DBHYDRO User Guide

September 10, 2013

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What is DBHYDRO?

"DBHYDRO" is the South Florida Water Management District's (the District) hydrometeorologic, water quality, and hydrogeologic data storage and retrieval system. This system is the source of historical and up-to-date data for the region covered by the District. To produce DBHYDRO, the District participates in a cooperative program with other agencies, such as the U.S. Geological Survey, Everglades National Park, the United States Army Corps of Engineers, Lake Worth Drainage District, and the U.S. Department of Agriculture. DBHYDRO allows users to access over 154,000 station-years of data, collected at over 15,000 stations in and around the District. Not only does DBHYDRO contain hydrologic, water quality, and hydrogeologic data, but it also stores additional information about the location and context where and how data are collected. Descriptions are available for most locations, giving the user information on hydrologic basin, latitude, longitude, state plane coordinates, county, section, township, range, and station notes.

One of the more powerful aspects of DBHYDRO is that data can be retrieved in a variety of ways. It is not necessary to know a specific identification number (ID) of a particular station, the database can be scanned to locate all stations that meet certain criteria, such as a given basin, county, or coordinate window. The DBHYDRO database has become an important reference for hydrologic, hydrogeologic, and water quality investigations in South Florida. The application that allows users to specify search criteria and retrieve data from DBHYDRO is called “DBHYDRO Browser”.

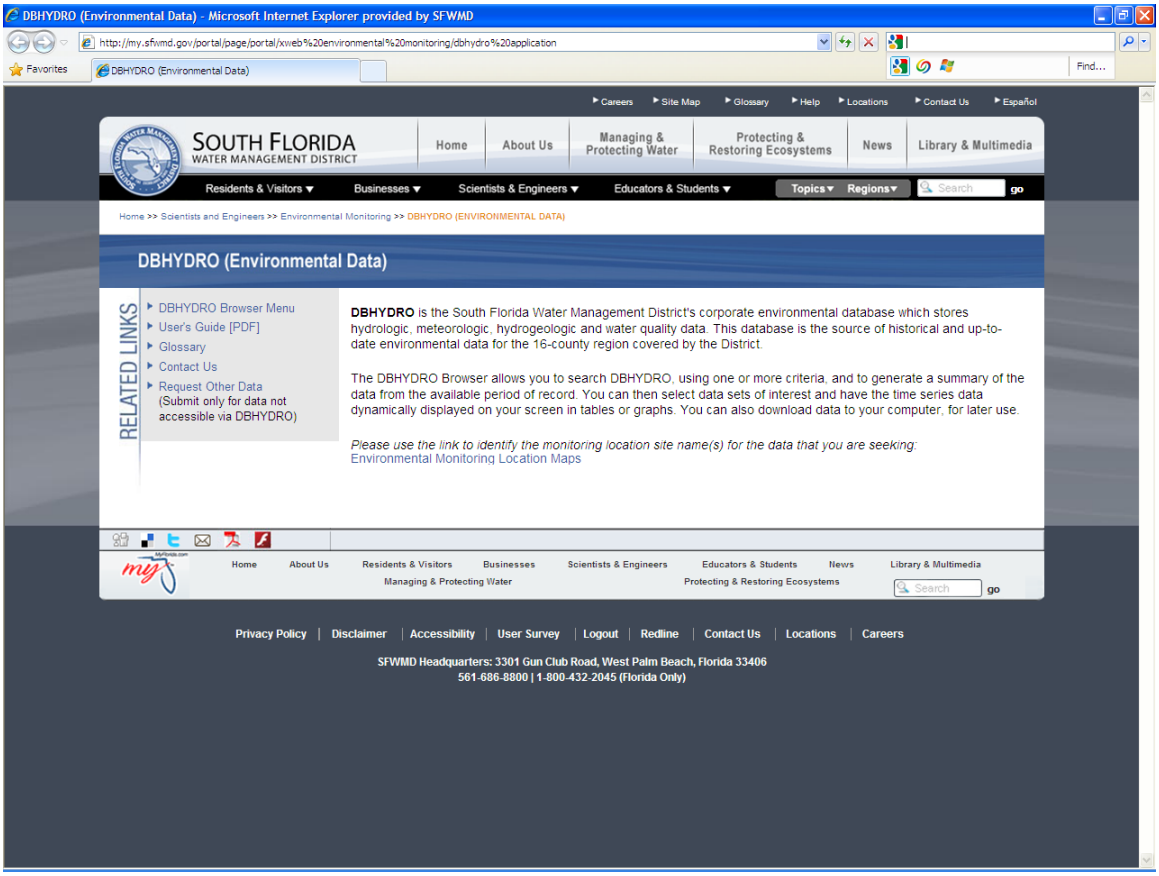
What is DBHYDRO Browser?

The DBHYDRO Browser is a web-based application that allows users to browse the South Florida Water Management District corporate environmental database, DBHYDRO, using one or more criteria, to generate a summary listing of time series. The user can then select one or more time series of interest and have the time series data dynamically displayed on their screen in tables or graphs. In addition to using text-based filters users may also access station data via a virtual globe.

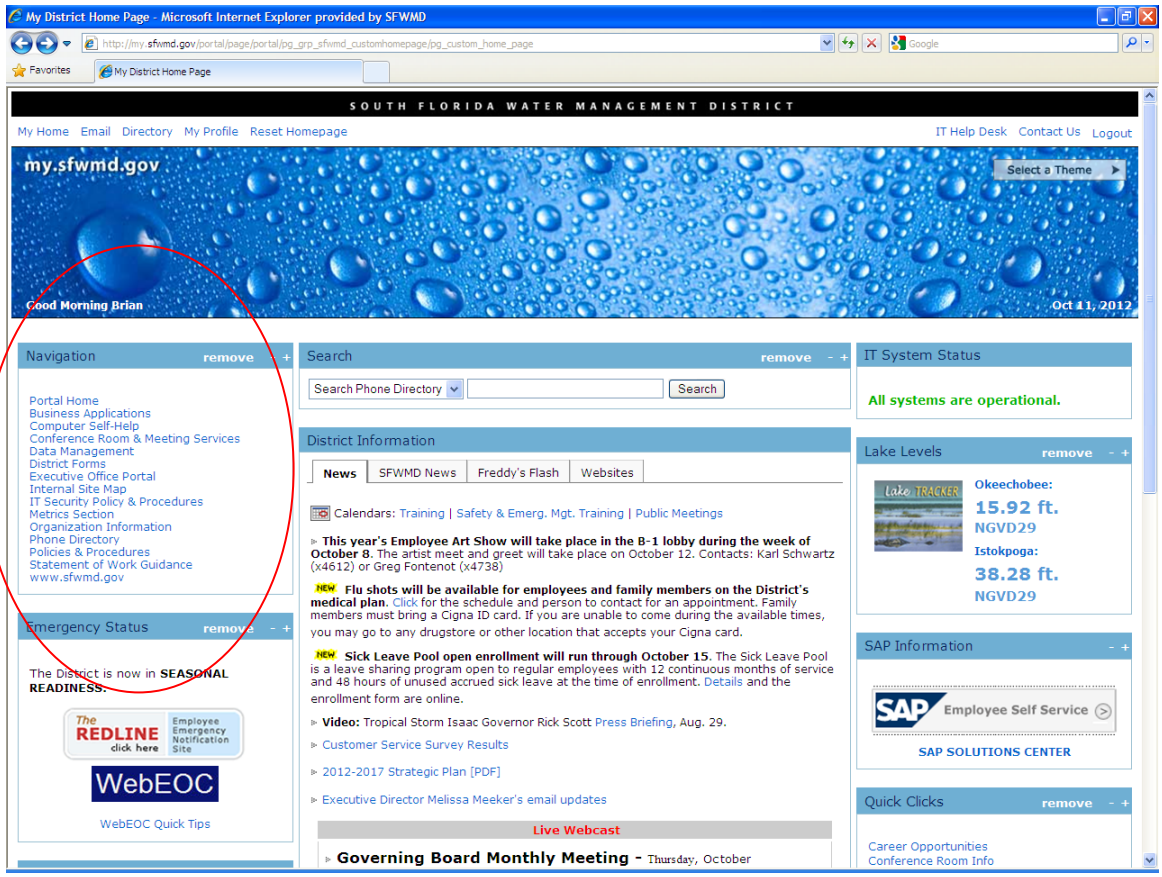
DBHYDRO Browser is tested and supported on Internet Explorer 9.

Getting Started

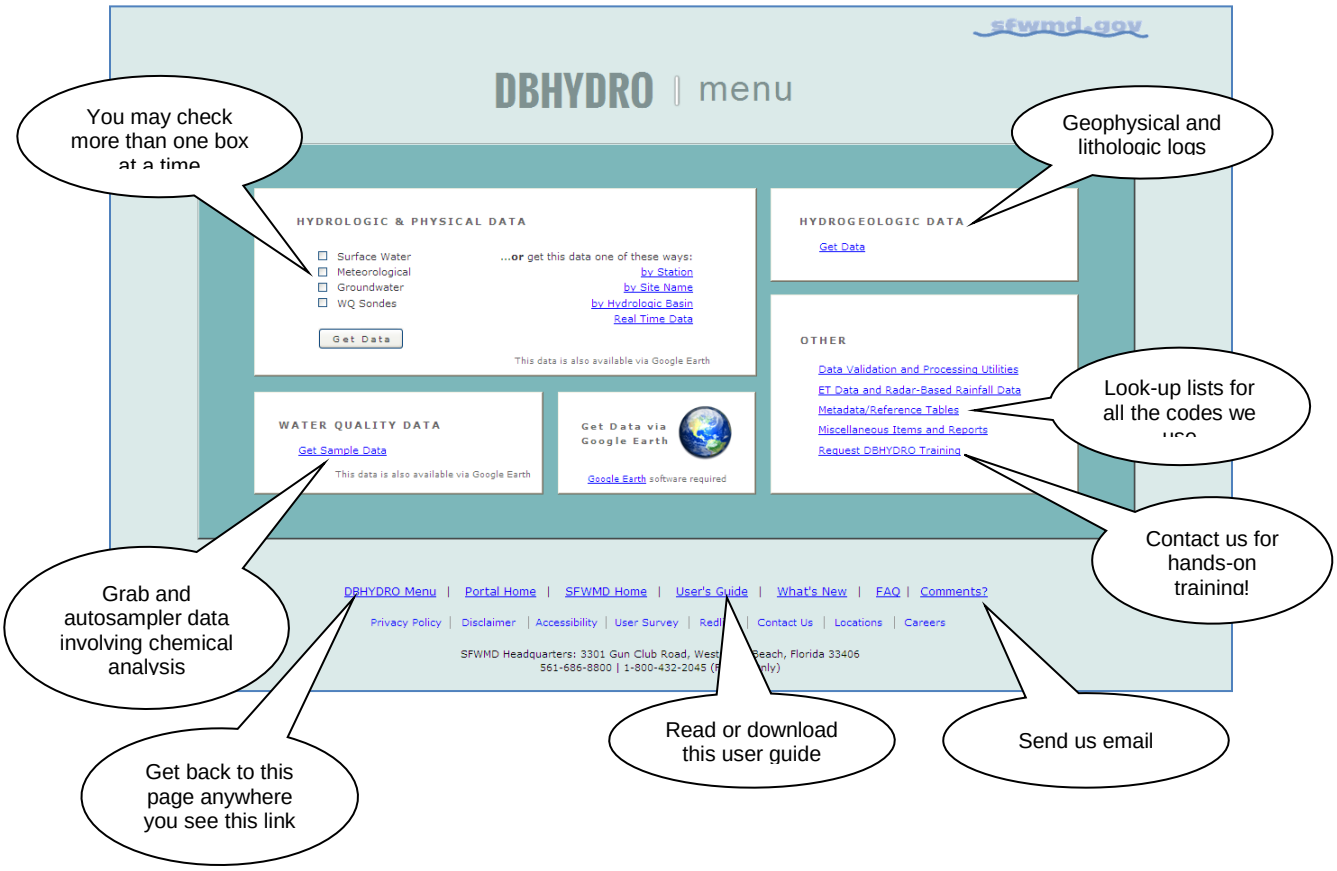
Internet access is provided at: http://www.sfwmd.gov/dbhydro



District employees, or any user authenticated on the SFWMD computer network, may also start the DBHYDRO Browser by first selecting “Business Applications” from the Navigation portlet on the District’s internal portal, and then selecting “DBHYDRO Browser”. Alternatively, District employees may start the DBHYDRO Browser by selecting “Data Management” from the District’s home page on the District’s portal, and then selecting “Enterprise Scientific Data Management” followed by “Applications”.



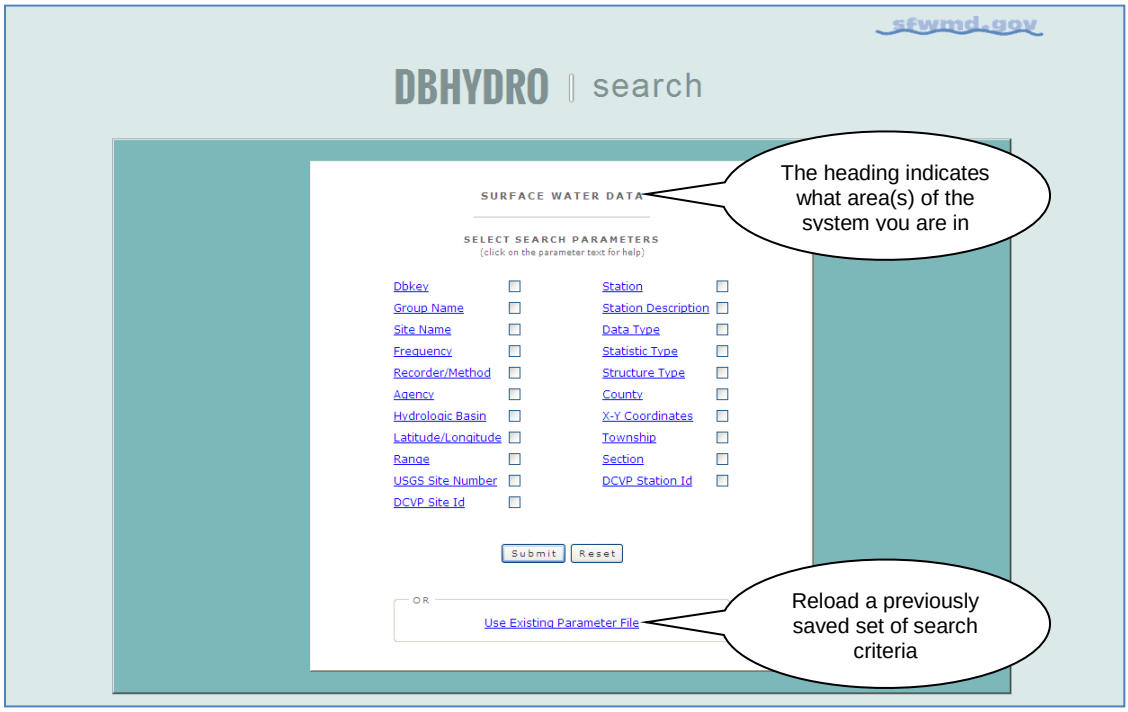
This is the DBHYDRO main menu. Some options are unavailable to users not authenticated on the District network (i.e. “internal use only”).



Hydrologic & Physical Data

One may check off multiple data categories simultaneously. For simplicity each category is presented separately in this guide.

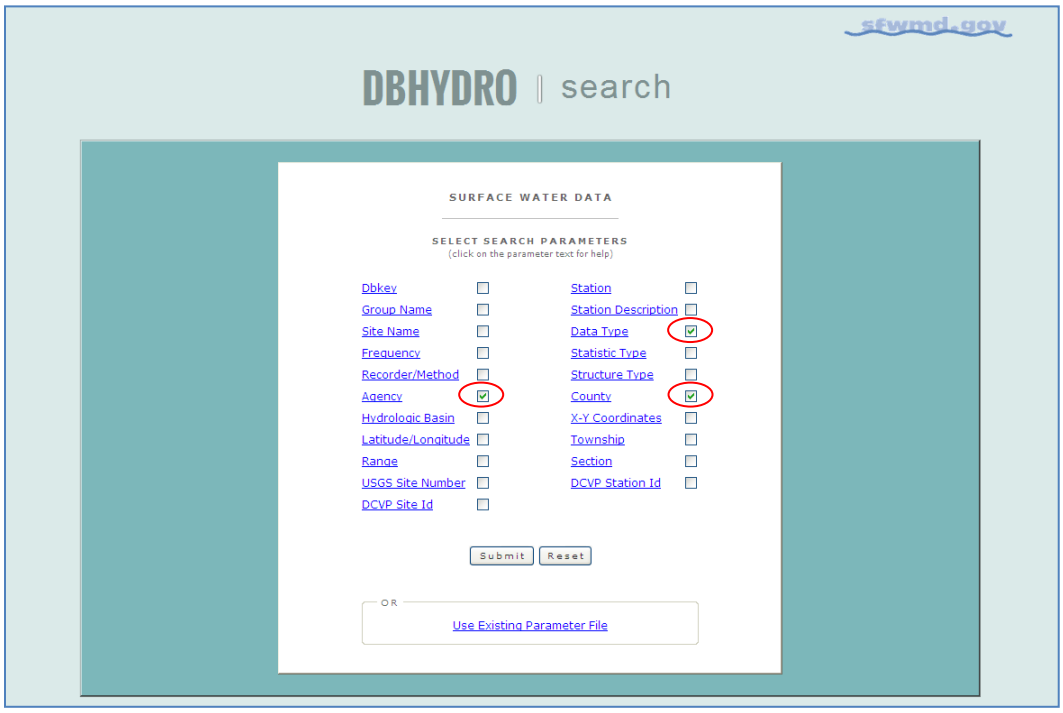
Checking "Surface Water" and then clicking on Get Data leads to the following page:



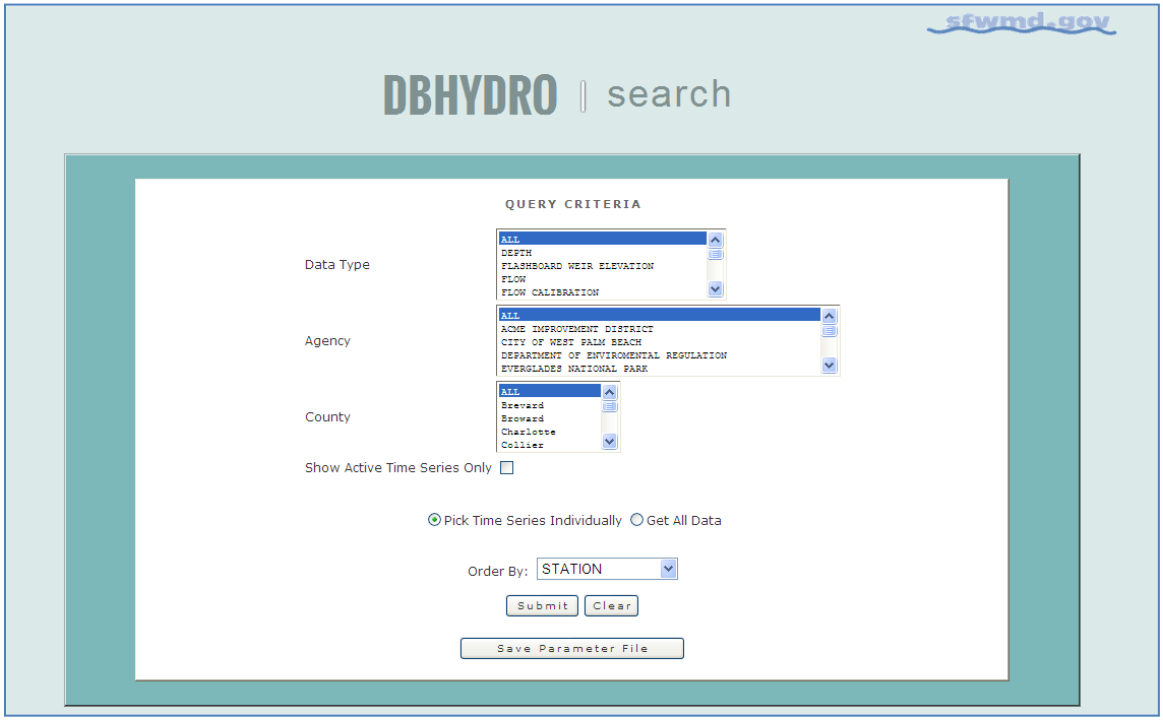
This is where you check off the boxes for the filters you want to use to identify which surface water data you care about. Each parameter (filter) is hyperlinked to a textual description of that parameter. For instance, clicking on the word **Agency** leads to the following help text:

Dismissing this window returns you to the Select Surface Water Search Parameters menu.

In the following example, the Agency, Data Type, and County parameters have been selected by checking their associated check boxes:



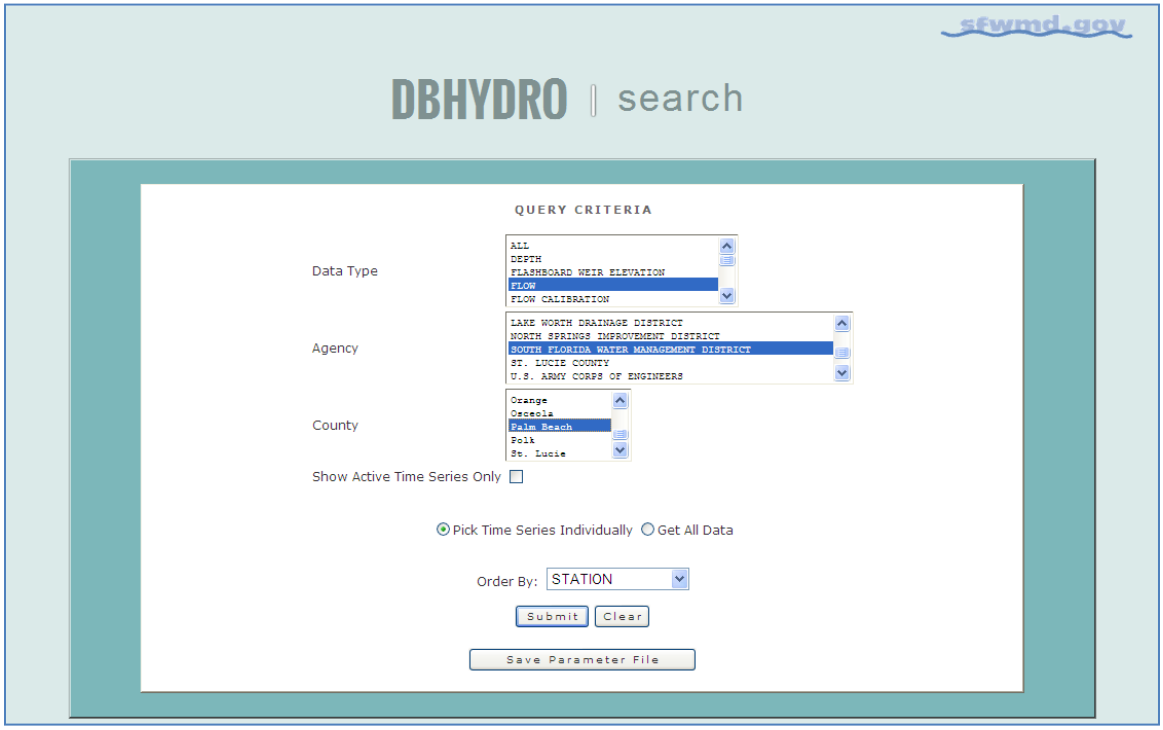
Clicking on the "Submit" button leads to the following screen:



As you can see, only Data Type, Agency, and County (as requested) and those parameters specific to surface water data can now be queried. This list filtering feature helps keep the list of query criteria from getting unnecessarily large and keeps the presented information on one page much of the time.

Each list of values allows one or more selections using the CTRL or SHIFT keys in conjunction with the left mouse button.

The criteria fields are filled in by selecting from the lists of values:



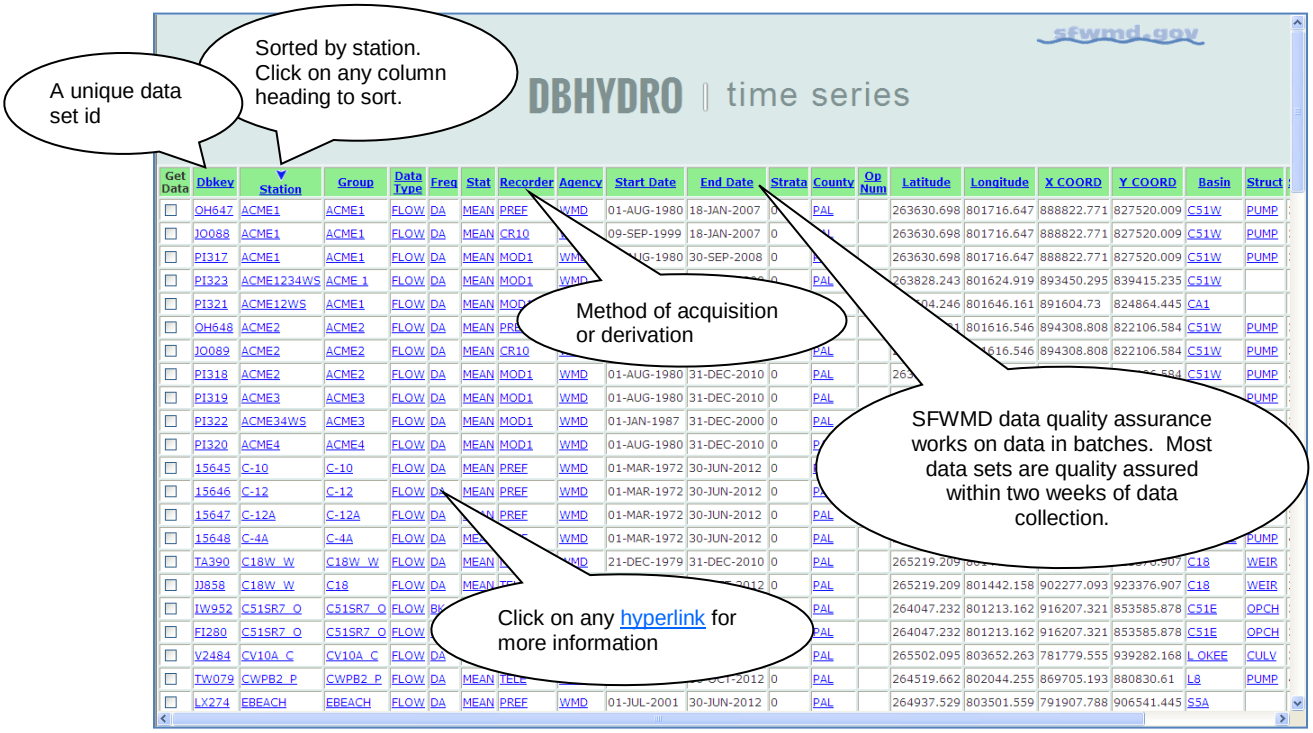
In the above example, SFWMD surface water flows in Palm Beach County are of interest. At this point, one may save a parameter file. The parameter file allows the selected criteria to be stored in a file on the user's individual computer, or server, such that the criteria may be recalled at any future date. This feature is helpful for frequently run queries to minimize keystrokes and mouse events required to get data. Note: You may find the web services URL feature better suits your needs if you have frequently repeated database queries… but more on that later in this guide.

By checking the check box "Show Active Time Series Only" one may filter out older data sets if one is only interested in more recent, or active, data sets. In the example above, both active and inactive time series are sought.

One may order (sort) the subsequent output by any of the available output columns. By default, the output will be in "Station" order.

Frequent users may wish to bypass the next screen to go right to getting data. This technique is useful if you know your query will return only a few data sets interactively or you wish to submit a batch request. To invoke the bypass feature choose the radio button marked "Get All Data" In our example here, we do not bypass the time series list because we want to pick and choose specific data sets. More information on batch requests is provided later on.

Clicking on the "Submit" button results in the following "metadata" list:

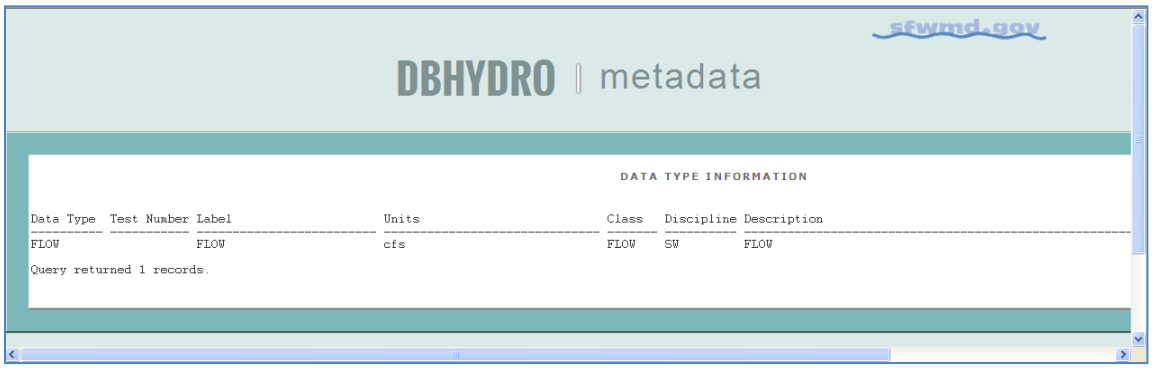


Get Data	Dbkey	Station	Group	Data Type	Freq	Stat	Recorder	Agency	Start Date	End Date	Strata	County	Op Num	Latitude	Longitude	X COORD	Y COORD	Basin	Struct
☐	OH647	ACME1	ACME1	FLOW	DA	MEAN	PREF	WMD	01-AUG-1980	18-JAN-2007	0	PAL		263630.698	801716.647	888822.771	827520.009	C51W	PUMP
☐	JO088	ACME1	ACME1	FLOW	DA	MEAN	CR10		09-SEP-1999	18-JAN-2007	0			263630.698	801716.647	888822.771	827520.009	C51W	PUMP
☐	PI317	ACME1	ACME1	FLOW	DA	MEAN	MOD1	WMD	UG-1980	30-SEP-2008	0			263630.698	801716.647	888822.771	827520.009	C51W	PUMP
☐	PI323	ACME1234WS	ACME 1	FLOW	DA	MEAN	MOD1	WMD			0	PAL		263828.243	801624.919	893450.295	839415.235	C51W	
☐	PI321	ACME12WS	ACME1	FLOW	DA	MEAN	MOD							04.246	801646.161	891604.73	824864.445	CA1	
☐	OH648	ACME2	ACME2	FLOW	DA	MEAN	PRE							1	801616.546	894308.808	822106.584	C51W	PUMP
☐	JO089	ACME2	ACME2	FLOW	DA	MEAN	CR10					PAL			616.546	894308.808	822106.584	C51W	PUMP
☐	PI318	ACME2	ACME2	FLOW	DA	MEAN	MOD1	WMD	01-AUG-1980	31-DEC-2010	0	PAL		263			584	C51W	PUMP
☐	PI319	ACME3	ACME3	FLOW	DA	MEAN	MOD1	WMD	01-AUG-1980	31-DEC-2010	0	PAL							PUMP
☐	PI322	ACME34WS	ACME3	FLOW	DA	MEAN	MOD1	WMD	01-JAN-1987	31-DEC-2000	0	PAL							
☐	PI320	ACME4	ACME4	FLOW	DA	MEAN	MOD1	WMD	01-AUG-1980	31-DEC-2010	0	P							
☐	15645	C-10	C-10	FLOW	DA	MEAN	PREF	WMD	01-MAR-1972	30-JUN-2012	0								
☐	15646	C-12	C-12	FLOW	DA	MEAN	PREF	WMD	01-MAR-1972	30-JUN-2012	0	P							
☐	15647	C-12A	C-12A	FLOW	DA	MEAN	PREF	WMD	01-MAR-1972	30-JUN-2012	0	PAL							
☐	15648	C-4A	C-4A	FLOW	DA	MEAN		WMD	01-MAR-1972	30-JUN-2012	0	PAL							PUMP
☐	TA390	C18W_W	C18W_W	FLOW	DA	MEAN		WMD	21-DEC-1979	31-DEC-2010	0	PAL		265219.209			376.907	C18	WEIR
☐	JJ858	C18W_W	C18	FLOW	DA	MEAN	TE			2012	0	PAL		265219.209	801442.158	902277.093	923376.907	C18	WEIR
☐	IW952	C51SR7_O	C51SR7_O	FLOW	DA							PAL		264047.232	801213.162	916207.321	853585.878	C51E	OPCH
☐	FI280	C51SR7_O	C51SR7_O	FLOW								PAL		264047.232	801213.162	916207.321	853585.878	C51E	OPCH
☐	V2484	CV10A_C	CV10A_C	FLOW	DA							PAL		265502.095	803652.263	781779.555	939282.168	L OKEE	CULV
☐	TW079	CWPB2_P	CWPB2_P	FLOW	DA	MEAN	TELE			OCT-2012	0	PAL		264519.662	802044.255	869705.193	880830.61	L8	PUMP
☐	LX274	EBEACH	EBEACH	FLOW	DA	MEAN	PREF	WMD	01-JUL-2001	30-JUN-2012	0	PAL		264937.529	803501.559	791907.788	906541.445	S5A	

You can also click on the column heading of any column in order to sort the list by that particular column. The "Station" column is used by default as indicated by the arrow ▼ above the column heading.

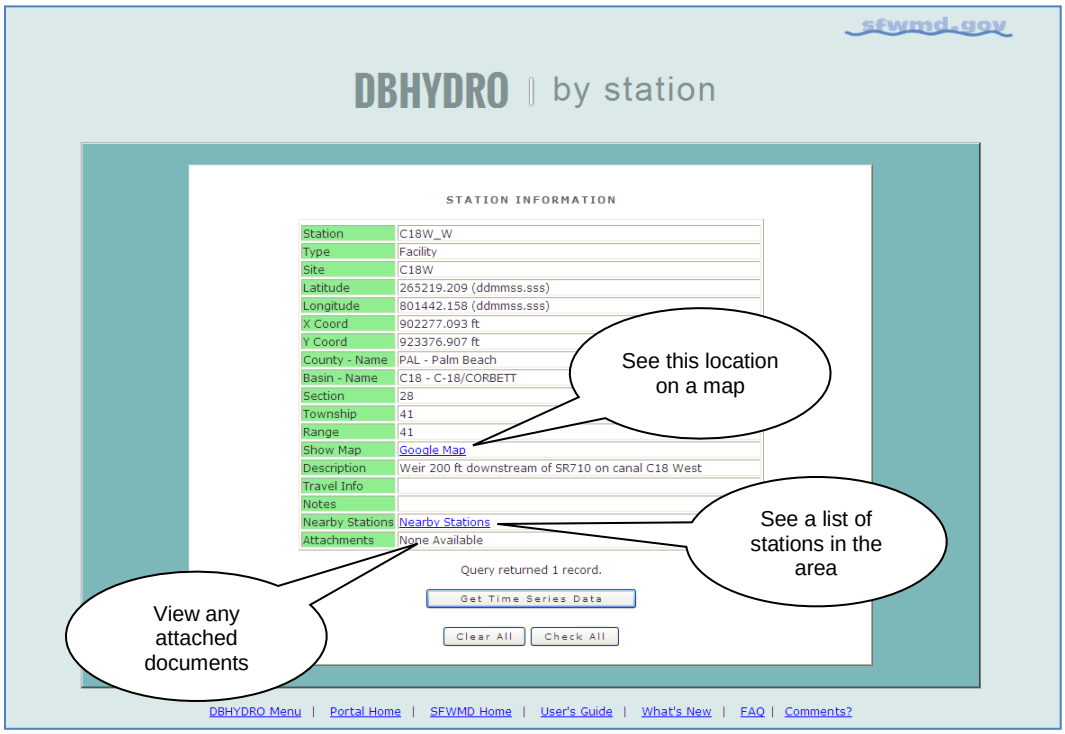
Each of the underlined fields is hyperlinked to additional information that explains its meaning.

For instance, clicking on the word "FLOW" in the data type column leads to the following screen that tells us more about what "FLOW" data is including its units of measure:



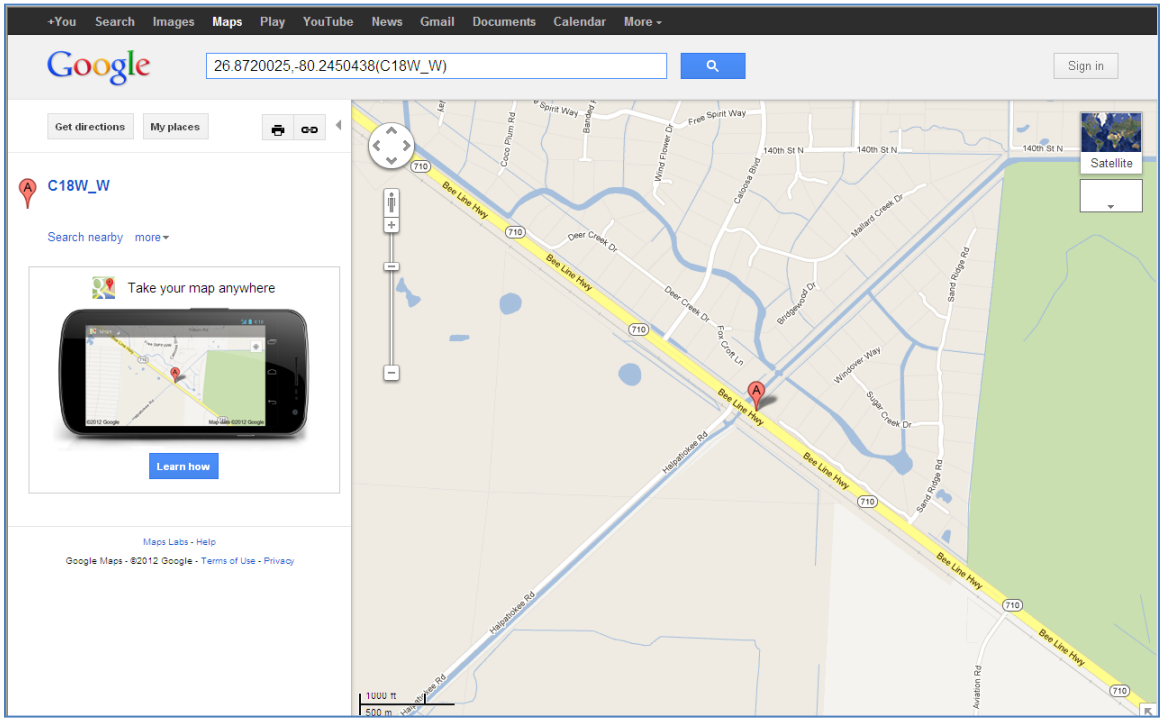
This behavior is similar for all the other hyperlinked time series attributes.

The station field hyperlink leads to a screen displaying the station information. Selecting station "C18W_W" leads to this screen:



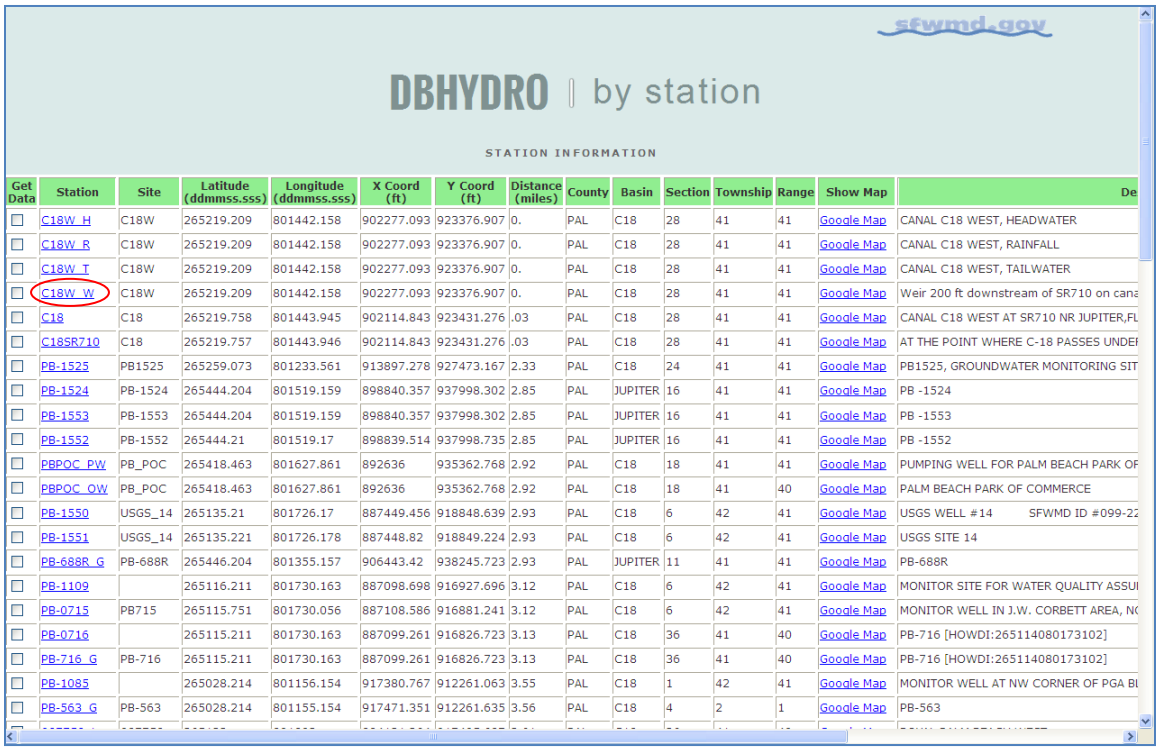
From here we can display a map with this station marked on it, "Get Time Series Data", or display structure information about this flow station. Had there been water quality data available at this station there would be a "Get Sample Data" button available. Had there been a groundwater well constructed at this station there would be a link to Well Info.

Selecting "Google Maps" leads to a map similar to this one:



Here we are taking advantage of publicly available map server technology to learn more about the area near the station of interest. The map can be drawn at different scales (zoom in/out) and printed. General directions to the station can also be generated. The South Florida Water Management District does not endorse the use of any particular commercial map server engine or its advertisers.

Alternatively, by selecting the "Nearby Station" link at the right end of the row, we can get a list of other monitoring stations in the vicinity. Such a list may lead us to other data that we, because of previous query criteria, did not realize was present. The column "Distance (miles)" tells us how close other stations are to "C18W_W".



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DBHYDRO | by station

STATION INFORMATION

Get Data	Station	Site	Latitude (ddmmss.sss)	Longitude (ddmmss.sss)	X Coord (ft)	Y Coord (ft)	Distance (miles)	County	Basin	Section	Township	Range	Show Map	De
☐	C18W_H	C18W	265219.209	801442.158	902277.093	923376.907	0.	PAL	C18	28	41	41	Google Map	CANAL C18 WEST, HEADWATER
☐	C18W_R	C18W	265219.209	801442.158	902277.093	923376.907	0.	PAL	C18	28	41	41	Google Map	CANAL C18 WEST, RAINFALL
☐	C18W_T	C18W	265219.209	801442.158	902277.093	923376.907	0.	PAL	C18	28	41	41	Google Map	CANAL C18 WEST, TAILWATER
☐	C18W_W	C18W	265219.209	801442.158	902277.093	923376.907	0.	PAL	C18	28	41	41	Google Map	Weir 200 ft downstream of SR710 on cana
☐	C18	C18	265219.758	801443.945	902114.843	923431.276	.03	PAL	C18	28	41	41	Google Map	CANAL C18 WEST AT SR710 NR JUPITER,FL
☐	C18SR710	C18	265219.757	801443.946	902114.843	923431.276	.03	PAL	C18	28	41	41	Google Map	AT THE POINT WHERE C-18 PASSES UNDE
☐	PB-1525	PB1525	265259.073	801233.561	913897.278	927473.167	2.33	PAL	C18	24	41	41	Google Map	PB1525, GROUNDWATER MONITORING SIT
☐	PB-1524	PB-1524	265444.204	801519.159	898840.357	937998.302	2.85	PAL	JUPITER	16	41	41	Google Map	PB -1524
☐	PB-1553	PB-1553	265444.204	801519.159	898840.357	937998.302	2.85	PAL	JUPITER	16	41	41	Google Map	PB -1553
☐	PB-1552	PB-1552	265444.21	801519.17	898839.514	937998.735	2.85	PAL	JUPITER	16	41	41	Google Map	PB -1552
☐	PBPOC_PW	PB_POC	265418.463	801627.861	892636	935362.768	2.92	PAL	C18	18	41	41	Google Map	PUMPING WELL FOR PALM BEACH PARK OF
☐	PBPOC_OW	PB_POC	265418.463	801627.861	892636	935362.768	2.92	PAL	C18	18	41	40	Google Map	PALM BEACH PARK OF COMMERCE
☐	PB-1550	USGS_14	265135.21	801726.17	887449.456	918848.639	2.93	PAL	C18	6	42	41	Google Map	USGS WELL #14 SFWMD ID #099-22
☐	PB-1551	USGS_14	265135.221	801726.178	887448.82	918849.224	2.93	PAL	C18	6	42	41	Google Map	USGS SITE 14
☐	PB-688R_G	PB-688R	265446.204	801355.157	906443.42	938245.723	2.93	PAL	JUPITER	11	41	41	Google Map	PB-688R
☐	PB-1109		265116.211	801730.163	887098.698	916927.696	3.12	PAL	C18	6	42	41	Google Map	MONITOR SITE FOR WATER QUALITY ASSU
☐	PB-0715	PB715	265115.751	801730.056	887108.586	916881.241	3.12	PAL	C18	6	42	41	Google Map	MONITOR WELL IN J.W. CORBETT AREA, N
☐	PB-0716		265115.211	801730.163	887099.261	916826.723	3.13	PAL	C18	36	41	40	Google Map	PB-716 [HOWDI:265114080173102]
☐	PB-716_G	PB-716	265115.211	801730.163	887099.261	916826.723	3.13	PAL	C18	36	41	40	Google Map	PB-716 [HOWDI:265114080173102]
☐	PB-1085		265028.214	801156.154	917380.767	912261.063	3.55	PAL	C18	1	42	41	Google Map	MONITOR WELL AT NW CORNER OF PGA BL
☐	PB-563_G	PB-563	265028.214	801155.154	917471.351	912261.635	3.56	PAL	C18	4	2	1	Google Map	PB-563

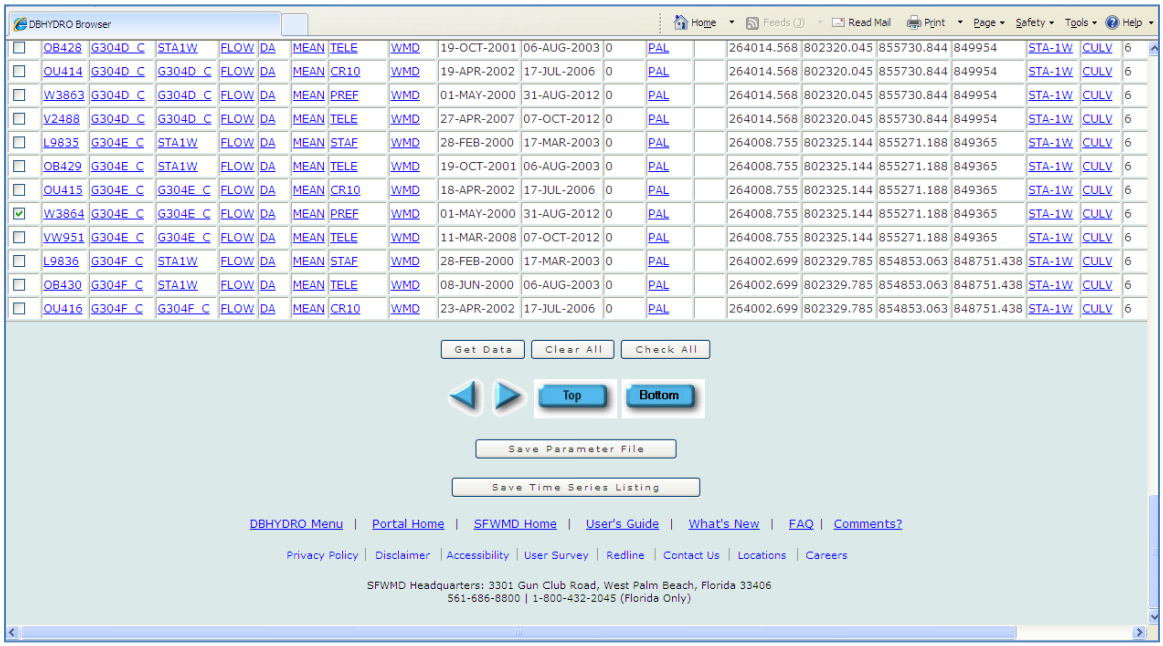
Warning: Station locations are determined by a number of different methods, each with its own inherent accuracy capabilities. Therefore, some coordinates and distances may only be approximate.

Click on the "Back" button twice in your browser to return to the Time Series Listing page where you can now select one or more data sets for display.

Note that data sets for which there is not yet any data are not selectable. That is, there is no check box available in the Get Data column.

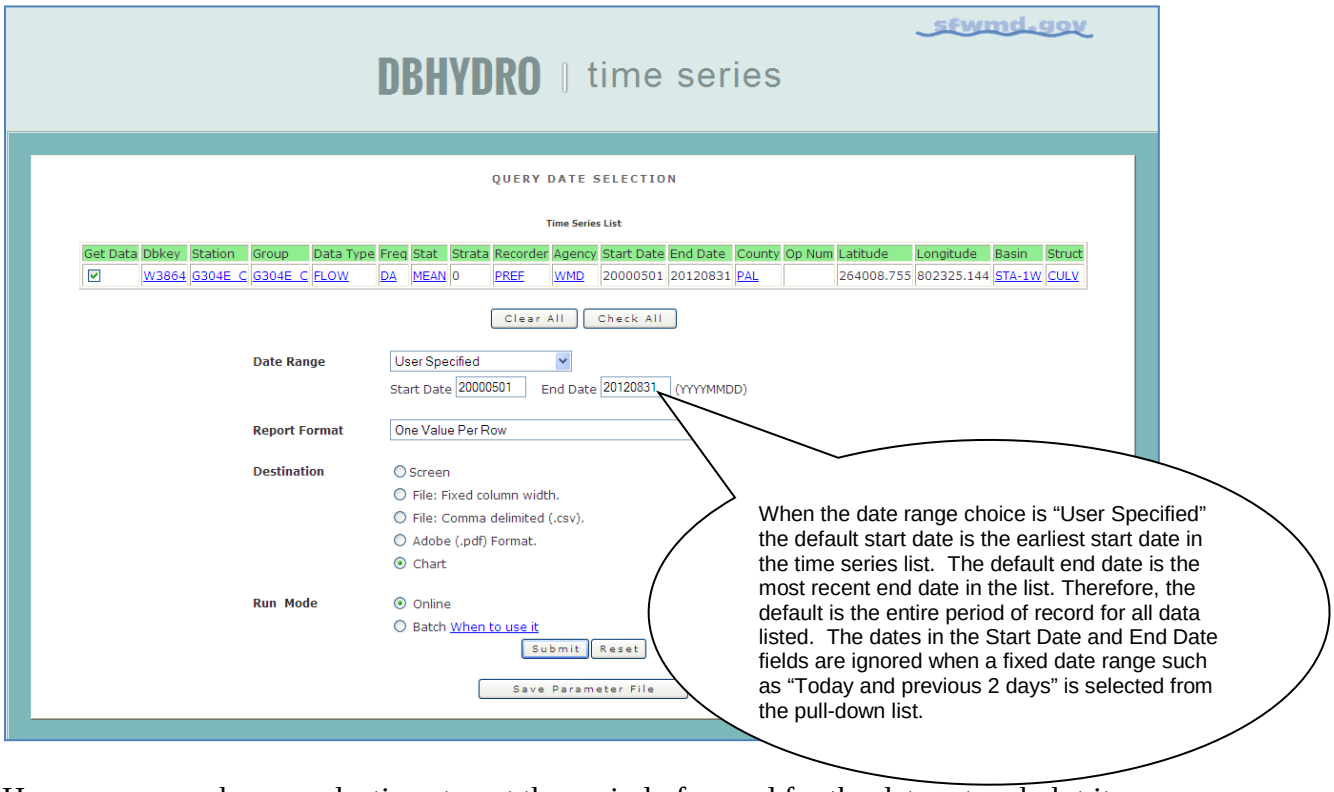
In this example we have indicated we want the data for "G304E_C". We have selected the data set with recorder equal to "PREF". "PREF is an abbreviation for "preferred". The data is preferred because such data sets undergo an additional level of quality assurance by engineering staff. Whenever "PREF" data is available for your date range of interest it should be used.

Up to 100 rows of metadata will be displayed on each page. If data from different pages are desired it must be fetched separately from one another. Alternatively, one could refine the query so fewer metadata rows are returned such that they all fit on one page. Scroll down and click on the Get Data button that is displayed at the bottom of the screen.



Take notice of the Clear All and Check All buttons that can be used to expedite the time series selection process. Clear All has the effect of removing check marks from all checked time series. Check All has the effect of selecting, or checking all the time series data records. Notice that data sets that have no data are not selectable. A data set may have no data because it is registered in preparation of receiving data but has not received any data yet. Again, a parameter file may be saved at this point in time also.

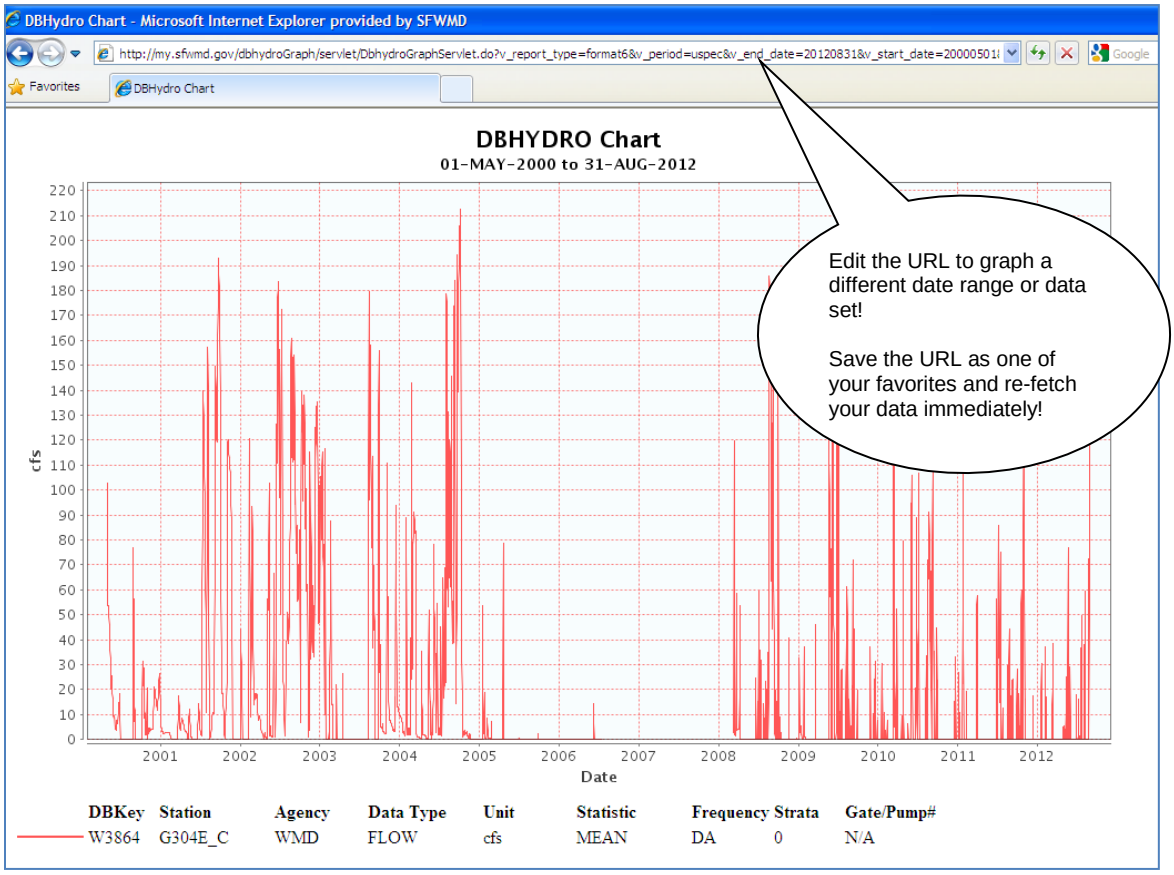
Once the Get Data button is pressed the date range selection and format selection screen is now displayed:



Here we may make our selections to get the period of record for the data set and plot it on a chart. As indicated above, the appropriate "radio buttons" have been selected. There are thirteen different output report formats (names) and five different output destinations. Note: Not all combinations of Report Format and Destination are valid but the user is informed of invalid combinations when attempted.

Charting/Graphing

Clicking on the "Chart" button under “Destination” results in the following graph:

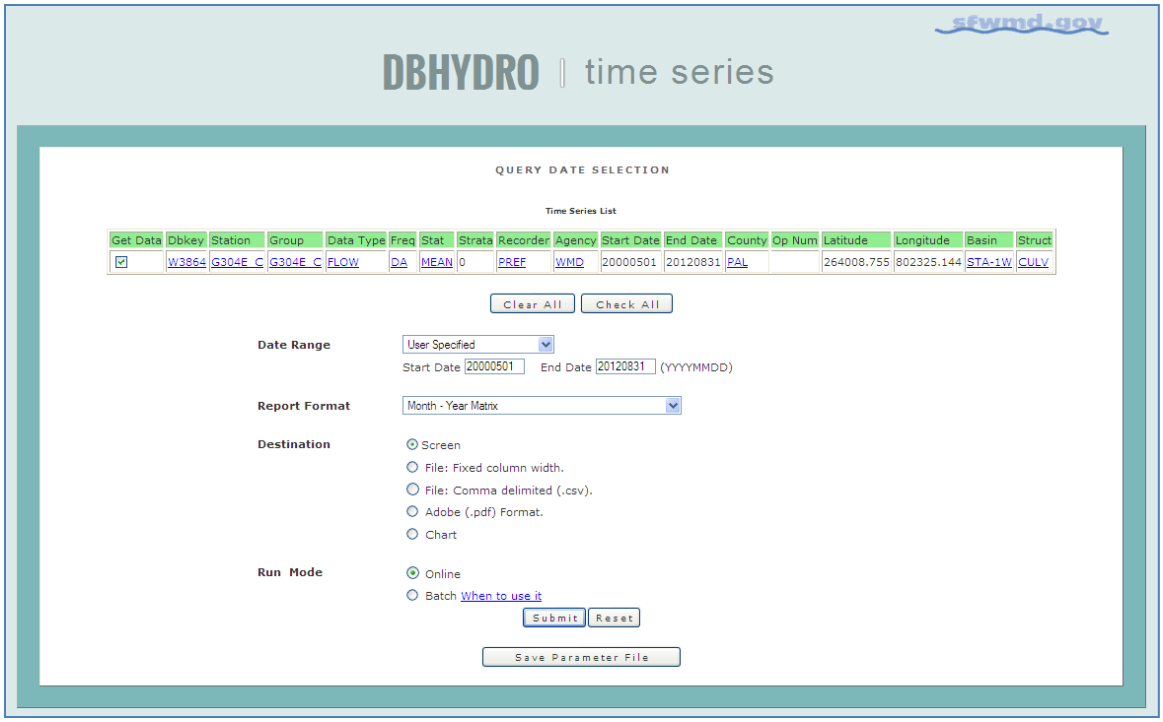


This graph is generated directly from the database “on-the-fly” ensuring your results are always up-to-date with what is available. The graph may be printed to any available printer. Make sure to print the graph in landscape mode.

One may simply edit the resulting chart URL date text to regenerate a graph covering a different date range or return to the previous screen and enter dates. Chart URLs may be bookmarked and reused directly from your web browser without having to navigate the DBHYDRO menu. Subsequent invocations of a chart URL will always get the current state of the data. More on this feature is in the web services section of this user guide.

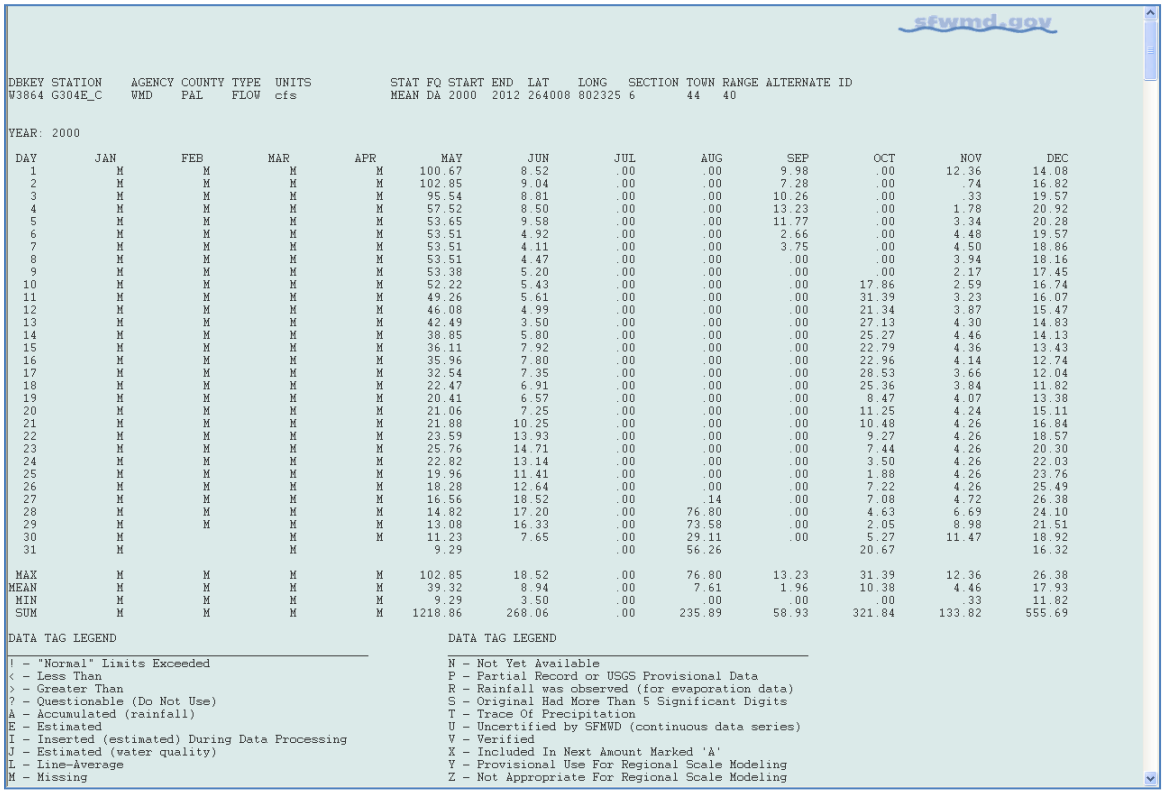
Multiple time series and multiple axes are supported.

Clicking on the "Back" button on your browser and selecting the tabular data option allows us to choose several formats. The example below indicates the user is ready to retrieve data in a “one year per page” tabular report.



Month-Year Matrix fits one year of data to a single page in matrix format in which the columns are months of the year and the rows are days of the month. One Value Per Row format is a single column output in which each value appears on its own line. Multiple Daily Values Per Row format is a multi-column output in which the values for multiple time series appear on a single line corresponding to a single date.

This is what you get with one year to a page. Each month is a separate column and each day is a separate row. Each year is a separate section in the output. Monthly summary statistics are at the bottom of each year.



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DBKEY STATION AGENCY COUNTY TYPE UNITS STAT FQ START END LAT LONG SECTION TOWN RANGE ALTERNATE ID
W3864 G304E_C WMD PAL FLOW cfs MEAN DA 2000 2012 264008 802325 6 44 40

YEAR: 2000

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	M	M	M	M	100.67	8.52	.00	.00	9.98	.00	12.36	14.08
2	M	M	M	M	102.85	9.04	.00	.00	7.28	.00	.74	16.82
3	M	M	M	M	95.54	8.81	.00	.00	10.26	.00	.33	19.57
4	M	M	M	M	57.52	8.50	.00	.00	13.23	.00	1.78	20.92
5	M	M	M	M	53.65	9.58	.00	.00	11.77	.00	3.34	20.28
6	M	M	M	M	53.51	4.92	.00	.00	2.66	.00	4.48	19.57
7	M	M	M	M	53.51	4.11	.00	.00	3.75	.00	4.50	18.86
8	M	M	M	M	53.51	4.47	.00	.00	.00	.00	3.94	18.16
9	M	M	M	M	53.38	5.20	.00	.00	.00	.00	2.17	17.45
10	M	M	M	M	52.22	5.43	.00	.00	.00	17.86	2.59	16.74
11	M	M	M	M	49.26	5.61	.00	.00	.00	31.39	3.23	16.07
12	M	M	M	M	46.08	4.99	.00	.00	.00	21.34	3.87	15.47
13	M	M	M	M	42.49	3.50	.00	.00	.00	27.13	4.30	14.83
14	M	M	M	M	38.85	5.80	.00	.00	.00	25.27	4.46	14.13
15	M	M	M	M	36.11	7.92	.00	.00	.00	22.79	4.36	13.43
16	M	M	M	M	35.96	7.80	.00	.00	.00	22.96	4.14	12.74
17	M	M	M	M	32.54	7.35	.00	.00	.00	28.53	3.66	12.04
18	M	M	M	M	22.47	6.91	.00	.00	.00	25.36	3.84	11.82
19	M	M	M	M	20.41	6.57	.00	.00	.00	8.47	4.07	13.38
20	M	M	M	M	21.06	7.25	.00	.00	.00	11.25	4.24	15.11
21	M	M	M	M	21.88	10.25	.00	.00	.00	10.48	4.26	16.84
22	M	M	M	M	23.59	13.93	.00	.00	.00	9.27	4.26	18.57
23	M	M	M	M	25.76	14.71	.00	.00	.00	7.44	4.26	20.30
24	M	M	M	M	22.82	13.14	.00	.00	.00	3.50	4.26	22.03
25	M	M	M	M	19.96	11.41	.00	.00	.00	1.88	4.26	23.76
26	M	M	M	M	18.28	12.64	.00	.00	.00	7.22	4.26	25.49
27	M	M	M	M	16.56	18.52	.00	.14	.00	7.08	4.72	26.38
28	M	M	M	M	14.82	17.20	.00	76.80	.00	4.63	6.69	24.10
29	M	M	M	M	13.08	16.33	.00	73.58	.00	2.05	8.98	21.51
30	M		M	M	11.23	7.65	.00	29.11	.00	5.27	11.47	18.92
31	M		M		9.29		.00	56.26		20.67		16.32
MAX	M	M	M	M	102.85	18.52	.00	76.80	13.23	31.39	12.36	26.38
MEAN	M	M	M	M	39.32	8.94	.00	7.61	1.96	10.38	4.46	17.93
MIN	M	M	M	M	9.29	3.50	.00	.00	.00	.00	.33	11.82
SUM	M	M	M	M	1218.86	268.06	.00	235.89	58.93	321.84	133.82	555.69

DATA TAG LEGEND

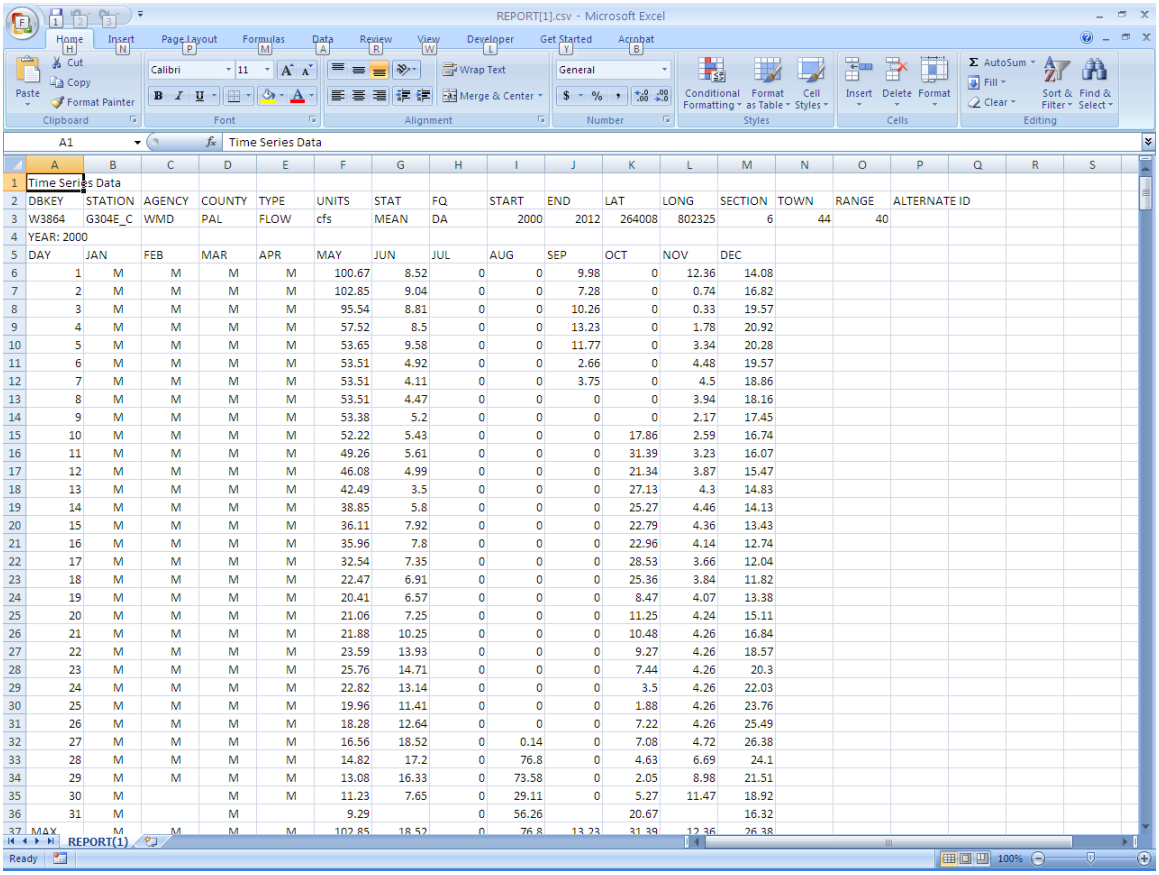
! – "Normal" Limits Exceeded
< – Less Than
> – Greater Than
? – Questionable (Do Not Use)
A – Accumulated (rainfall)
E – Estimated
I – Inserted (estimated) During Data Processing
J – Estimated (water quality)
L – Line-Average
M – Missing

DATA TAG LEGEND

N – Not Yet Available
P – Partial Record or USGS Provisional Data
R – Rainfall was observed (for evaporation data)
S – Original Had More Than 5 Significant Digits
T – Trace Of Precipitation
U – Uncertified by SFWMD (continuous data series)
V – Verified
X – Included In Next Amount Marked 'A'
Y – Provisional Use For Regional Scale Modeling
Z – Not Appropriate For Regional Scale Modeling

This output can be saved explicitly as a .txt file using File →Save As or one may choose Edit →Select All and paste the information into another application.

The file may also be saved in comma separated variable (.csv) format and opened in a program such as Notepad or a spreadsheet program like Microsoft Excel:



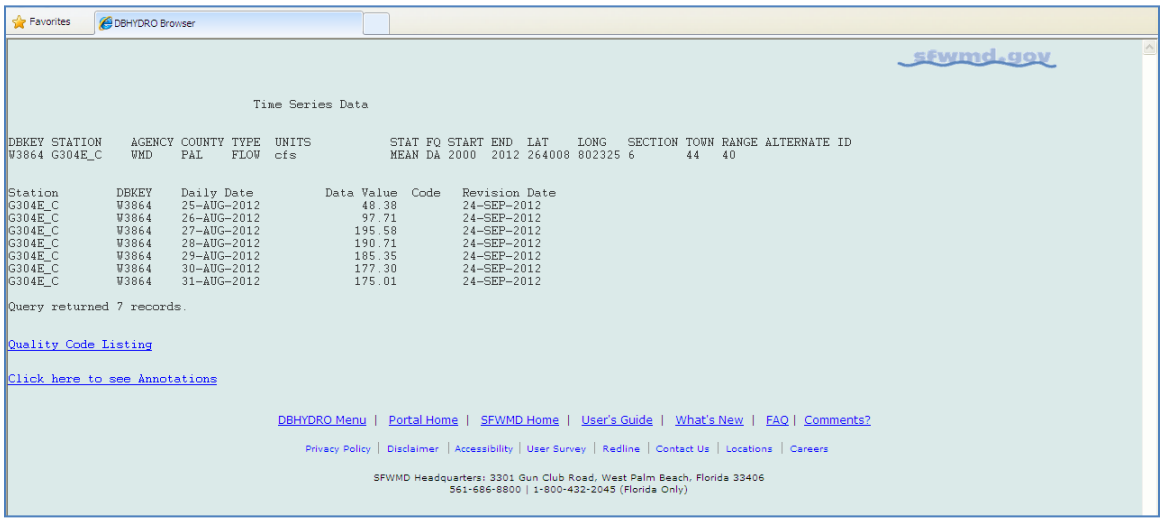
REPORT[1].csv - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Time Series Data																		
2	DBKEY	STATION	AGENCY	COUNTY	TYPE	UNITS	STAT	FQ	START	END	LAT	LONG	SECTION	TOWN	RANGE	ALTERNATE ID			
3	W3864	G304E_C	WMD	PAL	FLOW	cfs	MEAN	DA	2000	2012	264008	802325	6	44	40				
4	YEAR: 2000																		
5	DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC						
6	1	M	M	M	M	100.67	8.52	0	0	9.98	0	12.36	14.08						
7	2	M	M	M	M	102.85	9.04	0	0	7.28	0	0.74	16.82						
8	3	M	M	M	M	95.54	8.81	0	0	10.26	0	0.33	19.57						
9	4	M	M	M	M	57.52	8.5	0	0	13.23	0	1.78	20.92						
10	5	M	M	M	M	53.65	9.58	0	0	11.77	0	3.34	20.28						
11	6	M	M	M	M	53.51	4.92	0	0	2.66	0	4.48	19.57						
12	7	M	M	M	M	53.51	4.11	0	0	3.75	0	4.5	18.86						
13	8	M	M	M	M	53.51	4.47	0	0	0	0	3.94	18.16						
14	9	M	M	M	M	53.38	5.2	0	0	0	0	2.17	17.45						
15	10	M	M	M	M	52.22	5.43	0	0	0	17.86	2.59	16.74						
16	11	M	M	M	M	49.26	5.61	0	0	0	31.39	3.23	16.07						
17	12	M	M	M	M	46.08	4.99	0	0	0	21.34	3.87	15.47						
18	13	M	M	M	M	42.49	3.5	0	0	0	27.13	4.3	14.83						
19	14	M	M	M	M	38.85	5.8	0	0	0	25.27	4.46	14.13						
20	15	M	M	M	M	36.11	7.92	0	0	0	22.79	4.36	13.43						
21	16	M	M	M	M	35.96	7.8	0	0	0	22.96	4.14	12.74						
22	17	M	M	M	M	32.54	7.35	0	0	0	28.53	3.66	12.04						
23	18	M	M	M	M	22.47	6.91	0	0	0	25.36	3.84	11.82						
24	19	M	M	M	M	20.41	6.57	0	0	0	8.47	4.07	13.38						
25	20	M	M	M	M	21.06	7.25	0	0	0	11.25	4.24	15.11						
26	21	M	M	M	M	21.88	10.25	0	0	0	10.48	4.26	16.84						
27	22	M	M	M	M	23.59	13.93	0	0	0	9.27	4.26	18.57						
28	23	M	M	M	M	25.76	14.71	0	0	0	7.44	4.26	20.3						
29	24	M	M	M	M	22.82	13.14	0	0	0	3.5	4.26	22.03						
30	25	M	M	M	M	19.96	11.41	0	0	0	1.88	4.26	23.76						
31	26	M	M	M	M	18.28	12.64	0	0	0	7.22	4.26	25.49						
32	27	M	M	M	M	16.56	18.52	0	0.14	0	7.08	4.72	26.38						
33	28	M	M	M	M	14.82	17.2	0	76.8	0	4.63	6.69	24.1						
34	29	M	M	M	M	13.08	16.33	0	73.58	0	2.05	8.98	21.51						
35	30	M		M	M	11.23	7.65	0	29.11	0	5.27	11.47	18.92						
36	31	M		M		9.29		0	56.26		20.67		16.32						
37	MAX	M	M	M	M	102.85	18.52	0	76.8	13.23	31.39	12.36	26.38						

REPORT(1) | Ready | 100%

When saving the file, your operating system (e.g. Microsoft Windows) will know that you want this file associated with Microsoft Excel if it is saved with a .csv extension.

An example of One Value Per Row format is as follows:



Favorites | DBHYDRO Browser

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Time Series Data

DBKEY	STATION	AGENCY	COUNTY	TYPE	UNITS	STAT	FQ	START	END	LAT	LONG	SECTION	TOWN	RANGE	ALTERNATE ID
W3864	G304E_C	WMD	PAL	FLOW	cfs	MEAN	DA	2000	2012	264008	802325	6	44	40	

Station	DBKEY	Daily Date	Data Value	Code	Revision Date
G304E_C	W3864	25-AUG-2012	48.38		24-SEP-2012
G304E_C	W3864	26-AUG-2012	97.71		24-SEP-2012
G304E_C	W3864	27-AUG-2012	195.58		24-SEP-2012
G304E_C	W3864	28-AUG-2012	190.71		24-SEP-2012
G304E_C	W3864	29-AUG-2012	185.35		24-SEP-2012
G304E_C	W3864	30-AUG-2012	177.30		24-SEP-2012
G304E_C	W3864	31-AUG-2012	175.01		24-SEP-2012

Query returned 7 records.

Quality Code Listing

Click here to see Annotations

DBHYDRO Menu | Portal Home | SFWMD Home | User's Guide | What's New | FAQ | Comments?

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SFWMD Headquarters: 3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800 | 1-800-432-2045 (Florida Only)

Links to quality codes and data processing annotations made during the quality assurance process are located at the bottom of the listing.

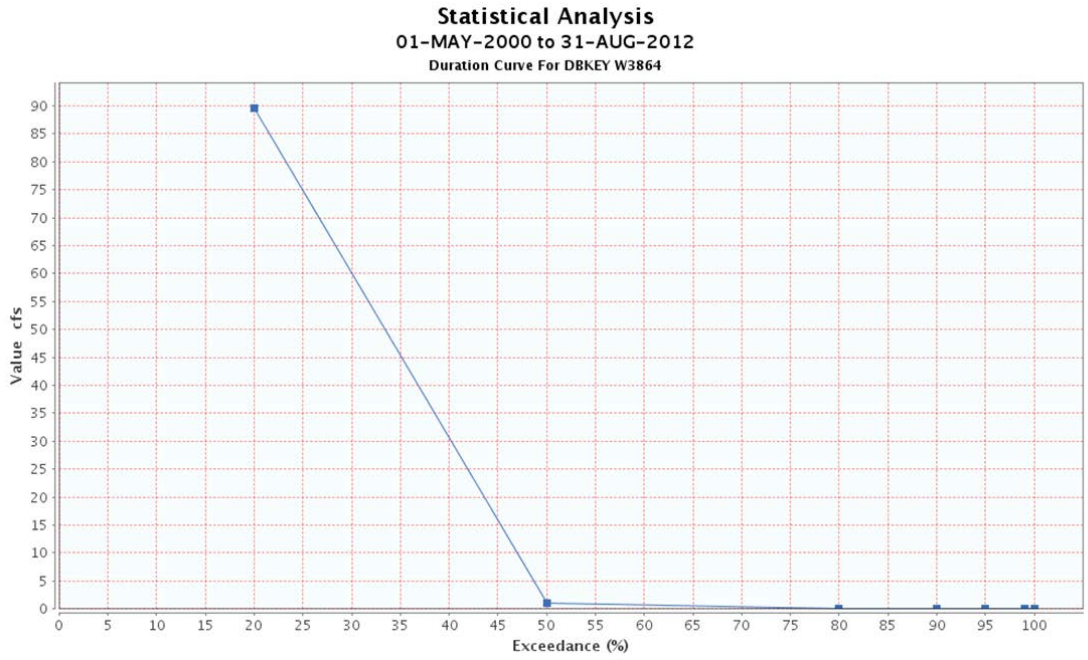
Multiple Daily Values Per Row format (not shown) provides for multiple simultaneous time series values to be displayed on the same row (date/time stamp). Users can chart multiple time series in the browser or with bit of additional manual effort the user may graph multiple time series on the same graph in Excel.

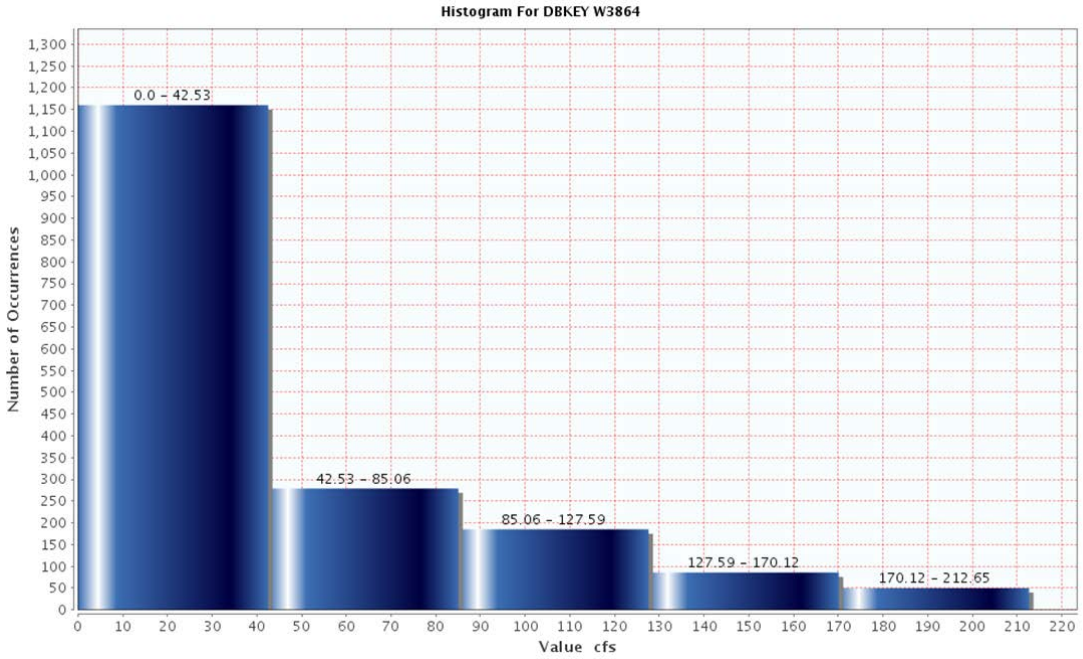
SHEF .E Format (not shown) provides data in Standard Hydrologic Exchange (SHEF) .E Format. The Standard Hydrologic Exchange Format (SHEF) has been developed jointly by the National Weather Service (NWS) and by the Corps of Engineers and is a documented set of rules for coding of data in a form for both visual and computer recognition.

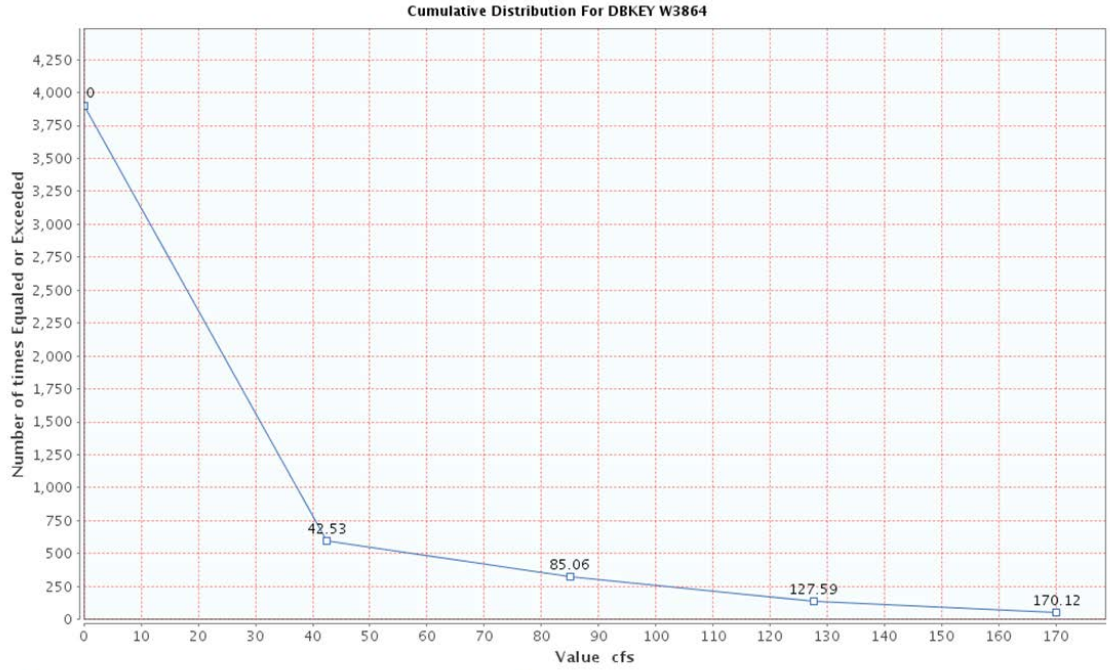
You can also run special statistical summary reports:

- Duration Curve, Histogram, and Cumulative Distribution
- Daily Norms
- Month-by-Month Summary
- Composite Monthly Summary
- Year-by-Year Summary
- Period of Record Summary
- Maximum and Minimum Values and Their Dates

Charts of the duration curve, histogram, and cumulative distribution statistical analyses can also be generated by selecting the corresponding report format:

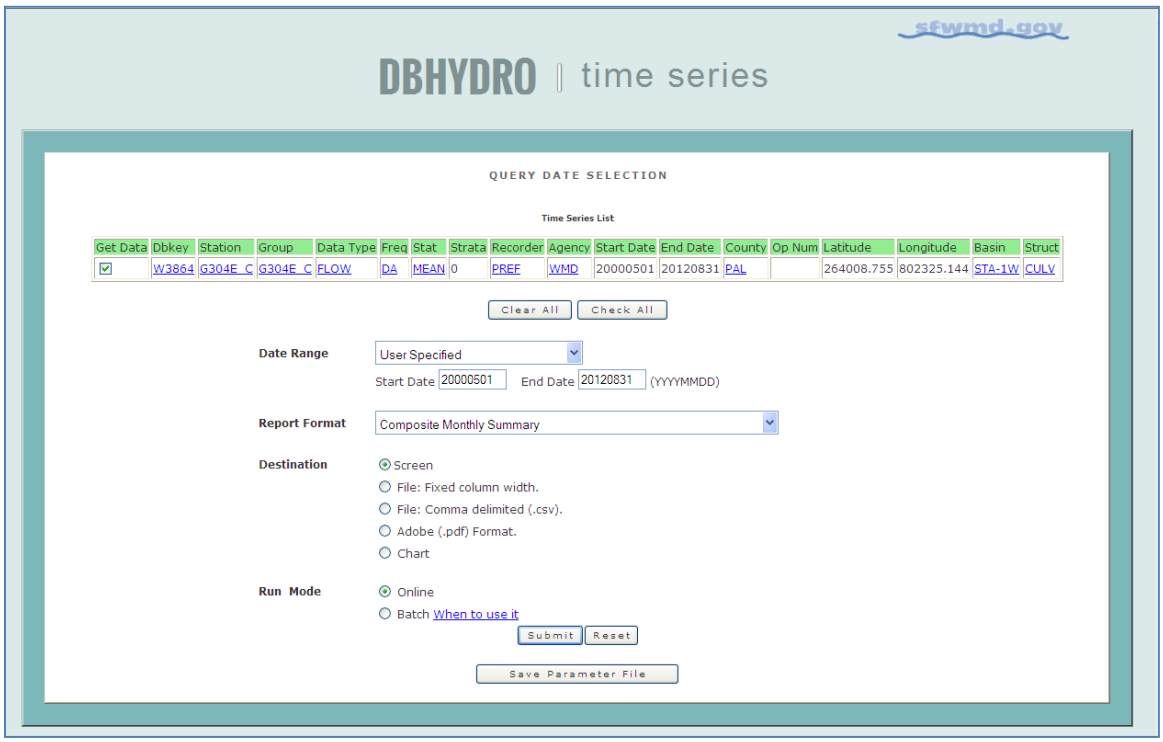




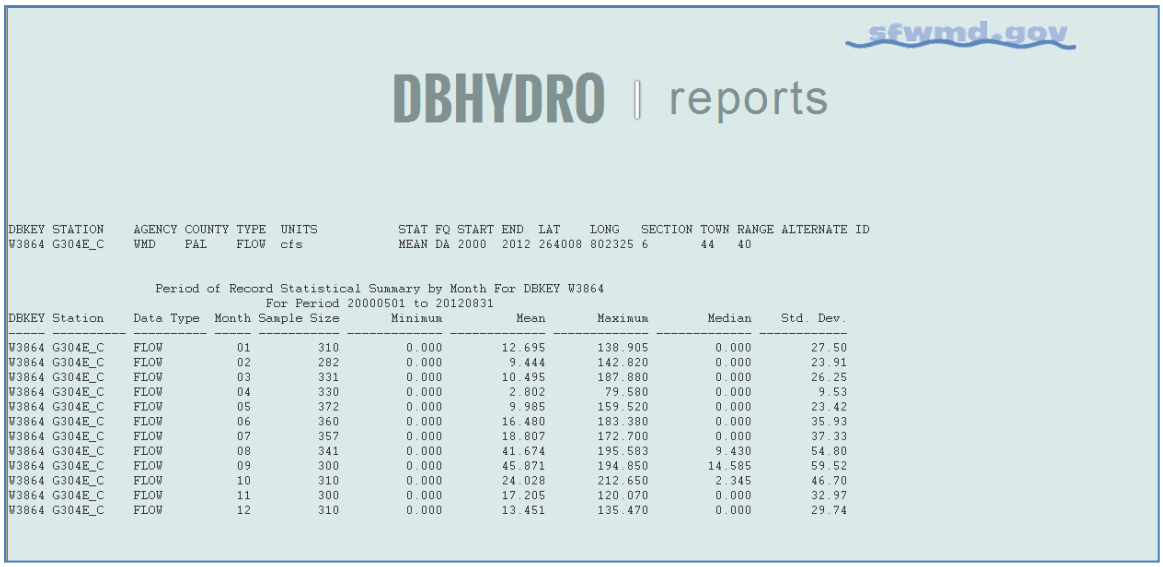


DBKey	Station	Agency	Data Type	Unit	Statistic	Frequency	Strata	Gate/Pump#
W3864	G304E_C	WMD	FLOW	cfs	MEAN	DA	0	N/A

An example of a composite monthly summary for the entire period of record for the "PREF"erred flow data at G304E_C is shown below. PREF data is data that has undergone a second level of QA/QC by hydrologists or engineers. PREF data, whenever available, should be used to the exclusion of all other data.



This is what you get:



This report can be very handy, especially with longer periods of record, to detect seasonal trends in the data.

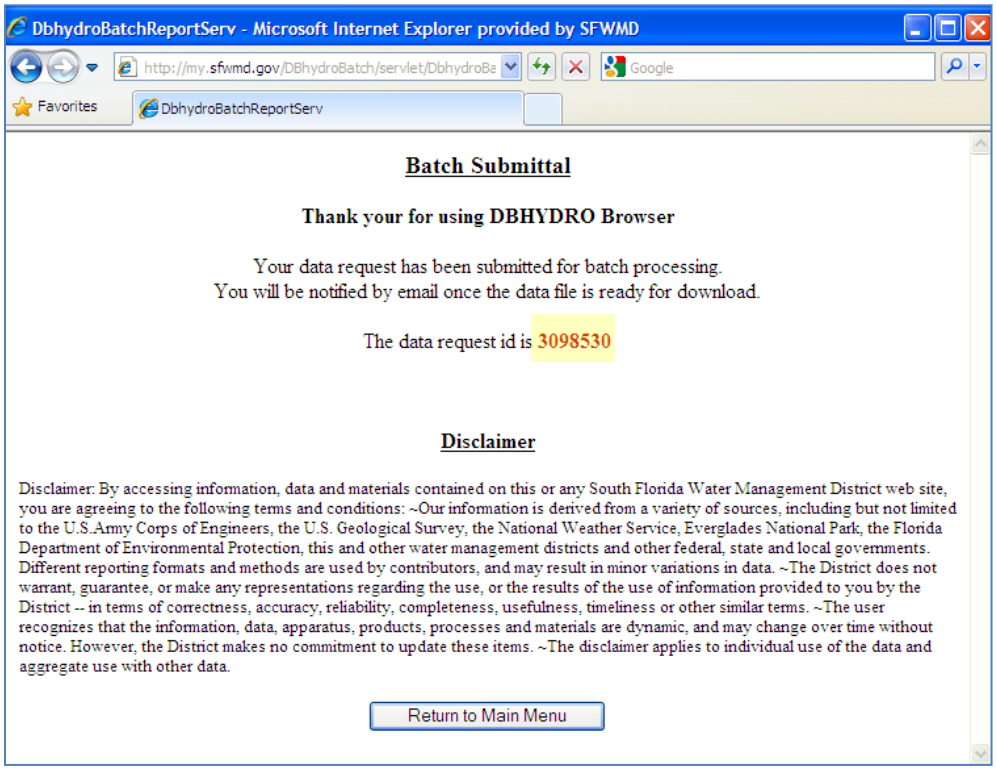
Users are encouraged to examine all the report formats and outputs.

Batch Mode

Choosing Batch Mode as the Run Mode allows you to retrieve large data sets in an "off-line manner. That is you do not have to wait at the computer "twiddling your thumbs" waiting for the data. Any retrieval that takes longer than five minutes to run interactively will be subject to a standard "time out" by the system and will need to be run as a batch submittal. Most batch jobs are executed immediately.

Enter your email address (carefully) and press Submit. The data request is submitted. You will then receive an email when the data request is done. The email has a hyperlink in it that will allow you to download the file via FTP.

This page is the confirmation page your request has been received:



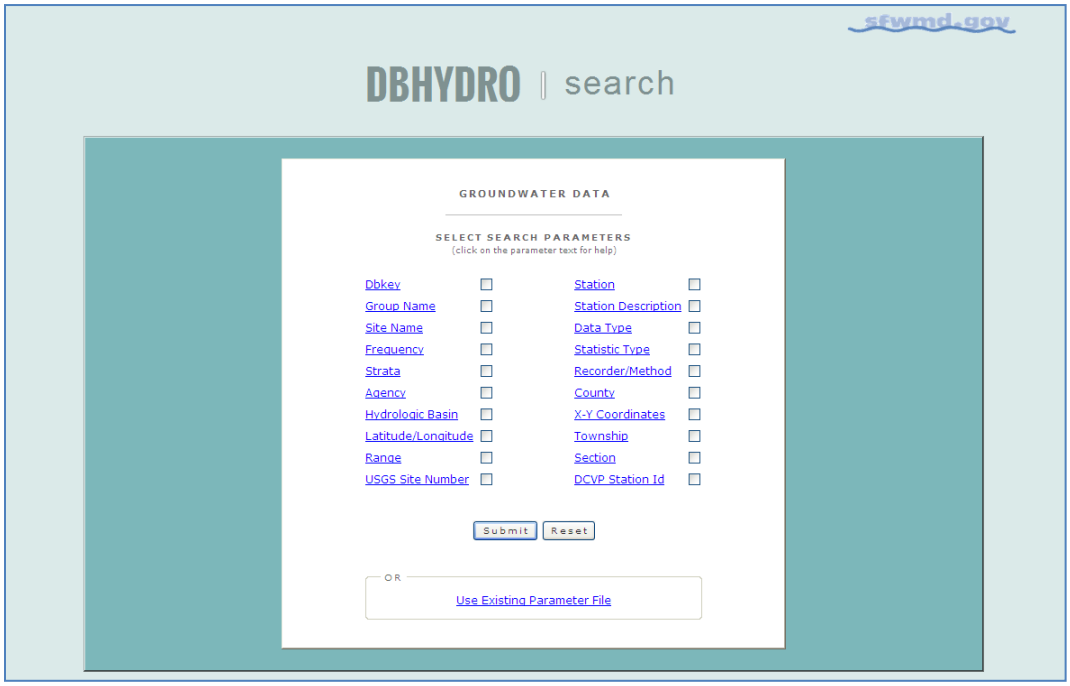
Please make note of the data request id in the event of a problem with email notification. You should receive an email similar to the following:

```
From: datamgmt
Sent: Thursday, March 28, 2013 9:56 AM
To: Doe, John
Subject: DBHYDRO batch request 3098530

Your data request 3098530 is processed and ready for download.
Your search criteria for this request was:
Enter value for request_id: 3098530

start_date      : 20070101
end_date        : 20080930
dbkey           : 00319
station         : s5a%
category        : SW
Please click on hyper link below to get your file.
http://my.sfwmd.gov/dbhydro_files/dbhydro_3098530.zip
```

If your email is not received within 60 minutes please call the SFWMD IT Help Desk at 561-682-6080. Your file may have been created and merely be waiting for you to download it. You may have success downloading the file by editing and invoking the standard download URL by placing your data request id immediately before the .zip: e.g. `http://my.sfwmd.gov/dbhydro_files/dbhydro_3098530.zip`

Groundwater Data

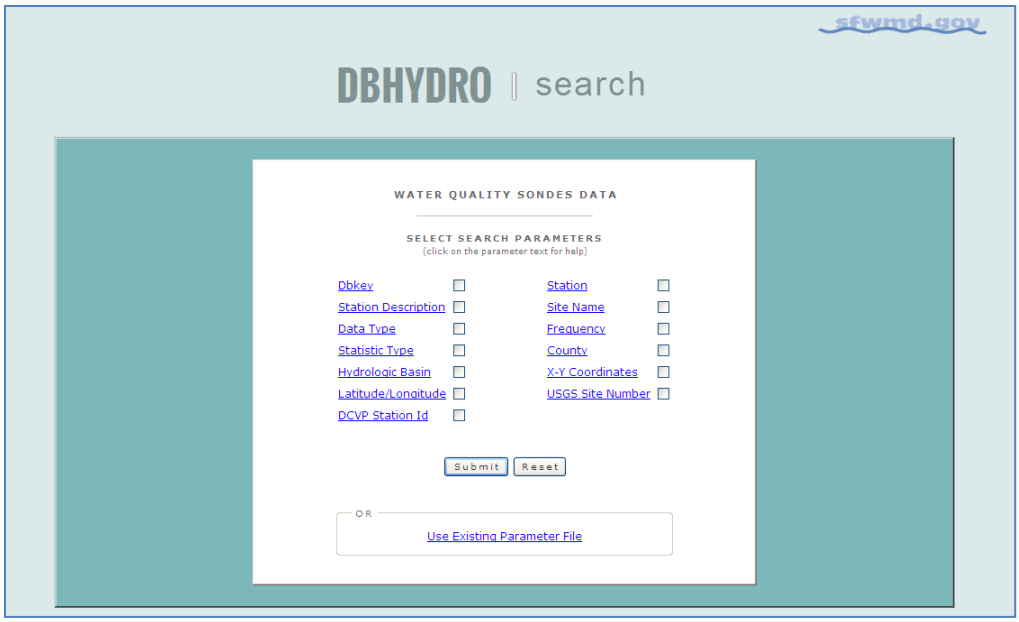
Selecting "Groundwater Data" from the main menu leads to the following screen:



You will notice there is a slight difference in the search parameters that are available for groundwater data. The search parameters are different because groundwater data, while related to surface water data, is a different discipline.

WQ Sondes (Continuous) Data

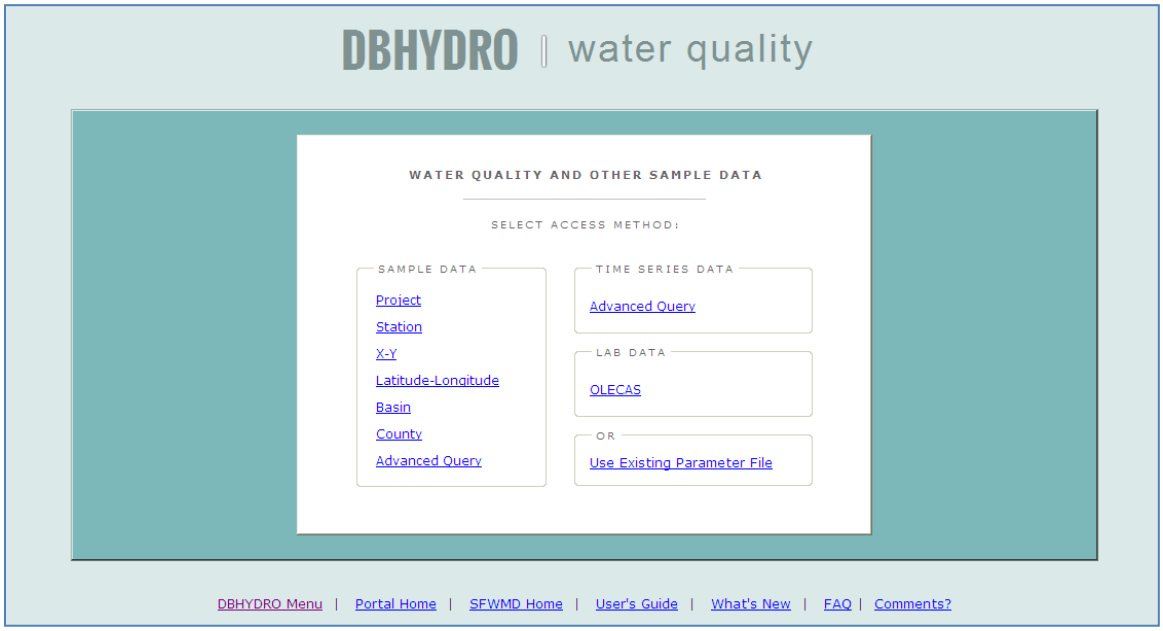
Checking the *WQ Sondes* check box from the main menu takes you to the following page:



Data from continuously deployed water quality probes (sondes) is accessed here. This data is also accessible from the Water Quality Data menu → Advanced Query

Water Quality Sample Data

Selecting "Get Sample Data" from the main menu leads to the following screen:

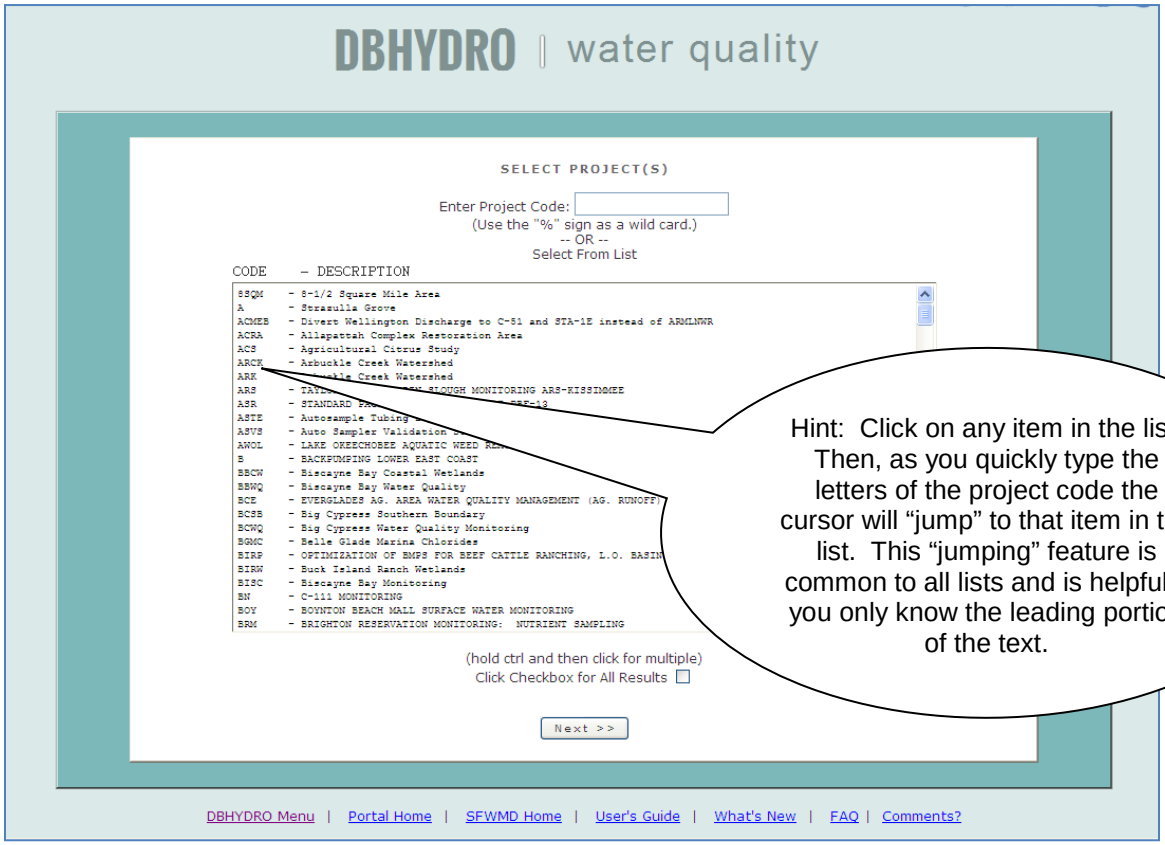


Most water quality queries have similar characteristics so the interface for water quality has been designed to facilitate the most frequently encountered queries.

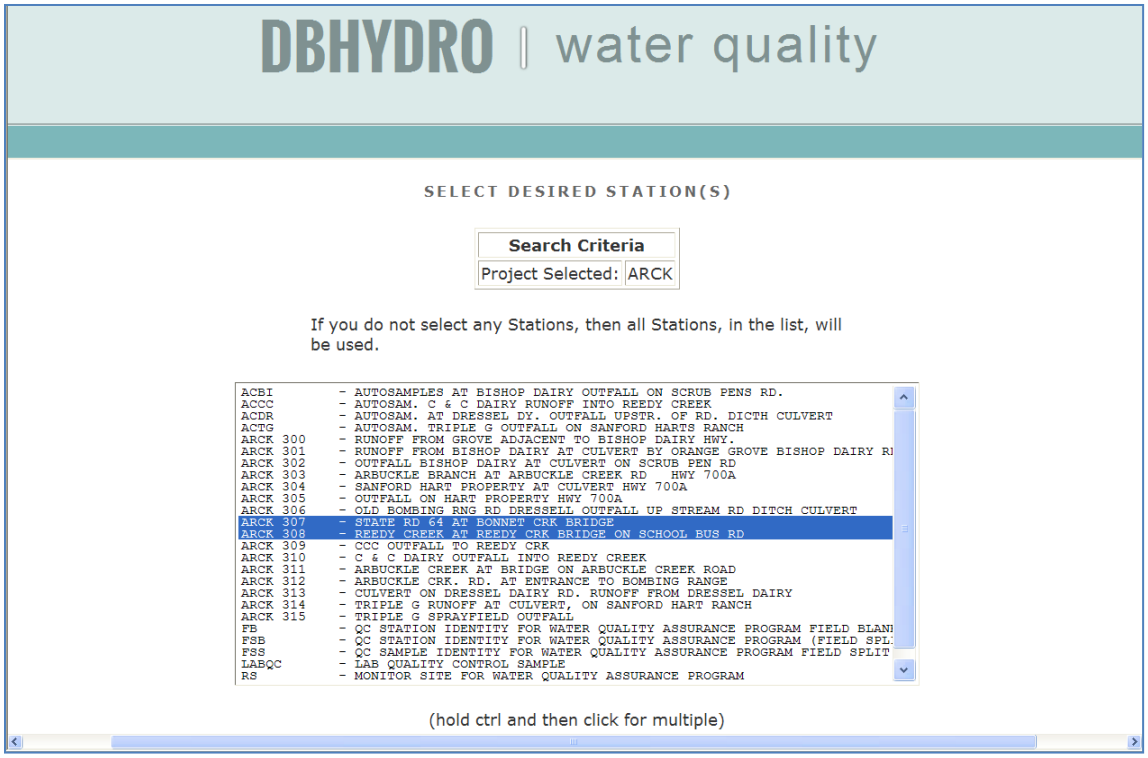
An Advanced Query option is available for access to continuously measured water quality parameters (sondes) providing the user experience offered by the Hydrologic & Physical Data interface.

The Lab Data On-Line Environmental Chemistry Analyst System (OLECAS) is available to network-authenticated users for reports on recently analyzed data and its comparison to historical trends. OLECAS can help detect curiousities in data that may be investigated for possible analytical rework before the expiration of sample holding time. Holding times are the length of time a sample can be stored after collection and prior to analysis without significantly affecting the analytical results.

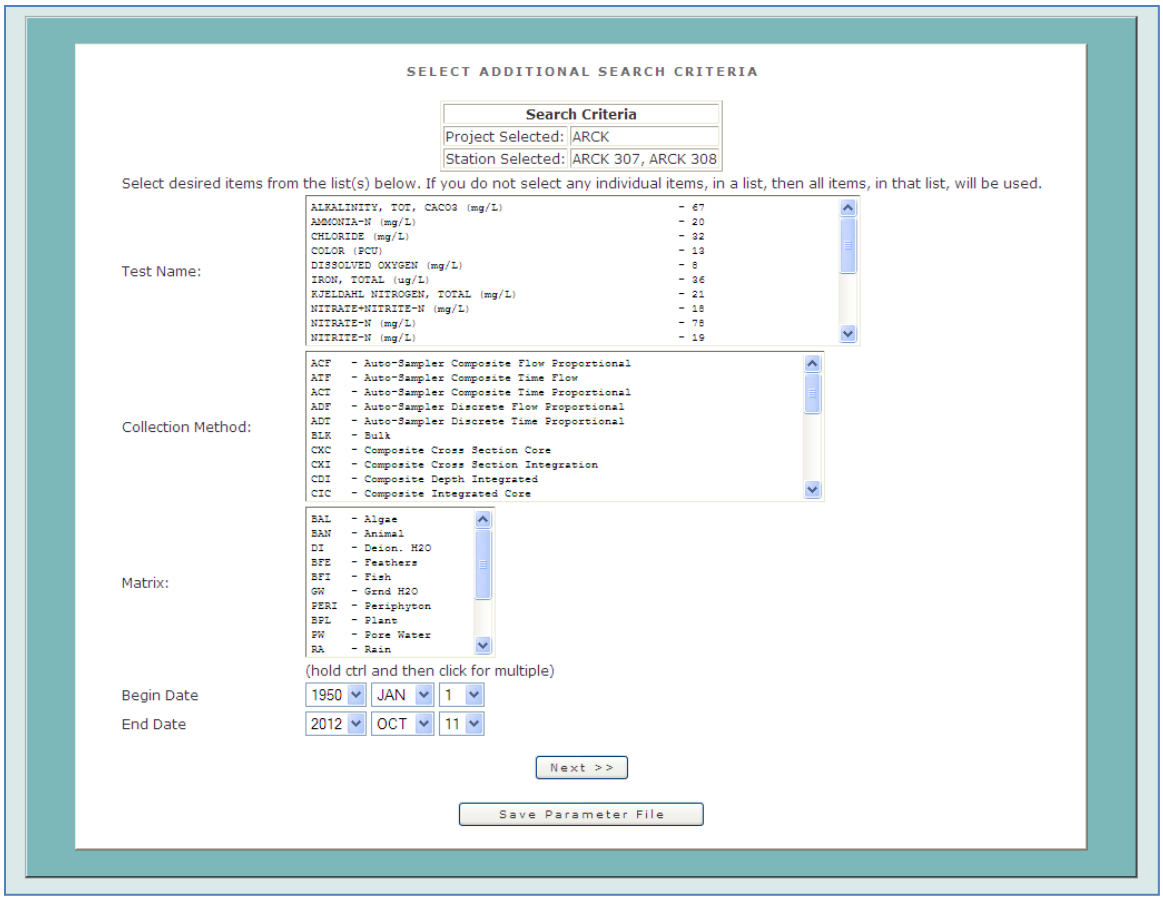
A typical project-based query is described here. Selecting Project from the water quality menu leads to this screen in which you can type in a project code or select one or more project codes from the list of values and then select Next >> .



A list of all the stations for which data has been collected under the given project(s) is provided. Stations of interest may be selected. Select Next >> .



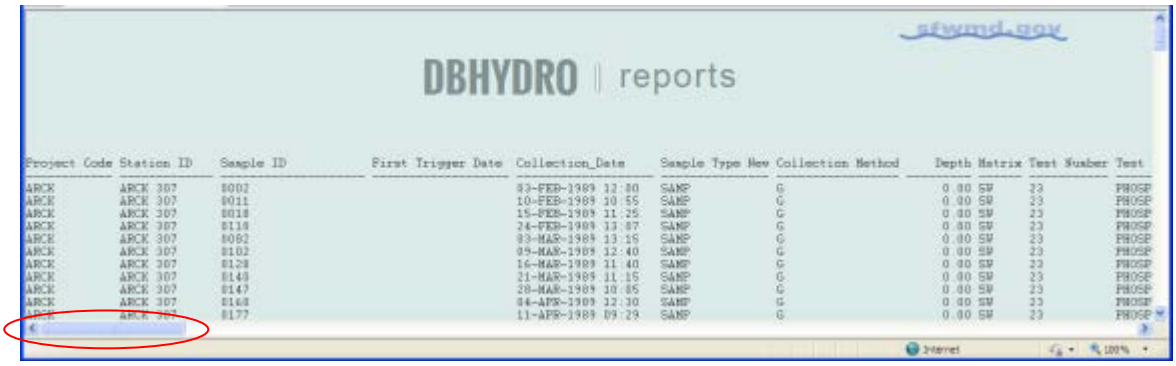
A list of test names (and their test numbers), collection methods, and Matrices is presented. Select those upon you which to filter your results. Provide a date range for your query. The begin date of 1950 is merely a placeholder to ensure the entire period of record will be ı Next >> ı by default. Select .



Choose Full Report w/o Flagged Results from the list of available reporting types:

Note: Full Report is “full” because it includes all attributes including valuable sample-level and result-level comments. Full Report w/o Flagged Results does not include all rows. To obtain data considered “flagged” for exclusion in some legally mandated agency reports please use the Full Report Flagged Results.

and the following report is returned to your web browser!!!



This output has many columns as indicated by the presence of scroll bar at the bottom of the screen. Codes for remarks, validation level, sampling purpose, and data investigation are available via hyperlinks at the bottom of each report.

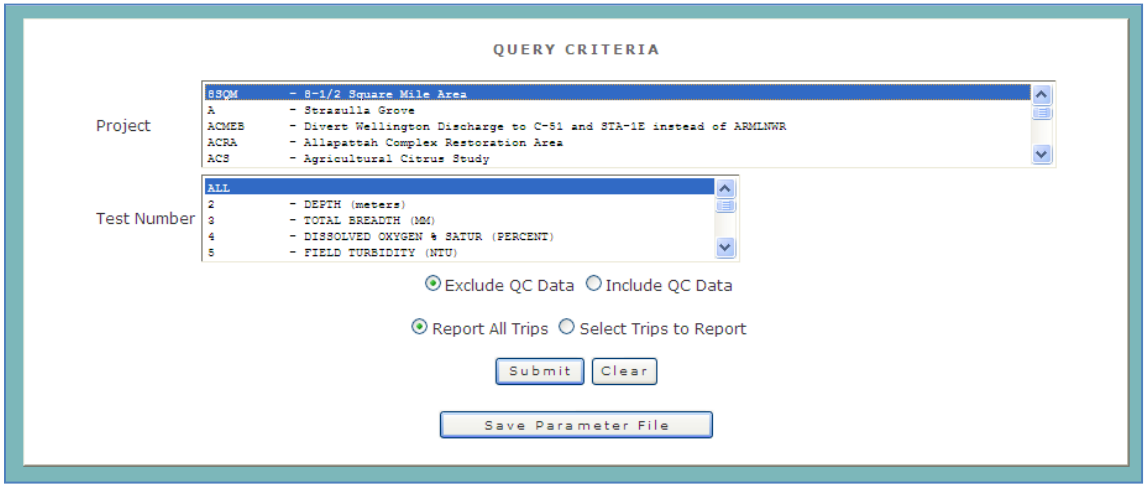
Other basic water quality searches work in a similar manner.

You can return to the water quality menu and perform a “Sample Data - Advanced Query” if the other “Sample Data” searches do not suit your needs.

Selecting Advanced Query leads you to this screen which allows for a complete range of query input parameters. Typical queries involve the selection of a project, a possibly a station, and one or more test names…

Program type, matrix, and collection method are unique to water quality data. Data can also be retrieved by the various common test groups. Test groups are a convenient way to specify a family of tests without having to note each test individually.

You may now select from the lists of values…



In this example the user has selected the 8SQM project and let the test name criteria default to 'ALL'. The user could also simply have not bothered to check the test name check box in the first place in order to achieve the effect of selecting all test names. The user may select to report on all trips or filter out trips based on a subsequently prescribed date range. In this example, data from all trips are being sought as there is no desire to filter out specific trips prior to data retrieval.

The default excludes the Quality Control (QC) results. However, if one wishes to retrieve QC results such as "spikes" and "blanks" one may choose the "Include QC Data" radio button.

After selecting the Submit button, summary information about the complete report is presented followed by a report layout options selector and output format list…

An example listing of the "Full Report – w/o Flagged Results" output to the screen follows:

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DBHYDRO | reports

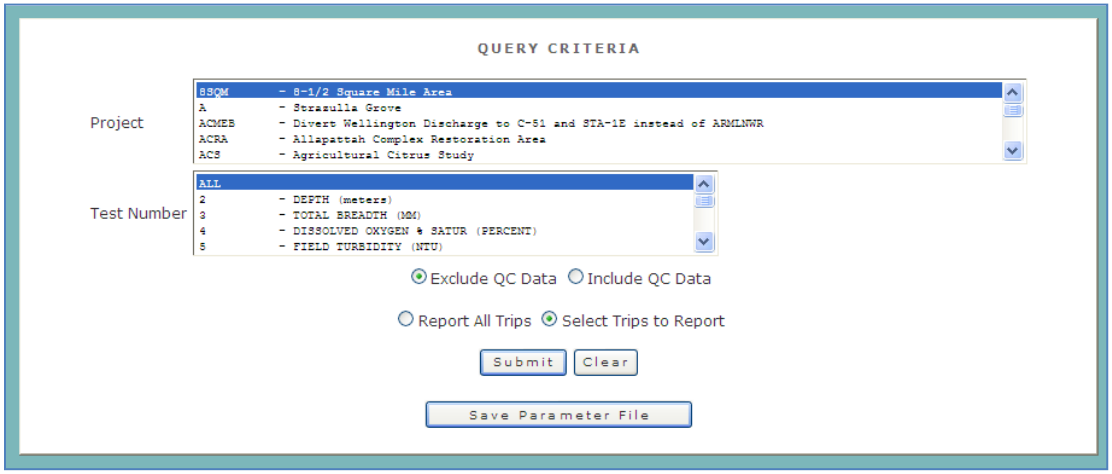
Project Code	Station ID	Sample ID	First Trigger Date	Collection_Date	Sample Type	Rev	Collection Method	Depth	Matrix	Test Number	Test N
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	21	KJELDA
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	8	DISSOL
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	9	SP CON
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	10	PH, FI
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	16	TOTAL
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	18	NITRAT
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	32	CHLORI
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	12	TURBID
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	13	COLOR
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	19	NITRIT
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	20	AMMONI
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	7	TEMP
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	23	PHOSPH
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	25	PHOSPH
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	67	ALKALI
RSGM	G211	0001		21-MAY-1997 13:05	SAMP	G		0.50	SW	78	NITRAT
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	25	PHOSPH
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	8	DISSOL
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	67	ALKALI
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	10	PH, FI
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	13	COLOR
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	16	TOTAL
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	7	TEMP
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	9	SP CON
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	12	TURBID
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	19	NITRIT
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	20	AMMONI
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	21	KJELDA
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	23	PHOSPH
RSGM	G211	0002		12-JUN-1997 13:45	SAMP	G		0.50	SW	32	CHLORI
RSGM	G211	0004		21-JUL-1997 11:30	SAMP	G		0.50	SW	18	NITRAT
RSGM	G211	0004		21-JUL-1997 11:30	SAMP	G		0.50	SW	20	AMMONI
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	21	KJELDA
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	10	PH, FI
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	9	SP CON
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	8	DISSOL
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	104	COPPER
RSGM	G211	0004		22-JUL-1997 11:30	SAMP	G		0.50	SW	7	TEMP

The Full Report – w/o Flagged Results option is a "dump" directly from the database of each row and column for the results satisfying the query criteria.

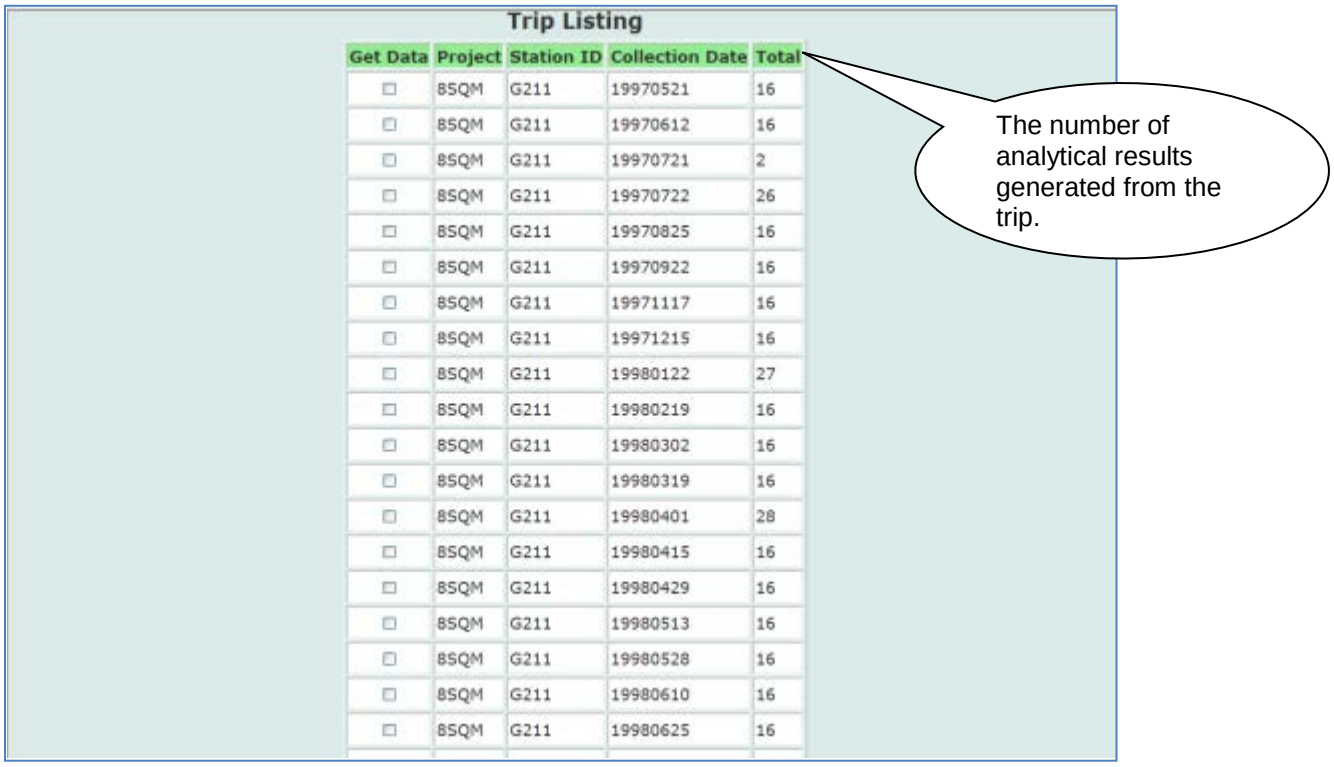
By choosing the other radio buttons different output options can be used. As you can see the Full Report is very wide. Selecting a file for output, rather than the screen, is very helpful in managing these long lines of data. The fixed format file and comma delimited file (.csv) options are helpful for import into a spreadsheet application. The .pdf file output is great for sharing on the web or in email.

Each station visit (indicated by date collected) is considered a "trip". A single trip may involve the collection of one or more samples (sample ids). Each sample may be analyzed for one or more analytes (test names/test numbers).

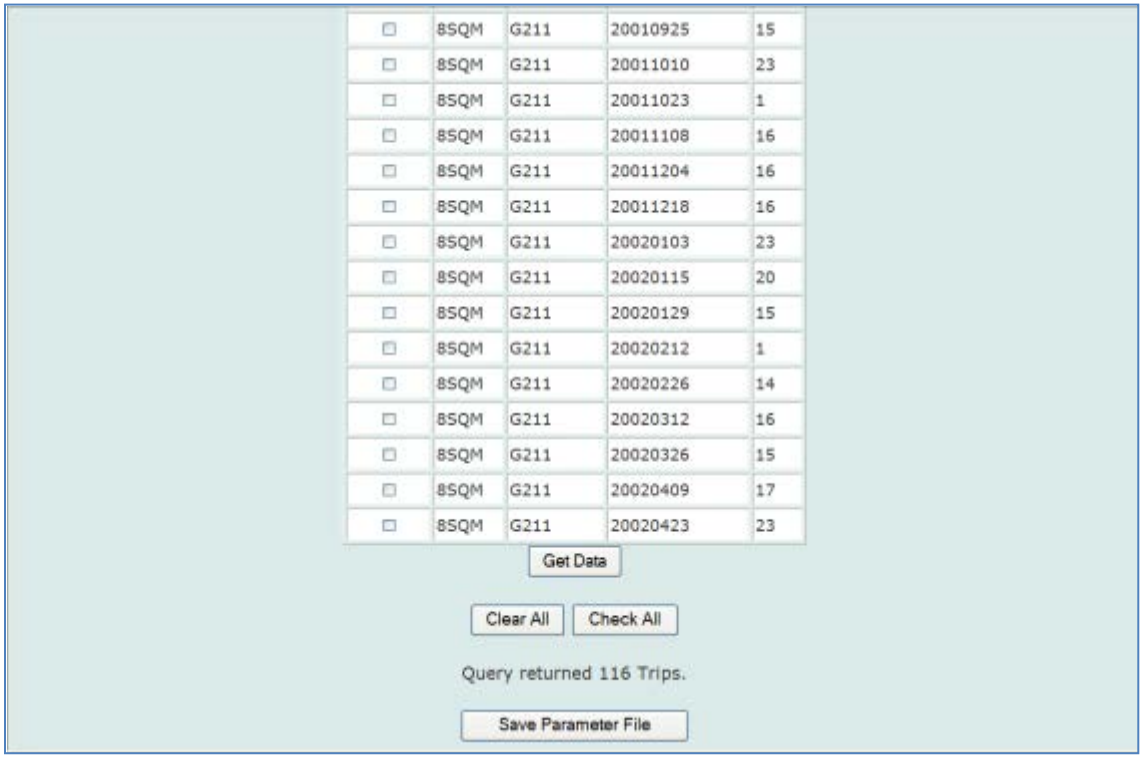
An alternate approach to a complete listing would be to select results by trip…



A list of relevant trips meeting the specified criteria is displayed along with the number of results derived from each trip…



After selecting the trips of interest…



the user selects the Get Data button.

Getting data results in the following listing which is a consolidation of the selected trips:

The report type and output options are the same as for reporting on all trips.

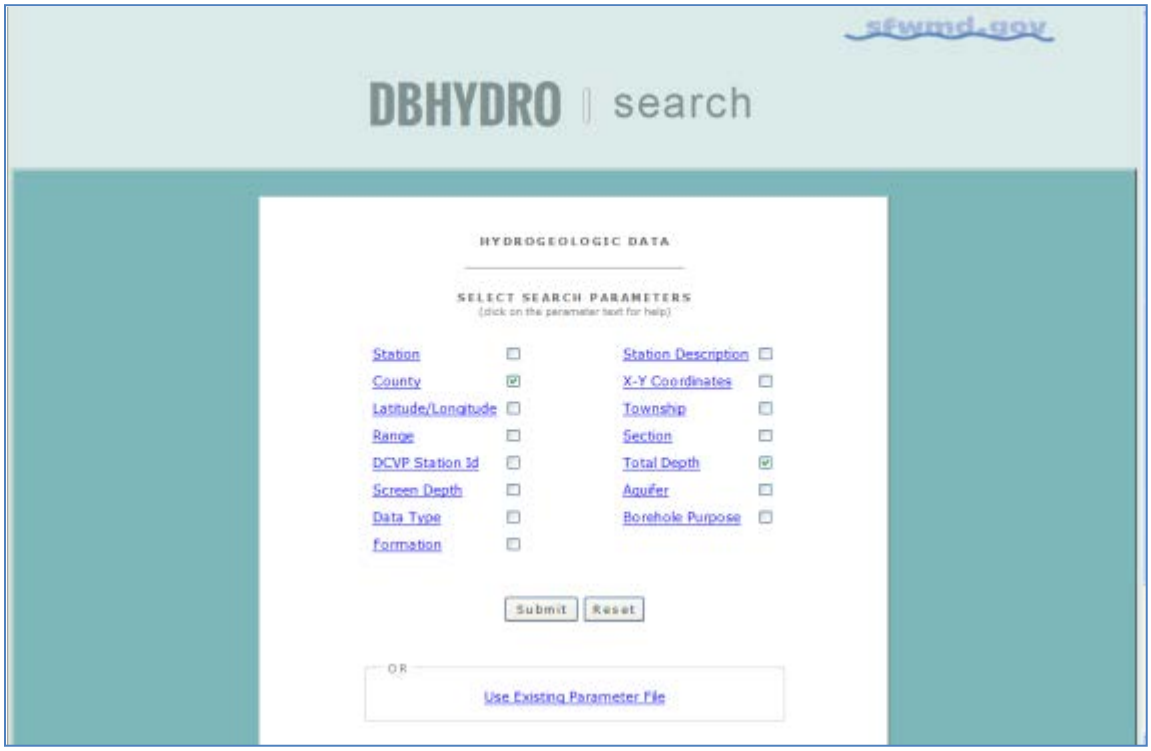
Hydrogeologic Data

Selecting *Hydrogeologic Data* from the main menu takes you to the following page:

While the search parameters look similar to those in *Groundwater Data*, queries under *Hydrogeologic Data* direct you to well construction specifications, geophysical, hydraulic and lithologic data, multimedia data, and data rather than to groundwater data alone.

Once you have chosen your selection criteria, the browser directs you to a page that displays that criteria and allows you to submit or save your parameters to a file.

In the example below, a query was built to select all wells in Palm Beach County with total depths between 300 and 400 feet.
You would select County and Total Depth as shown below…

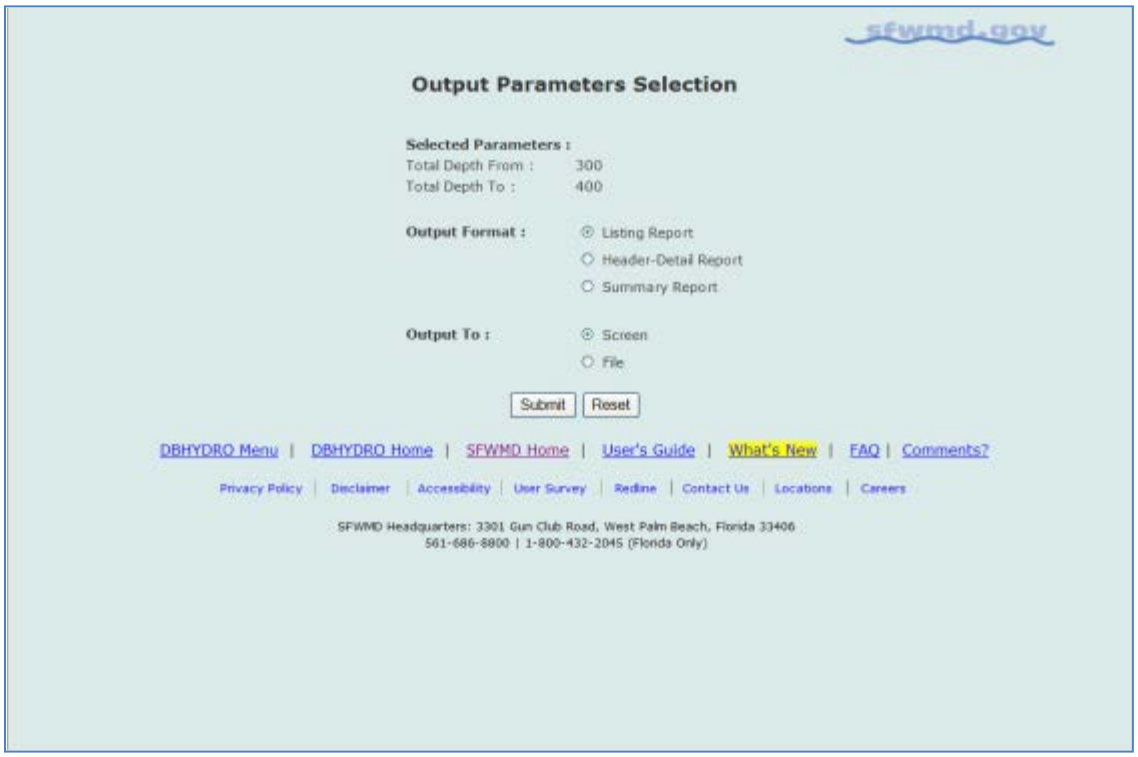


and then click on Submit.

The following screen will appear. This screen allows you to select the specific county or counties and specify the range of total depth...

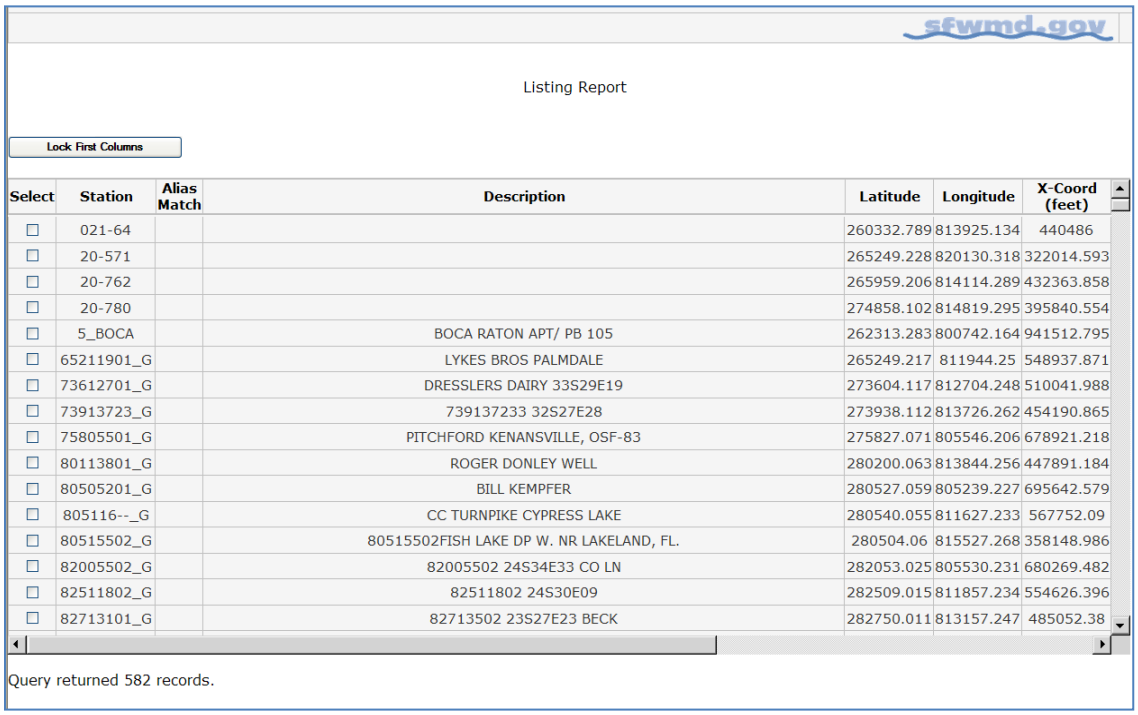
Clicking on Submit leads you to the Output Parameters Selection screen…

This screen allows you to select what kind of report you want and where you want the output to go…



In this example, a Listing Report is chosen.

The Listing Report Option (shown below) returns a table with names, locations, and highlighted items for construction and multimedia data when available.



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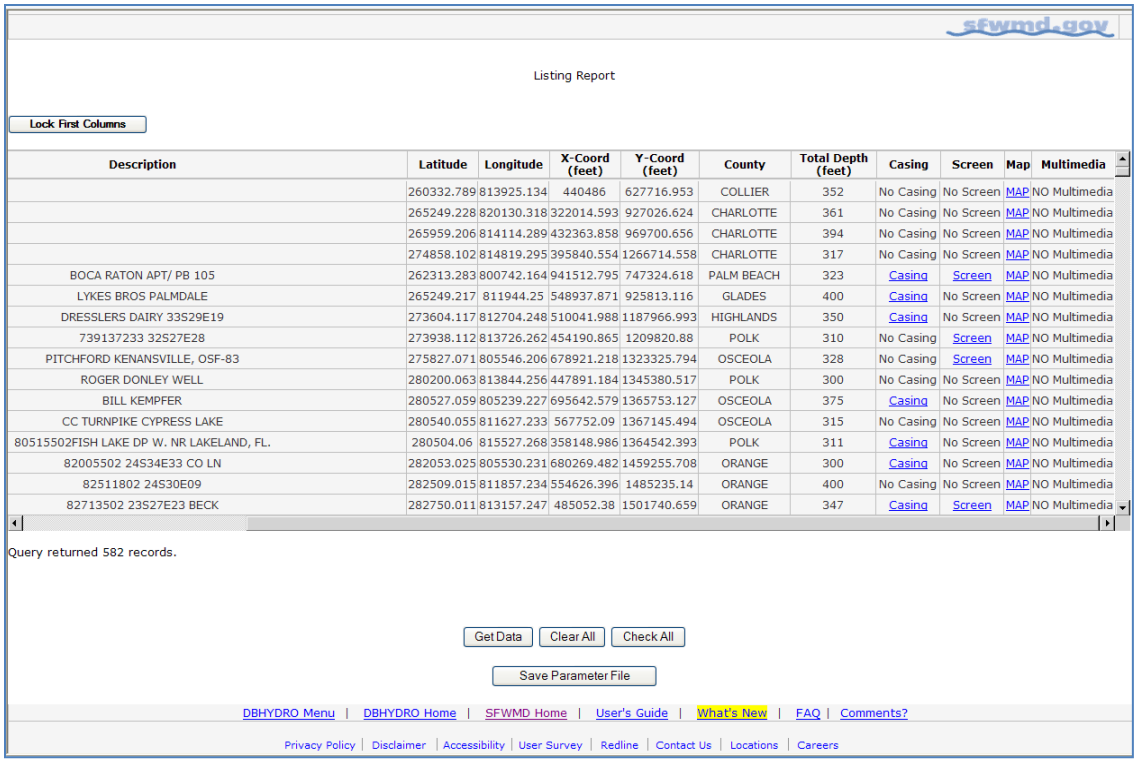
Listing Report

Lock First Columns

Select	Station	Alias Match	Description	Latitude	Longitude	X-Coord (feet)
☐	021-64			260332.789	813925.134	440486
☐	20-571			265249.228	820130.318	322014.593
☐	20-762			265959.206	814114.289	432363.858
☐	20-780			274858.102	814819.295	395840.554
☐	5_BOCA		BOCA RATON APT/ PB 105	262313.283	800742.164	941512.795
☐	65211901_G		LYKES BROS PALMDALE	265249.217	811944.25	548937.871
☐	73612701_G		DRESSLERS DAIRY 33S29E19	273604.117	812704.248	510041.988
☐	73913723_G		739137233 32S27E28	273938.112	813726.262	454190.865
☐	75805501_G		PITCHFORD KENANSVILLE, OSF-83	275827.071	805546.206	678921.218
☐	80113801_G		ROGER DONLEY WELL	280200.063	813844.256	447891.184
☐	80505201_G		BILL KEMPFER	280527.059	805239.227	695642.579
☐	805116--_G		CC TURNPIKE CYPRESS LAKE	280540.055	811627.233	567752.09
☐	80515502_G		80515502FISH LAKE DP W. NR LAKELAND, FL.	280504.06	815527.268	358148.986
☐	82005502_G		82005502 24S34E33 CO LN	282053.025	805530.231	680269.482
☐	82511802_G		82511802 24S30E09	282509.015	811857.234	554626.396
☐	82713101_G		82713502 23S27E23 BECK	282750.011	813157.247	485052.38

Query returned 582 records.

The Listing Report is wide and you will have to scroll to the right to see that there are links to casing, screen, and multimedia information. There is also a link to a map. Multimedia may include any kind of documents including scanned field notes, driller reports and logs, and photographs.



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Listing Report

Lock First Columns

Description	Latitude	Longitude	X-Coord (feet)	Y-Coord (feet)	County	Total Depth (feet)	Casing	Screen	Map	Multimedia
	260332.789	813925.134	440486	627716.953	COLLIER	352	No Casing	No Screen	MAP	NO Multimedia
	265249.228	820130.318	322014.593	927026.624	CHARLOTTE	361	No Casing	No Screen	MAP	NO Multimedia
	265959.206	814114.289	432363.858	969700.656	CHARLOTTE	394	No Casing	No Screen	MAP	NO Multimedia
	274858.102	814819.295	395840.554	1266714.558	CHARLOTTE	317	No Casing	No Screen	MAP	NO Multimedia
BOCA RATON APT/ PB 105	262313.283	800742.164	941512.795	747324.618	PALM BEACH	323	Casing	Screen	MAP	NO Multimedia
LYKES BROS PALMDALE	265249.217	811944.25	548937.871	925813.116	GLADES	400	Casing	No Screen	MAP	NO Multimedia
DRESSLERS DAIRY 33S29E19	273604.117	812704.248	510041.988	1187966.993	HIGHLANDS	350	Casing	No Screen	MAP	NO Multimedia
739137233 32S27E28	273938.112	813726.262	454190.865	1209820.88	POLK	310	No Casing	Screen	MAP	NO Multimedia
PITCHFORD KENANSVILLE, OSF-83	275827.071	805546.206	678921.218	1323325.794	OSCEOLA	328	No Casing	Screen	MAP	NO Multimedia
ROGER DONLEY WELL	280200.063	813844.256	447891.184	1345380.517	POLK	300	No Casing	No Screen	MAP	NO Multimedia
BILL KEMPFER	280527.059	805239.227	695642.579	1365753.127	OSCEOLA	375	Casing	No Screen	MAP	NO Multimedia
CC TURNPIKE CYPRESS LAKE	280540.055	811627.233	567752.09	1367145.494	OSCEOLA	315	No Casing	No Screen	MAP	NO Multimedia
80515502FISH LAKE DP W. NR LAKELAND, FL.	280504.06	815527.268	358148.986	1364542.393	POLK	311	Casing	No Screen	MAP	NO Multimedia
82005502 24S34E33 CO LN	282053.025	805530.231	680269.482	1459255.708	ORANGE	300	Casing	No Screen	MAP	NO Multimedia
82511802 24S30E09	282509.015	811857.234	554626.396	1485235.14	ORANGE	400	No Casing	No Screen	MAP	NO Multimedia
82713502 23S27E23 BECK	282750.011	813157.247	485052.38	1501740.659	ORANGE	347	Casing	Screen	MAP	NO Multimedia

Query returned 582 records.

Get Data | Clear All | Check All

Save Parameter File

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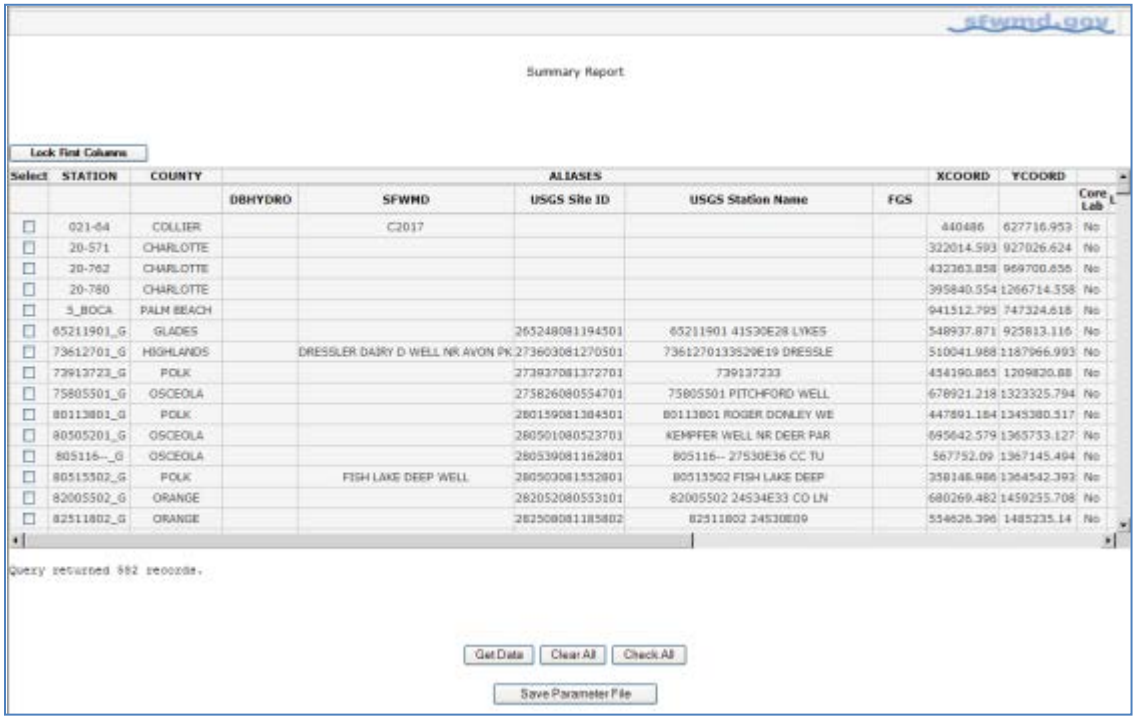
A Header-Detail report lists the information for all wells that met your search criteria and the report looks like this…

Header-Detail Report

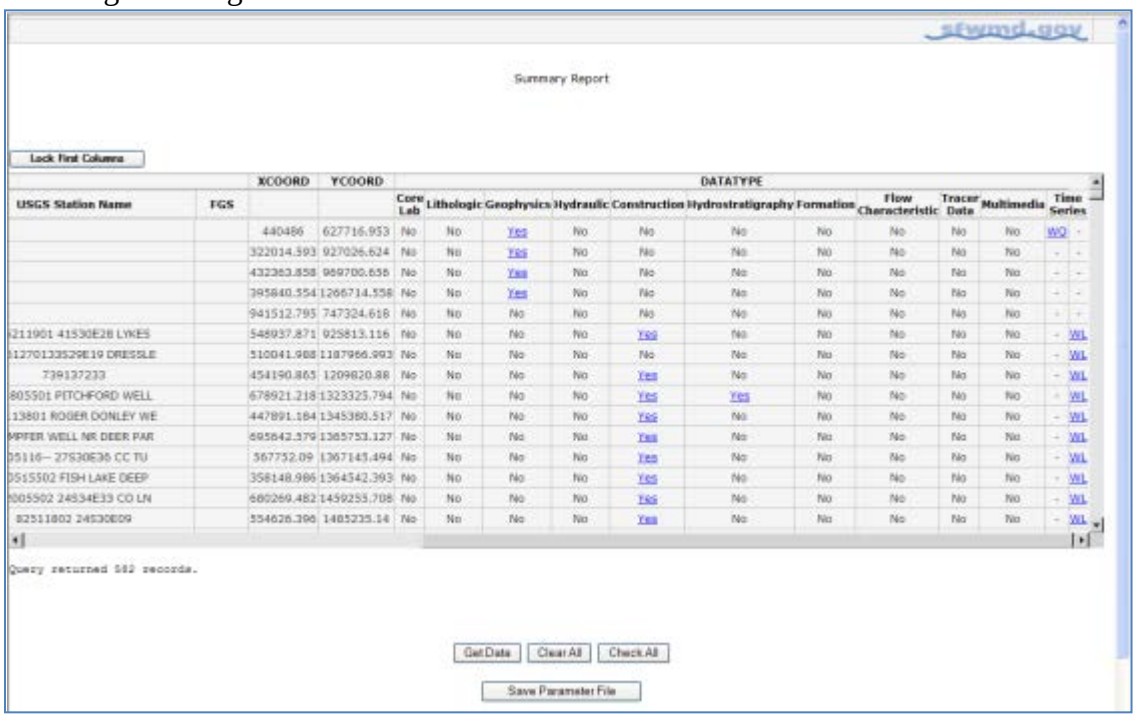
Station	021-44	MAP NO Multimedia
Alias Match		
Description		
Latitude	260333	
Longitude	813925	
X Coordinate	440486 (feet)	
Y Coordinate	627717 (feet)	
County	COLLIER	
Total Depth	352 (feet)	
Station	28-571	MAP NO Multimedia
Alias Match		
Description		
Latitude	265249	
Longitude	820130	
X Coordinate	322015 (feet)	
Y Coordinate	927027 (feet)	
County	CHARLOTTE	
Total Depth	361 (feet)	
Station	28-762	MAP NO Multimedia
Alias Match		
Description		
Latitude	265959	
Longitude	814114	
X Coordinate	432364 (feet)	
Y Coordinate	969781 (feet)	
County	CHARLOTTE	
Total Depth	394 (feet)	
Station	28-780	MAP NO Multimedia
Alias Match		
Description		
Latitude	274858	
Longitude	814819	
X Coordinate	395841 (feet)	
Y Coordinate	1266715 (feet)	
County	CHARLOTTE	
Total Depth	317 (feet)	
Station	S_BOCA	MAP NO Multimedia
Alias Match		
Description	BOCA RATON APT/ PB 105	
Latitude	262313	
Longitude	800742	
X Coordinate	941613 (feet)	

The Header Detail option (above) offers a different display format, and shows casing and screen details on screen when they are available instead of just showing links. Both the Header Detail and the Listing Report options have links to multimedia data. These multimedia data include photos, spreadsheets, and other documents in a wide variety of formats, including JPG, TXT, TIFF, XLS, PDF, and others.

The summary report (below) shows all the different types of data available for each well appearing in the query. The Summary Report format provides highlighted links to the different data types offered in the hydrogeologic section of DBHYDRO. The link to time series data will bring up a list of all time series for this station including water quality and hydrologic data.



Scrolling to the right…



Clicking on the 'Yes' link under Lithologic for station W-12425, produces a detailed lithologic description as shown below:

DBHYDRO | reports

Lithologic Details

Station	X-Coord (feet)	Y-Coord (feet)
W-12425	956543	820434

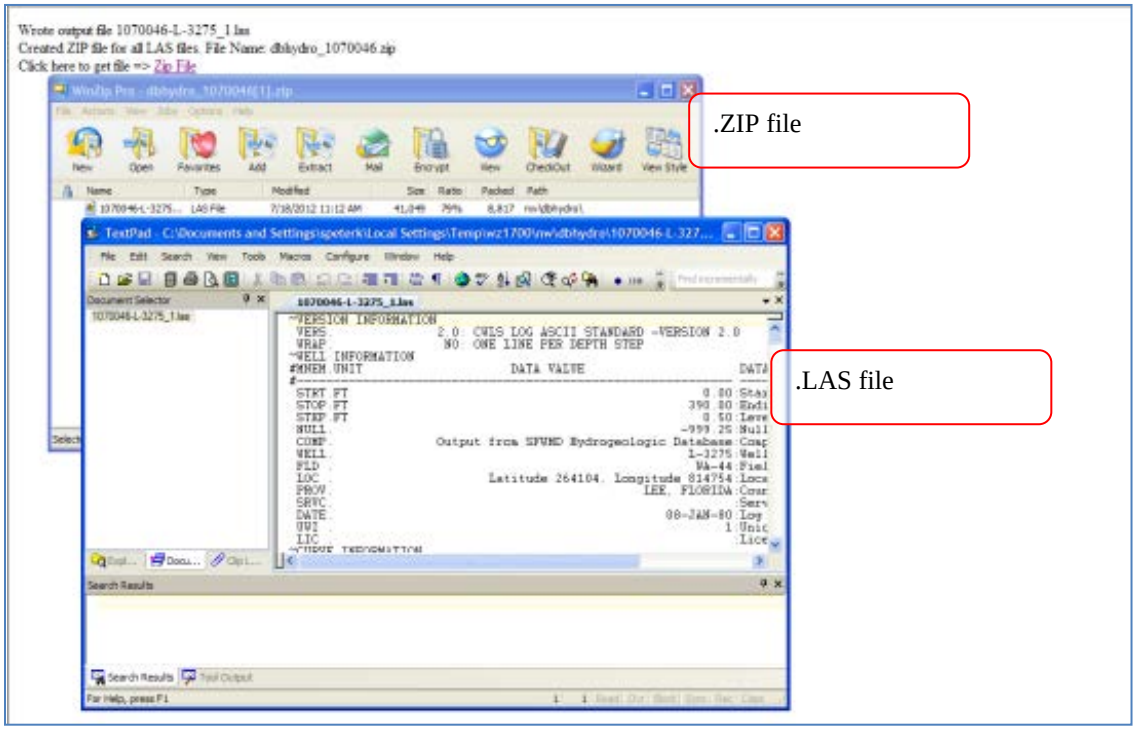
Min. Depth	Max. Depth	Primary Rock	% Primary Rock	Primary Color	Induration	% Porosity	
0	20	SAND (QUARTZ)		DARK YELLOWISH ORANGE	UNCONSOLIDATED		
20	30	SAND (QUARTZ)		DARK YELLOWISH ORANGE	UNCONSOLIDATED		
30	45	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES
45	60	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES
60	80	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES
80	90	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES
90	110	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES
110	125	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		
125	130	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		
130	135	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES ORLY CONSOLIDATED
135	140	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES ORLY CONSOLIDATED
140	150	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE CONTAINS HLY CONSOLIDATED ED ALLOCHEMS AN TAL LIMESTONE CH
150	164	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE INCLUDES F PELLETAL LIMES
164	175	SAND (QUARTZ)		YELLOWISH GRAY	UNCONSOLIDATED		SAMPLE CONTAINS RACE AMOUNTS OF ND SOME FROSTED
175	190	LIMESTONE		MODERATE BLUISH GRAY	MODERATE		SAMPLE INCLUDES
190	205	LIMESTONE		MODERATE BLUISH GRAY	MODERATE		LIMESTONE CUTTIN T IS GREATER. AN HE SAND
205	220	LIMESTONE		YELLOWISH GRAY	MODERATE		LIMESTONE IS LES LL FRAGMENTS
220	235	LIMESTONE		YELLOWISH GRAY	POOR		
235	250	LIMESTONE		LIGHT GREENISH YELLOW	POOR		LOOSE PELLETS AR ELLETS IN THE LI
250	280	LIMESTONE		VERY LIGHT ORANGE	POOR		SAMPLE IS A MIXT AND. AND CALCITE
280	295	SANDSTONE		LIGHT OLIVE GRAY	POOR		HALF OF THE PIEC
295	325	SAND (QUARTZ)		OLIVE GRAY	UNCONSOLIDATED		SAMPLE INCLUDES RITIC SANDSTONE.

This information can be saved to a text file (Save as .txt) through the web browser file menu.

Clicking on the summary report 'Yes' link under the Geophysics data type takes you through a series of screens which allow you to create a file in Log ASCII Standard (LAS) format. (LAS) is a standard file format, created by the Canadian Well Logging Society, to store wellbore log information. Well logging is used to characterize subsurface stratigraphy in a wellbore.

Common curves found in a LAS file might be gamma ray logging, sonic logging, or resistivity logging.

Files are delivered in a compressed (.zip) format.



Clicking on the summary report 'Yes' link under the Hydraulic data takes you to a screen showing the aquifer characteristics, test details, and analysis methods employed for any aquifer performance tests associated with the well.

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DBHYDRO | reports

Hydraulic Details

Site	JONATHAN DICKINSON STATE PARK -K1281		
Test Type	APT		
Start Test Date Time	26-SEP-1989 1220	Site Map	NO
Pumped Well	K-1281	Discharge Rate	168 (g/min)
Pumped Well X-Coord	927986 (feet)	Spec. Capacity	(gpm/ft)
Pumped Well Y-Coord	979684 (feet)	Transmissivity	3617.89 (ft**2/day)
Hours Pumped	71.5	Storativity	.00047
Tested Interval Min.	30 (ft)	Horizontal K	(feet/day)
Tested Interval Max.	120 (ft)	Vertical K	(feet/day)
No Monitored Wells	2	Leakance	(1/day)
Aquifer	SURFICIAL AQUIFER SYSTEM		
Source	SOUTH FLORIDA WMD		
Reference	ADAMS, KARIN M., HANCE 1998, HYDROGEOLOGIC INVESTIGATION JONATHON DICKINSON STATE PARK, SFWMD, DEPARTMENT OF RESEARCH AND EVALUATION,		
Comments			

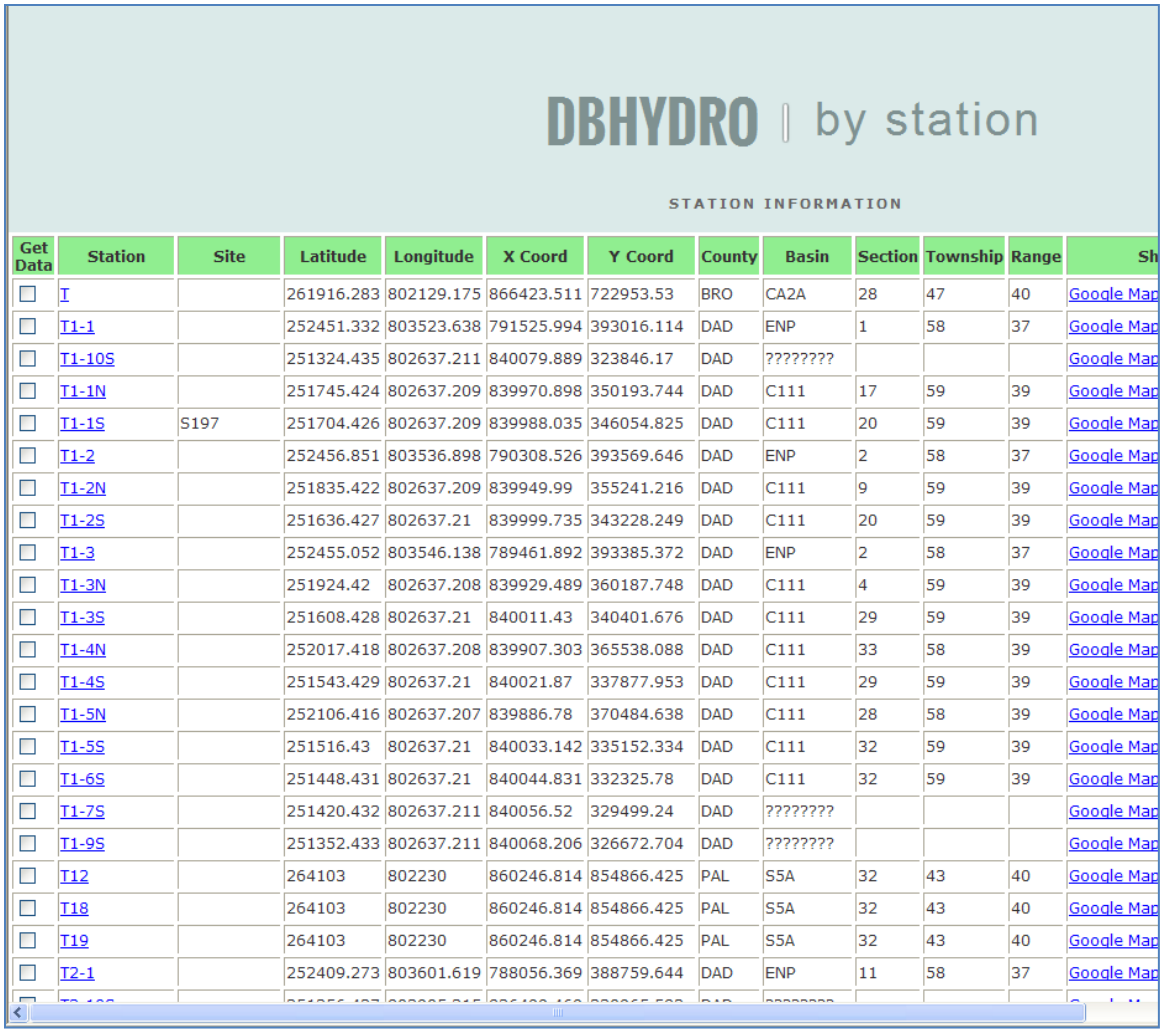
Station	X-Coord (feet)	Y-Coord (feet)	Analysis Method	Distance from Production Well (ft)	Max Drawdown (ft)	Transmissivity (ft**2/day)	Storativity	Leakance
1D_JDSP	945461	973063	NEUMAN	75		3604.95	.00852	
2D_JDSP	945386	973063	NEUMAN	157		2817.51	.00847	

Access by Station Name

Selecting "by Station" from the DBHYDRO Browser menu brings up the following screen:

On this screen you can select the letter that corresponds with the first letter of the name of the station in which you are interested with or without wildcard characters. Alternatively you can type in the name of the station in which you are interested. The percent sign "%" can be used as a wildcard character. You may also select by a lat-lon or x-y box. X-Y coordinates are Florida state plane NAD83 East Zone in units of feet.

In this example we show selection by letter. Once a letter is selected, a list of database stations beginning with the selected letter will appear as follows:



DBHYDRO | by station

STATION INFORMATION

Get Data	Station	Site	Latitude	Longitude	X Coord	Y Coord	County	Basin	Section	Township	Range	Sh
☐	T		261916.283	802129.175	866423.511	722953.53	BRO	CA2A	28	47	40	Google Map
☐	T1-1		252451.332	803523.638	791525.994	393016.114	DAD	ENP	1	58	37	Google Map
☐	T1-10S		251324.435	802637.211	840079.889	323846.17	DAD	????????				Google Map
☐	T1-1N		251745.424	802637.209	839970.898	350193.744	DAD	C111	17	59	39	Google Map
☐	T1-1S	S197	251704.426	802637.209	839988.035	346054.825	DAD	C111	20	59	39	Google Map
☐	T1-2		252456.851	803536.898	790308.526	393569.646	DAD	ENP	2	58	37	Google Map
☐	T1-2N		251835.422	802637.209	839949.99	355241.216	DAD	C111	9	59	39	Google Map
☐	T1-2S		251636.427	802637.21	839999.735	343228.249	DAD	C111	20	59	39	Google Map
☐	T1-3		252455.052	803546.138	789461.892	393385.372	DAD	ENP	2	58	37	Google Map
☐	T1-3N		251924.42	802637.208	839929.489	360187.748	DAD	C111	4	59	39	Google Map
☐	T1-3S		251608.428	802637.21	840011.43	340401.676	DAD	C111	29	59	39	Google Map
☐	T1-4N		252017.418	802637.208	839907.303	365538.088	DAD	C111	33	58	39	Google Map
☐	T1-4S		251543.429	802637.21	840021.87	337877.953	DAD	C111	29	59	39	Google Map
☐	T1-5N		252106.416	802637.207	839886.78	370484.638	DAD	C111	28	58	39	Google Map
☐	T1-5S		251516.43	802637.21	840033.142	335152.334	DAD	C111	32	59	39	Google Map
☐	T1-6S		251448.431	802637.21	840044.831	332325.78	DAD	C111	32	59	39	Google Map
☐	T1-7S		251420.432	802637.211	840056.52	329499.24	DAD	????????				Google Map
☐	T1-9S		251352.433	802637.211	840068.206	326672.704	DAD	????????				Google Map
☐	T12		264103	802230	860246.814	854866.425	PAL	S5A	32	43	40	Google Map
☐	T18		264103	802230	860246.814	854866.425	PAL	S5A	32	43	40	Google Map
☐	T19		264103	802230	860246.814	854866.425	PAL	S5A	32	43	40	Google Map
☐	T2-1		252409.273	803601.619	788056.369	388759.644	DAD	ENP	11	58	37	Google Map

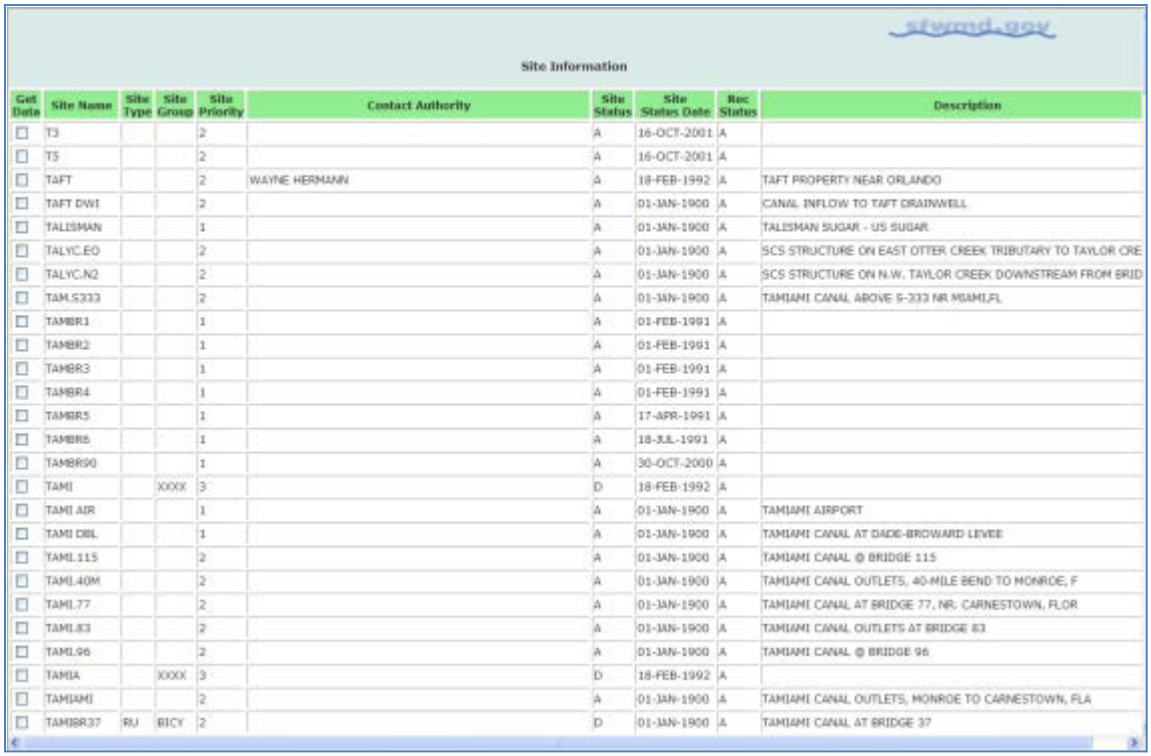
In this example the letter "T" was selected to generate the list of stations indicated. Each of the station names is hyperlinked to information about that station, an example of which is in the Surface Water Data section. One may also get data by station through this screen by checking the “Get Data” box, at the bottom the page, for each station of interest.

Access by Site Name

Sites represent a collection of stations. Therefore, you can gain access to a group of related stations by accessing a single site. By virtue of this "one-to-many" relationship, the site listing will always be shorter than the station listing. Selecting "by Site" from the DBHYDRO Browser menu brings up the following:

On this screen you can select the letter that corresponds with the first letter of the name of the site in which you are interested. Alternatively you can type in the name of the site in which you are interested. The percent sign "%" can be used as a wildcard character. You may also select by a lat-lon or x-y box. X-Y coordinates are Florida state plane NAD83 HARN East Zone in units of feet.

In this example we show selection by letter. Once a letter is selected, a list of database sites beginning with the selected letter will appear as follows:



Site Information

Get Data	Site Name	Site Type	Site Group	Site Priority	Contact Authority	Site Status	Site Status Date	Rec Status	Description
☐	T3			2		A	16-OCT-2001	A	
☐	T5			2		A	16-OCT-2001	A	
☐	TAFT			2	WAYNE HERMANN	A	18-FEB-1992	A	TAFT PROPERTY NEAR ORLANDO
☐	TAFT DWI			2		A	01-JAN-1900	A	CANAL INFLOW TO TAFT DRAINWELL
☐	TALISMAN			1		A	01-JAN-1900	A	TALISMAN SUGAR - US SUGAR
☐	TALYC.EO			2		A	01-JAN-1900	A	SCS STRUCTURE ON EAST OTTER CREEK TRIBUTARY TO TAYLOR CRE
☐	TALYC.N2			2		A	01-JAN-1900	A	SCS STRUCTURE ON N.W. TAYLOR CREEK DOWNSTREAM FROM BRID
☐	TAM.S333			2		A	01-JAN-1900	A	TAMIAMI CANAL ABOVE S-333 NR MIAMI,FL
☐	TAMBR1			1		A	01-FEB-1991	A	
☐	TAMBR2			1		A	01-FEB-1991	A	
☐	TAMBR3			1		A	01-FEB-1991	A	
☐	TAMBR4			1		A	01-FEB-1991	A	
☐	TAMBR5			1		A	17-APR-1991	A	
☐	TAMBR6			1		A	18-JUL-1991	A	
☐	TAMBR90			1		A	30-OCT-2000	A	
☐	TAMI		XXXX	3		D	18-FEB-1992	A	
☐	TAMI AIR			1		A	01-JAN-1900	A	TAMIAMI AIRPORT
☐	TAMI DBL			1		A	01-JAN-1900	A	TAMIAMI CANAL AT DADE-BROWARD LEVEE
☐	TAMI.115			2		A	01-JAN-1900	A	TAMIAMI CANAL @ BRIDGE 115
☐	TAMI.40M			2		A	01-JAN-1900	A	TAMIAMI CANAL OUTLETS, 40-MILE BEND TO MONROE, F
☐	TAMI.77			2		A	01-JAN-1900	A	TAMIAMI CANAL AT BRIDGE 77, NR. CARNESTOWN, FLOR
☐	TAMI.83			2		A	01-JAN-1900	A	TAMIAMI CANAL OUTLETS AT BRIDGE 83
☐	TAMI.96			2		A	01-JAN-1900	A	TAMIAMI CANAL @ BRIDGE 96
☐	TAMIA		XXXX	3		D	18-FEB-1992	A	
☐	TAMIAMI			2		A	01-JAN-1900	A	TAMIAMI CANAL OUTLETS, MONROE TO CARNESTOWN, FLA
☐	TAMIBR37	RU	BICY	2		D	01-JAN-1900	A	TAMIAMI CANAL AT BRIDGE 37

In this example the letter "T" was selected to generate the list of sites indicated. Each of the site names is hyperlinked to information about that site, an example of which is in the Surface Water Data section. One may also get data by site through this screen by checking the “Get Data” box for each site of interest.

Access by Hydrologic Basin

Stations can be accessed by hydrologic basin. Basin names are grouped by first letter.

Selecting a first letter, in this case 'B', brings up a list of all the basins that begin with the letter 'B'.

In this example, basin name BOGGY CR is selected:

The time series listing is displayed for all continuous time series in basin BOGGY CR:

sfwmd.gov

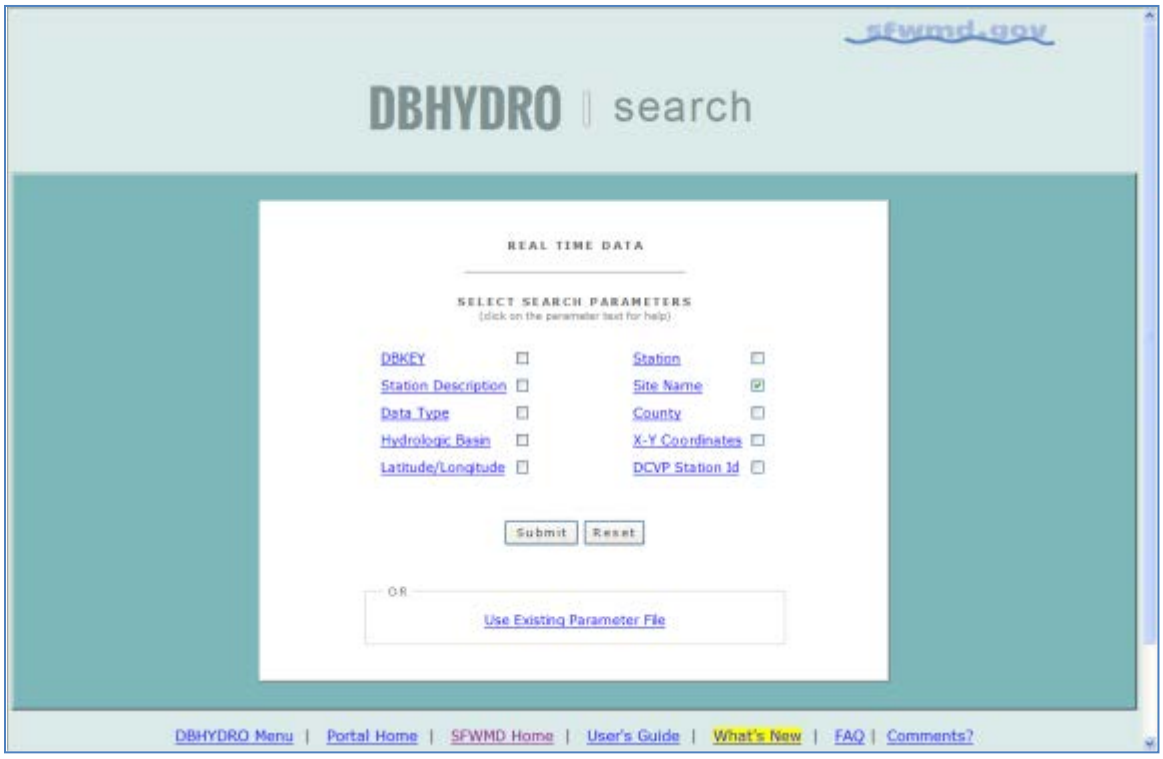
DBHYDRO | time series

Get Data	Dbkey	Station	Group	Data Type	Freq	Stat	Recorder	Agency	Start Date	End Date	Strata	County	Op Num	Latitude	Longitude	X
☐	PT351	086628-1	086628	RAIN	DA	SUM	NA	NOAA	01-FEB-1974	28-JUN-1996	0	ORA		282700	811900	554
☐	PT352	086628-2	086628	RAIN	DA	SUM	NA	NOAA	01-JUL-1996	28-DEC-2001	0	ORA		282602	811930	551
☐	PT482	086633-1	086633	RAIN	DA	SUM	NA	NOAA	18-FEB-1950	28-DEC-1958	0	ORA		283300	812100	543
☐	PT354	086638-1	086638	RAIN	DA	SUM	NA	NOAA	01-JUL-1948	28-JAN-1974	0	ORA		283300	812000	549
☐	10868	82911801	82911801	WELL	RI	RAND	????	USGS	14-MAY-1980	25-SEP-1981	422	ORA	0	282956.005	811817.232	558
☐	10321	BOGGY.TA	BOGGY.TA	CLD	RI	RAND	????	USGS	10-JUN-1980	29-JUL-1982	0	ORA	0	282217.022	811838.234	556
☐	10317	BOGGY.TA	BOGGY.TA	DO	RI	RAND	????	USGS	06-FEB-1980	30-SEP-1983	0	ORA	0	282217.022	811838.234	556
☐	00113	BOGGY.TA	BOGGY.TA	FLOW	DA	MEAN	NA	USGS	01-SEP-1959	03-MAY-2011	0	ORA	0	282217.022	811838.234	556
☐	00111	BOGGY.TA	BOGGY.TA	GAGHT	DA	MEAN	????	USGS	17-SEP-1959	03-MAY-2011	60.97	ORA	0	282217.022	811838.234	556
☐	10320	BOGGY.TA	BOGGY.TA	H2OT	RI	RAND	????	USGS	06-FEB-1980	11-AUG-1984	0	ORA	0	282217.022	811838.234	556
☐	10318	BOGGY.TA	BOGGY.TA	PH	RI	RAND	????	USGS	06-FEB-1980	30-SEP-1983	0	ORA	0	282217.022	811838.234	556
☐	10316	BOGGY.TA	BOGGY.TA	SCOND	RI	RAND	????	USGS	06-FEB-1980	30-SEP-1983	0	ORA	0	282217.022	811838.234	556
☐	00112	BOGGY.TA	BOGGY.TA	STG	DA	FWM	????	USGS	04-OCT-1978	11-AUG-1984	0	ORA	0	282217.022	811838.234	556
☐	10319	BOGGY.TA	BOGGY.TA	STG	RI	RAND	????	USGS	06-FEB-1980	11-AUG-1984	0	ORA	0	282217.022	811838.234	556
	05638	BOGGY527	BOGGY527	FLOW	DA	MEAN	NA	WMD			0	ORA	0	282342.019	812231.237	535
☐	05633	BOGGY527	BOGGY527	STG	BK	INST	????	WMD	23-OCT-1985	13-MAR-1999	0	ORA	0	282342.019	812231.237	535
☐	07170	BOGGY527	BOGGY527	STG	DA	MEAN	SP01	WMD	19-MAY-1987	31-MAY-1988	0	ORA	0	282342.019	812231.237	535

Real Time Data

Choose Real Time Data from the main menu. This option is presently only available for users whose login credentials have been authenticated on the SFWMD computer network.

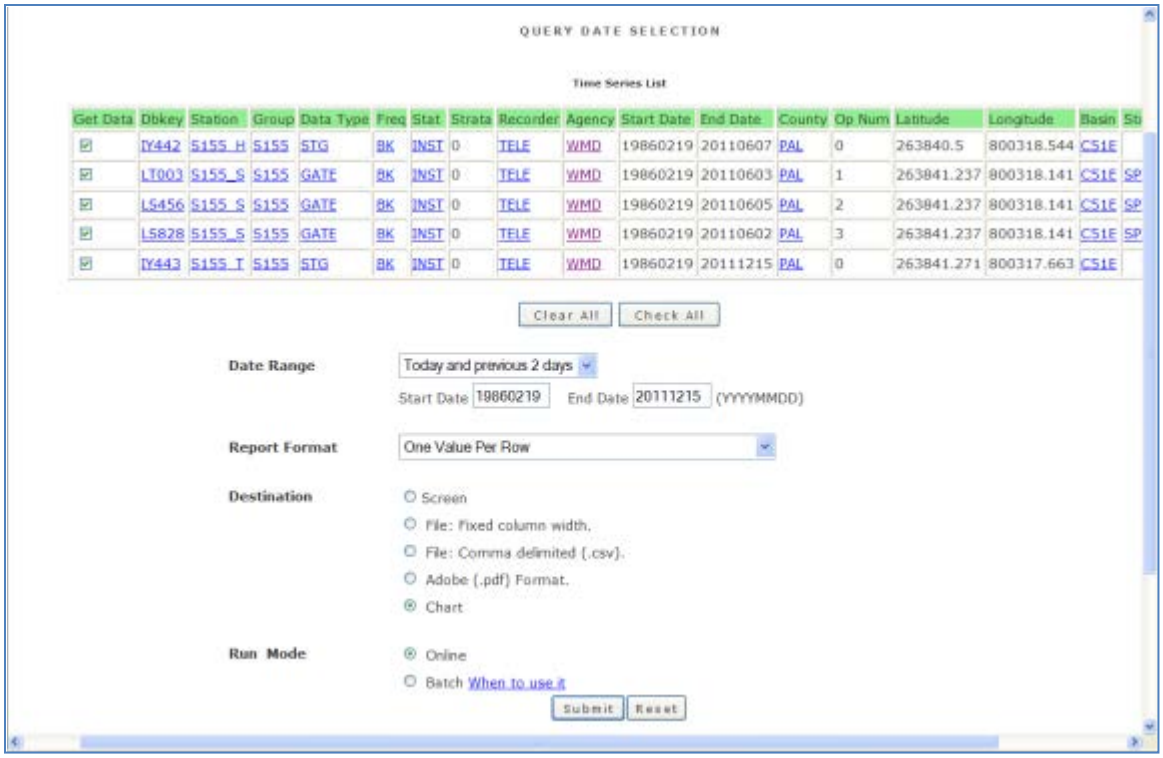
Real time stages and water control structure operations are available. For instance, if one has interest in real-time data at the S155 spillway, one checks the Site Name box and selects "Submit"



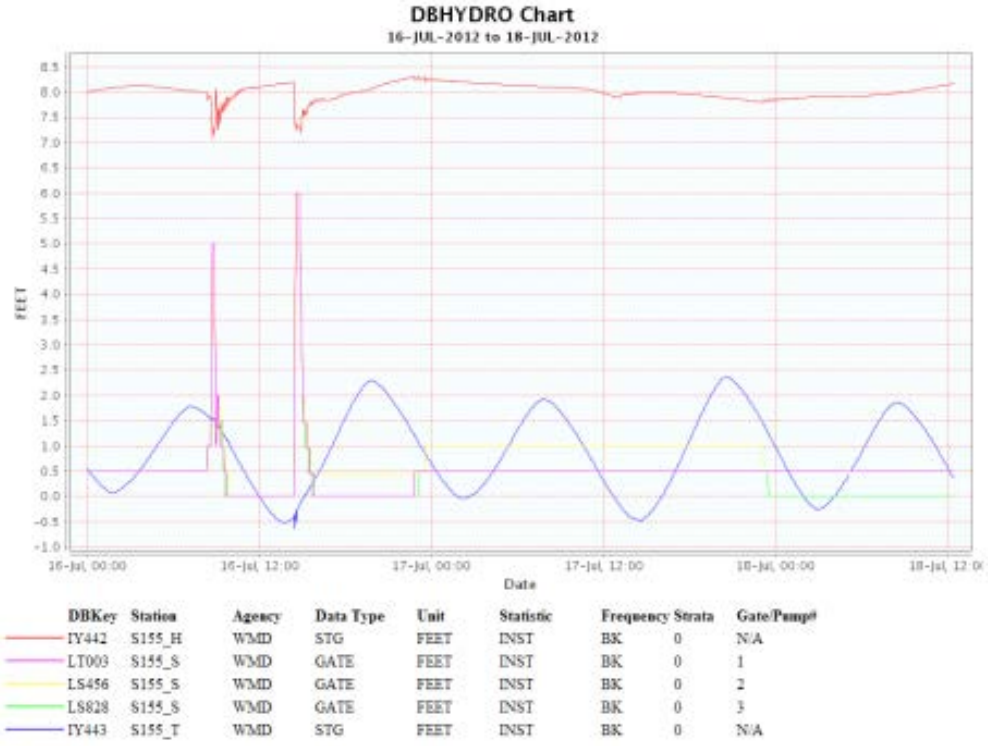
Select site S155 from the list of values and select “Submit”…

Check off the time series of interest and select 

Set the Date Range for “Today and previous 2 days”, select the Chart destination option, and press the Submit button.



A hydrograph with current data is generated and displayed:

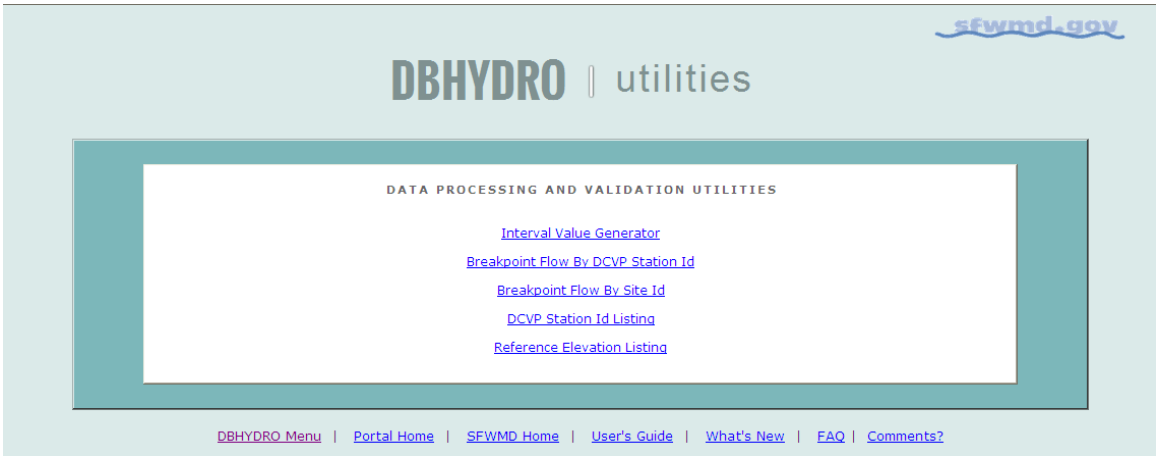


This graph shows stage (water levels) and gate openings for the current day and previous two days. The tabular view of this data (One Value Per Row) tells us after which date each time series is provisional. Provisional data is that data which is considered not to have undergone standard and accepted review procedures. These procedures typically involve interactive review by one or more staff members.

Data Processing and Validation Utilities

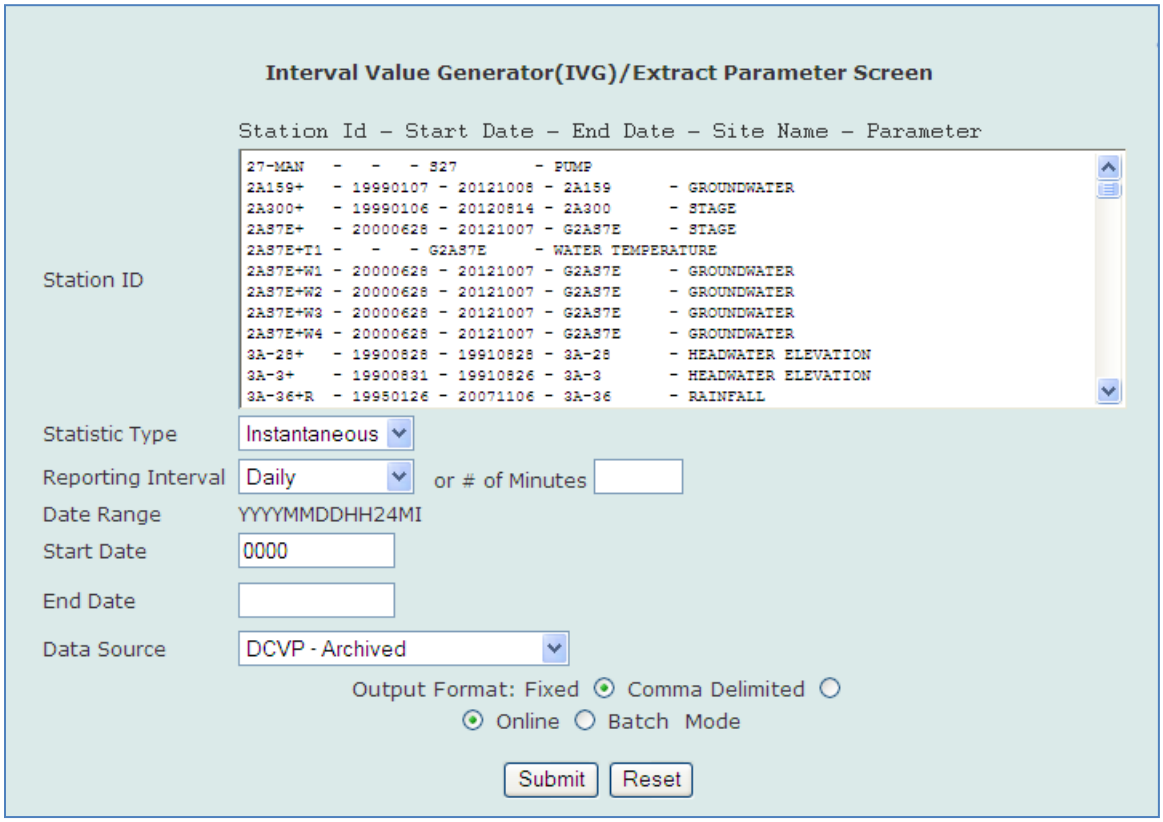
This option is available on the SFWMD intranet only.

These utilities are primarily used by the SFWMD Engineering Associates who handle the routine processing of instrument readings and perform quality assurance on these readings prior to archiving in the corporate database.



Interval Value Generator

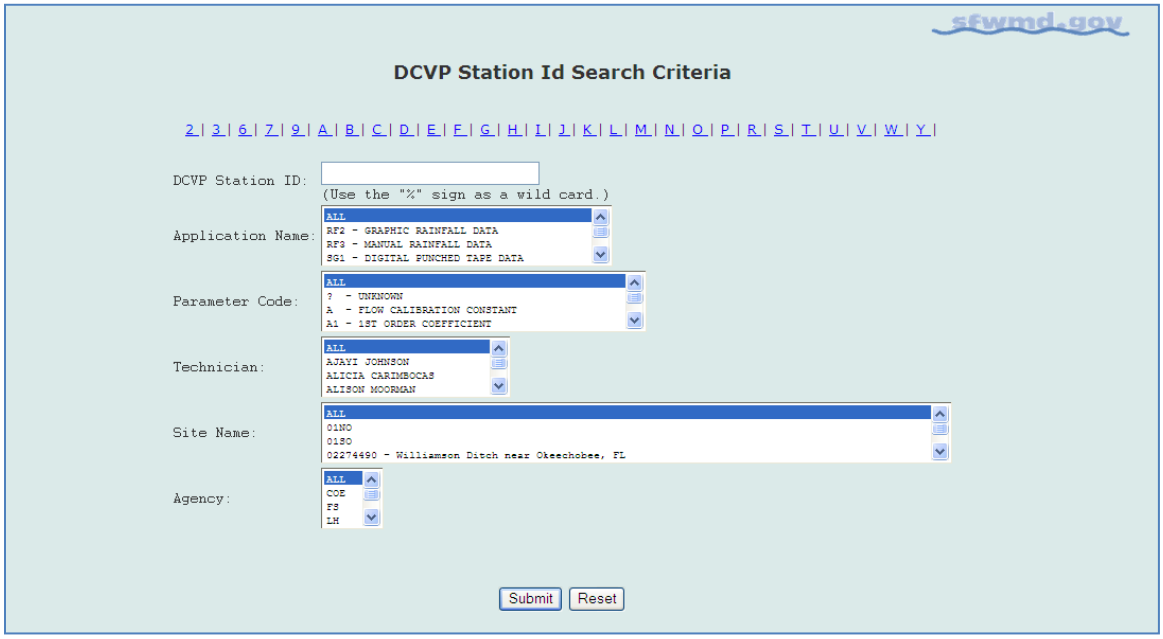
Selecting "Interval Value Generator" brings you to the following screen:



The Interval Value Generator (IVG) program allows the user to generate summarized statistical information from any individual or group of individual DCVP Station_ids. Each station_id is considered to be a set of readings from a single sensor or device. IVG can be used to create mean daily values, maximum hourly values, and minimum monthly values, etc… The user may define any date range of interest. IVG works with archived, provisional, and real-time data. Output may be online or via batch jobs. Batch jobs send email notification when complete.

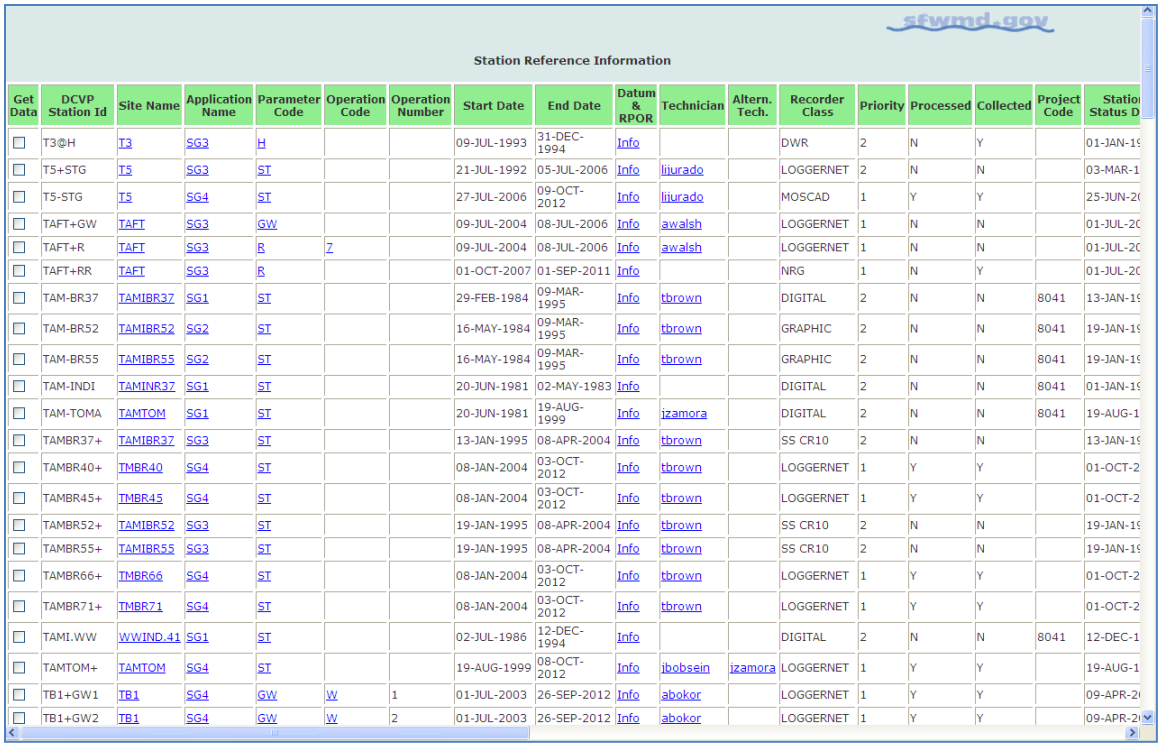
DCVP Station Id Listing

Returning to the Data Processing and Validation Utilities menu affords us other options. The Data Collection Validation Processing (DCVP) system station reference table may be accessed by selecting “DCVP Station ID Listing”. The selection leads to this screen:



The user may select all station_ids (timeseries) starting with a given character or query by station_id name (including the % as the wildcard character), application name (the processing method), the parameter code, the technician assigned to the station, the site name, or the agency from whom the data is received.

In this example, we keep it simple…
Selecting the letter “T” generates a list of all DCVP station ids beginning with the letter “T”:



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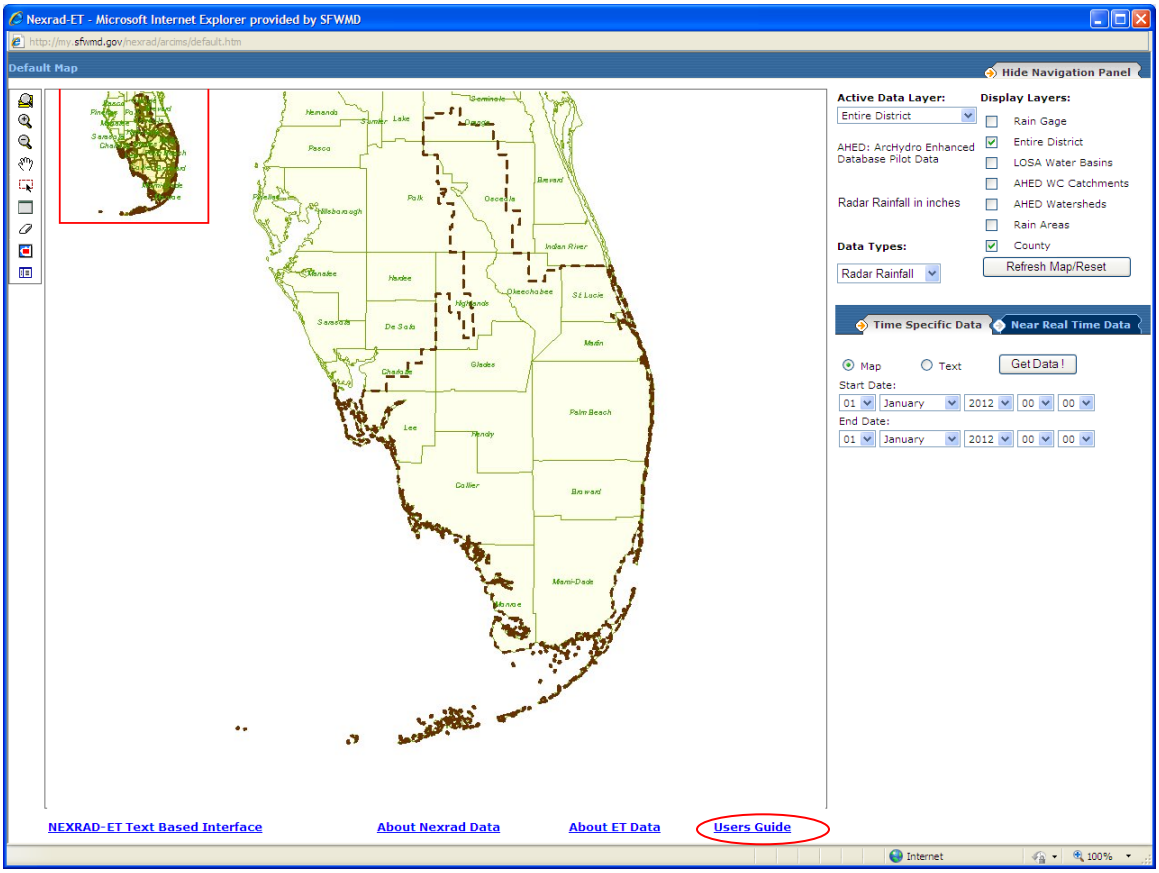
Station Reference Information

Get Data	DCVP Station Id	Site Name	Application Name	Parameter Code	Operation Code	Operation Number	Start Date	End Date	Datum & RPOR	Technician	Altern. Tech.	Recorder Class	Priority	Processed	Collected	Project Code	Statio Status D
☐	T3@H	T3	SG3	H			09-JUL-1993	31-DEC-1994	Info			DWR	2	N	Y		01-JAN-19
☐	T5+STG	T5	SG3	ST			21-JUL-1992	05-JUL-2006	Info	liurado		LOGGERNET	2	N	N		03-MAR-1
☐	T5-STG	T5	SG4	ST			27-JUL-2006	09-OCT-2012	Info	liurado		MOSCAD	1	Y	Y		25-JUN-2(
☐	TAFT+GW	TAFT	SG3	GW			09-JUL-2004	08-JUL-2006	Info	awalsh		LOGGERNET	1	N	N		01-JUL-2(
☐	TAFT+R	TAFT	SG3	R	7		09-JUL-2004	08-JUL-2006	Info	awalsh		LOGGERNET	1	N	N		01-JUL-2(
☐	TAFT+RR	TAFT	SG3	R			01-OCT-2007	01-SEP-2011	Info			NRG	1	N	Y		01-JUL-2(
☐	TAM-BR37	TAMIBR37	SG1	ST			29-FEB-1984	09-MAR-1995	Info	tbrown		DIGITAL	2	N	N	8041	13-JAN-19
☐	TAM-BR52	TAMIBR52	SG2	ST			16-MAY-1984	09-MAR-1995	Info	tbrown		GRAPHIC	2	N	N	8041	19-JAN-19
☐	TAM-BR55	TAMIBR55	SG2	ST			16-MAY-1984	09-MAR-1995	Info	tbrown		GRAPHIC	2	N	N	8041	19-JAN-19
☐	TAM-INDI	TAMINR37	SG1	ST			20-JUN-1981	02-MAY-1983	Info			DIGITAL	2	N	N	8041	01-JAN-19
☐	TAM-TOMA	TAMTOM	SG1	ST			20-JUN-1981	19-AUG-1999	Info	izamora		DIGITAL	2	N	N	8041	19-AUG-1
☐	TAMBR37+	TAMIBR37	SG3	ST			13-JAN-1995	08-APR-2004	Info	tbrown		SS CR10	2	N	N		13-JAN-19
☐	TAMBR40+	TMBR40	SG4	ST			08-JAN-2004	03-OCT-2012	Info	tbrown		LOGGERNET	1	Y	Y		01-OCT-2
☐	TAMBR45+	TMBR45	SG4	ST			08-JAN-2004	03-OCT-2012	Info	tbrown		LOGGERNET	1	Y	Y		01-OCT-2
☐	TAMBR52+	TAMIBR52	SG3	ST			19-JAN-1995	08-APR-2004	Info	tbrown		SS CR10	2	N	N		19-JAN-19
☐	TAMBR55+	TAMIBR55	SG3	ST			19-JAN-1995	08-APR-2004	Info	tbrown		SS CR10	2	N	N		19-JAN-19
☐	TAMBR66+	TMBR66	SG4	ST			08-JAN-2004	03-OCT-2012	Info	tbrown		LOGGERNET	1	Y	Y		01-OCT-2
☐	TAMBR71+	TMBR71	SG4	ST			08-JAN-2004	03-OCT-2012	Info	tbrown		LOGGERNET	1	Y	Y		01-OCT-2
☐	TAMI.WW	WWIND.41	SG1	ST			02-JUL-1986	12-DEC-1994	Info			DIGITAL	2	N	N	8041	12-DEC-1
☐	TAMTOM+	TAMTOM	SG4	ST			19-AUG-1999	08-OCT-2012	Info	jbobsein	izamora	LOGGERNET	1	Y	Y		19-AUG-1
☐	TB1+GW1	TB1	SG4	GW	W	1	01-JUL-2003	26-SEP-2012	Info	abokor		LOGGERNET	1	Y	Y		09-APR-2(
☐	TB1+GW2	TB1	SG4	GW	W	2	01-JUL-2003	26-SEP-2012	Info	abokor		LOGGERNET	1	Y	Y		09-APR-2(

There is an extensive list of DCVP station id attributes, several of which are hyperlinked to other related tables to provide additional information about the particular time series. For instance, you can find out the name of the person responsible for the validation of a particular SFWMD data set if you have questions about the data.

Radar Based Rainfall Data

This option is available on the SFWMD intranet only.

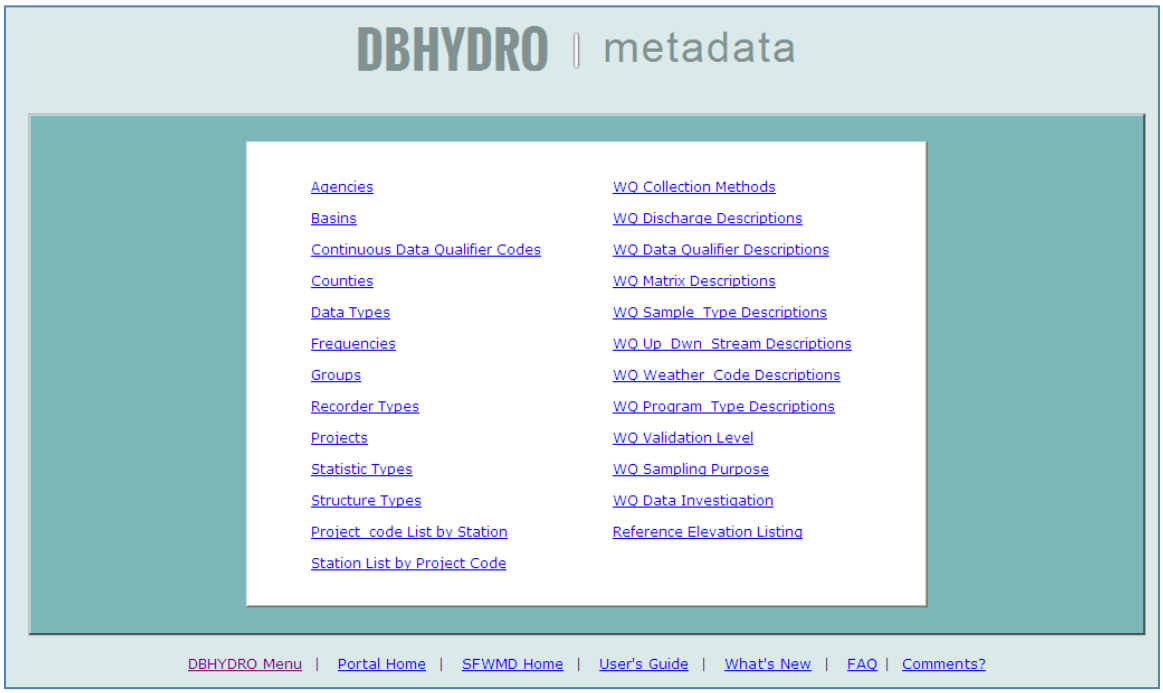


NEXRAD or **Nexrad** (**Nex**t-Generation **Rad**ar) is a network of 159 high-resolution S-band Doppler weather radars operated by the National Weather Service, an agency of the National Oceanic and Atmospheric Administration (NOAA) within the United States Department of Commerce. Its technical name is **WSR-88D**, which stands for **W**eather **S**urveillance **R**adar, 19**88**, **D**oppler. NEXRAD detects precipitation and atmospheric movement or wind. It returns data which when processed can be displayed in a mosaic map which shows patterns of precipitation and its movement. (source: Wikipedia, http://en.wikipedia.org/wiki/NEXRAD, accessed April 5, 2013).

This application, also known as NEXRAD or NEXRAIN data, has its own User's Guide which may be accessed from the bottom of the main screen as shown above. Both map-based and text-based retrievals are available. Map-based retrievals result in thematic maps of rainfall amounts defined by the geographic layer of choice. Text-based retrievals result in data files that may be viewed or imported into other applications.

Metadata/Reference Tables

Metadata includes descriptive information about the context, quality and condition, or characteristics of the data. In the case of DBHYDRO, each of the attributes of a time series or a measurement is such metadata. The domains from which these attributes are drawn are accessible by selecting the Metadata/Reference Tables option from the main page. Upon selection, the following DBHYDRO Metadata screen appears:



Selecting any one of the items displays an up-to-date list of valid values for that particular attribute.

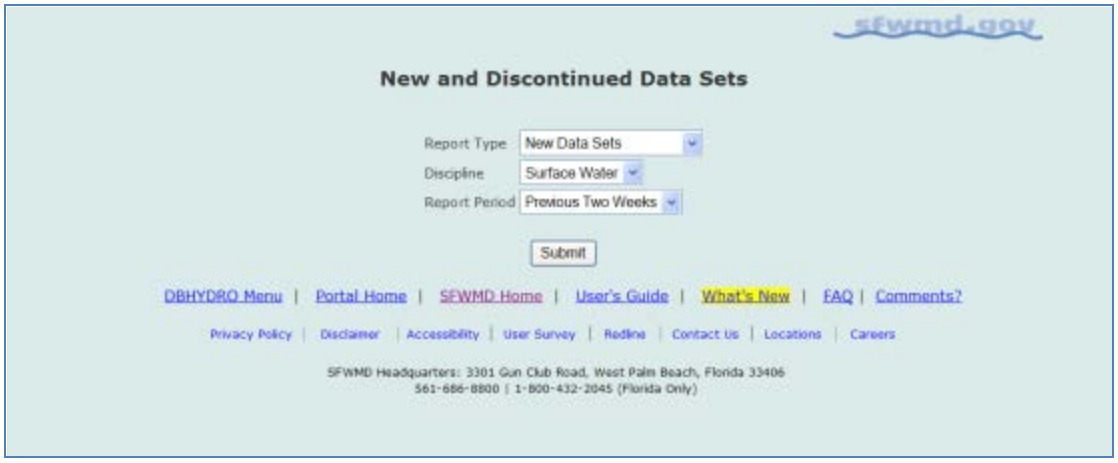
Miscellaneous Items and Reports

The menu items, some limited to SFWMD internal use only, offer other web resources that users have found helpful.

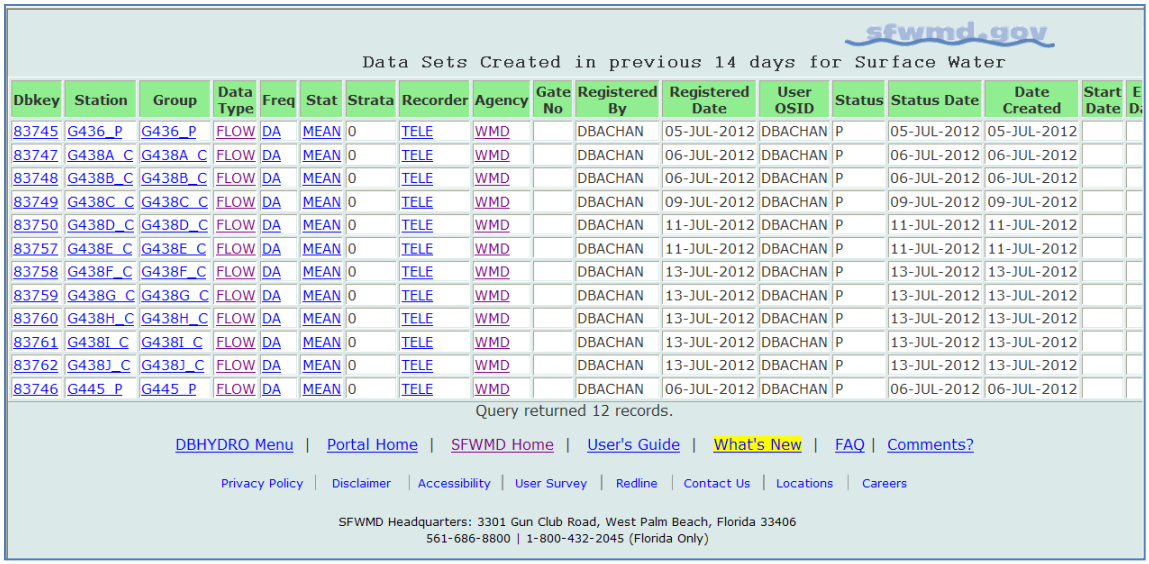
New and Discontinued Data Sets

New data sets are continually added to the database. Monitoring may also be discontinued or changed from one method to another. This feature provides information on these types of additions and changes to the database.

Selecting New and Discontinued Data Sets results in this screen…



You may choose from a variety of report types, disciplines, and date ranges of interest. The following screen displays the results of a query of newly created data sets in the surface water discipline:



Dbkey	Station	Group	Data Type	Freq	Stat	Strata	Recorder	Agency	Gate No	Registered By	Registered Date	User OSID	Status	Status Date	Date Created	Start Date	E D
83745	G436_P	G436_P	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	05-JUL-2012	DBACHAN	P	05-JUL-2012	05-JUL-2012		
83747	G438A_C	G438A_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	06-JUL-2012	DBACHAN	P	06-JUL-2012	06-JUL-2012		
83748	G438B_C	G438B_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	06-JUL-2012	DBACHAN	P	06-JUL-2012	06-JUL-2012		
83749	G438C_C	G438C_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	09-JUL-2012	DBACHAN	P	09-JUL-2012	09-JUL-2012		
83750	G438D_C	G438D_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	11-JUL-2012	DBACHAN	P	11-JUL-2012	11-JUL-2012		
83757	G438E_C	G438E_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	11-JUL-2012	DBACHAN	P	11-JUL-2012	11-JUL-2012		
83758	G438F_C	G438F_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	13-JUL-2012	DBACHAN	P	13-JUL-2012	13-JUL-2012		
83759	G438G_C	G438G_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	13-JUL-2012	DBACHAN	P	13-JUL-2012	13-JUL-2012		
83760	G438H_C	G438H_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	13-JUL-2012	DBACHAN	P	13-JUL-2012	13-JUL-2012		
83761	G438I_C	G438I_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	13-JUL-2012	DBACHAN	P	13-JUL-2012	13-JUL-2012		
83762	G438J_C	G438J_C	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	13-JUL-2012	DBACHAN	P	13-JUL-2012	13-JUL-2012		
83746	G445_P	G445_P	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	06-JUL-2012	DBACHAN	P	06-JUL-2012	06-JUL-2012		

By selecting “Other Data Sets at Station” you can see what other time series are, or have been, measured at the station of interest.

All the “headers” for each of the time series at the selected station are displayed here:

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Data Sets at Station G445_P

Dbkey	Station	Group	Data Type	Freq	Stat	Strata	Recorder	Agency	Gate No	Registered By	Registered Date	User OSID	Status	Status Date
83746	G445_P	G445_P	FLOW	DA	MEAN	0	TELE	WMD		DBACHAN	06-JUL-2012	DBACHAN	P	06-JUL-2012

Query returned 1 records.

DBHYDRO Menu | Portal Home | SFWMD Home | User's Guide | What's New | FAQ | Comments?

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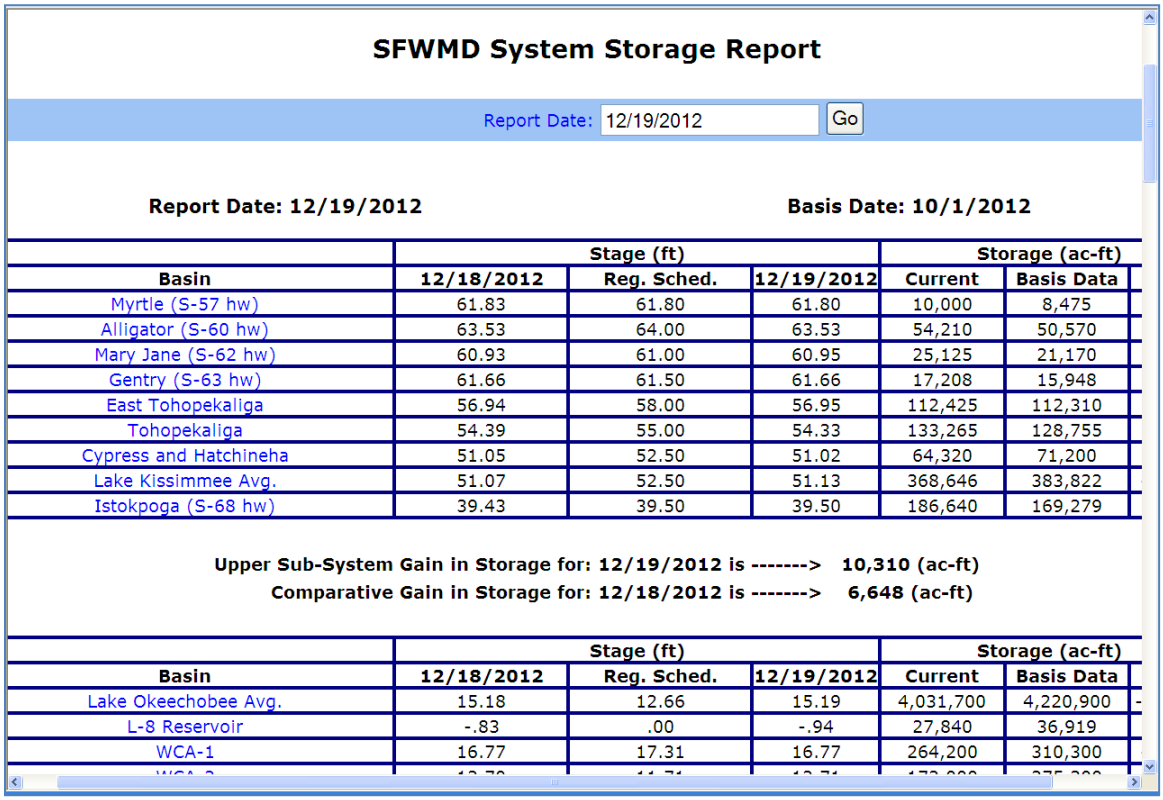
SFWMD Headquarters: 3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800 | 1-800-432-2045 (Florida Only)

SFWMD Daily System Storage Report

(targeted for retirement)

The Daily System Storage Report shows a number of key water bodies in south Florida and their current water levels, estimated storage, and recent changes in storage. The report is one of many tools available to water managers. The user must be authenticated on the SFWMD network to access this report.



SFWMD System Storage Report

Report Date: 12/19/2012 Go

Report Date: 12/19/2012 **Basis Date: 10/1/2012**

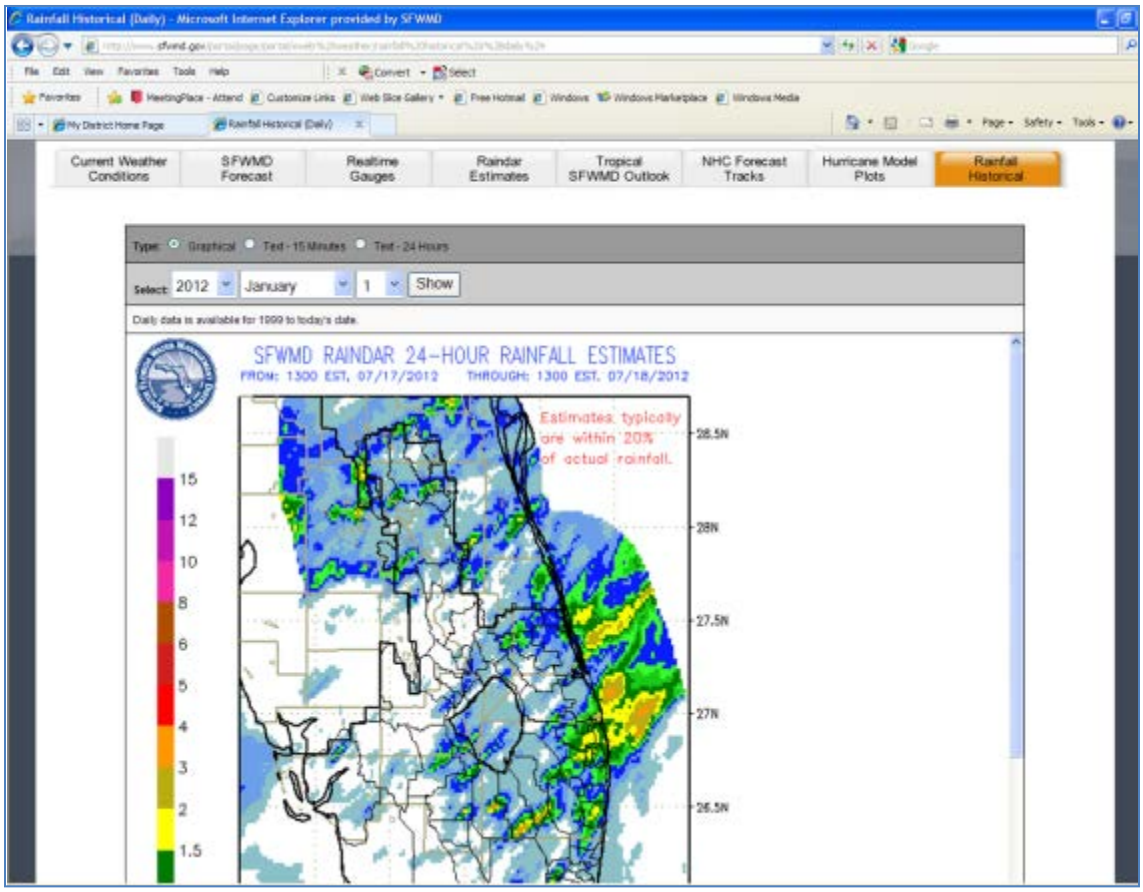
	Stage (ft)			Storage (ac-ft)	
Basin	**12/18/2012**	**Reg. Sched.**	**12/19/2012**	**Current**	**Basis Data**
Myrtle (S-57 hw)	61.83	61.80	61.80	10,000	8,475
Alligator (S-60 hw)	63.53	64.00	63.53	54,210	50,570
Mary Jane (S-62 hw)	60.93	61.00	60.95	25,125	21,170
Gentry (S-63 hw)	61.66	61.50	61.66	17,208	15,948
East Tohopekaliga	56.94	58.00	56.95	112,425	112,310
Tohopekaliga	54.39	55.00	54.33	133,265	128,755
Cypress and Hatchineha	51.05	52.50	51.02	64,320	71,200
Lake Kissimmee Avg.	51.07	52.50	51.13	368,646	383,822
Istokpoga (S-68 hw)	39.43	39.50	39.50	186,640	169,279

Upper Sub-System Gain in Storage for: 12/19/2012 is -------> 10,310 (ac-ft)
Comparative Gain in Storage for: 12/18/2012 is -------> 6,648 (ac-ft)

	Stage (ft)			Storage (ac-ft)	
Basin	**12/18/2012**	**Reg. Sched.**	**12/19/2012**	**Current**	**Basis Data**
Lake Okeechobee Avg.	15.18	12.66	15.19	4,031,700	4,220,900
L-8 Reservoir	-.83	.00	-.94	27,840	36,919
WCA-1	16.77	17.31	16.77	264,200	310,300

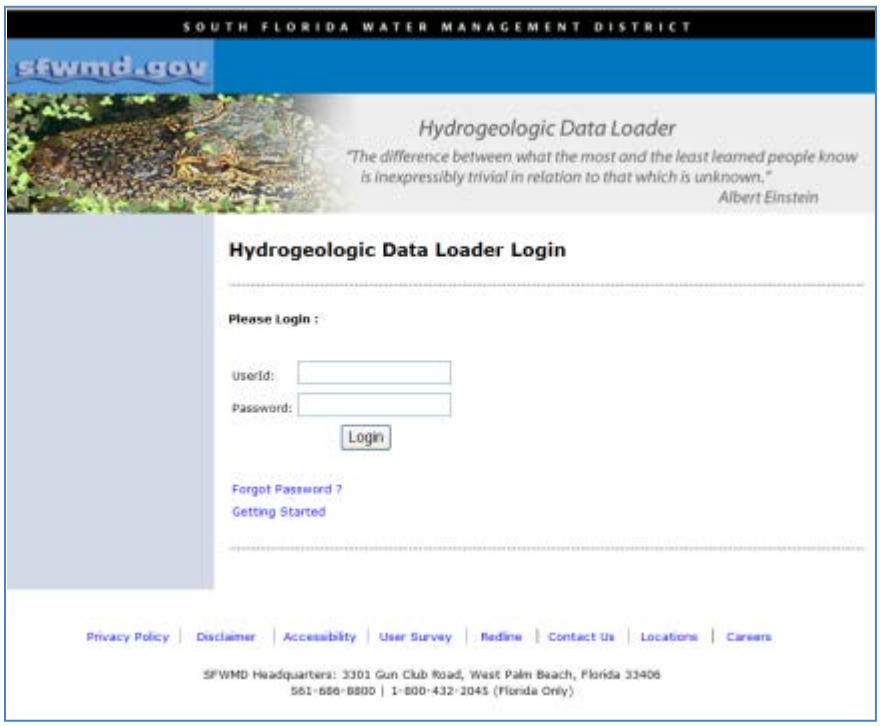
District Daily Rainfall Report

Several tabbed interfaces to District-wide rainfall data and other web-based climate resources are available via this page.



Hydrogeologic Data Loader

The hydrogeologic data loader is a specialized interface for SFWMD data stewards, or other authorized personnel, to perform bulk transfers of hydrogeologic data into DBHYDRO.



Water Budget

This function is available on the SFWMD intranet only.

The primary purpose of this program is to provide comprehensive water budget information for Stormwater Treatment Areas (STAs). However, the program can be used to develop a water budget for any water body, where daily data are available from the corporate database, DBHYDRO. The program is capable of performing calibration of water budgets for STAs and also for each cell within a STA.

The water budget application has its own user guide which is accessible from the water budget application menu.

Nutrient Load Computation Application

This function is available to SFWMD staff on the SFWMD intranet only.

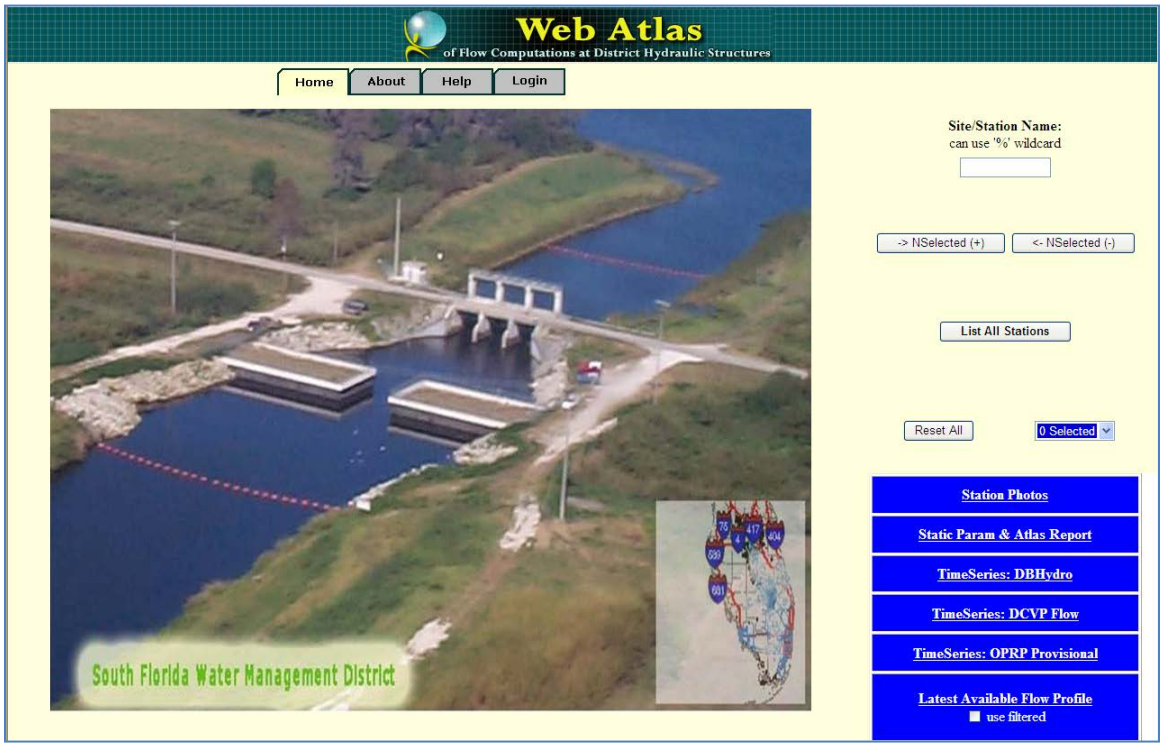
Key features of the nutrient load application include the ability to calculate loads based on flow time series and water quality concentration time series pairings. The outputs of these calculations are not presently stored in DBHYDRO.

The nutrient load application has its own User Guide accessible from the application's menu.

Web Atlas of Flow Computation at District Hydraulic Structures

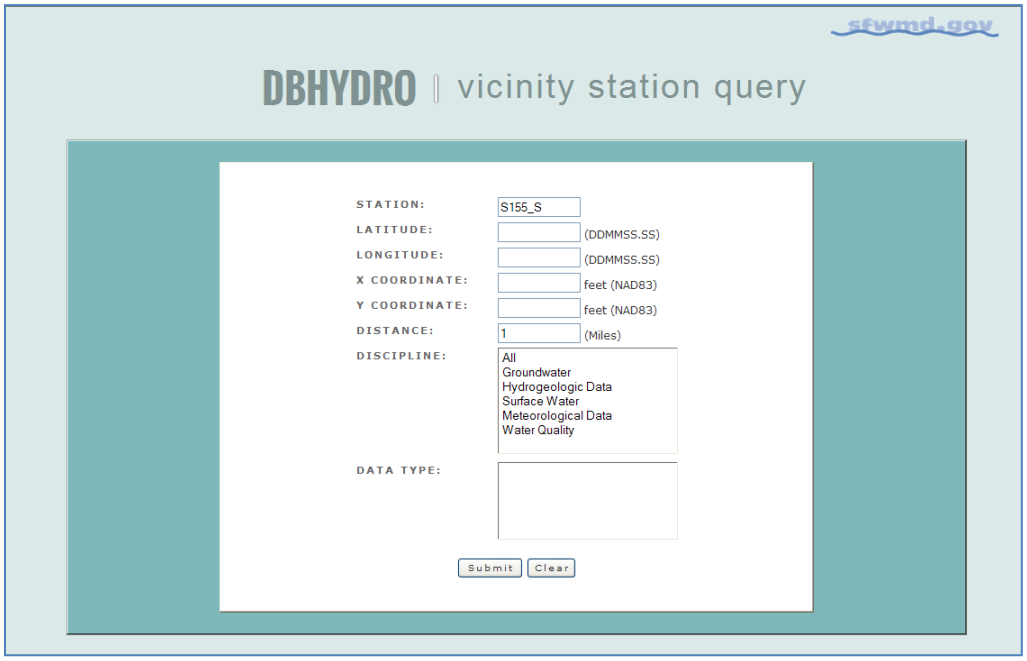
This function is available on the SFWMD intranet only.

The Web Atlas application is an interface to information on all registered hydraulic structures of type: culvert, pump, spillway, weir, or index velocity meter. The application displays station photos, accesses real-time and historical time series data, displays configuration parameters used in discharge computation, and describes the computations.

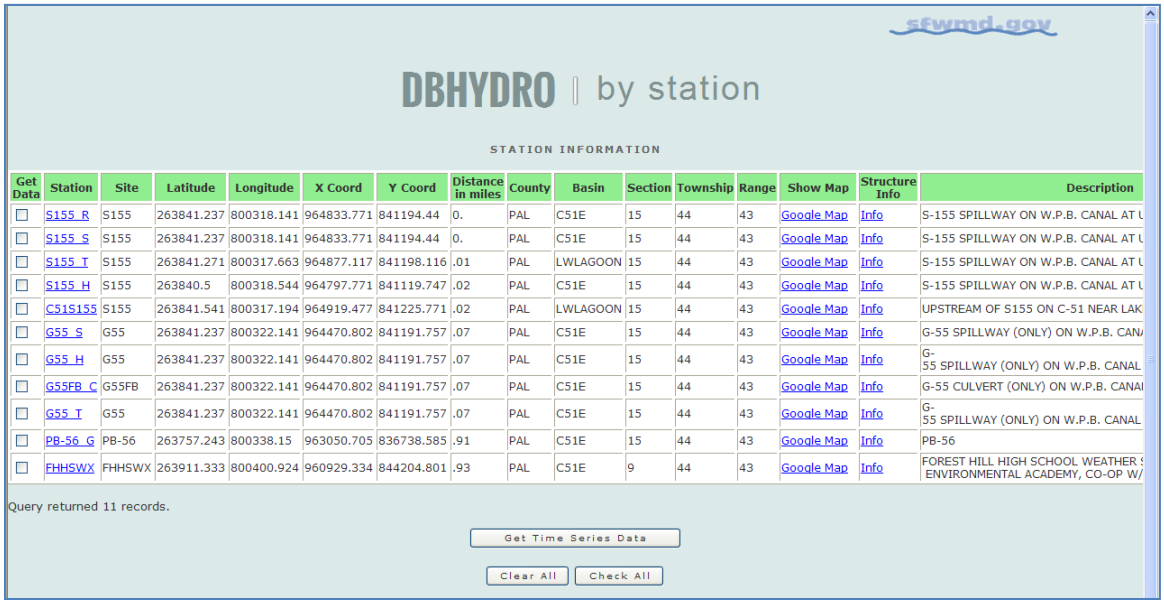


Nearby Station Look-up

By selecting Vicinity Station from the menu one can find out what stations are near a given station or coordinate. A variable distance in miles may be entered. The output list may be further filtered by discipline and even further by data type.



By clicking on Submit a list of stations, filtered if specified, within the provided distance is displayed, sorted by distance.



Web Services

Users have the ability to create their own interfaces to DBHYDRO by knowing some of the special URLs the system uses. Most URLs are exposed in the browser's address bar. If you like a page, many URL's can be copied and reused as a browser bookmark or in any document or other web page as a hyperlink. By embedding these hyperlinks in bookmarks or applications you can create a custom project-oriented or function-oriented document or web page and avoid having to navigate the DBHYDRO menu or Google Earth.

Note of caution: What may appear as spaces (" ") in these URL examples are actually underscores ("_").

Water Quality Results

Water quality data access is controlled by an SQL "where clause" that defines which data is to be retrieved and a target_code which defines the destination of the retrieved data. The where clause may contain references to project_code, station_id, and date_collected. The target_code may either be screen or csv. Screen displays results on the screen and csv creates a comma separated variable (.csv) file for ready import into software applications such as Microsoft Excel. Only data that has met quality standards for SFWMD mandated reports are accessible via these URLs. Data not meeting such reporting standards is considered to be "flagged".

The water quality data report for data that has not been flagged can be generated directly for any project_code, in this case ACMEB, with the following URL:

http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+project_code+=+**'ACMEB'**&v_target_code=screen

The water quality data report for data that has not been flagged can be generated directly for any station, in this case ORF-62, with the following URL:

http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+station_id+=+'**ORF-62'**&v_target_code=screen

The water quality data report for data that has not been flagged can be generated directly for a list of stations with the following URL:

http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+station_id+in+(**'ACRA1','ACRA2'**)&v_target_code=screen
The station list is enclosed by parentheses with each station in single quotes and separated by commas.

You can restrict date ranges. If you want to get data only after a certain date, insert after "v_where_clause=where", the following string:
+date_collected+>+**'01-JAN-2010'**+and+

as follows:
http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+date_collected+>+**'01-JAN-2010'**+and+station_id+in+(**'ORF-62','ACRA1'**)&v_target_code=screen

To write the results directly to a .csv (comma separated variable) file use a target_code of file_csv as shown here:
http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+date_collected+>+'01-JAN-2010'+and+station_id+in+('ORF-62','ACRA1')&v_target_code=**file_csv**

You may also use:
+date_collected+<+**'01-JAN-2011'**+and+
to get data only before a certain date.

To display the data for all stations beginning with the characters ACRAWEL:
http://my.sfwmd.gov/dbhydroplsql/water_quality_data.report_full?v_where_clause=where+station_id+like+('ACRAWEL%25')&v_target_code=screen
Note the use of %25 as the wildcard.

Notes:
Flagged water quality data must be retrieved interactively via DBHYDRO Browser.

Hydrologic Instantaneous and Daily Values

A daily values report can be generated directly for any dbkey, in this case 15631, and date range with the following URL:

http://my.sfwmd.gov/dbhydroplsql/web_io.report_process?v_period=uspec&v_start_date=20090101&v_end_date=20110430&v_report_type=format6&v_target_code=screen&v_run_mode=onLine&v_js_flag=Y&v_dbkey=15631

Use v_period=uspec (user specified) to have explicit control over the start and end dates of the period for which data is to be retrieved. v_start_data and v_end_date are provided in the format of YYYYMMDD. Multiple dbkeys are separated by a forward slash (/). Options for v_report_type include format6 and format7. format6 is one value per row. format7 is multiple timeseries daily values per row. Each input variable, except for the first one, is preceded by the ampersand character.

Instantaneous values time series are retrieved only using format6.

Notes:
Specification of dates has a different format for water quality than it does for daily values.

Hydrographs

A hydrograph of the past 7 days (1 week) of instantaneous near real-time values from the four gages that comprise the Lake Okeechobee daily average is generated as follows:

http://my.sfwmd.gov/dbhydroGraph/servlet/DbhydroGraphServlet.do?v_report_type=format6&v_period=1week&v_dbkey=IX846/IX865/IX875/IY030

Dbkeys should be of frequency 'BK' to execute properly with this URL. Other options for the period for instantaneous data include '3day' and 'today'. Increasing the number of dbkeys and the duration will increase the time it takes to generate the graph. Multiple dbkeys are separated by the forward slash (/) character.

To generate a hydrograph of the past year of daily stage values from four water level gages on Lake Okeechobee:

http://my.sfwmd.gov/dbhydroGraph/servlet/DbhydroGraphServlet.do?v_report_type=format6&v_period=year&v_dbkey=16022/12509/12519/16265

Dbkeys should be of frequency 'DA' for periods of one year (v_period=year). Other appropriate options for daily values hydrographs include v_period=month. v_start_date and v_end_date may always be supplied explicitly. The values of v_start_date and v_end_date will be ignored unless the value of v_period is provided as v_period=uspec.

An error may be encountered if there is no data, or insufficient data, in the period specified. Tip: If a  icon should appear where the graph otherwise should, refreshing  your page will often solve the problem.

Note: To ensure updated data be sure to clear your web browser cache prior to executing the same url a second time within the same browser session.

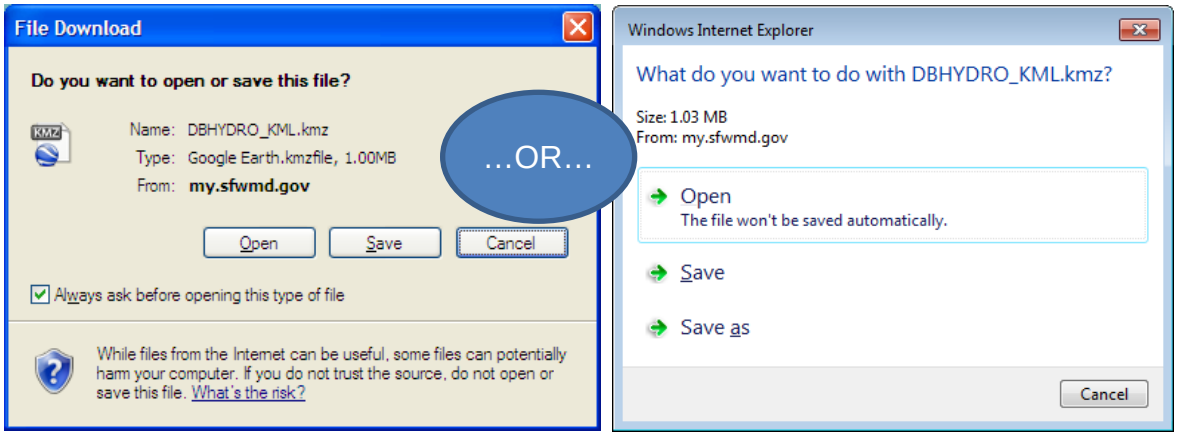
Map-based Access Using Google Earth

Access to DBHYDRO Browser via Google Earth is enabled from the main menu or through the use of this special URL:
http://my.sfwmd.gov/KMLEXT/CUSTOMKMLS/DBHydro/DBHydroKML/DBHYDRO_KML.kmz

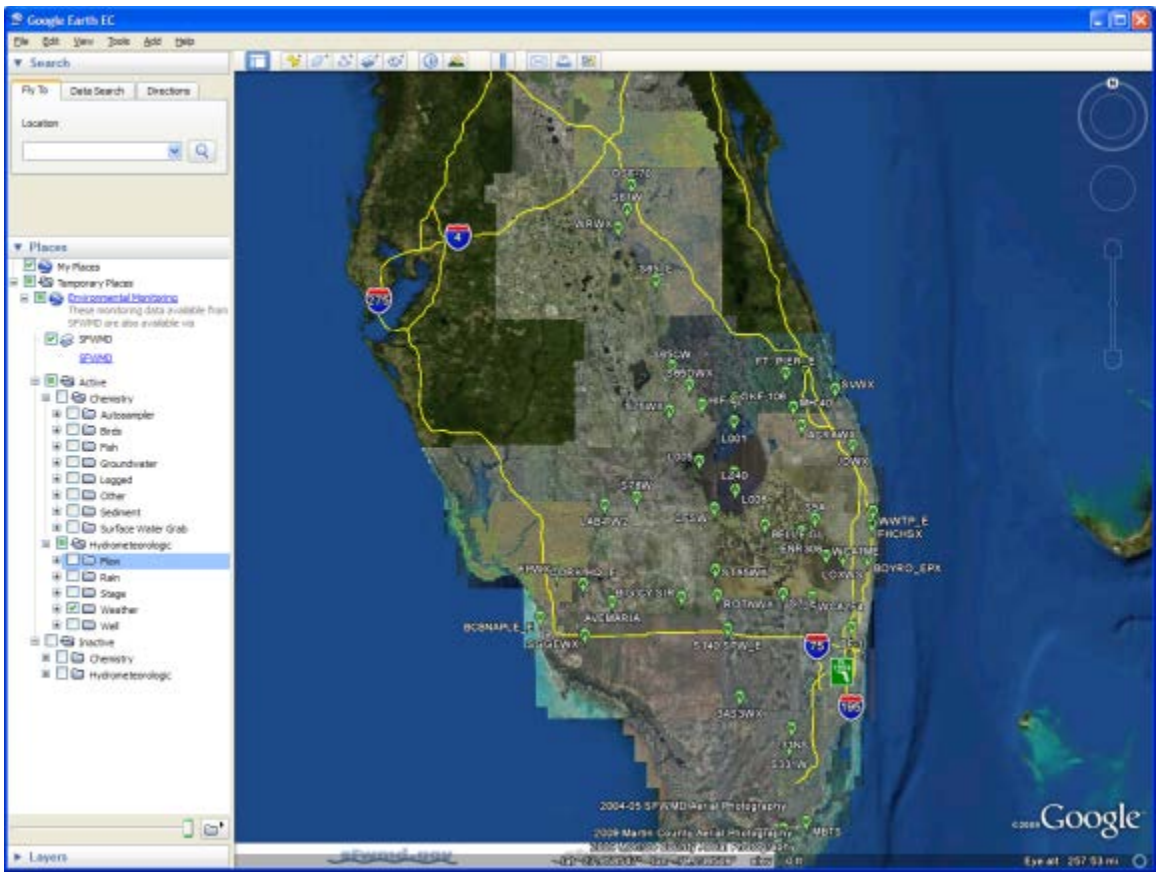
Either way, the user's computer requires the free to the public Google Earth software downloadable from: http://www.google.com/earth/download/ge/

Knowledge of the Google Earth software is assumed.

When selecting the DBHYDRO via Google Earth hyperlink, if presented with choices such as:



the user should choose Open. Opening the .kmz file will start Google Earth and present the user an initial view of the monitoring network as shown:

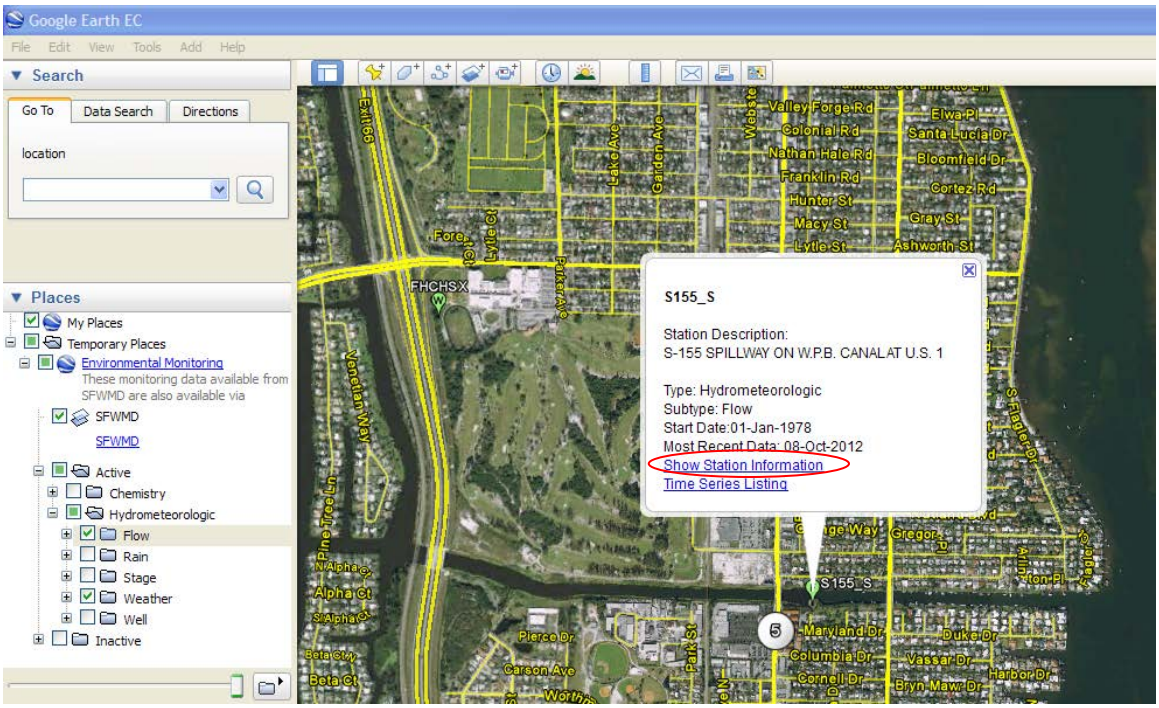


In the event Google Earth fails to launch as shown you may Save the .kmz file to your computer and then drag it into an open Google Earth window.

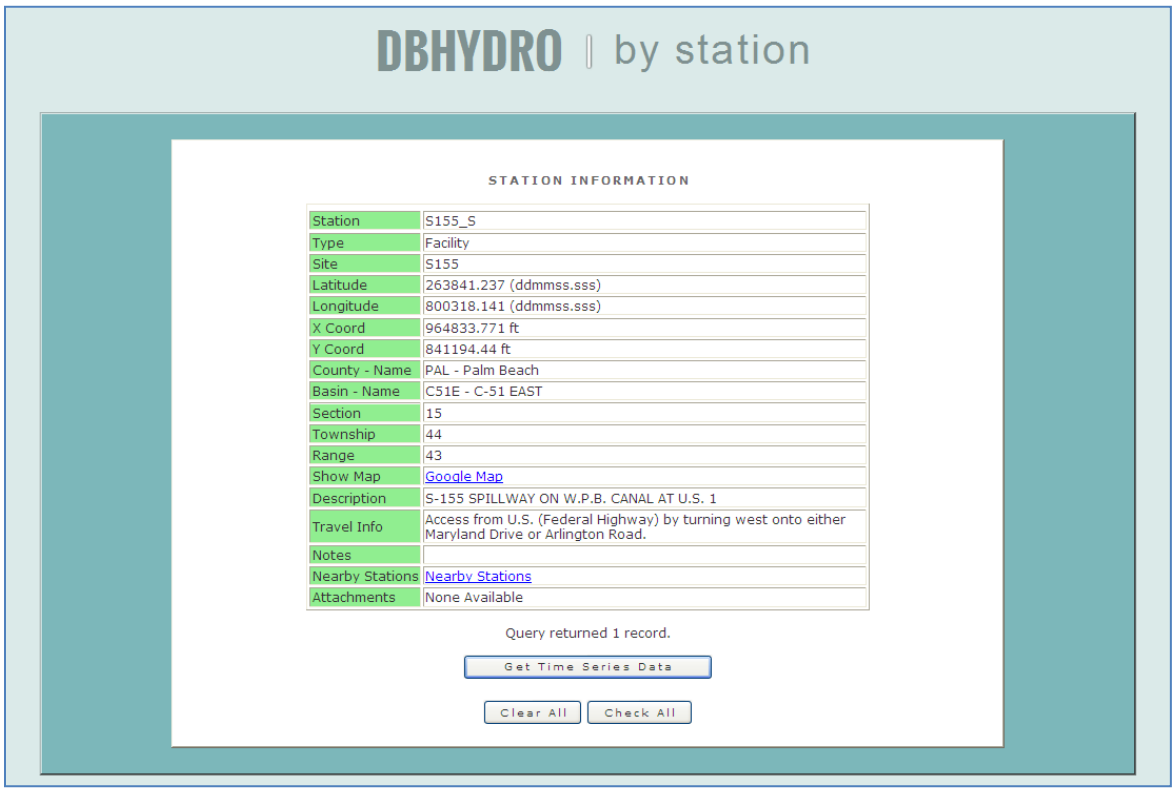
For best performance, after loading of the DBHYDRO Environmental Monitoring placemarks, the user should first zoom to a specific area of interest then turn on placemarks on the map. Turning on all the placemarks while zoomed out will result in longer page re-display times and a cluttered screen.

These placemarks are loaded into the Temporary Places section of Google Earth as Environmental Monitoring and, if prompted, should be discarded upon exiting Google Earth.

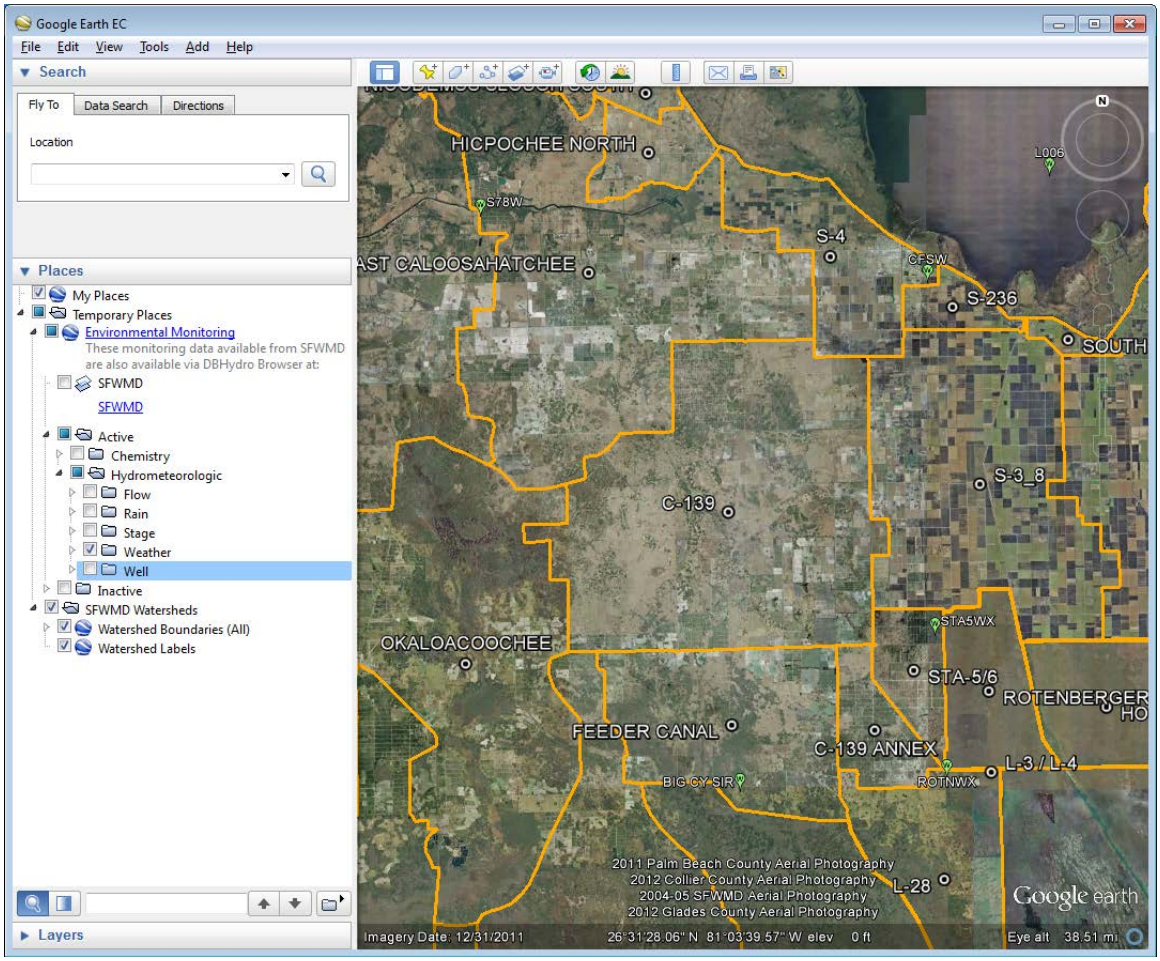
In this example we have first zoomed into eastern Palm Beach County and located the S-155 spillway and then turned on the Active Flow placemarks.



Selecting the Show Station Information link leads us to the station information screen we have seen earlier in this user guide. As you might infer, the map interface is an alternative, and for some more intuitive, path to the same data accessible through the menu-driven web pages.



The South Florida Water Management District watersheds may be added to the Google Earth session by selecting this hyperlink:
http://my.sfwmd.gov/KMLEXT/CUSTOMKMLS/DBHydro/Watersheds/SFWMDWatersheds.kmz



The watershed boundaries places pane may be expanded to identify each watershed separately. By default, the watershed boundaries are turned on.

The watershed labels may be turned on and off as a distinct layer. By default the watershed labels are turned off.

Application Enhancements

Contact Brian Turcotte at 561-682-6579 or email at bturcott@sfwmd.gov to discuss or request ideas for improvement. SFWMD employees may also call the IT Help Desk, send email to "IT Help Desk", or log their own Remedy Help Desk requests or bug reports.

Training

The South Florida Water Management District offers *Introduction to DBHYDRO* training. District employees should contact their training coordinator to register and sign up for course number 50015360. Non-District personnel should contact Sharon Peterkin, 561-686-8800 x4594, speterk@sfwmd.gov to reserve a seat in a class.

Data Requests and Inquiries

Sharon Peterkin, 561-686-8800 x4594, speterk@sfwmd.gov , is available as a first point of contact to assist users in data acquisition, to report questionable data, or to route data inquiries to the appropriate data steward.

Appendix A - Water Quality Report Column Descriptions

PROJECT CODE
A short identifier given to a collection of samples from a group of related stations. The code identifies project-specific samples. The code is typically derived from the project description. e.g. "ENRP" is the project code for samples collected in the "Everglades Nutrient Removal Project".

STATION ID
Identifies the sampling station name for the water quality data sample collection activity.

SAMPLE ID
Identifies a discrete sample within a project. Uusually sequential numbers 00001 - 99999.

FIRST TRIGGER DATE
Populated for autosampler data

COLLECTION DATE
Date and time the sample was collected by the field person.

SAMPLE TYPE NEW
Keeps track of the kind of sample and is considered more technically correct than the sample type numeric code.

COLLECTION METHOD
The method by which the sample was collected. For example, 'G' means **g**rab sample. Codes are listed in the metadata listings pages.

DEPTH
The depth below the water surface at which the sample was taken.

DEPTH_UNITS
The units of measure of the depth value.

MATRIX
The substance in which the analyte was present.

TEST_NUMBER
Numeric code used to identify individual tests within the laboratory. e.g. 25 = TPO4 "Total Phosphorus".

TEST NAME
A description of the test performed.

STORET CODE
The Environmental Protection Agency five character legacy code for the corresponding result.

METHOD
The method by which the sample was analyzed.

MEASURE DATE
The data the laboratory analysis was conducted.

VALUE
Numeric field which contains the result analyzed for a specific test.

UNCERTAINTY
The reporting of estimated analytical measurement uncertainty values for all analytes was implemented at the SFWMD Chemistry Laboratory in July 2012. The values entered into DBHYDRO for the District's laboratory reflect only analytical uncertainty (i.e., without the contributions from field activities). The uncertainty has a probabilistic basis and reflects incomplete knowledge of the quantity. All measurements are subject to uncertainty and a measured value is only complete if it is accompanied by a statement of the associated uncertainty.

The uncertainty value in DBHYDRO has been estimated using the nested hierarchical methodology by Ingersoll (2001) in combination with a mathematical model found in the Eurachem/CITAC (2000) guide on uncertainty. This QC-based nested approach uses the statistical quality control data attributed to laboratory measurement activities and does not include uncertainty attributed to field sampling activities. The estimated uncertainty is calculated using the following equation:

$$u(x) = \sqrt{s_o^2 + (s_1^2 x^2)}$$

in which:

- $u(x)$ is the combined standard uncertainty in the result x.
- s_0 is a constant contribution to the overall uncertainty derived from the procedure to determine the MDL.
- s_1 is a proportionality constant derived from nested hierarchical methodology by Ingersoll.

Many factors contribute towards deviation from the true value of the measurement including:

- Imperfections in the measuring instrument
- Imperfections in the measurement method
- Operator effects

MDL
Method Detection Limit. Is peculiar to each laboratory and is calculated based on statistical analysis of the results of repeated analyses of the same standard. "The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte. The MDL for an analytical procedure may vary as function of sample type. The procedure requires a complete, specific, and well defined analytical method. It is essential that all sample processing steps of the analytical method be included in the determination of the method detection limit."--- CFR Part 136 Appendix B (revised July 1998)

PQL
Practical Quantitation Level. One may estimate the quantitation limits as 4 to 10 times the method detection limit if the matrix is ground water or low-concentration soil, and 500 times the method detection limit for VOC*s in water-miscible liquid waste. In setting a quantification level, the agency must consider the achievability of the value by competent commercial laboratories.

RDL
This value is the Reportable Detection Limit and is the lowest value the analyst has confidence reporting.

UNITS
Contains the units in which a test value is reported by the laboratory (SFWMD or contractor) e.g. microg/L. Ideally, all units for a given test should be reported the same. When a lab gives us different units for a test it should trigger a review of the value so we make sure the data set is consistent with respect to units.

REMARK_CODE
Comprised of zero, one, or more data qualifiers as applied by the lab or project manager. The list of data qualifiers and their meaning are approved by Florida DEP.

FLAG
Indicates data that is excluded from certain analyses based on interagency agreement. Your criteria may be different. Flag is <null> unless there is a "fatal" qualifier in the remark code. In such a case the flag is set to ‘yes’. The user should review the REMARK CODE field on every result.

LIMS_NUMBER
Unique string generated by the laboratory at sample log in. Used to identify a discrete sample and all results for a sample. e.g. "l345-670"

SOURCE
Identifies the source laboratory of the sample data. e.g. "USGS" indicates data came from the United States Geological Survey.'

OWNER
Typically the organization who paid for the analysis.

VALIDATION LEVEL
The degree to which validation occurred. Codes are listed in the metadata listings.

VALIDATOR
The organization responsible for the validation of result.

SAMPLING PURPOSE
The purpose of the sample provides context for potential re-use of the data for other purposes.

DATA INVESTIGATION
Indicates whether the data has been subject to additional investigation subsequent to validation. Presence of the indicator helps prevent unnecessary re-investigations of data. Results of investigations are kept on file for future inquiries.

TDEPTH
The total depth of the water column at the location of the sample.

DCS
DCS is depth to consolidated substrate. Values are in meters.

SAMPLE TYPE
Two digit number for legacy applications. Information embedded here is contained explicitly in other report columns.

QCTYPE
Indicates sample is a quality control sample otherwise null. e.g. EB = Equipment Blank.

DISCHARGE
A code indicating whether or not water was flowing at the time of the sampling event and in which direction it was flowing if it was flowing. Codes are 0 = no discharge, 1 = flow in the positive direction, 2 = flow in the negative direction.

UP DWN STREAM
Indicates where a sample was collected with respect to a control structure. If downstream and flowing then higher turbidity may be expected. Codes are 0 = Undefined, 1 = Upstream, 2 = Downstream.

WEATHER CODE
Weather conditions when sample was taken e.g. 0 = undefined, 01 = clear skies, 02 = slight overcast, 03 = medium overcast, 04 = very overcast, 05 = drizzle, 06 = rain

PROGRAM TYPE
Distinguishes routine monitoring data from experimental data.

Appendix B - Units Conversions

Length
1 meter = 3.281 feet

Area
1 acre = 43,560 square feet

Volume
1 cfs-day = 86,400 cubic feet
1 cubic foot = 7.481 gallons
1 acre-ft = 43,560 cubic feet
1 acre-ft = 325,900 gallons

Temperature
[°Fahrenheit] = [°Celsius] × $^{9}/_{5}$ + 32
[°Celsius] = ([°Fahrenheit] − 32) × $^{5}/_{9}$

Appendix C - Units Abbreviations/Symbols

Symbol	Description
mg/L	milligrams per litre
ug/L	micrograms per litre
ng/L	nanograms per litre
g/cc	grams per cubic centimetre
ug/kg	micrograms per kilogram
mm	millimetres
ft	feet
ft NAVD88	feet North American Vertical Datum 1988
ft NGVD29	feet National Geodetic Vertical Datum 1929
cfs	cubic feet per second


SOUTH FLORIDA WATER MANAGEMENT DISTRICT
PROTECTION OF THE EVERGLADES SINCE 1949

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