

Water-Data Report 2011

254722080152201 Local number G 3604. USGS Observation Well near Miami, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Miami-Dade County, FL

LOCATION.--Lat 25°47'23.7", long 80°15'22.6" referenced to North American Datum of 1983, in NE ¼ SE ¼ NE ¼ sec.32, T.53 S., R.41 E., Miami-Dade County, FL, Hydrologic Unit 03090202, at northeast entrance to parking lot of Grapeland Heights Park, at intersection of NW 37th Avenue and NW 17th Street, 57 ft west of sidewalk, 0.3 mi north of State Road 836.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 120 ft. Upper casing diameter 2 in.; top of first opening 115 ft, bottom of last opening 120 ft.

DATUM.--Land-surface datum is 5 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 5.03 ft above National Geodetic Vertical Datum of 1929, Aug. 26, 1995, to present.

PERIOD OF RECORD.--August 1995 to current year. See REMARKS.

INSTRUMENTATION.--Quarterly measurement with chalked steel tape or electric tape. Annual profile with electromagnetic induction logger. See REMARKS.

REMARKS.--This station is also used for salinity monitoring, including an annual induction log. Salinity monitoring and induction logging began August 1995. Water-level measurements began November 2000. Induction logs are used to assess movement of the fresh-water/salt-water interface in ground water. See [RECORDS OF BULK CONDUCTIVITY](#).

In WY2008, the instrument used to calibrate the induction logging probe was re-examined, and found to have been constructed to a different specification than originally communicated by the manufacturer. As a consequence of this calibration problem, logs of bulk conductivity collected from 1995 to 2007 are considered to be in error. The 0.7686 multiplier correction applied to most bulk conductivity data collected prior to WY2002, as referenced in previous data publications, is not required. Instead, a 1.33 multiplier correction is required for bulk conductivity data collected from water years 1995, 1996, 1998, and 2002 to 2007. A 1.0 multiplier has been applied to the remainder of the data, to the current year. However, the depths of any hydrologic or lithologic features seen in the published logs are not affected by this correction.

In order to display changes in bulk conductivity between induction logs collected over the period of record, each log has been adjusted to a median conductivity value at a depth that corresponds to a stable lithologic feature which produces a consistent conductivity profile, based on data collected from 1995 to 1999, 2001 to 2008. These adjustments compensate for small variations in equipment response resulting from variations in environmental conditions and/or probe calibrations. For this station, induction logs are adjusted to a median response of 13.4 mS/m at a depth of 52.1 ft below land surface. The resulting plot of logs collected from 1995 to the current year is provided in this report. 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 water level measured, 2.52 ft NGVD, June 15, 2007; lowest, 0.76 ft NGVD, Jan. 22, 2009.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 5,000 mg/L, Apr. 20, 2010, Apr. 25, 2011; lowest, 2,600 mg/L, July 31, 2006.

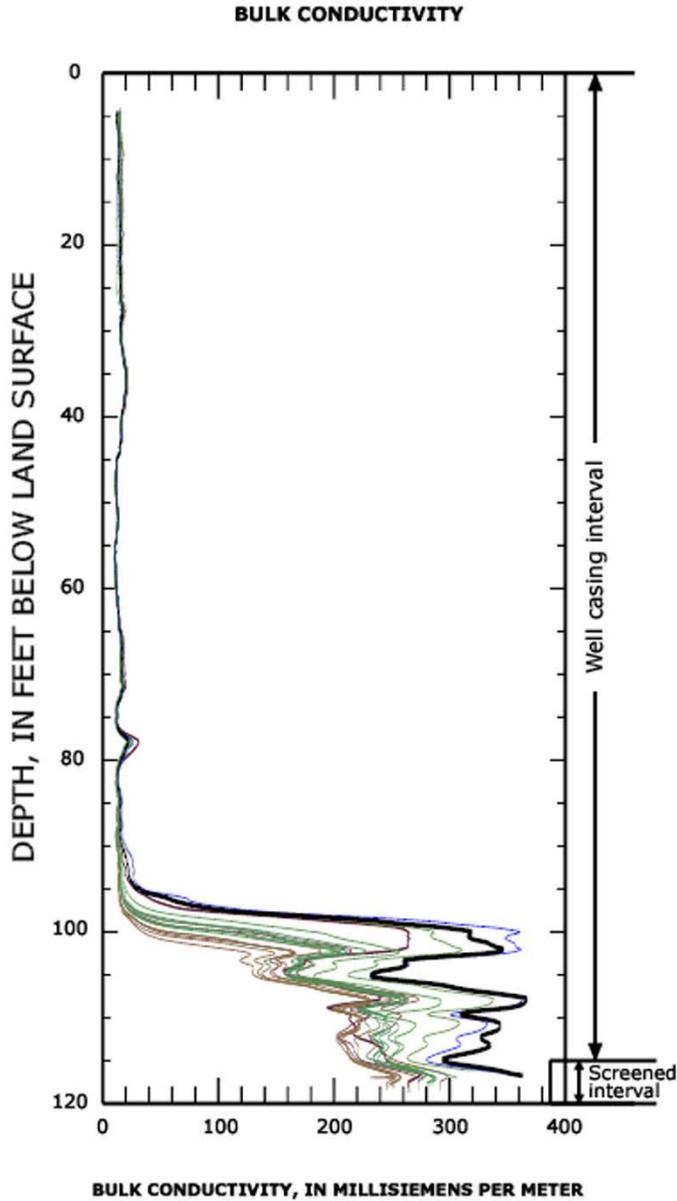
254722080152201 Local number G 3604. USGS Observation Well near Miami, FL.—Continued

WATER-QUALITY DATA**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**[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 21, 2010	1137	--	1.96	--
January 26, 2011	1457	--	1.62	--
April 25, 2011	0912	15,600	1.20	5,000
July 14, 2011	1045	--	1.71	--



WY 2011 Induction log results
Station: USGS 254722080152201
Local name: G -3604



**INDUCTION LOG DATES,
 ASSOCIATED CHLORIDE SAMPLE DATES**

Induction log date	Chloride sample date	Dissolved chloride concentration, in mg/L
April 25, 2011	April 25, 2011	5,000
April 20, 2010	April 20, 2010	5,000
May 11, 2009	May 12, 2009	4,600
May 2, 2008	May 2, 2008	4,100
June 15, 2007	June 15, 2007	3,600
Sept. 13, 2006	Sept. 13, 2006	2,800
April 18, 2005	April 18, 2005	2,800
April 21, 2004	April 21, 2004	3,600
April 28, 2003	April 28, 2003	3,500
May 14, 2002	May 14, 2002	3,400
April 6, 2001	April 6, 2001	3,200
April 13, 2000	April 13, 2000	3,500
April 12, 1999	April 12, 1999	3,500
April 3, 1998	April 16, 1998	3,500
April 21, 1997	April 21, 1997	3,600
May 13, 1996	- no sample -	--
Jan. 17, 1996	Jan. 10, 1996	4,000
Aug 29, 1995	Aug 26, 1995	3,100

254722080152201 Local number G 3604. USGS Observation Well near Miami, FL.—Continued**Lithologic log, USGS 254722080152201. Local Number G -3604**

Depth interval (ft below land surface)	Lithologic description
0 - 5	Regolith with micritic limestone fragments
5 - 20	Micritic limestone with very fine grains of phosphate; sequence changes color from white to gray as it nears the surface
20 - 65	Sandy micritic limestone, fine to medium-grained quartz sand; includes calcified coral and marine shells grading to limestone with no marine shells
65 - 70	Sandy limestone, medium-grained quartz sand in a micritic limestone matrix with marine shell fragments
70 - 75	Sandy limestone, medium-grained quartz sand in a micritic limestone matrix; includes marine shell fragments and shows some dissolution
75 - 80	Sandy limestone, well sorted fine-grained quartz sand in a micritic matrix with marine shells
80 - 85	Fresh-water limestone with gastropod shells; includes moderately sorted quartz sand and dissolution features
85 - 100	Sandy limestone, medium to fine-grained quartz sand in a micritic limestone matrix, includes marine shells, dissolution features and some recrystallization
100 - 120	Quartz sand, poorly sorted, very fine to coarse-grained; includes rock fragments marine shells and fine phosphate grains; sequence fines upwards and changes color from gray to white; there is some calcite cementation in the rock fragments