

Water-Data Report 2012

260920080092201 Local number G 2898. USGS Observation Well near Fort Lauderdale, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Broward County, FL

LOCATION.--Lat 26°09'21.6", long 80°09'21.6" referenced to North American Datum of 1983, in NE ¼ SE ¼ sec.28, T.49 S., R.42 E., Broward County, FL, Hydrologic Unit 03090202, near discontinued toll booth located 0.1 mi west of the Powerline Road (State Road 845) entrance to Mills Pond Park, 0.74 mi south of Oakland Park Boulevard (State Road 816).

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 119.5 ft. Upper casing diameter 2; top of first opening 109.5 ft, bottom of last opening 119.5 ft.

DATUM.--Land-surface datum is 5.20 ft above National Geodetic Vertical Datum of 1929. Measuring point: From June 5, 2002, to present, measuring point has been top of casing, 5.21 ft above National Geodetic Vertical Datum of 1929 (NGVD). From Feb. 21, 2001, to June 4, 2002, measuring point was top of base, 8.35 ft above NGVD. From Sept. 29, 1997, to Feb. 21, 2001, measuring point was top of casing, 5.21 ft above NGVD. Between February 21, 2001 and June 4, 2002, the top of base measuring point was incorrectly considered to be 8.43 ft above NGVD (reported as 8.44 ft above NGVD in the 2002 Water Resources Data Report). From July 24, 2002 to January 30, 2003, and prior to February 21, 2001, top of casing measuring point was incorrectly considered to be 5.20 ft NGVD. See REMARKS.

PERIOD OF RECORD.--October 1999 to January 2001 (monthly), February 2001 to June 2002 (daily), July 2002 to current year. See REMARKS.

INSTRUMENTATION.--Monthly measurement with chalked steel tape or electric tape. See REMARKS.

REMARKS.--This well is also used for salinity monitoring. Quarterly salinity sampling began in October 1999, with monthly sample collection from January 2000 to July 2002. Electromagnetic induction logs were collected from April 2000 to May 2011. The station was temporarily reconstructed between February 21, 2001 and June 4, 2002, and continuous water-level and conductivity data were collected, from March 2001 through June 2002, as part of a salt water intrusion modeling project. Data from this project are available in the files of the U.S. Geological Survey. The figures of water level as elevation, in feet NGVD, from October 1999 to January 2003 are in error. Corrected records are in the files of the U.S. Geological Survey. See DATUM. Induction logs are used to assess the movement of the fresh-water/salt-water interface in ground water. See [a href="http://www.sflorida.er.usgs.gov/edl_data/text/induction.html#induction">RECORDS OF BULK CONDUCTIVITY.](http://www.sflorida.er.usgs.gov/edl_data/text/induction.html#induction)

In 2008, the induction probe calibration equipment was found to have been misidentified by the manufacturer, resulting in a combination of errors of scale for converting instrument response to units of measurement (mS/m) and errors in correcting the log data to consistent units of measurement among the induction logs collected. The equipment misidentification and resulting errors affect data collected from 2002 to 2008 at this station. As a result, published induction logs released by the U.S. Geological Survey prior to 2008 are considered to be in error. The combined corrections require a 1.33 multiplier to be applied to the bulk conductivity data collected from 2002 to 2008. A 1.0 multiplier has been applied to the remainder of the data, to the 2011 year. The logs published in the annual reports include the noted corrections. However, the depths of any hydrologic or lithologic features previously shown in the published logs are not affected.

Because the bulk conductivity data from this well is affected by changes in groundwater salinity throughout the logged depth interval, adjusting the logs for variations in environmental conditions and/or probe calibrations has been determined to be impractical. The resulting plot of logs collected, from 2000 to the 2011 water year, were provided in the annual reports. The original and corrected records of bulk conductivity, in millisiemens per meter, are available in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--

WATER-LEVEL ELEVATION: Highest daily maximum water level, 4.25 ft NGVD, Sept. 29, 2001; lowest measured water level, 0.16 ft NGVD, Mar. 01, 2011.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 2,650 mg/L, Oct. 27, 2011; lowest, 360 mg/L, Jan. 5, 2001, Jan. 15, June 4, 2002.

260920080092201 Local number G 2898. USGS Observation Well near Fort Lauderdale, FL.—Continued

WATER-QUALITY DATA**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**[NGVD, National Geodetic Vertical Datum; ft, feet; mg/L, milligrams per liter;
°C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter; --, no data]

Date	Sample start time	Specific conduc- tance, water, unfiltered, $\mu\text{S}/\text{cm}$ at 25°C (00095)	Elevation above NGVD 1929, ft (72020)	Chloride, water, unfiltered, mg/L (99220)
October 27, 2011	1300	8,720	1.89	2,600
November 16, 2011	1024	--	1.93	--
December 16, 2011	1728	--	1.51	--
January 20, 2012	1506	7,020	.34	2,000
February 16, 2012	1040	--	1.07	--
March 12, 2012	1255	--	.94	--
April 16, 2012	1448	7,720	1.03	2,400
May 15, 2012	1103	--	1.39	--
June 18, 2012	1145	--	1.52	--
July 6, 2012	1550	6,860	1.47	2,200
August 9, 2012	1356	--	1.24	--
September 18, 2012	1512	--	1.93	--