on sites, including "metadata," such as elevation, latitude/longitude and hydrologic unit code (HUC).

View photos of the site, including a site map (in Google maps when available).



Report Generator creates reports in both tabular and chart format. Single-station and multiple-station charting is also supported. Data may be displayed in either English or Metric units.

Who can benefit from using these data and products?

Farmers, municipalities, water and hydroelectric utilities, environmental organizations, fish and wildlife managers, tribal nations, reservoir managers, recreationists, wetlands managers, urban developers, transportation departments, and research organizations regularly use our data

Create a Single Station Report

This tutorial describes how to create a custom report for a single station in Report Generator. The example will use a SNOTEL station (Site 526, Hogg Pass) to create a report which compares snow water equivalent (SWE) and snow depth data for the current year and the previous year.

Step 1: Select station

Start Report Generator.

Select the Create/Modify Report tab.

Add the Hogg Pass station to the Selected Stations list. In **Select network:** select **SNOTEL** from the dropdown list.

In **Enter station(s):** enter **526** (the station ID for Hogg Pass). Optionally, enter the first few characters of the Station Name to activate the auto-fill capability.

Select the **Add** button to add Station 526 to the Selected Stations list.

Create/Modify Report	View Report	Report Deta	ails					
 Select Stations 								
Select network:	SNOTEL				Selected	Stations (1)		
Enter station(s)	526	Add	9	Station Id	Name	State	Network	Actions
A	dvanced Search		-	526	Hogg Pass	OR	SNTL	Remove
					Remove All Sort By: Na	me		

The Hogg Pass station is now the selected station for the custom report.

Step 2: Select columns

In the Select Columns pane, ensure the **Data** tab is selected.

In the **Element** area, select **snow water equivalent**. Select Depth = **None**, Value Type = **Value**, Function = **None**.

Select the **Add** button to add the element to the Manage Selected Columns list.

Data Metadata			
Filter: Sort Standard 🔻	None	Value Value	None
battery precipitation accumulation precipitation increment precipitation increment - snow-adj snow depth		QA Flag Previous Year's Value Delta from Previous Value Collection Date Normal (1981-2010)	Mean Max Min Add

In the **Element** area, select **snow water equivalent**. Change the **Value Type** to **Previous Year's Value**.

Select the **Add** button to add the element to the Manage Selected Columns list.

In the **Element** area, select **snow depth**. Select Depth = **None**, Value Type = **Value**, Function = **None**.

Select the **Add** button to add the element to the Manage Selected Columns list.

Repeat steps 6 and 7, using **Previous Year's Value** as the Value Type. The screen should look similar to the following.

Data	Metadata						
Elem Filter: air te batte preci preci snow	Sort Standard Sort Standard mperature minimum mperature observed ry pitation accumulation pitation increment pitation increment - snow-adj / depth	Depth None	Value Type Value QC Flag QA Flag Previous Year's Value Delta from Previous V Collection Date Normal (1981-2010) % of Normal (1981-20	alue 10) •	Function None Sum Mean Max Min	Add	
		Man	age Selected Columns				
	Data Type		Element Depth	Fun	ction	Value Type	
	snow water equivalent					Value	
	snow water equivalent					Previous Year's Value	Move Up
	snow depth					Value	Move Down
	snow depth					Previous Year's Value	
		Remove Se	lected Columns Remov	e All			

Step 3: Determine column order

The next step is to determine the order in which the columns will be displayed.

To change the order of a column. Enable (select) the checkbox to the left of the snow water equivalent Previous Year's Value data type.

Select the **Move Down** button. The snow water equivalent Previous Year's Value will move down one level in order.

	Mar	age Selected Columns			
 Image: A second s	Data Type	Element Depth	Function	Value Type	
	snow water equivalent			Value	
	snow water equivalent			Previous Year's Value	Move Up
	snow depth			Value	Move Down
	snow depth			Previous Year's Value	
	Remove Se	elected Columns Remo	ve All		

	Ma	nage Selected Columns			
1	Data Type	Element Depth	Function	Value Type	
	snow water equivalent			Value	
	snow depth			Value	Move Up
•	snow water equivalent			Previous Year's Value	Move Down
8	snow depth			Previous Year's Value	

The report will contain snow water equivalent and snow depth data for the current year, followed by snow water equivalent and snow depth data for the previous year for the Hogg Pass station (526).

Now that the data types and order of the columns are complete, it's time to determine the layout of the final report.

Step 4: Determine report layout

For this example, the initial report will be generated with a frequency of monthly and a time series layout.

In the Select Time Period, Layout, and Units pane, select the following:

Frequency = Monthly Report Instantaneous Data As = Start of Period Time Period = Current Calendar Year and All Months Layout = Time Series Units = English Output Format = HTML

Interval/Duration	Time Period		Lavout	Units	Output Format
Daily	Current Month	All Months	Time Series	English	(HTML
Hourly Water Year	Last 12 Months Current Water Year	Feb Mar Apr	Stacked Time Series	Metric	CSV
Calendar Year *	Penoa or Accord	May 👻	Viater Year - Group by Month		
Report Instantaneous Data As:	Custom Begin Date Cu	stom End Date	Calendar Year - Group by Month		
Start of Period	Make custom dates rel	ative to today			

The report will contain snow water equivalent and snow depth data for the current year, followed by snow water equivalent and snow depth data for the previous year for the Hogg Pass station (526).

Now that the data types and order of the columns are complete, it's time to determine the layout of the final report.

Step 5: Create the report

Select the

Now that the station has been identified, the data types and their order defined, and the look and feel of the final report determined, it's time to view the report and analyze the results.

View Report

button. The results of the report are displayed in the **View Report** tab.

Note that snow water equivalent and snow depth data are displayed for the current and previous year for the Hogg Pass station (526).

Create/Modif	y Report	View Report	Report Details			
Output Format	Layout	Units 👻 Time Pe	riod 👻 Fit Table To S	Screen		
Hogg Pa	ISS (526) Site 1700.	6 4			
Reportin	a Frequ	L Site - 4790 Jency: Month	nt Ny: Date Ran	ge: Jan 2018	to Dec 2018	3
(As of: Fri Oct	12 07:44:41	GMT-08:00 2018)		5		
Provisional d	ata, subject t	Hogg Pass	Hogg Pass	Hogg Pass	Hong Pass	
		(526) Snow	(526) Snow	(526) Snow	(526) Snow	
Date	• ¢	Equivalent	Depth (in)	Equivalent	Depth (in)	
		Start of Month Values 🗘	Start of Month Values 🗘	Start of Month Values 🗘	Start of Month Values 🗘	
Jan 2	2018	3.4	9	14.4	50	
Feb 2	2018	9.3	28	22.1	60	
Mar 2	2018	10.9	42	29.6	81	
Apr 2	2018	13.5	36	25.4	58	
May 2	2018	4.8	14	21.0	46	
Jun 2	2018	0.0	0	0.0	0	
Jul 2	018	0.0	0	0.0	0	
Aug 2	2018	0.0	0	0.0	0	
Sep 2	2018	0.0	0	0.0	0	
Oct 2	2018	0.0	0	0.0	0	
Nov 2	2018			0.0	0	
Dec 2	2018			1.2	6	

To save the results of the report in comma-separated value format, select **CSV** from the **Output Format** dropdown list. A web page will open with the data from the report displayed.

The dat databas Data ar ney be Help an Support	a you have obtained a are subject to rev a released on condit held lisels for any d Tutorials: http:// Contact: nrcsprod@m	from this evidence (leture) Report ision regardless of indicated Que ision that neither the NUSE nor the damages resulting from its use. Now.wcc.nrcs.usda.gov/report_gene sidel.service-now.com	rce Conservation lity Assumance la United States Go rator/report_gene	Service rvtl. Svernment eretor_lending.h	ta				
# Dete Ra # Report	nge: Jan 2018 to Dec Instantaneous Deta J	y 2018 2: Stert of Honth							
# Data fo	n the following site	(c) are contained in this file: 1. 08							
# Data it	ens provided in this	file:							
. Element	Name Valu	e Type Function Type	Function Duretic	in and linesh	Base Data	Heesurement Units	Sensor Depth	Element Code	Description
would the # Snow De	oretically result if pth Valu	the entire snoupack were melted in	instantaneously Instantaneous	Start of Honth	II/A	Inches	11/A	516.0	Total snow depth
would the	oretically result if oth Prev	tous year's value Hone the entire snowpack were melted rious year's value. Hone	instantaneously Instantaneously	Start of Honth	11/4	Inches	11/A 11/A	516.0	Total snow depth
Quelity	Control flags inclu	ided:							
Fleg V H E B K X S Quelity	Hane Valid HD Profile Edit Sach Estimate Estimate External Estimate Supert Assurance flags inc	Description Validated Data No profile for sutomated validat Edit, minor adjustment for senso Argenession-based estimate Estimate Enternal estimate Suspett data Nuded:	ion r noise mogenizing colloc	teted Snow Cours	e and Snow	Pillow dete sets			
U	Unknown Rev	Unknown No Human Review							
11	Provisionel Approved	Preliminary Human Review Processing and Final Review Comp	leted						
<pre># Hogg Pa # Oregon # Reports # As of:</pre>	ss (\$26) SHOTEL Site - 4790 ng Frequency: Honthl Oct 12, 2018 7:51:25	ft y; Date Kange: Jan 2018 to Dec 20) AN GNT-08:00	18						
<pre>Bate, Hogg Month Val Jan 2018, Feb 2018, Mar 2018, Mar 2018, Mar 2018, Jun 2018, Jun 2018, Jun 2018, Sep 2018, Oct 2018, Nov 2018, Dec 2018,</pre>	$\begin{array}{l} \mbox{Pets} & (526) \ \mbox{Snow} \ \mbox{int} \\ \mbox{vets}, \mbox{logg} \ \mbox{Pess} & (526) \\ \mbox{snow} \ \mbox{snow} \ \mbox{snow} \\ \mbox{snow} \ \mbox{snow} \\ \mbox{snow} \ \mbox{snow} \ \mbox{snow} \ \mbox{snow} \\ \mbox{snow} \ sno$	ter Equivalent (in) Start of Honth Snow Depth (in) Start of Honth Va	values,∺ogg Pass lves	s (526) Snow Dep	th (in) Ste	ert of Month Values,	Hogg Pass (524	i) Snow Weter I	Quivalent (in) Start of

Right-click on this web page and select **Save as..**.

Save the file with a .csv extension.

To change the report from tabular to chart view, select **Chart** from the **Layout** drop-down menu. The table will display as a chart, similar to the one shown below.



Create a Multi-Station Report

This tutorial describes how to create custom reports for multiple stations in Report Generator. The example will use several SNOTEL (Snow Telemetry) stations in the state of Oregon to compare standard elements and generate two reports: a multi-station report grouped by element and a multi-station chart.

Step 1: Select stations

Start Report Generator.

Select the Create/Modify Report tab.

Add stations to the Selected Stations list. In Select network: select SNOTEL from the dropdown list.

In Enter station(s): enter 619 (the station ID for McKenzie). Optionally, enter the first few characters of the Station Name to activate the auto-fill capability.

Select the Add button to add Station 619 to the Selected Stations list.



Repeat Steps #4 and #5 to add each of these stations to the Selected Stations list:

- 719 Roaring River
- 733 Santiam Junction

When finished, there should be three stations in the Selected Stations list.

Create/Modify Repo	rt View Report	Report Details					
 Select Stations 							
Select network:	SNOTEL	•		Selected Stat	ions (3)		
Enter station(s):		Add 😡	Station Id	Name	State	Network	Actions
	Advanced Search		619	Mckenzie	OR	SNTL	Remove
			719	Roaring River	OR	SNTL	Remove
			733	Santiam Jct.	OR	SNTL	Remove
			_	Remove All Sort By: Name		۲	

Step 2: Select columns

The next step is to determine the data columns which will be part of the multi-station report. For this tutorial, we will add two data columns (snow water equivalent and precipitation accumulation) and a metadata column (HUC) to display for the multiple stations.

Add the data columns. In the **Select Columns** pane, select the **Data** tab.

For element, select **air temperature average.** Depth = **None**, Value Type = **Value**, Function = **None**.

Select the **Add** button to add the element to the Manage Selected Columns list.

Repeat Steps 2 and 3, this time selecting the **snow depth** element.

The display should look similar to the following.

	Metadata									
Elem	ent	Depth	Value Type		Functi	ion				
Filter:	Sort Standard •	None .	Value		None					
an te	inperature infinitum		QC Flag				Sum			
batte preci preci snow	ry pitation accumulation pitation increment pitation increment - snow-adj depth	Mana	Previous Year's Value Delta from Previous Value Collection Date Normal (1981-2010) % of Normal (1981-2010)	Ŧ	Max Min	Ŧ	Add			
1	Data Type		Element Depth F	un	ction		Value Type			
							Value	Move Up		
•	air temperature average									

Step 3: Determine report layout

For this example, the report will be generated with a frequency of **Water Year**, a time period of the **Last 3 Water Years** and **Water Year - Group by Month** layout.

In the Select Time Period, Layout, and Units pane, select the following:

Frequency = Monthly Report Instantaneous Data As = Start of Period Time Period = Last 12 Months, All Months Layout = Stacked Time Series Units = English Output Format = HTML

Interval/Duration	Time Period		Layout	Units	Output Format
Monthly Somi Monthly Hourly	Current Month Last Month Last 12 Months	All Months Jan Feb Mar	Time Series Stacked Time Series	English Metric	CSV
Water Year Calendar Year 👻	Current Calendar Year Period of Record	Apr May +	Water Year - Group by Month		
Report Instantaneous Data As:	Custom Begin Date	Custom End Date	Calendar Year - Group by Month		
Start of Period	Ake custom dates	relative to today			

Step 4: Generate the report

Now that the stations have been identified, the data types and their order defined, and the look and feel of the final report determined, it's time to generate the report and analyze the results.

Select the button. The results of the report are displayed in the **View Report** tab.

Note that Air Temperature Average and Snow Depth data are displayed for the last 12 months for the three selected stations. Note, too, that Report Generator automatically added the Site ID and Site Name into the report.

Cr	reate/Modify Report	View Report	Report Details		
(Output Format Layout -	Units 👻 Time Peri	iod 👻 Fit Table To Screen		
					-
	Reporting Frequ	iency: Month	ly; Date Range: Oct 201	7 to Oct 201	8
	(As of: Fri Oct 12 10:25:11 G **Provisional data, subject to	MT-08:00 2018) o revision**			
	Date 🗘	Station Id 💠	Station Name 🗘	Air Temperature Average (degF) ≎	Snow Depth (in) Start of Month Values ♀
	Oct 2017	619	Mckenzie	39	0
	Nov 2017	619	Mckenzie	35	0
	Dec 2017	619	Mckenzie	29	14
	Jan 2018	619	Mckenzie	34	27
	Feb 2018	619	Mckenzie	29	41
	Mar 2018	619	Mckenzie	33	81
	Apr 2018	619	Mckenzie	38	64
	May 2018	619	Mckenzie	46	53
	Jun 2018	619	Mckenzie	50	0
	Jul 2018	619	Mckenzie	59	0
	Aug 2018	619	Mckenzie	57	0
	Sep 2018	619	Mckenzie	47	0
	Oct 2018	619	Mckenzie		0
	Oct 2017	719	Roaring River	44	0
	Nov 2017	719	Roaring River	36	0
	Dec 2017	719	Roaring River	36	8
	Jan 2018	719	Roaring River	38	15
	Feb 2018	719	Roaring River	31	25
	Mar 2018	719	Roaring River	34	56
	Apr 2018	719	Roaring River	39	42
	May 2018	719	Roaring River	49	28
	Jun 2018	719	Roaring River	52	0
	Jul 2018	719	Roaring River	62	0
	Aug 2018	719	Roaring River	60	0
	Sep 2018	719	Roaring River	51	0
	Oct 2018	719	Roaring River		0
	Oct 2017	733	Santiam Jct.	44	0
	Nov 2017	733	Santiam Jct.	36	0
	Dec 2017	733	Santiam Jct.	34	4

Tip: To save the results of the report, select the **Export** icon (the output of the report.

). Use the Layout, Units, and Time Period menus to change

The final step in this tutorial is to create a multi-station chart.

In the Layout dropdown list, select Chart.

Select the button.

Depending on the time of year the tutorial is completed, a chart similar to the one shown displays.



Create a Daily Soil Summary

This tutorial describes how to create a daily soil data summary for a single station in Report Generator. The example will use a Soil Climate Analysis Network (SCAN) station (Site 2015, Adams Ranch) to create a report which summarizes soil moisture and soil temperature at three depths for the last 30 days.

Step 1: Select station

- 1. Start Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Add the Adams Ranch SCAN station to the Selected Stations list. In **Select network:** select **SCAN** from the dropdown list.
- 4. In **Enter station(s):** enter **2015** (the station ID for Adams Ranch). Optionally, enter the first few characters of the Station Name to activate the auto-fill capability.
- 5. Select the Add button to add Station 2015 to the Selected Stations list.

Select network SC	AN 15	Add	Station Id	Selected Name	Stations (1) State	Network	Actions
Enter standings - 20		AUG				and the second	

The Adams Ranch station is now the selected station for the custom report.

Step 2: Select columns

The next step is to determine the data columns which will be part of the single station report. For this tutorial, we will add columns to display the previous 30 day's soil moisture percentage at three depths (2', 8", and 20") for the Adams Ranch station.

- 1. In the Select Columns pane, ensure the **Data** tab is selected.
- 2. In the **Element** area, select **soil moisture percent**.
- 3. Set Depth to -2", Value Type to Value, Function to Mean, and Function Interval to Hourly.
- 4. Select the Add button to add the element to the Manage Selected Columns list.



- 5. Repeat Steps 3 and 4, using the **Depths** -8" and -20".
- 6. Select the Add button to add each depth to the Manage Selected Columns list.

Elen	nent	De	pth Value Type	Function	n Base Data	
ilter	sort Stand	ard 🔻 -2	▲ (Value	A None A	Daily A	
relat relat relat relat salir	tive humidity tive humidity enclosure tive humidity maximun tive humidity minimum tity	-8	QA Flag Previous Year's Value Delta from Previous Collection Date Normal (1981-2010) % of Normal (1981-2	e Value Min	Semi-Monthly Hourly	D
-	moisture percent		Austras (1081 3010			
-	moisture percent		Manage Selected Columns			
,	Data	Туре	Manage Selected Columns Element Depth	Function	Value Type	
/	Data soil moisture perce	Type	Manage Selected Columns Element Depth -2	Function Mean Of Hourly Values	Value Type Value	Move Up
	Data soil moisture perce soil moisture perce	Type nt	Manage Selected Columns Element Depth -2 -8	Function Mean Of Hourly Values Mean Of Hourly Values	Value Type Value Value	Move Up Move Down

- 7. Next, in the **Element** area, select **soil temperature observed**.
- Set Depth to -2", Value Type to Value, Function to Mean, and Function Interval to Hourly.
 Select the Add button to add the element to the Manage Selected Columns list.

Data Metadata				
Element	Depth	Value Type	Function	Base Data
Filter: Sort Standard V Soil moisture percent average soil moisture percent maximum soil moisture percent minimum soil temperature average soil temperature maximum soil temperature observed	* -8° -20° -40°	Value QC Flag QA Flag Previous Year's Value Delta from Previous Value Collection Date Normal (1981-2010) % of Normal (1981-2010)	None Sum Mean Max Min	Daily Monthly Semi-Monthly Hourly

- Repeat Steps 8 and 9, using the **Depths** -8" and -20".
 Select the **Add** button to add each depth to the Manage Selected Columns list.

Elen	ient	Depth Value Type	Function	n Base Data	
Soll Soll Soll Soll Sola Vapo	Sort Standard Sort Standard Comperature average temperature maximum temperature observed radiation /langley total or pressure - partial	-2* Value -4* QC Fiag -8* QA Flag Previous Year's Delta from Previous Collection Date Normal (1981- % of Normal (1)	Value vious Value 2010) 981-2010)	Daily Monthly Semi-Monthly Houriv	d
		Manage Selected Col	umns		
1	Data Type	Element De	pth Function	Value Type	
	soil moisture percent	-2	Mean Of Hourly Values	Value	
	soil moisture percent	-8	Mean Of Hourly Values	Value	
8	soil moisture percent	-20	Mean Of Hourly Values	Value	Move Up
0	soil temperature observed	-2	Mean Of Hourly Values	Value	Move Dow
	soil temperature observed	-8	Mean Of Hourly Values	Value	
			Harry Of		

Soil moisture and soil temperature data at depths of -2", -8", and -20" will be reported on an hourly mean basis for the Adams Ranch SCAN station (2015).

Now that the data types are selected, it's time to determine the layout of the final report.

Step 3: Determine report layout

For this example, the initial report will be generated with a frequency of monthly and Standard (non-grouped) layout.

1. In the Select Time Period, Layout, and Units pane, select the following:

Frequency = Daily Report Instantaneous Data As = Start of Period Time Period = Last 30 Days, All Months, and All Days Layout = Time Series Units = English Output Format = HTML

Interval/Duration	Time Period		_	Layout	Units	Output Form
Daily Semi-Monthly	Today	All Months -	All Days	Time Series	English	• HTML
Hourly Water Year Calendar Year	Current Calendar Year Period of Record	Mar Apr May	3 4 5 ¥	Stacked Time Series Water Year - Group by Month	Metric	CSV
Report	Custom Begin Date C	ustom End Dat	e	Calendar Year - Group by Month		
Data As:			-	Chart		

Step 4: Generate the report

Now that the station has been identified, the data types and their order defined, and the look and feel of the final report determined, it's time to generate the report and analyze the results.

1. Select the button. The results of the report are displayed in the **View Report** tab.

Adams Ranch #1 (2015) New Mexico SCAN Site - 6175 ft Reporting Frequency: Daily; Date Range: 2018-09-16 to 2018-10-15

(As of: Mon Oct 15 11:27:41 GMT-08:00 2018)

	a, subject to revision					
Date 🗘	Adams Ranch #1 (2015) Soil Moisture Percent -2in (pct) Mean of Hourly Values ♀	Adams Ranch #1 (2015) Soil Moisture Percent -8in (pct) Mean of Hourly Values	Adams Ranch #1 (2015) Soil Moisture Percent -20in (pct) Mean of Hourly Values	Adams Ranch #1 (2015) Soil Temperature Observed -2in (degF) Mean of Hourly Values	Adams Ranch #1 (2015) Soil Temperature Observed -8in (degF) Mean of Hourly Values	Adams Ranch #1 (2015) Soil Temperature Observed -20in (degF) Mean of Hourly Values
2018-09-16	10.2	11.3	23.4	76	74	72
2018-09-17	9.6	10.9	23.4	75	74	72
2018-09-18	9.1	10.6	23.8	72	73	72
2018-09-19	8.8	10.1	23.5	74	72	72
2018-09-20	14.3	10.5	23.7	69	71	72
2018-09-21	18.2	14.9	23.3	65	67	70
2018-09-22	17.0	15.2	23.0	67	67	69
2018-09-23	15.6	14.5	22.8	67	67	68
2018-09-24	14.3	14.1	23.0	68	68	68
2018-09-25	13.0	13.4	23.2	69	69	69
2018-09-26	12.0	13.1	23.3	64	67	68
2018-09-27	11.7	12.5	23.1	66	66	67
2018-09-28	11.2	12.4	22.9	69	68	67
2018-09-29	10.7	11.6	22.9	69	68	68
2018-09-30	10.2	11.3	23.3	71	70	68
2018-10-01	9.8	10.9	23.1	70	70	69
2018-10-02	9.6	10.6	23.1	70	70	69

Note that mean hourly soil moisture and soil temperature data are displayed for three depths (-2", -8", and -20") for the last 30 days for the Adams Ranch station (2015).

2. To change the report from tabular to chart view, select **Chart** from the **Layout** drop-down menu.



Tip: To save the results of the report, select the CSV icon () from the **Output Format** dropdown list. Use the **Layout**, **Units**, and **Time Period** menus to change the output of the report.

Tip: To save the chart in a graphics format, select the and select **Save image as...** to save to a format such as .png or .jpg.

button. Right click the image

View Station Information Panel: Select Predefined Reports

This tutorial shows how to work with predefined reports in Report Generator. There are two types of predefined reports:

- **Data Reports.** These reports are based on several standard elements (such as precipitation or snow depth), values, and time periods.
- Metadata Reports. These reports are based on current and historic sensor data and site information.

Note: This tutorial uses the set of the Data Reports and Metadata Reports that are available in the current release of Report Generator. Your version of Report Generator may have additional reports available.

The tutorial consists of three, short lessons:

• Lesson 1 shows how to display the different predefined Data Reports in the View Reports pane.

- Lesson 2 shows how to take the results in the View Reports pane and save them to a .csv (commaseparated value) file for further analysis.
- Lesson 3 shows how to quickly change the layout of a Data Report from tabular view to chart view.

Lesson 1: View Report

- 1. Start Report Generator.

- Select the Create/Modify Report tab.
 Choose the station. In the Enter station(s) field, enter the following station ID: 526.
 Station 526, Hogg Pass, will be added to the Selected Stations list. When a station is added, the View Station Information link appears in the upper left corner of the application.

Create/Modify Rep	ort View Report	Report Det	ails				
 Select Stations Select network: 	SNOTE			Selected	Stations (1)		
Select nethork.	5110122			Jene et			
Enter station(s)		Add 😡	Station Id	Name	State	Network	Action

5. Select the View Station Information link. The Station View panel will open, displaying the station name, station metadata (such as Network, County, Elevation, Latitude, and Longitude), a site photo and a link to the site in Google Maps.



6. From the Station View pane, hover over the the Reports dropdown list and select Standard Sensors-Hourly.

Reports 🔻	Metadata Reports 🔻						
Standard Se	ensors-Daily						
Standard Se	ensors-Hourly						
Snow Depth	Snow Depth						
Daily Snow	Water Equivalent Medians and Averages						
Daily Accun	nulated Precipitation Averages						

7. A report opens with hourly standard sensor data for the Hogg Pass site for the last seven days.

Hogg Pass (526) Oregon SNOTEL Site - 4790 ft Reporting Frequency: Hourly; Date Range: 2016-10-18 14:00 to 2016-10-25 13:00

(As of: Tue Oct 25 13:20:05 PDT 2016) **Provisional data, subject to revision**

Date ≎	Snow Water Equivalent (in) ≎	Snow Depth (in) ≎	Precipitation Accumulation (in) \$	Air Temperature Observed (degF) \$
2016-10-18 14:00	1.2	6		36
2016-10-18 15:00	1.2	6		36
2016-10-18 16:00	1.2	5		37
2016-10-18 17:00	1.2	5		37
2016-10-18 18:00	1.2	5		37
2016-10-18 19:00	1.1	4		37
2016-10-18 20:00	1.1	4		37

8. Next, select **Daily Sensor Descriptions** from the **Metadata Reports** dropdown list. The data changes to reflect the complete list of sensor descriptions for the Hogg Pass site.



Oregon SNTL Site Hogg Pass (526) - Daily Sensors for

2016-October-25 NRCS National Water and Climate Center

Daily sensors report a summary value for the previous day.

Hourly sensors report a summary value for the previous hour. Instantaneous sensors report a single observation on the hour.

Instantaneous sensors are included with both Daily and Hourly sensor selections.

Instantaneous sensors for a Daily sensor selections are the midnight observation.

*The use of a particular manufacturer's instrument does not constitute an endorsement of that instrument or manufacturer.

Label	Element	Unit	Instrument*	Ecode	Function Interval	Ordinal	Sensor Height
[E.I-0:H]				[E]	[1]	[0]	[H]
WTEQ.I-1	Snow Water Equivalent	In	100" Transducer - Sensotec	WTEQ	INSTANTANEOUS	1	unknown
PREC.I-1	Precipitation Accumulation	In	200" Transducer - Sensotec	PREC	INSTANTANEOUS	1	unknown
TOBS.I-1	Air Temperature Observed	Degc	Ysi Extended Range	TOBS	INSTANTANEOUS	1	unknown
TMAX.D-1	Air Temperature Maximum	Degc	Ysi Extended Range	TMAX	1 DAY	1	unknown
TMIN.D-1	Air Temperature Minimum	Degc	Ysi Extended Range	TMIN	1 DAY	1	unknown
TAVG.D-1	Air Temperature Average	Degc	Ysi Extended Range	TAVG	1 DAY	1	unknown
SNWD.I-1	Snow Depth	In	Unknown - Linear Equation	SNWD	INSTANTANEOUS	1	unknown
SNWD.I-2	Snow Depth	In	Unknown - Linear Equation	SNWD	INSTANTANEOUS	2	unknown
BATT.I-1	Battery	Volt	Unknown - Linear Equation	BATT	INSTANTANEOUS	1	unknown
BATT.I-2	Battery	Volt	Unknown - Linear Equation	BATT	INSTANTANEOUS	2	unknown
BATT.I-3	Battery	Volt	Unknown - Linear Equation	BATT	INSTANTANEOUS	3	unknown
BATT.I-4	Battery	Volt	Unknown - Linear Equation	BATT	INSTANTANEOUS	4	unknown

Try the remaining selections in the **Reports** dropdown list to see what's available. You may also want to use the Time Period dropdown to modify the frequency and time period selections for the report.

Lesson 2: Export Data

This lesson uses components in the **View Report** tab to take the data from the **Standard Sensors-Daily** report and save it to a .csv (comma-separated value) file for further analysis.

1. Go to the Reports dropdown list and select Standard Sensors-Daily. The predefined report displays.

Reports 👻 Metadata Reports 👻
Standard Sensors-Daily
Standard Sensors-Hourly
Snow Depth
Daily Snow Water Equivalent Medians and Averages
Daily Accumulated Precipitation Averages

2. In the View Report tab, select CSV from the Output Format dropdown menu.

C	reate/Modify Re	port View Re	eport Report	Details			
	Output Format	yout ▼ Units ▼ Tir	me Period 🔻 Fit Tabl	le To Screen			
		526)					
	Oregon SNO	TEL Site - 47	'90 ft				
	Reporting Fr	requency: Da	ily; Date Rar	nge: 2016-09-	-26 to 2016-1	0-25	
	(As of: Tue Oct 25 12:	:43:17 PDT 2016)					
		Snow	Snow	Precipitation	Air	Air	Air
	Date 🗘	water Equivalent (in) ≎	Depth (in) ≎	Accumulation (in) \$	Maximum (degF) \$	Minimum (degF) \$	Average (degF) \$
	2016-09-26	0.0	0	65.5	78	53	64
	2016-09-27	0.0	0	65.5	69	49	58
	2016-09-28	0.0	0	65.5	69	45	56
	2016-09-29	0.0	0	65.5	62	45	52
	2016-09-30	0.0	0	65.5	56	39	47
	2016-10-01	0.0	0	0.0	43	37	39
	2016-10-02	0.0	0	0.1	43	35	38
	2016-10-03	0.0	0	0.2	44	34	39
	2016-10-04	0.0	0	0.3	41	35	39
	2016-10-05	0.0	0	1.5	42	35	40
	2016-10-06	0.0	0	2.8	46	39	42
	2016-10-07	0.3	0	2.9	49	44	47
	2016-10-08	0.2	0	3.7	59	45	52
	2016-10-09	0.2	0	3.7	58	45	50
	2016-10-10	0.3	0	3.9	48	39	46
	2016-10-11	0.2	0	4.3	47	36	39

3. A web page will open with the data from the report displayed.

#			WARNI	NG					
# # The da # databa # Data a # may be	ta you have obtained se are subject to rev re released on condit sheld liable for any	from this a vision regard ion that ne damages res	utomated Natural dless of indicat ither the NRCS r ulting from its	Resource Conservation Servic ed Quality Assurance level. or the United States Governme use.	e nt				
# # Help a	nd Tutorials: http:/	/www.wcc.nr	cs.usda.gov/repo	rt_generator/report_generator	_landing.htm	n			
# # Suppor	t Contact: nrcsprod@m	idatl.servi	ce-now.com						
#									
# Report	ing Frequency: Daily								
# Date R # Report #	ange: 2016-09-26 to 2 Instantaneous Data A	2016-10-25 As: Start of	Day						
# Data f #	or the following site	e(s) are con	tained in this f	ile:					
#	SNOTEL 526: Hogg Pass	, OR							
# Data i #	tems provided in this	file:							
# Elemen	t Name	Value Type	Function Type	Function Duration	Base Data	Measurement Units	Sensor Depth	Element Code	Description
# Show if	lepth	Value	None	Instantaneous - Start of Day Instantaneous - Start of Day	N/A N/A	Inches	N/A N/A	SNWD	
# Precip	itation accumulation	Value	None	Instantaneous - Start of Day	N/A	Inches	N/A	PREC	Precipitation accumulation
# Air te	mperature maximum	Value	None	Daily	N/A	Degrees fahrenheit	N/A	TMAX	Air temperature maximum
# Air te	mperature average	Value	None	Daily	N/A	Degrees fahrenheit	N/A	TAVG	Air temperature average
# # Qualit #	y Control flags inclu	ided:							
# Flag	Name	Descriptio	n						
# V # N	Valid No Profile	No profile	for automated y	alidation					
# E	Edit	Edit, mino	r adjustment for	sensor noise					
# В	Back Estimate	Regression	-based estimate	for homogenizing collocated S	now Course a	and Snow Pillow data	sets		
# K	Estimate	Estimate							
# S	Suspect	Suspect da	ta						
# # Qualit #	y Assurance flags ind	:luded:							
# Flag	Name	Descriptio	n						
# U	Unknown	Unknown							
# K	Provisional	Preliminar	v Human Review						
# A	Approved	Processing	and Final Revie	w Completed					
#									
# # Hogg F	ass (526)								
# Oregon	SNOTEL Site - 4790	ft Date Bange	2016-00-26 to	2016-10-25: Report Instantane	ous Data as	Start of Day			
# xeport	and an one carry	, bace kange	. 2010-05-20 10	2010-10-25, Report Instantane	ous baca as	Start of Day			
# AS OT: #	OCT 25, 2016 12:44:4	I PM PD1							
Date, Sno	w Water Equivalent (i	in),Snow Dep 4	th (in),Precipit	ation Accumulation (in),Air T	emperature (Aaximum (degF),Air Te	mperature Mini	imum (degF),Air	r Temperature Average (degF)
2016-09-	27,0.0,0,65.5,69,49,5	8							
2016-09-	28,0.0,0,65.5,69,45,5	56							
2016-09-	29,0.0,0,65.5,62,45,5	52							
2016-10-	01.0.0.0.0.0.43.37.39	, ,							
2016-10-	02,0.0,0,0.1,43,35,38	3							
2016-10-	03,0.0,0,0.2,44,34,39								
2016-10-	05.0.0.0.1.5.42.35.40	,							
2016-10-	06,0.0,0,2.8,46,39,42	2							
2016-10-	07,0.3,0,2.9,49,44,47								
2016-10-	00,0.2,0,3.7.58.45.52	,							
2016-10-	10,0.3,0,3.9,48,39,46	5							
2016-10-									
0040 00	11,0.2,0,4.3,47,36,39								
2016-10-	11,0.2,0,4.3,47,36,39 12,0.2,1,4.3,58,31,40 13,0,2,0,4.4.50,37,46	5							
2016-10- 2016-10- 2016-10-	11,0.2,0,4.3,47,36,39 12,0.2,1,4.3,58,31,46 13,0.2,0,4.4,50,37,46 14,0.4,1,6.6,42,35,46	5							
2016-10- 2016-10- 2016-10- 2016-10-	11,0.2,0,4.3,47,36,39 12,0.2,1,4.3,58,31,46 13,0.2,0,4.4,50,37,46 14,0.4,1,6.6,42,35,46 15,0.4,0,8.0,45,38,41	9 5 9 1							
2016-10- 2016-10- 2016-10- 2016-10- 2016-10- 2016-10- 2016-10-	11, 0.2, 0, 4.3, 47, 36, 35 12, 0.2, 1, 4.3, 58, 31, 46 13, 0.2, 0, 4.4, 50, 37, 46 14, 0.4, 1, 6.6, 42, 35, 46 15, 0.4, 0, 8.0, 45, 38, 43 15, 0.4, 0, 9.0, 41, 36, 38 17, 0, 3, 0, 9, 3, 41, 36, 38	9 5 5 9 1 8 5							
2016-10- 2016-10- 2016-10- 2016-10- 2016-10- 2016-10- 2016-10- 2016-10-	11,0.2,0,4.3,47,36,35 12,0.2,1,4.3,58,31,44 13,0.2,0,4.4,50,37,46 14,0.4,1,6.6,42,35,46 15,0.4,0,8.0,45,38,41 16,0.4,9,9.0,41,36,35 17,0.3,0,9.3,41,33,36 15,1.0,4,10.7,,,	9 5 5 9 1 8 5							

- 4. Right click on this web page and select **Save as...**
- 5. Save the file with a .csv extension.

Lesson 3: Change from Standard to Chart Layout

This lesson uses the **Layout** dropdown menu in the **View Report** tab to change the display of the Standard Sensors-Daily report from tabular to line chart view.

- 1. If not already there, go to the **Reports** dropdown list and select **Standard Sensors-Daily**. The predefined report displays in the View Report tab.
- 2. In the View Report tab, select Chart from the Layout dropdown list.

Create/Modify	Report	View	Report	Report Details	
Output Format 🔻	Layout 🔻	Units 🔻	Time Perio	d 🔻 Fit Table To Scree	n 📃
	Time Serie	s			
Hogg Pass	Stacked T	ime Series			
Reporting	Water Yea	r - Group I	by Month	ite Range: 20	16-09
Start of Da	Calendar	/ear - Gro	up by Month	J	
(As of: Tue Oct 25 **Provisional data	Chart)			

3. The report will change to chart format.



- 4. To save the chart, select Export Chart as Image.
- 5. Right click on the image, select **Save Image As...** and save the file to a graphics format, such as .png or .jpg.
- 6. To return to tabular format, select **Standard** from the **Layout** dropdown list.

Managing Stations

Add a Station

This tutorial describes how to add stations to a report in Report Generator.

- 1. Open Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the network. In the **Select network:** field choose a network from the dropdown list. This tutorial uses the SNOTEL network as an example.
- 4. Choose the station. Stations may be selected using either the **Station Name** or the **Station ID**. This field auto-suggests entries as you type. In the **Enter station(s):** field, enter the following station ID: 526.
- 5. Select the **Add** button.
- 6. Station 526, Hogg Pass, will be added to the Selected Stations list.

reate/modify kepd	view Report	Report Details					
 Select Stations 							
Select network: S	NOTEL	•		Selected Stations	(1)		
Enter station(s)	26	Add Station	n Id	Name	State	Network	Action
A	dvanced Search	526	Hogg Pass	E.	OR	SNTL	Remove
			Remove All	Sort By: Name		•	

This completes the Add a Station tutorial. Now it's time to learn how to remove stations from a report.

Remove a Station

This tutorial describes how to remove stations from a report in Report Generator. First, we will add a station to the Selected Stations list. Then, we will remove that station from the list.

- 1. Open Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the network. In the **Select network:** field choose a <u>network</u> from the dropdown list. This tutorial uses the SNOTEL network as an example.
- Choose the station. Stations may be selected using either the Station Name or the Station ID. This field auto-suggests entries as you type. In the Enter station(s): field, enter the following station ID: 526.
 Station 526. Hogg Pass, will be added to the Selected Stations list.
- 6. To remove the Hogg Pass station, simply click the Remove link at the right of the station name.

eate/ modily kep	View Report	керо	n De	tans				
Select Stations								
Select network:	SNOTEL	•			Selected	Stations (1)		
Enter station(s):	526	Add	0	Station Id	Name	State	Network	Action
	Advanced Search			526	Hogg Pass	OR	SNTL	Remove
					Demonstrating Control Day			-

Tip: If you have many stations defined and wish to remove all of them from the Selected Stations list, select the <u>Remove All</u> link.

Tip: Use the **Sort By:** dropdown selection box to sort the list of stations by various criteria, such as Station ID or HUC.

This completes the **Remove a Station** tutorial. If you understand adding and removing stations, move on to the **Perform an Advanced Search** tutorial.

Perform an Advanced Station Search

This tutorial describes how to search for stations in Report Generator. This is an alternative to selecting stations oneby-one in the **Select Stations** list. The tutorial assumes that several stations have already been added to the **Selected Stations** list.

- 1. Open Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Select the Advanced Search link.

Create/Modify Report	/iew Report	Report I	Details				
 Select Stations 							
Select network: SNOTEL		•		Selected	Stations (0)		
Enter station(s):		Add 9	Station Id	Name	State	Network	Actions
Advanced S	Search	,	No stations selected	i			
			Ren	nove All Sort By: Na	me	•	

- 4. The **Advanced Search** page opens.
- 5. In the Station Selection Criteria area, select search criteria from one or more of the entry fields.
- 6. Select the Search button to show the stations that match the search criteria.
- 7. Optionally, add individual stations that don't meet the specified criteria. This works like the Add Stations field in the Create/Modify Report tab.
- 8. Specify the sort order for the stations in the Sort By: dropdown list.



Adding Additional Stations

Sometimes you'll need to add stations to your selection that do not match your selection criteria. For example, let's say you wanted all of the SNOTEL stations in Oregon, but also wanted to include one station from Washington. In this case, you would set the "State" field to "OR" and select the Network **SNOTEL**, select the **Search** button, and then add the additional station using the "Enter station(s)" input field in the **Add additional stations** section. This section works the same as the way you enter stations on the main **Create/Modify Report** page. You simple pick a network in the **Select Network** menu, and then enter the first few characters of the station id or station name to add and then click the station that you want to add. Stations that are added individually can be removed individually by clicking on the Remove link in the Actions column in the table of selected stations.

Note: Stations in the table that are a result of the station selection criteria will not have anything in the Actions column.

Close Button

Pressing the **Close** button will close the window and return you to the **Create/Modify Report** tab in Report Generator. When you return to the Create/Modify Report tab, any changes that you had made in the **Advanced Station Selection** screen will be reflected in the **Selected Stations** table.

Define Search Criteria and Filtering

There are many ways to search for the stations using the Advanced Search feature in Report Generator. In the top left quadrant of the Advanced Search page is a Station Selection Criteria section. Each of the text fields accepts a comma-separated list of wildcard patterns (only the asterisk '*' and '?' wildcard characters are understood).

The following table describes the different search criteria fields:

Search Field	Description
Station ID	The station id of the stations. This can include wildcards and can be a comma separated list of station ids. If wildcards are used, the '*' can be used to match any number of characters and the '?' can be used to match a single character.
Station Name	The name of the station. This can include wildcards and can be a comma separated list of station names or station names with wildcards.
	The two-character state FIPS alphabetic code (such as 'OR' for Oregon or 'WA' for Washington). This can be a single state code or a comma separated list of state codes.
State	There is also an undocumented feature that allows you to search for stations under the jurisdiction of a particular Data Collection Office (DCO) by entering the 2- character state code of the DCO followed by the letters 'DCO'. For example, if you want to search for stations in the Oregon DCO, type 'ORDCO' in the 'State' search field. You can enter more than more DCO in the same way that you enter more than one state. You can also enter a state and a DCO, but what results is the intersection of the DCO and the states entered (if you enter ORDCO and OR, you'll get only the stations that are in OR and in ORDCO)
Network	The network code of the station(s). Zero, one, or more networks can be selected. To select a single network, just click on the item. To deselect a network or to add another network to the selection hold down the CTRL key and click on the network to select or deselect.
HUC	The hydrologic unit code. You can enter one or more 2, 4, 6, or 8 digit HUCs separated by commas.
Min/Max Elev	The minimum and maximum elevation of the stations. None, one, or both of these filter fields can be specified.
Active Sites Only	If this box is checked, only stations that are still active will be returned. If this is unchecked, any station that matches the search criteria will be returned, even if the station is no longer in service.
Elements	Used to select the elements that a station should have data for. If multiple elements are selected, a station will be returned if it has at least one of the elements selected

When the filter is executed, there is an "OR" operator placed between the comma separated items in a given field and an "AND" operator placed between the various filter fields.

Following are some examples which illustrate how to use the filtering capabilities:

Example 1 - Find station 10360900

```
Station : 103060900
State :
Network :
HUC :
Min/Max Elev :
```

Example 2 - Find all stations in California or Nevada

```
Station :
State : CA, NV
Network :
HUC :
Min/Max Elev :
```

Example 3 - Find all streamflow or reservoir stations in California or Nevada where the station name begins with "LAKE"

```
Station : LAKE*
State : CA, NV
Network : USGS (STREAM), BOR (RESV)
HUC :
Min/Max Elev :
```

Example 4 - Find all SNOTEL stations whose elevation is between 1000 and 7000 feet and are in HUC 18

```
Station :
State :
Network : SNOTEL/SCAN
HUC : 18
Min/Max Elev : 1000 to 7000
```

Example 5 - Find all stations in Oregon that have incremental precipitation

Station : State : OR Network : HUC : Min/Max Elev : Elements : precipitation increment

Managing Columns

Add a Data Flement Column

This tutorial describes how to add data element columns to a report in Report Generator. The example adds two columns for "air temperature maximum" using Value Types of this year's and the previous year's values.

- 1. Open Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the network. In the Select network: field choose a networkfrom the dropdown list. This tutorial uses the SNOTEL network as an example.
- 4. Choose the station. Stations may be selected using either the Station Name or the Station ID. This field auto-suggests entries as you type. In the Enter station(s): field, enter the following station ID: 526. The Hogg Pass station displays in the Selected Stations list.
- 5. In the Select Columns pane, select the Data tab.
- 6. Under Element, select "air temperature maximum."
- Under Depth, select "None."
 For Value Type, select "Value."
 For Function, select "None."
- 10. Select the Add button to add the element to the Manage Selected Columns list.
- 11. Ensure the element "air temperature maximum" with a value type of "Value" appears at the bottom of the Manage Selected Columns list.

Data Metadata Element Filter: Sort Standard air temperature average air temperature maximum air temperature observed battery precipitation accumulation	None	Value Type Value Previous Year's Value Delta from Previous Value Collection Date Normal (1981-2010) % of Normal (1981-2010) Average (1981-2010) % of Average (1981-2010)	Function None Sum Mean Max Min
Mana Mana	ge Selected Colu Element De	mns pth Function Value	Type Move Up

- 1. Under Element, ensure "air temperature maximum" is selected.
- 2. Under Depth, keep "None"
- 3. For Value Type, select "Previous Year's Value."
- 4. For Function, select "None."
- 5. Select the Add button to add the element to the Manage Selected Columns list.
- Value Type, select "Previous Year's Value."
 Ensure the element "air temperature maximum" with a value type of "Previous Year's Value" appears at the bottom of the Manage Selected Columns list.

Data	a Metadata						
Ele	ment	D	epth Va	lue Type		Function	
Filte	r: Sort Standard 🔻	N	lone 🔺 🛛	alue	-	None 🔺	
air t	air temperature average air temperature maximum			elta from Previo ollection Date	us Value	Mean Max	Add
air t air t bat	emperature minimum emperature observed terv		N %	ormal (1981-201 of Normal (1981	-2010)	Min	
pre	cipitation accumulation	*	* %	of Average (1981-20	1-2010) 💌	-/	
	м	anage S	elected Col	umns		/	
1	Data Type	Elem	ent Depth	Function	Valu	e Type	Movelle
	air temperature maximum				Value	1	Move of
							Move D

Add a Metadata Column

This tutorial shows how to add a metadata column to a report in Report Generator. The example adds a column for the **Hydrologic Unit Code** (**HUC**) metadata type to the report.

Note: If you are continuing this tutorial from the Add a Data Element Column tutorial, go to Step 4.

- 1. Start Report Generator,
- 2. Choose the Create/Modify Report tab.
- 3. Add a station. In the Select Stations **Enter Station(s)** field, enter 526. The Hogg Pass station is added to the Selected Stations list.
- 4. In the Select Columns pane, select the Metadata tab.
- 5. Under Metadata, select Hydrologic Unit Code (HUC).
- 6. Select the Add button.
- 7. Ensure the metadata type HUC appears at the bottom of the Manage Selected Columns list.

Dat	a Metadata				
Me	tadata				
Lai Lo Co	ngitude ngitude nunty Name unty Code	Add			
HU	drologic Unit Code (HUC) IC Name ID				
HU	drologic Unit Code (HUC) IC Name ID	anaçe Selected Colur	nns		
	drologic Unit Code (HUC) C Name JD M Data Type	anaçe Selected Colur Element Depth	nns Function	Value Type	
	drologic Unit Code (HUC) C Name ID M Data Type air temperature maximum	anaçe Selected Colur Element Depth	nns Function	Value Type Value	Move Up
	drologic Unit Code (HUC) C Name ID M Data Type air temperature maximum air temperature maximum	anaçe Selected Colur Element Depth	nns Function	Value Type Value Previous Year's Value	Move Up Move Down

Change Column Order

This tutorial shows how to change the order that columns appear in a report in Report Generator. It also shows how to change the sort order of a column in a report. The example moves the metadata element HUC2 (2-digit HUC) to the top of the order. The final report will therefore display the HUC as the first item in the report, followed by air temperature minimum and air temperature maximum.

Note: If you're continuing this tutorial from the Add a Metadata Column tutorial, go to Lesson 2: Change order of data types.

Lesson 1: Add data types

- 1. Start Report Generator.
- 2. Select the Create/Modify Report tab
- 3. Add a station. In the Select Stations **Enter station(s)** field, enter 526. The Hogg Pass station is added to the Selected Stations list.
- 4. Add an element. In the Select Columns pane, select the **Data** tab.
- 5. Under Element, select "air temperature minimum."
- 6. Under Depth, select "None."
- 7. For Value Type, select 'Value."
- 8. For Function, select "None."
- 9. Select the Add button to add the element to the Manage Selected Columns list.
- 10. Add a second element for the previous year. Under Element, ensure "air temperature maximum" is selected.
- 11. Under Depth, keep "None"
- 12. For Value Type, select "Previous Year's Value."
- 13. For Function, select "None."
- 14. Select the Add button to add the element to the Manage Selected Columns list.
- 15. Add another element. Under Element, select "snow water equivalent."
- 16. Select the **Add** button.

The display should look similar to the following.

		Manage Selected Columns			
1	Data Type	Element Depth	Function	Value Type	
0	air temperature minimum			Value	Move Up
Ð	air temperature maximum			Value	Move Down
	snow water equivalent			Value	

Lesson 2: Change order of data types

1. Enable the checkbox next to the snow water equivalent Data Type.

		Manage Selected Columns			
1	Data Type	Element Depth	Function	Value Type	
Ð	air temperature minimum			Value	Move Up
0	air temperature maximum			Value	Move Dow
7	snow water equivalent			Value	

- 2. Select the **Move Up** button. The snow water equivalent Data Type will move up one level in order.
- 3. Select the **Move Up** button again. The snow water equivalent Data Type will move to the top of the list, and will therefore appear as the first column on the final report.

	Data Tuna	Floment Death	Function	Mahua Tuna	
	Data Type	Element Depth	Function	value Type	
1	snow water equivalent			Value	Move Up
	air temperature minimum			Value	Move Dow
	air temperature maximum			Value	

Lesson 3: Change sort order of columns in report

- 1. In the Select Time Period, Layout, and Units pane, select the following:
 - Interval/Duration = Daily
 - Report Instantaneous Data As = Start of Period
 - Time Period = Last 7 Days, All Months, All Days
 - Layout = Time Series
 - Units = English
 - Output Format = HTML
- 2. Select the View Report button. A report similar to the following will open

Hogg Pass (526) Oregon SNOTEL Site - 4790 ft Reporting Frequency: Daily; Date Range: 2016-12-08 to 2016-12-14

(As of: Wed Dec 14 11:04:16 GMT-08:00 2016) **Provisional data, subject to revision** Hogg Pass Hogg Pass Hogg Pass (526)(526)(526)Snow Air Air Water Date 🗘 Temperature Temperature Equivalent Minimum Maximum (in) (degF) 🗘 (degF) 🗘 Start of Day Values 37 2016-12-08 6.2 13 2016-12-09 7.4 32 36 2016-12-10 8.3 29 32 9.4 28 30 2016-12-11 10.6 31 2016-12-12 14 2016-12-13 11.0 18 23 2016-12-14 11.1

Note that each column in the report has Up/Down arrows next to the column heading. The Up/Down arrows allow you to sort the columns as follows:



Take some time to explore how each sort option works for each column in the report.

Remove Columns

This tutorial shows how to remove columns from a report in Report Generator. The first example removes a single data type from the report. The second example then removes all data types from the report.

- 1. Start Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the station. In the Enter station(s) field, enter the following station ID: 526.
- 4. Station 526, Hogg Pass, will be added to the Selected Stations list. When a station is added, the **View Station Information** link appears in the upper left corner of the application.

Vie	w Station Information	>								
	Create/Modify Rep	port	View Report	Report D	etails					
	 Select Stations 									
	Select network:	SNOTE	iL	•			Selected Statio	ns (1)		
	Enter station(s):			Add 😡	Station Id		Name	State	Network	Actions
		Advance	ed Search		526	Hogg Pass		OR	SNTL	Remove
						Remove All	Sort By: Name		•	

5. Select the **View Station Information** link. The Station View panel will open, displaying the station name, station metadata (such as Network, County, Elevation, Latitude, and Longitude), a site photo and a link to the site in Google Maps.



6. From the Station View pane, hover over the the Reports dropdown list and select Standard Sensors-Hourly.

Note: The Reports and Metadata Reports dropdown lists contain pre-defined reports for commonly-used data elements.

Reports 👻 Metadata Reports 👻
Standard Sensors-Daily
Standard Sensors-Hourly
Snow Depth
Daily Snow Water Equivalent Medians and Averages
Daily Accumulated Precipitation Averages

- Under Manage Selected Columns, enable the checkbox next to the snow water equivalent data type.
 Select the <u>Remove Selected Columns</u> link. The data type will be deleted from the list.
- 9. Next, select the Remove All link. All the data types will be removed from the list.

	Manag	e Selected Columns		
 Image: A second s	Data Type	Element Depth	Function	Value Type
	snow water equivalent	\supset		Value
	snow depth			Value
	precipitation accumulation			Value
	air temperature maximum			Value
	air temperature minimum			Value
	air temperature average			Value
	Remove Sele	cted Columns temo	ve All	

	Manag	e Selected Columns			
~	Data Type	Element Depth	Function	Value Type	
	snow depth			Value	
	precipitation accumulation			Value	Move U
	air temperature maximum			Value	Move D
	air temperature minimum			Value	
	air temperature average			Value	
	Remove Sele	cted Columns Remo	ove All		

Managing Report Types

Select Frequency and Time Period

This tutorial shows how to use the **Frequency** and **Time Period** selections in Report Generator. Frequency and Time Period are interactive; options change depending on the frequency or time period selected.

The **Frequency** selection determines how often data is supplied to a report in Report Generator. The **Time Period** selection determines the duration of the report and the number of days to include in the report.

The example uses a **Standard** data report (Standard Sensors - Daily) to change the frequency and time period of data displayed in the **View Report** tab.

- 1. Start Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the station. In the Enter station(s) field, enter the following station ID: 526.
- 4. Station 526, Hogg Pass, will be added to the Selected Stations list. When a station is added, the **View Station Information** link appears in the upper left corner of the application.

View Station Informati	on							
Create/Modify	Report	View Report	Report De	tails				
 Select Stati 	ons ork: SNOT	(FL	•		Selected St	tions (1)		
Enter statio	n(s):		Add 😡	Station Id	Name	State	Network	Actions
	Advan	ced Search		526	Hogg Pass	OR	SNTL	Remove
					Remove All Sort By: Name		T	

- 5. Select the **View Station Information** link. The Station View panel will open, displaying the station name, station metadata (such as Network, County, Elevation, Latitude, and Longitude), a site photo and a link to the site in Google Maps.
- 6. From the Station View pane, hover over the **Reports** dropdown list and select **Standard Sensors-Daily.** A tabular report will open, displaying the snow water equivalent, snow depth, precipitation, and temperature min/max/averages for the Hogg Pass site for the last 30 days.

	Station View	
	Reports 🔻	Metadata Reports 👻
(Standard Se	ensors-Daily
	Standard Se	ensors-Hourly
	Snow Depth	
	Daily Snow	Water Equivalent Medians and Averages
	Daily Accum	ulated Precipitation Averages

eate/Modify Report	View Report	Report Details				
	_					
Output Format + Layout +	Units - Time Pe	Fit Table To	Screen			
Hogg Pass (526)						
Oregon SNOTEL	Site - 4790 f	it Data Damas	2040 40 22 4	- 2040 44 24		
As of: Mon Nov 21 08:12:39	ency: Dally; I	Date Range:	2016-10-23 t	0 2016-11-21		
"Provisional data, subject t	Snow	Enow	Precipitation			
Date 0	Water Equivalent (in) Start of Day Values	Depth (in) Start of Day Values	Accumulation (in) Start of Day Values	Air Temperature Maximum (degF) ⁽⁾	Air Temperature Minimum (degF) ⁽⁾	Air Temperature Average (degF) ⁰
2016-10-23	0.0	0	13.0	47	35	42
2016-10-24	0.0	0	13.0	53	38	43
2016-10-25	0.1	0	13.3	49	37	43
2016-10-26	0.2	1	13.5	51	40	46
2016-10-27	0.1	1	14.0	45	37	39
2016-10-28	0.0	1	14.3	47	34	41
2016-10-29	0.0	1	14.3	45	38	40
2016-10-30	0.0	0	14.5	43	38	40
2016-10-31	0.1	0	14.8	43	35	38
2016-11-01	0.0	0	15.3	43	36	39
2016-11-02	0.0	0	15.5	58	39	49
2016-11-03	0.0	0	15.5	55	36	46
2016-11-04	0.0	0	15.5	59	36	49
2016-11-05	0.0	0	15.5	55	38	47
2016-11-06	0.1	0	16.0	48	36	41
2016-11-07	0.0	0	16.1	53	38	46
2016-11-08	0.0	0	16.2	64	38	51
2016-11-09	0.0	1	16.1	58	43	49
2016-11-10	0.0	0	16.2	56	39	47
2016-11-11	0.0		16.1	62	42	55
2016-11-12	0.0	0	16.3	50	39	44
2016-11-13	0.0	0	16.3	51	40	45
2016-11-14	0.0	1	16.5	48	41	44
2016-11-15	0.1	0	18.3	47	31	37
2016-11-16	0.1	2	18.8	34	30	31
2016-11-17	0.1	1	18.9	38	29	32
2016-11-18	0.1	1	18.9	35	29	31
2016-11-19	0.1	1	18.9	46	32	40
2016-11-20	0.0	0	19.1	42	34	37
2016-11-21	0.1	1	19.7			

7. To change the frequency and time period for which data are reported, select the **Time Period** dropdown list

on the report.
8. In the Time Period tab, change the Frequency to Monthly, the Report Instantaneous Data as: to Start of Period, and the Time Period to Last 12 Months and All Months.

9. Select **Apply**. The data in the View Reports tab change to reflect a reporting frequency of monthly and a time period of the last 12 months.



reate/Modify Report	View Report	Report Details				
Output Format + Layout	 Units - Time Pe 	eriod 👻 Fit Table To	Screen			
Pass (526 Pregen SNOTE) L Site - 4790 (n.				
Reporting Frequ	ency: Month	ly; Date Ran	ge: Nov 2015	to Nov 2016		
(As of: Mon Nov 21 Us.17) "Provisional data, subject	to revision"					
Date 0	Snow Water Equivalent (in) Start of Month Values	Snow Depth (in) Start of Month Values	Precipitation Accumulation (in) Start of Month Values	Air Temperature Maximum (degF) [©]	Air Temperature Minimum (degF) [©]	Air Temperature Average (degF) [©]
Nov 2015	0.0	0	3.9	50	15	33
Dec 2015	1.0	4	11.1	48	8	31
Jan 2016	11.1	43	29.9	52	7	32
Feb 2016	16.5	51	38.4	53	15	37
Mar 2016	14.4	35	44.4	61	25	35
Apr 2016	16.1	39	54.3	71	28	43
May 2016	0.0	0	58.0	72	31	47
Jun 2016	0.0	0	60.1	83	31	52
Jul 2016	0.0	0	62.5	84	38	56
Aug 2016	0.0	0	63.7	83	37	60
Sep 2016	0.0	0	63.8	78	33	51
Oct 2016	0.0	0	0.0	59	31	42
Nov 2016	0.0	0	15.3			

Select Layout

This tutorial shows how to choose the layout (format) of the report in Report Generator. Available layout options are:

• **Time Series**. Single station or multi-station report. The report will display for all stations defined with elements listed on a per-station basis. That is, each report will include all elements for that station for the time period defined. For example:

	Station 1	Station 1	Station 2	Station 2
Date	Elem 1	Elem 2	Elem 1	Elem 2
Jan 2011	XXXXX	xxxx	xxxxx	XXXX
Feb 2011	XXXXX	xxxxx	XXXXX	XXXXX

• **Stacked Time Series.** Multi-station report. The report will display all stations with elements listed on a perstation basis. For example:

Date	Station	Elem 1	Elem 2
Jan 2011	Station 1	xxxxx	20000
Feb 2011	Station 1	XXXXX	20000
Jan 2011	Station 2	XXXXX	XXXXXX
Feb 2011	Station 2	XXXXX	20000

• Water Year - Group by Month. Single station or multi-station report. The report will display for all elements defined, grouped by month for the current water year (Oct. 1-Sept. 30). For example:

Water	0	ct	Nov		
Year	Elem 1	Elem 2	Elem 1	Elem 2	
2011	XXXX	xxxx	XXXX	xxxx	
2012	xxxx	xxxx	XXXX	xxxx	

• **Calendar Year - Group by Month.** Single station or multi-station report. The report will display for all elements defined, grouped by month for the current calendar year (Jan. 1-Dec. 31). For example:

Vezz	Ja	n	Feb		
real	Elem 1	Elem 2	Elem 1	Elem 2	
2011	xxxx	XXXX	xxxx	XXXX	
2012	xxxx	xxxx	xxxx	xxxx	

• **Chart.** Single station or multi-station chart. Report Generator will display a line chart for all elements and all the stations defined. For example:



The following tutorial uses a **Standard** data report (Snow Depth) to change the layout for data displayed in the **View Report** tab from Standard to Chart.

The tutorial consists of two, quick lessons:

- Lesson 1: Change layout from Standard to Group Elements by Month
- Lesson 2: Change layout from Standard to Chart

Lesson 1: Change Layout from Standard to Group Elements by Month

- 1. Start Report Generator.
- 2. Select the Create/Modify Report tab.
- 3. Choose the station. In the Enter station(s) field, enter the following station ID: 526.
- 4. Station 526, Hogg Pass, will be added to the Selected Stations list. When a station is added, the **View Station Information** link appears in the upper left corner of the application.
- Select the View Station Information link. The Station View panel will open, displaying the station name, station metadata (such as Network, County, Elevation, Latitude, and Longitude), a site photo and a link to the site in Google Maps.
- 6. From the Station View pane, hover over the **Reports** dropdown list and select **Standard Sensors-Daily.** A tabular report will open, displaying the snow water equivalent, snow depth, precipitation accumulation, and air temperature minimum, maximum and average for the Hogg Pass site for the last 30 days.

	Reports 💌	Metadata Reports 👻				
	Standard Sensors-Daily					
	Standard Sensors-Hourly					
	Snow Depth					
	Daily Snow Water Equivalent Medians and Averages Daily Accumulated Precipitation Averages					

1. In the **View Report** tab, select **Water Year - Group by Month** in the **Layout** drop-down list. The report will change from elements being listed on a per-station basis to elements being listed on a per-month basis.



ate/M	odify Report	View Report	Report Detail	s				
tput Form	nat 👻 Layout 👻 Ur	nits 👻 Time Period	 Fit Table To Sor 	een 🔽				
iona P	Pass (526)							
Dregor	SNOTEL Sit	te - 4790 ft						
Report	ing Frequenc	y: Daily; Da	te Range: 20	16-10-03 to 2	2016-11-01;			
As of: Tue	Nov 01 11:07:01 PDT	2016)						
"Provisiona	al data, subject to revision** Oct							
Day	Snow Water Equivalent (in)	Snow Depth (in)	Precipitation Accumulation (in)	Air Temperature Maximum (degF)	Air Temperature Minimum (degF)	Air Temperature Average (degF)	Snow Water Equivaler (in)	
01	0.0	0	0.0	43	37	39		
02	0.0	0	0.1	43	35	38		
03	0.0	0	0.2	44	34	39		
04	0.0	0	0.3	41	35	39		
05	0.0	0	1.5	42	35	40		
06	0.0	0	2.8	46	39	42		
07	0.0	0	2.9	49	44	47		
08	0.0	0	3.7	59	45	52		
09	0.0	0	3.7	58	45	50		
10	0.0	0	3.9	48	39	46		
11	0.0	0	4.3	47	36	39		
12	0.0	0	4.3	58	31	46		
13	0.0	0	4.4	50	37	46		
14	0.0	0	6.6	42	35	40		
15	0.0	0	8.0	45	38	41		
16	0.0	0	9.0	41	36	38		
17	0.0	0	9.3	41	33	36		
18	0.7	4	10.7	37	33	35		
19	0.7	4	11.2	48	42	46		

Continue to Lesson 2: Change Layout from Standard to Chart.

Lesson 2: Change Layout from Standard to Chart

1. In the View Report tab, select **Chart** from the Layout drop-down list. The report will change from a tabular format to a line chart.



Tip: To save the results of this report:

- To save the chart to a graphics format such as .jpg or .png, select the **Export Chart as Image** button, then right-click on the image to save it.

Frequently-Asked Questions

Answers to questions from our users.

Report Generator Frequently-Asked Questions

Q Does Report Generator have any predefined report formats I can use?

A Report Generator has several predefined reports available. When you add a station to Report Generator, the View Station Information link to open the Station View pane.

In the Station View pane, the Reports and Metadata Reports () dropdown menus contain several predefined report templates. For example, choose from both hourly and daily standard sensor reports, snow depth, daily snow water equivalent medians and averages, and sensor metadata reports.

Q What are the sources of data Report Generator uses?

А

Report Generator uses data from the National Resources Conservation Service (NRCS) Water and Climate Information System (WCIS) databases. This includes manually-collected snow course data and information from automated Snow Telemetry (SNOTEL) and Soil Climate Analysis Network (SCAN) stations.

Report Generator also uses precipitation, streamflow, and reservoir data from the U.S. Army Corps of Engineers (USACE), the U.S. Bureau of Reclamation (BOR), the National Weather Service (NWS), the Applied Climate Information System (ACIS), the U.S. Geological Survey (USGS) and various water districts and other entities.

Q I created a tabular report in Report Generator. Is it possible to export this data for further analysis?

A Yes. In the View Report tab, select the CSV icon () from the Output Format dropdown list (). A web page will open with the data from the report displayed. Open a text editor (such as Notepad or Excel). Copy and paste lines that do not begin with a pound sign (#) into the text editor. Save the file with a .csv extension.

- Q I created a chart in Report Generator. Can I save this chart to another format?
- A Charts may be saved to a graphics format or exported to another format (such as .csv. or .xls).

To save the chart in a graphics format, select the Export Chart as Image button (). When the file opens, right-click the chart and select Save image as... Save the file to a graphics format, such as .png or .jpg.

To export the data to .csv or .xls format, in the View Report tab, select the CSV icon () from the Output Format dropdown list (). A web page will open with the data from the report displayed. Open a text editor (such as Notepad or Excel). Copy and paste the data from the web page into the text editor. Save the file with a .csv extension.

Q I'm using Internet Explorer as my browser. Many of the functions of Report Generator aren't working correctly.

A Report Generator 2.0 won't function properly in Internet Explorer if Compatibility View is enabled, or if the USDA.gov domain has been added to Compatibility View. To disable Compatibility View, go to Tools > Compatibility View Settings in Internet Explorer, and disable (uncheck) the Display Intranet Sites in Compatibility View checkbox. If USDA.gov is in the Websites you've added to Compatibility View list, highlight USDA.gov and select the Remove button.

Q I want to create a report for all the sites within a basin, but I don't know the site names or station IDs. Can Report Generator find those sites?

A If you know all or part of the Hydrologic Unit Code (HUC) for the basin, you can use the Advanced Search feature in Report Generator to quickly define a list of sites within the basin. Simply select the data Network, then enter the HUC for the basin (1-12 digits, wildcards are accepted), and select Search.

- Q Can Report Generator be used to create multi-station charts?
- A Yes. Version 2.0 of Report Generator supports multi-station charting.

Announcements and Release Notes

Contains important information associated with updates and changes to Report Generator. It also contains Release Notes describing recent enhancements and defect fixes.