

Water-Data Report 2012

253710080184701 Local number G 3611. USGS Observation Well near Cutler, FL.

Biscayne aquifer
Biscayne Limestone Aquifer

Miami-Dade County, FL

LOCATION.--Lat 25°37'10.4", long 80°18'45.4" referenced to North American Datum of 1983, in SW ¼ NE ¼ SW ¼ sec.26, T.55 S., R.40 E., Miami-Dade County, FL, Hydrologic Unit 03090202, adjacent to Deering Estate, 6 ft east of SW 74th Avenue, 40 ft north of SW 163rd Street, 0.1 mi west of Old Cutler Road, 2 mi east of U.S. Highway 1.

WATER-QUALITY RECORDS

WELL CHARACTERISTICS.--Depth 100 ft. Upper casing diameter 2; top of first opening 95 ft, bottom of last opening 100 ft.

DATUM.--Land-surface datum is 7 ft above National Geodetic Vertical Datum of 1929. Measuring point: From Aug. 26, 1995, to present, measuring point has been top of casing, 6.98 ft above National Geodetic Vertical Datum of 1929. Prior to March 2000, top of casing measuring point was estimated to be 9 ft above NGVD from a topographic map. See REMARKS.

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 quarterly salinity monitoring, including an annual induction log. Salinity monitoring began August 1995. Induction logging began January 1996. Water-level measurements began in October 1996. Induction logs are used to assess movement of the fresh-water/salt-water interface in ground water. See [RECORDS OF BULK CONDUCTIVITY](#). Water-level elevation data collected prior to March 14, 2000, have been computed using the top of casing measuring point surveyed March 14, 2000 and are in the files of the U.S. Geological Survey. See DATUM.

In 2008, 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 2002, 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 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 1996 to 2001, and 2003 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 9.3 mS/m at a depth of 63.9 ft below land surface. The resulting plot of logs collected from 1996 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, 3.15 ft NGVD, Sept. 29, 1997; lowest, 1.53 ft NGVD, May 17, 2002.

CHLORIDE CONCENTRATION: Highest measured chloride concentration, 240 mg/L, Jan. 16, 1996; lowest, 130 mg/L, Aug. 26, 1995.

253710080184701 Local number G 3611. USGS Observation Well near Cutler, 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; $\mu\text{S/cm}$, microsiemens per centimeter]

Date	Sample start time	Specific conductivity, water, unfiltered, $\mu\text{S/cm}$ at 25°C (00095)	Elevation above NGVD 1929, ft (72020)	Chloride, water, unfiltered, mg/L (99220)
October 21, 2011	1215	931	2.22	160
January 18, 2012	1528	943	2.01	160
April 18, 2012	1244	905	2.19	180
July 19, 2012	1025	913	2.47	160

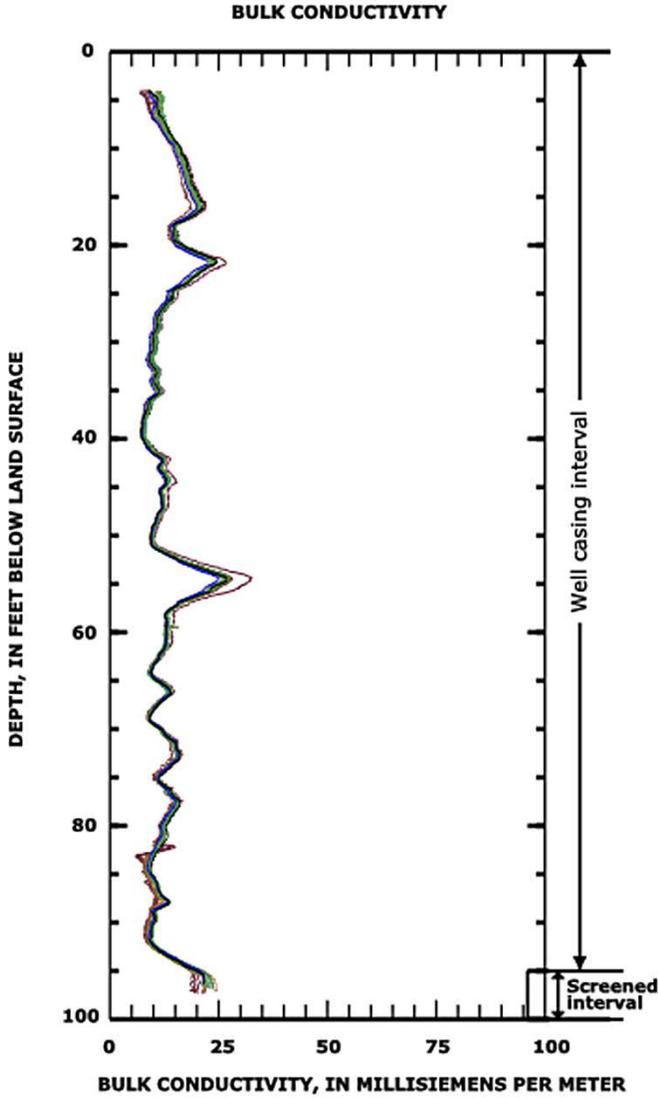
Lithologic log, USGS 253710080184701. Local Number G -3611

Depth interval (ft below land surface)	Lithologic description
0 - 20	Oolitic limestone
20 - 30	Sandy limestone; quartz sand is moderately sorted, medium-grained; includes marine shells and dissolution features
30 - 35	Sandy limestone, gray, extensive dissolution features, some calcite fill; some quartz sand
35 - 50	Sandy limestone; sand is moderately sorted, medium-grained; includes marine shells and dissolution features
40 - 45	Freshwater limestone with gastropod shells; also includes sandy micritic limestone fragments with corals; dissolution features are present
45 - 50	Quartz sand, moderately sorted, medium-grained; with sandy limestone fragments and marine shells
50 - 55	Sandy micritic limestone; includes marine shells and dissolution features; sand is medium-grained quartz
55 - 60	Quartz sand, moderately sorted, medium-grained; with sandy limestone fragments and marine shells
60 - 100	Sandy micritic limestone; includes marine shells and dissolution features; some lenses of moderately sorted, medium-grained quartz sand

253710080184701 Local number G 3611. USGS Observation Well near Cutler, FL.—Continued



WY 2012 Induction log results
 Station: USGS 253710080184701
 Local name: G -3611



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

Induction log date	Chloride sample date	Dissolved chloride concentration, in mg/L
Apr. 18, 2012	Apr. 18, 2012	175
Apr. 7, 2011	Apr. 7, 2011	170
Apr. 9, 2010	Apr. 9, 2010	170
May 6, 2009	May 6, 2009	170
Apr. 30, 2008	Apr. 30, 2008	170
June 13, 2007	June 13, 2007	175
Apr. 20, 2006	Apr. 20, 2006	180
Apr. 26, 2005	Apr. 26, 2005	190
Apr. 26, 2004	Apr. 26, 2004	200
May 1, 2003	May 1, 2003	200
May 17, 2002	May 17, 2002	200
Apr. 5, 2001	Apr. 5, 2001	185
Apr. 18, 2000	Apr. 11, 2000	195
Apr. 8, 1999	Apr. 8, 1999	200
Apr. 1998	Apr. 16, 1998	210
Apr. 22, 1997	Apr. 22, 1997	200
May 8, 1996	- no sample -	--
Jan. 9, 1996	Jan. 16, 1996	240