

Maryland Department of Natural Resources  
Resource Assessment Service  
Maryland Geological Survey  
Richard A. Ort, Jr., Director

**HYDROGRAPHS AND TABLES SHOWING GROUNDWATER LEVEL  
RECORDS FOR SELECTED OBSERVATION WELLS IN CHARLES  
COUNTY, MARYLAND**

Compiled by  
Isabel L. Glasman



Prepared in cooperation with the  
Charles County Department of Planning  
and Growth Management

July 2019

## SUMMARY

This report presents water-level data for 28 observation wells in Charles County updated through June 2019. Water-levels are tabulated for measurements from July 2018 to June 2019. Water-level hydrographs are shown for the entire period of record at each site. Data were obtained from the National Water Information System, Ground-Water Site Inventory database, which is maintained by the U.S. Geological Survey. Historical and additional ground-water data may be obtained from the U.S. Geological Survey website at <http://waterdata.usgs.gov/nwis/gw>. The water-level data can also be accessed through a convenient map interface of the Maryland Geological Survey at [http://www.mgs.md.gov/groundwater/water\\_level\\_mapper.html](http://www.mgs.md.gov/groundwater/water_level_mapper.html).

Water levels in the **Magothy aquifer** continue to fluctuate in response to pumpage, but generally show a slightly declining or flat trend. Water levels range from 68.04 ft below sea level at Sun Valley (CH Be 43) to 117.81 ft below sea level at St. Charles (CH Bf 133). The observation well at John Hanson Middle School (CH Bf 134) developed a leak in the casing and will be dropped from the network and abandoned.

Water levels in the **Upper Patapsco aquifer** have shown a relatively flat trend, except for water levels at St. Charles (CH Bf 157) which continue to decline. Water levels range from 15.28 ft below sea level at Douglas Point (CH Da 21) to 82.15 ft below sea level at St. Charles (CH Bf 157). A monitoring well at St. Charles (CH Bf 151) was abandoned in July 2017 to address a damaged and leaking well casing.

Water levels in the **Lower Patapsco aquifer** in wells in the far northern and northwestern parts of the county (CH Be 72, CH Bc 24, CH Bc 81, and CH Cc 31) have recovered by as much as 30 feet since late 2007, and have either continued to recover or have held steady since 2012. These recoveries, beginning in 2008, resulted from a drop in usage of the Lower Patapsco aquifer system in the western part of the County when the new Patuxent aquifer system wells were added to the system. Lower Patapsco water levels at St. Charles (CH Bf 146), La Plata (CH Ce 56), Chapel Point Woods (CH De 52), and Douglas Point (CH Da 20) show a generally flat trend. Water levels in the Lower Patapsco aquifer range from 16.8 ft below sea level at Douglas Point (CH Da 20) to 138.51 ft below sea level at La Plata (CH Ce 56).

Water levels in the **Patuxent aquifer** continue to decline or exhibit a flat trend. In the northeastern part of the County at Malcom (CH Bg 18), these declines have slowed in recent years. Elsewhere in the County, water levels in the Patuxent aquifer are declining at rates of approximately 1 to 4 ft per year with the fastest declines occurring in the Chapmans Landing/Bryans Road area wells (CH Bc 75, 77 and 78). Water levels in the Patuxent aquifer range from 12.84 ft below sea level in the western part of the county at Douglas Point (CH Da 18) to 102.6 ft below sea level at Chapman's Landing (CH Bc 77). Measurements from the production well at Bryans Road (CH Bc 78) are conspicuously flat from 2015 to 2018, caused by a blockage in the measuring tube.

## OBSERVATION WELLS

### Magothy aquifer

<u>Well Number</u>	<u>Location</u>	<u>Aquifer</u>
CH Be 43	Sun Valley	Magothy
CH Bf 133	St. Charles	Magothy
CH Bf 134	John Hanson Middle School	Magothy

### Upper Patapsco aquifer system

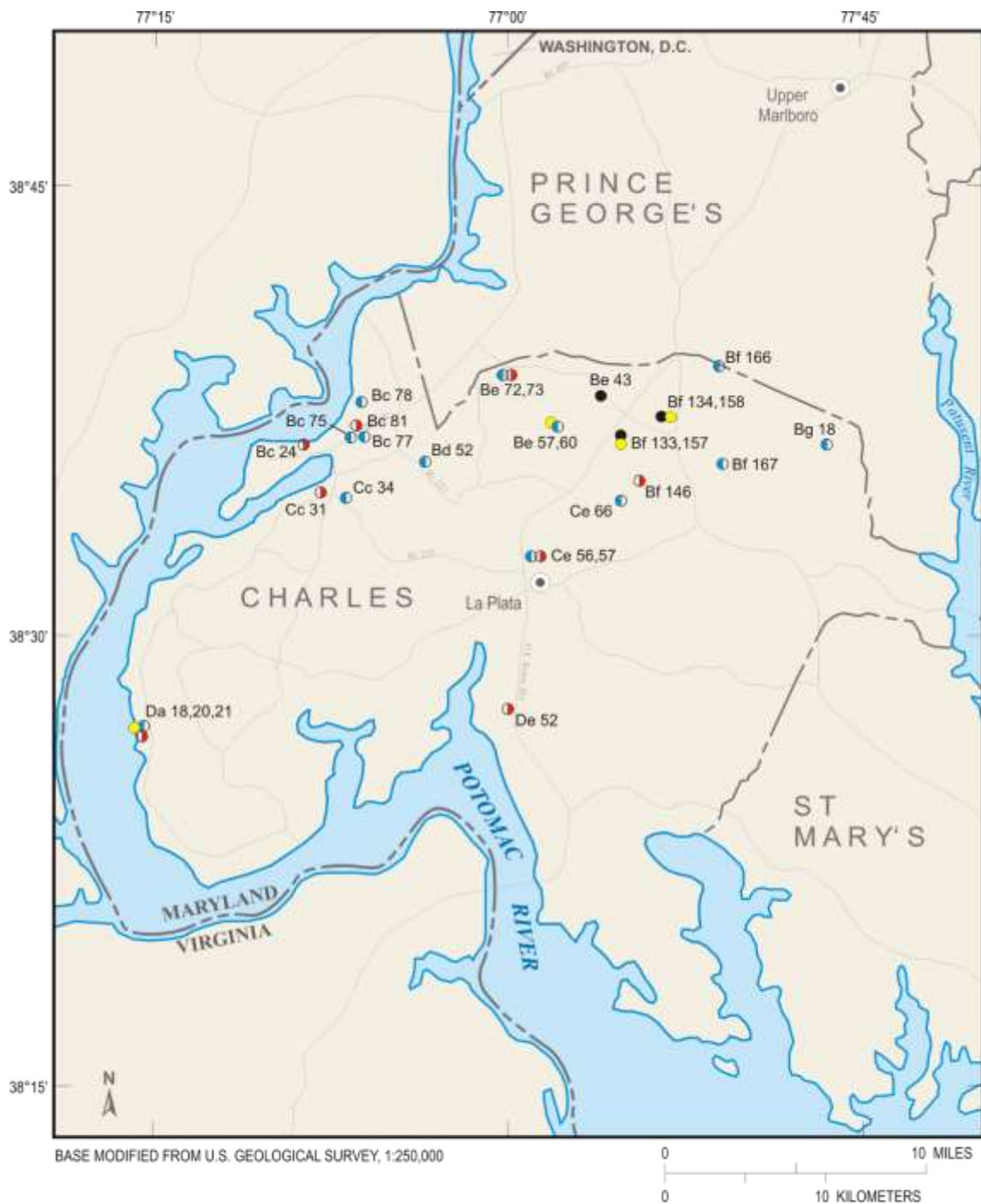
<u>Well Number</u>	<u>Location</u>	<u>Aquifer</u>
CH Be 60	Smallwood West	Upper Patapsco
CH Bf 157	St. Charles	Upper Patapsco
CH Bf 158	John Hanson Middle School	Upper Patapsco
CH Da 21	Douglas Point	Upper Patapsco

### Lower Patapsco aquifer system

<u>Well Number</u>	<u>Location</u>	<u>Aquifer</u>
CH Bc 24	Potomac Heights	Lower Patapsco
CH Bc 81	Montrose Farms	Lower Patapsco
CH Be 72	Saw Mill Place	Lower Patapsco
CH Bf 146	near St. Charles	Lower Patapsco
CH Cc 31	Dravo well	Lower Patapsco
CH Ce 56	Heritage Green, La Plata	Lower Patapsco
CH Da 20	Douglas Point	Lower Patapsco
CH De 52	Chapel Point Woods	Lower Patapsco

### Patuxent aquifer system

<u>Well Number</u>	<u>Location</u>	<u>Aquifer</u>
CH Bc 75	Chapman's Landing Well 2	Patuxent
CH Bc 77	Chapman's Landing Well 1	Patuxent
CH Bc 78	Bryans Road Well 5	Patuxent
CH Bd 52	Route 227 test site	Patuxent
CH Be 57	Smallwood West	Patuxent
CH Be 73	Saw Mill Place	Patuxent
CH Bf 166	Pinefield	Patuxent
CH Bf 167	Gardiner Road	Patuxent
CH Bg 18	near Malcolm	Patuxent
CH Cc 34	Mattawoman Waste-Water Treatment Plant	Patuxent
CH Ce 57	Heritage Green, La Plata	Patuxent
CH Ce 66	White Plains Regional Park	Patuxent
CH Da 18	Douglas Point	Patuxent



**Figure 1. Location of observation wells.**

## **MAGOTHY AQUIFER**

WELL NUMBER: CH Be 43

LOCATION: Sun Valley

AQUIFER: Magothy Formation of Upper Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 459 ft;

Casing diameter: 6 in. to 428 ft;

Screen diameter: 5 in. from 433 to 459 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 216.79 ft above NGVD of 1929.

MEASURING POINT: Top of casing 1.95 ft above land surface.

PERIOD OF RECORD: April 1971 to current year.

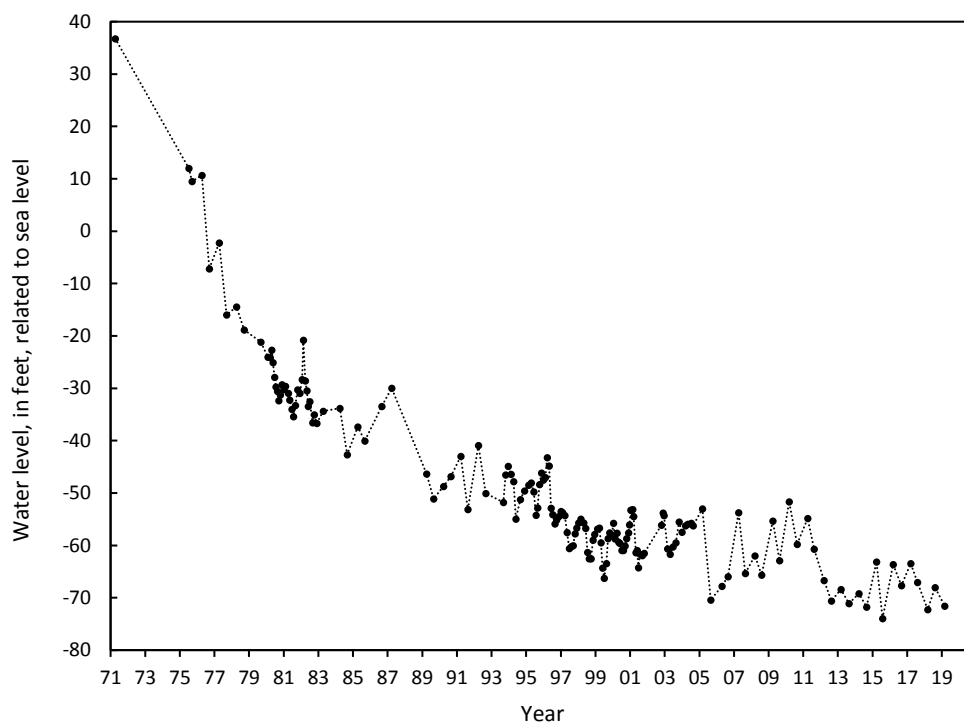
EXTREMES FOR RECORD: Highest water level measured, 180 ft below land surface, on April 8, 1971;  
lowest measured, 290.73 ft below land surface, on September 2, 2015.

PERMIT NUMBER: CH-71-0066

LAT. 38° 38' 19", LONG. 76° 55' 55"

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 19, 2018	284.83
Apr 09, 2019	288.34



WELL NUMBER: CH Bf 133

LOCATION: St. Charles

AQUIFER: Magothy Formation of Upper Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 510 ft;

Casing diameter: 10 in. to 77 ft; 6 in. from -2 to 420 ft; 4 in. from 420 to 436 ft, and 506 to 510 ft;

Screen diameter: 4 in. from 436 to 506 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 223.50 ft above NGVD of 1929.

MEASURING POINT: Top of casing 0.82 ft above land surface.

PERIOD OF RECORD: May 1970 to current year.

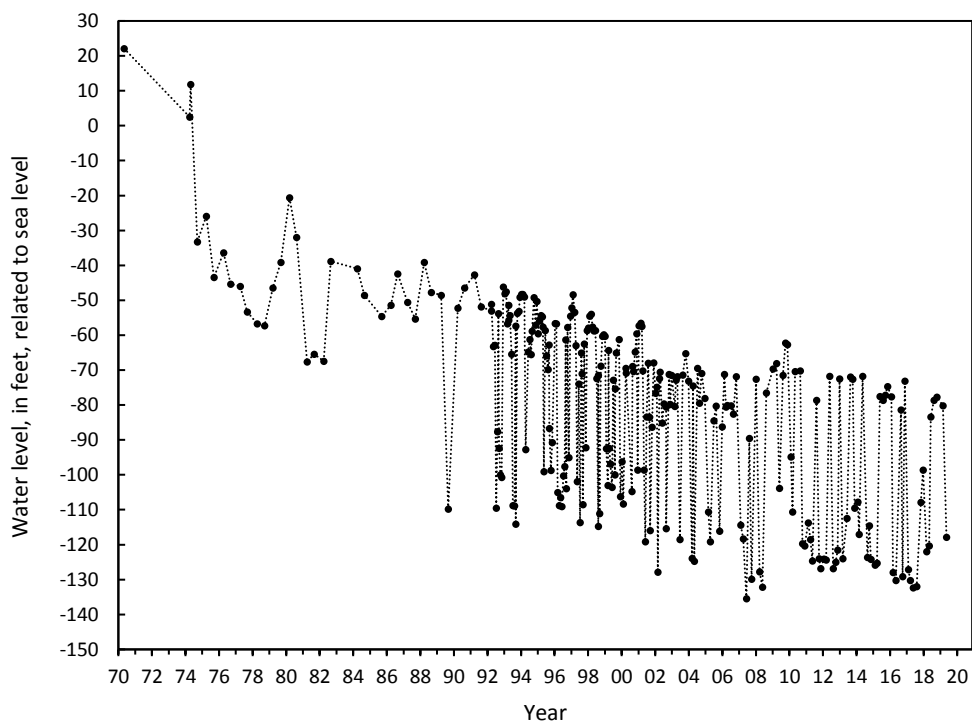
EXTREMES FOR RECORD: Highest water level measured, 201.4 ft below land surface, on May 6, 1970; lowest measured, 358.98 ft below land surface, on July 10, 2007.

PERMIT NUMBER: CH-70-0069

LAT. 38° 36' 40", LONG. 76° 54' 59"

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	306.88	Nov 19, 2018	301.19	Jun 19, 2019	341.31
Sep 19, 2018	302.13	Apr 02, 2019	303.63		



WELL NUMBER: CH Bf 134

LOCATION: John Hanson Middle School

AQUIFER: Magothy Formation of Upper Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 546 ft;

Casing diameter: 6 in. to 402 ft; 4 in. from 422 to 485 ft;

Screen diameter: 4 in. from 402 to 422 ft, and 485 to 546 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 202.09 ft above NGVD of 1929.

MEASURING POINT: Top of casing 1.52 ft above land surface.

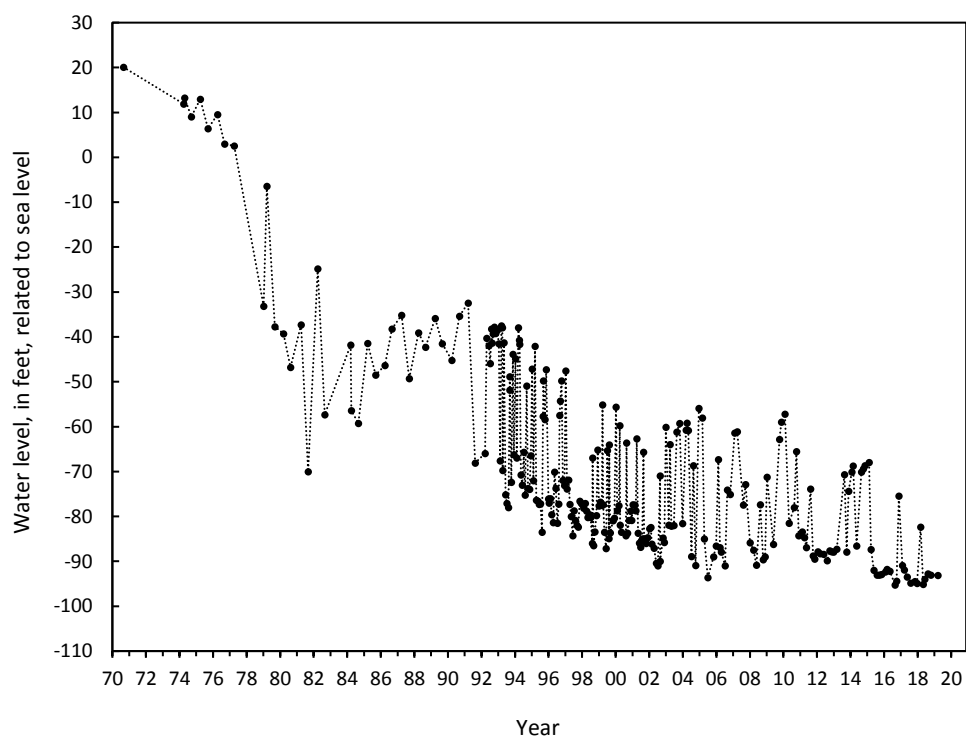
REMARKS: Leak in casing noted April 22, 2019, well will be abandoned and dropped from network.

PERIOD OF RECORD: August 1970 to current year.

EXTREMES FOR RECORD: Highest water level measured, 182 ft below land surface, on August 28, 1970; lowest measured, 297.32 ft below land surface, on October 3, 2016.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	296.05	Nov 19, 2018	295.13
Sep 19, 2018	294.84	Apr 22, 2019	295.17





## **UPPER PATAPSCO AQUIFER SYSTEM**

WELL NUMBER: CH Be 60  
LOCATION: Smallwood West

PERMIT NUMBER: CH-81-1468  
LAT. 38° 37' 06", LONG. 76° 57' 56"

AQUIFER: Upper Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 635 ft;

Casing diameter: 6 in. to 401 ft; 4 in. from 401 to 610 ft, and 625 to 635 ft;

Screen diameter: 4 in. from 610 to 625 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 212.8 ft above NGVD of 1929.

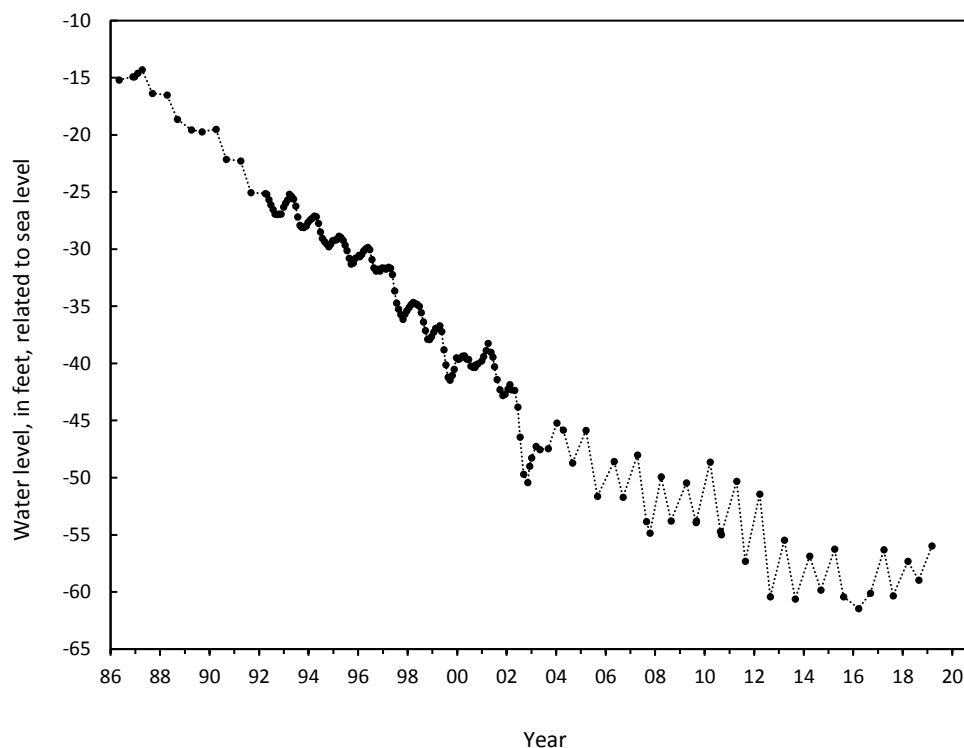
MEASURING POINT: Top of casing 2.2 ft above land surface.

PERIOD OF RECORD: May 1986 to current year.

EXTREMES FOR RECORD: Highest water level measured, 227.1 ft below land surface, on April 10, 1987; lowest measured, 274.24 ft below land surface, on April 11, 2016.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 19, 2018	271.77
Apr 02, 2019	268.77



WELL NUMBER: CH Bf 157

LOCATION: St. Charles

AQUIFER: Upper Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 623 ft;

Casing diameter: 6 in. to 396 ft; 4 in. from 396 to 608 ft;

Screen diameter: 4 in. from 608 to 623 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 225.0 ft above NGVD of 1929.

MEASURING POINT: Top of casing 1.70 ft above land surface.

PERIOD OF RECORD: September 1986 to current year.

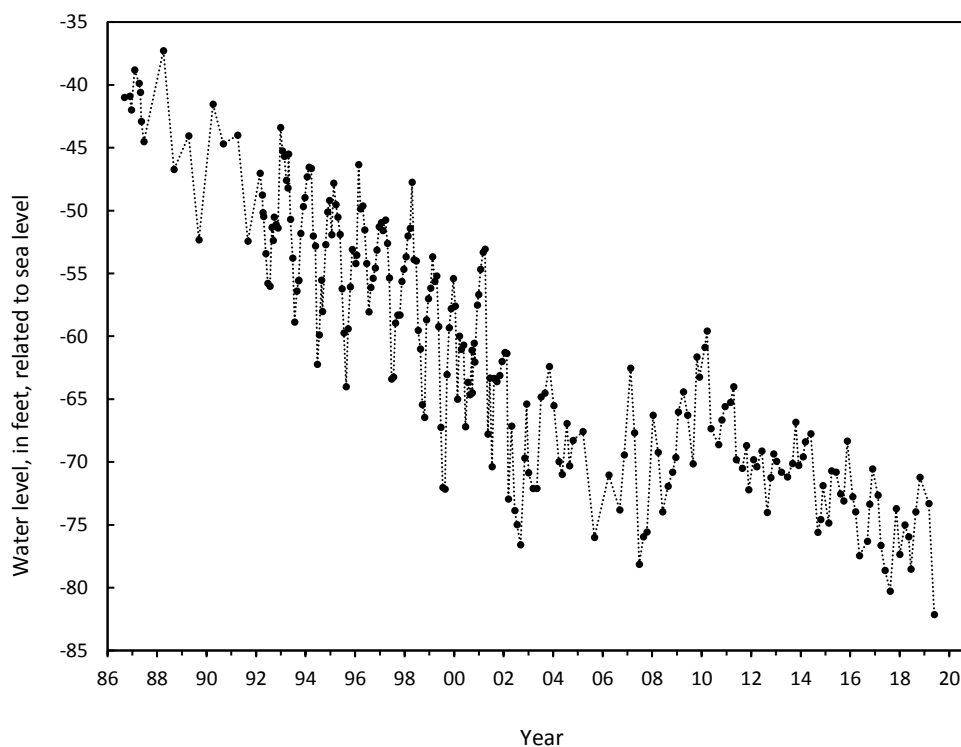
EXTREMES FOR RECORD: Highest water level measured, 262.27 ft below land surface, on April 5, 1988; lowest measured, 307.15 ft below land surface, on June 19, 2019.

PERMIT NUMBER: CH-81-1846

LAT. 38° 36' 40", LONG. 76° 54' 59"

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	303.53	Nov 19, 2018	296.21	Jun 19, 2019	307.15
Sep 19, 2018	298.96	Apr 02, 2019	298.30		



WELL NUMBER: CH Bf 158

PERMIT NUMBER: CH-81-1847

LOCATION: John Hanson Middle School

LAT. 38° 37' 32", LONG. 76° 53' 19"

AQUIFER: Upper Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 645 ft;

Casing diameter: 6 in. to 398 ft; 4 in. from 398 to 630 ft;

Screen diameter: 4 in. from 630 to 645 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 193 ft above NGVD of 1929.

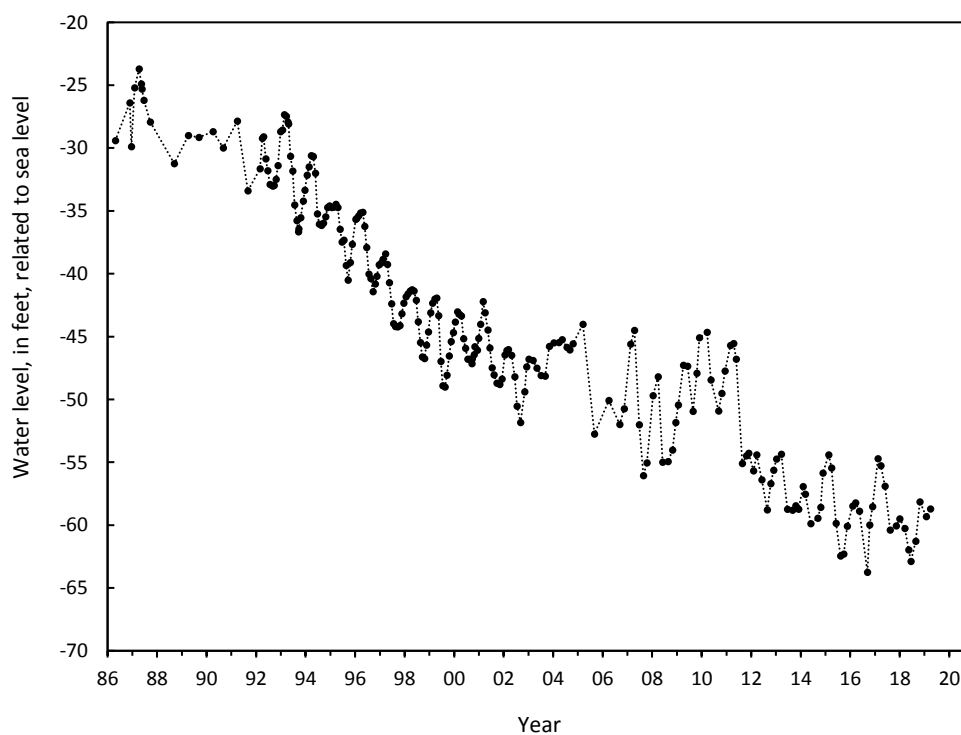
MEASURING POINT: Top of casing 2.0 ft above land surface.

PERIOD OF RECORD: April 1986 to current year.

EXTREMES FOR RECORD: Highest water level measured, 216.7 ft below land surface, on April 10, 1987; lowest measured, 256.75 ft below land surface, on October 3, 2016.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	255.89	Nov 19, 2018	251.15	Apr 22, 2019	251.71
Sep 19, 2018	254.28	Feb 19, 2019	252.33		



WELL NUMBER: CH Da 21

PERMIT NUMBER: CH-73-0592

LOCATION: Douglas Point

LAT. 38° 26' 59", LONG. 77° 15' 24"

AQUIFER: Upper Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 381 ft;

Casing diameter: 6 in. to 366 ft;

Screen diameter: 6 in. from 366 to 381 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 90 ft above NGVD of 1929.

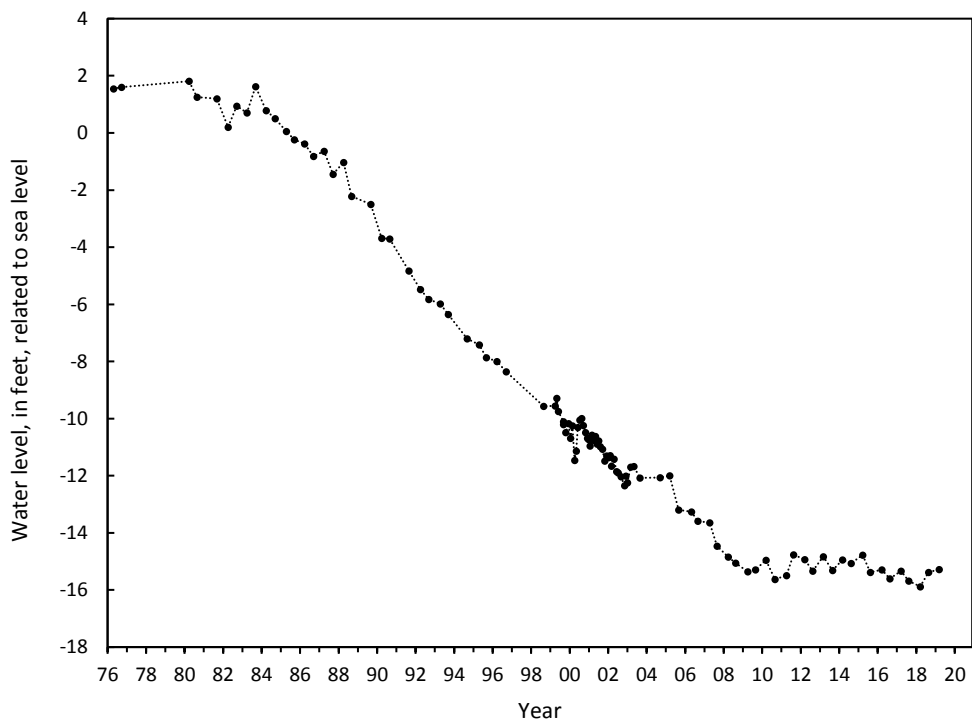
MEASURING POINT: Top of casing 1.67 ft above land surface.

PERIOD OF RECORD: April 1976 to current year.

EXTREMES FOR RECORD: Highest water level measured, 88.19 ft below land surface, on March 25, 1980; lowest measured, 105.88 ft below land surface, on April 20, 2018.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 20, 2018	105.38
Apr 09, 2019	105.28



## **LOWER PATAPSCO AQUIFER SYSTEM**

WELL NUMBER: CH Bc 24  
LOCATION: Potomac Heights

PERMIT NUMBER: CH-02-0874  
LAT. 38° 36' 34", LONG. 77° 08' 30"

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 435 ft;

Casing diameter: 10 in. to 383.5 ft and 398.5 to 415 ft;

Screen diameter: 10 in. from 383.5 to 398.5 and 415 to 435 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 72 ft above NGVD of 1929.

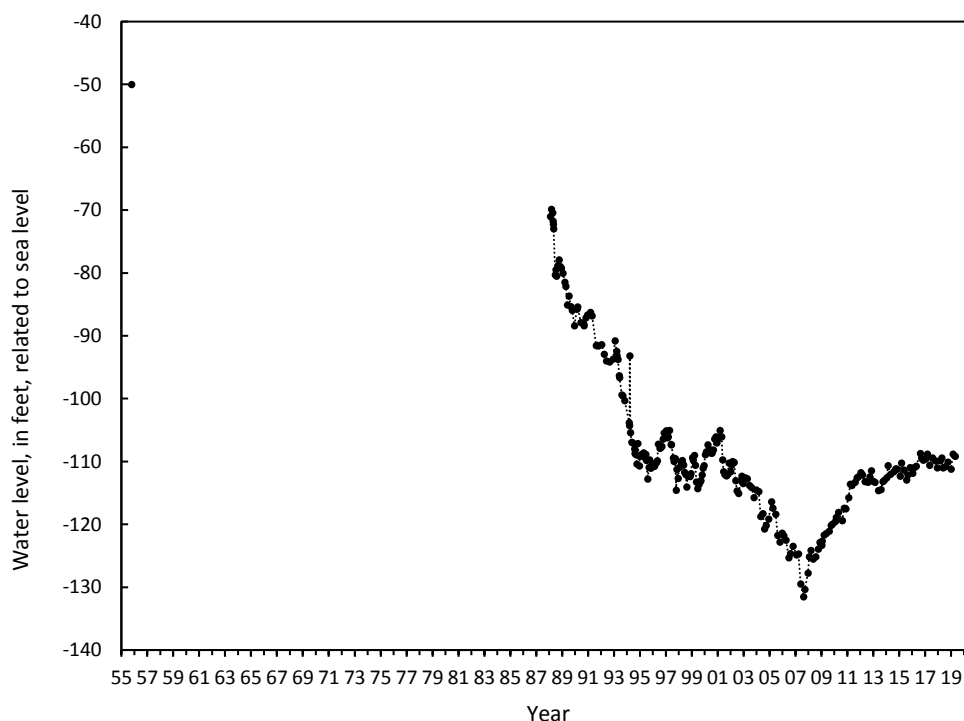
MEASURING POINT: Top of casing 1.55 ft above land surface.

PERIOD OF RECORD: October 1955 to current year.

EXTREMES FOR RECORD: Highest water level measured, 122 ft below land surface, on October 10, 1955; lowest measured, 203.48 ft below land surface, on September 21, 2007.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	182.99	Nov 19, 2018	182.07	Apr 09, 2019	180.81
Sep 20, 2018	182.75	Feb 19, 2019	183.18	Jun 19, 2019	181.15



WELL NUMBER: CH Bc 81

LOCATION: Montrose Farms

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 656 ft;

Casing diameter: 6 in. to 541 ft; 4 in. from 531 to 556 ft, 588 to 642 ft, and 646 to 656 ft;

Screen diameter: 4 in. from 556 to 588 ft, and 642 to 646 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 156.46 ft above NGVD of 1929.

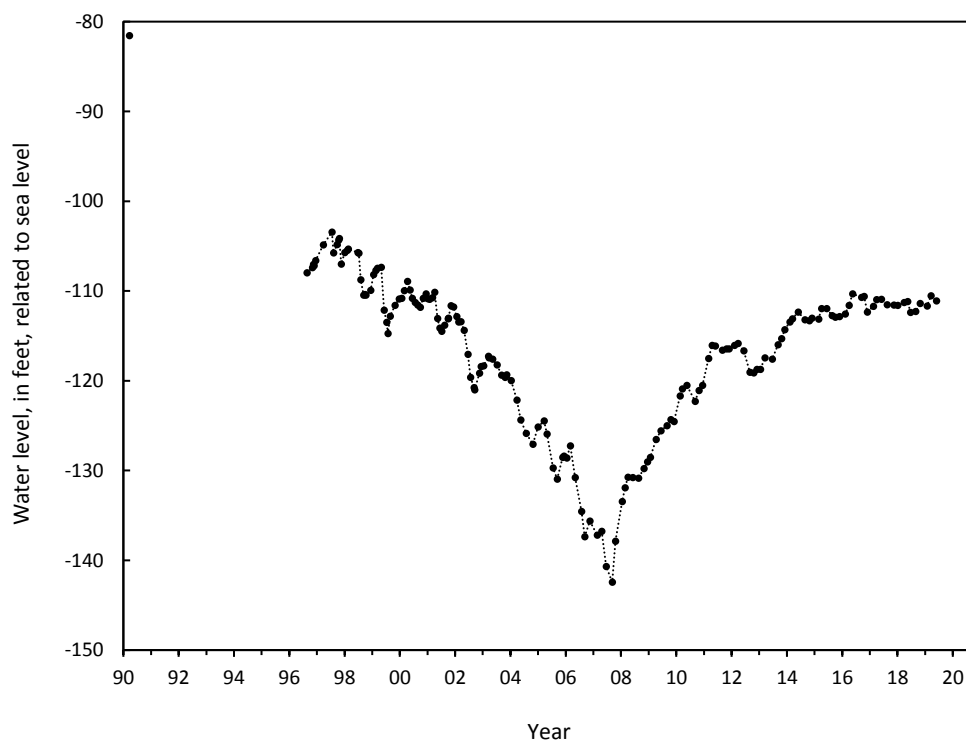
MEASURING POINT: Top of recorder platform 2.07 ft above land surface.

PERIOD OF RECORD: March 1990 to current year.

EXTREMES FOR RECORD: Highest water level measured, 238 ft below land surface, on March 19, 1990; lowest measured, 298.89 ft below land surface, on September 21, 2007.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	268.84	Nov 19, 2018	267.83	Apr 09, 2019	266.97
Sep 20, 2018	268.74	Feb 19, 2019	268.14	Jun 19, 2019	267.56





WELL NUMBER: CH Be 72

LOCATION: Saw Mill Place

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 905 ft;

Casing diameter: 4 in. to 720 ft, and 730 to 880 ft, and 900 to 905 ft;

Screen diameter: 4 in. from 720 to 730 ft, and 880 to 900 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 110 ft above NGVD of 1929.

MEASURING POINT: Top of recorder platform 3.3 ft above land surface.

PERIOD OF RECORD: June 2007 to current year.

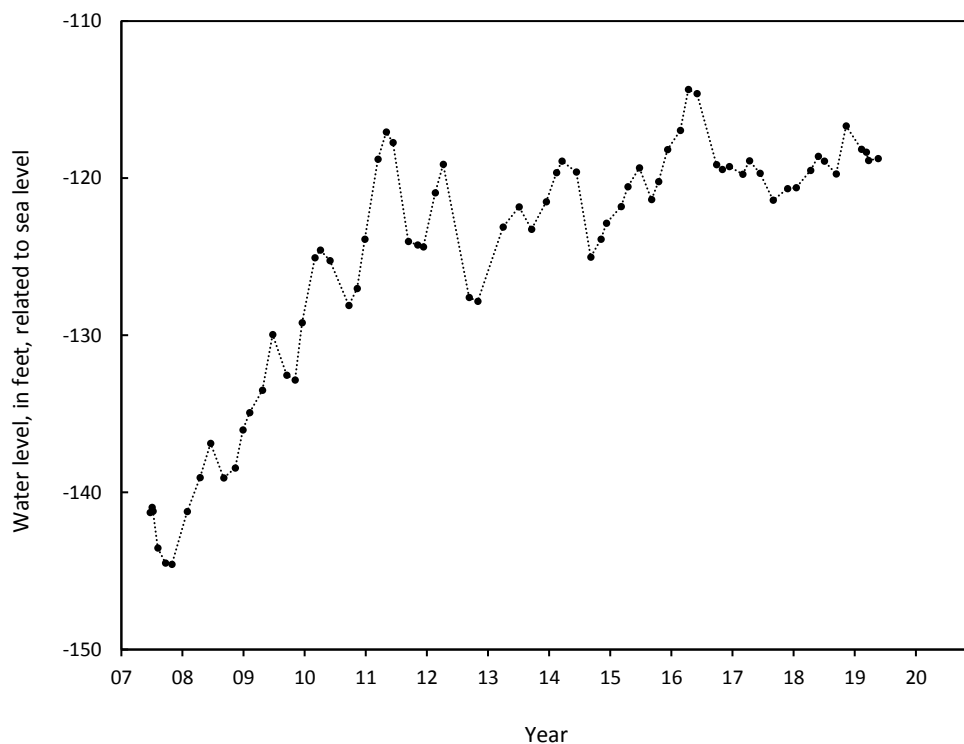
EXTREMES FOR RECORD: Highest water level measured, 224.36 ft below land surface, on April 19, 2016; lowest measured, 254.58 ft below land surface, on October 31, 2007.

PERMIT NUMBER: CH-95-0275

LAT. 38° 39' 03", LONG. 76° 59' 43"

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	228.92	Feb 19, 2019	228.15	Apr 02, 2019	228.88
Sep 20, 2018	229.73	Mar 19, 2019	228.35	May 29, 2019	228.74
Nov 19, 2018	226.68				



WELL NUMBER: CH Bf 146

LOCATION: Near St. Charles

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1,427 ft;

Casing diameter: 6 in. to 1,059 ft, 1,069 to 1,073 ft, 1,083 to 1,161 ft, 1,166 to 1,170 ft, 1,180 to 1,184 ft, 1,189 to 1,195 ft, 1,205 to 1,244 ft, 1,249 to 1,252 ft, 1,262 to 1,298 ft, 1,328 to 1,342 ft, and 1,417 to 1,427 ft;

Screen diameter: 6 in. from 1,059 to 1,069 ft, 1,073 to 1,083 ft, 1,161 to 1,166 ft, 1,170 to 1,180 ft, 1,184 to 1,189 ft, 1,195 to 1,205 ft, 1,244 to 1,249 ft, 1,252 to 1,262 ft, 1,298 to 1,328 ft and 1,342 to 1,417 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 192.8 ft above NGVD of 1929.

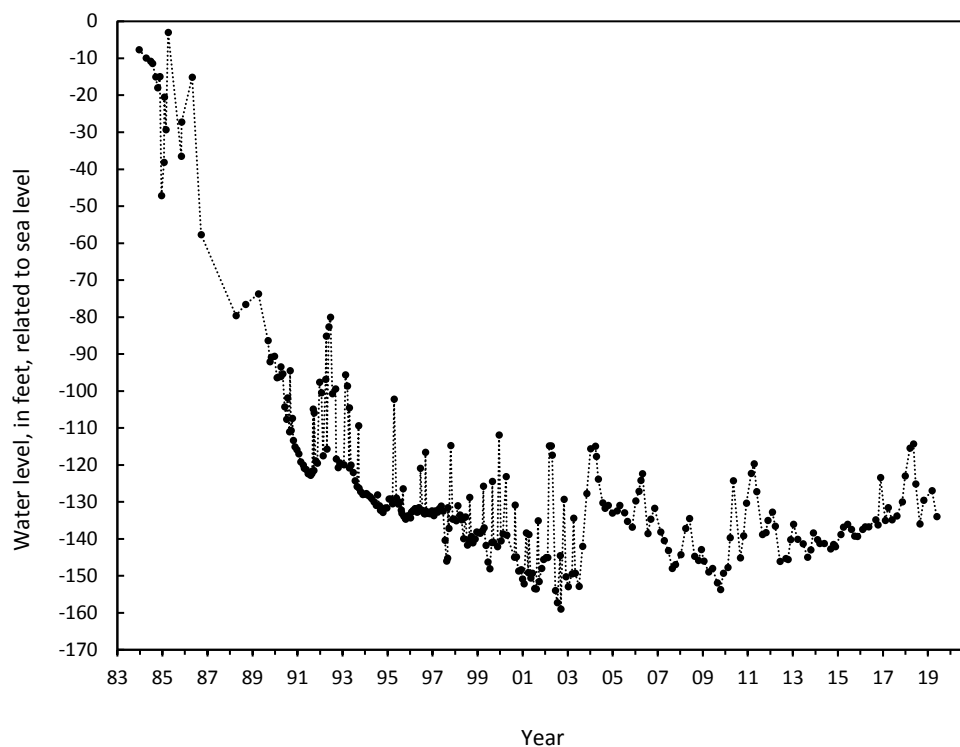
MEASURING POINT: Top of casing 2.50 ft above land surface.

PERIOD OF RECORD: December 1983 to current year.

EXTREMES FOR RECORD: Highest water level measured, 195.82 ft below land surface, on April 4, 1985; lowest measured, 351.74 ft below land surface, on September 25, 2002.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	317.89	Nov 19, 2018	322.36	Jun 19, 2019	326.79
Sep 19, 2018	328.77	Apr 02, 2019	319.76		



WELL NUMBER: CH Cc 31

PERMIT NUMBER: CH-73-1416

LOCATION: Dravo well

LAT. 38° 34' 55", LONG. 77° 07' 44"

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 559 ft;

Casing diameter: 6 in. to 200 ft; 4 in. from 200 to 438 ft, 453 to 480 ft, 505 to 544 ft, and 554 to 559 ft;

Screen diameter: 4 in. from 438 to 453 ft, 480 to 505 ft, and 544 to 554 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 35 ft above NGVD of 1929.

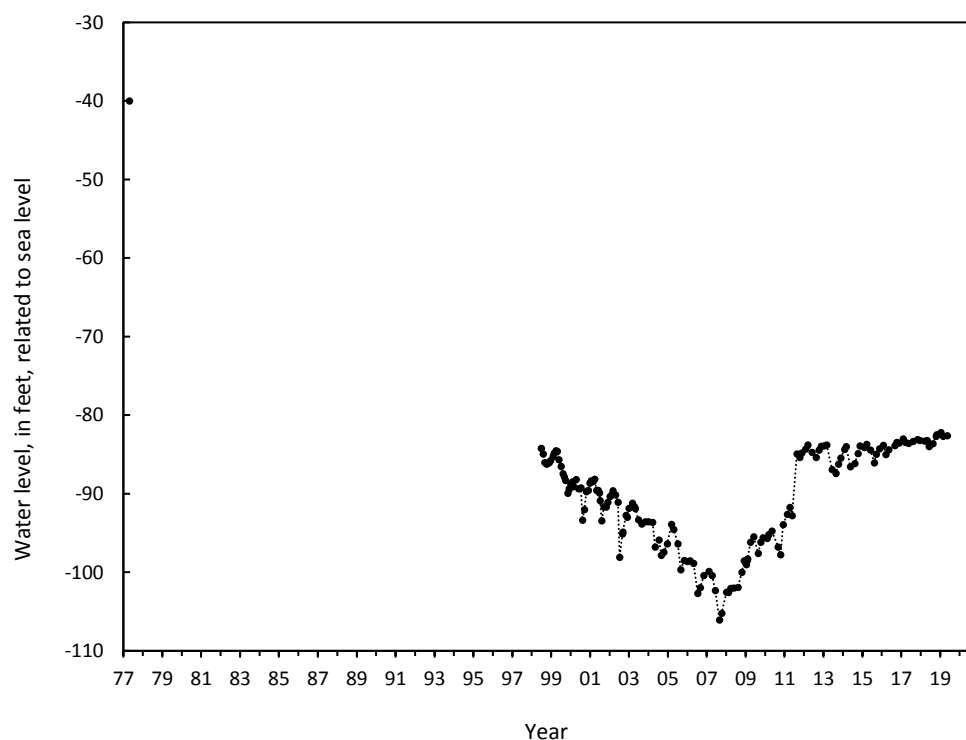
MEASURING POINT: Top of recorder platform 3.75 ft above land surface.

PERIOD OF RECORD: April 1977 to current year.

EXTREMES FOR RECORD: Highest water level measured, 75 ft below land surface, on April 26, 1977; lowest measured, 141.06 ft below land surface, on September 21, 2007.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	118.99	Nov 30, 2018	117.45	Apr 02, 2019	117.68
Sep 20, 2018	118.62	Feb 19, 2019	117.20	Jun 19, 2019	117.57
Nov 19, 2018	117.67				



WELL NUMBER: CH Ce 56

PERMIT NUMBER: CH-94-1111

LOCATION: Heritage Green, La Plata

LAT. 38° 32' 51", LONG. 76° 58' 39"

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1,268 ft;

Casing diameter: 6 in. to 475 ft; 4 in. from 475 to 896 ft, 906 to 945 ft, 950 to 957 ft, 962 to 993 ft, 1,008 to 1,024 ft, 1,029 to 1,037 ft, 1,042 to 1,094 ft, 1,134 to 1,166 ft, 1,186 to 1,204 ft, 1,214 to 1,248 ft, and 1,258 to 1,268 ft;

Screen diameter: 4 in. from 896 to 906 ft, 945 to 950 ft, 957 to 962 ft, 993 to 1,008 ft, 1,024 to 1,029 ft, 1,037 to 1,042 ft, 1,094 to 1,134 ft, 1,166 to 1,186 ft, 1,204 to 1,214 ft, and 1,248 to 1,258 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 196.48 ft above NGVD of 1929.

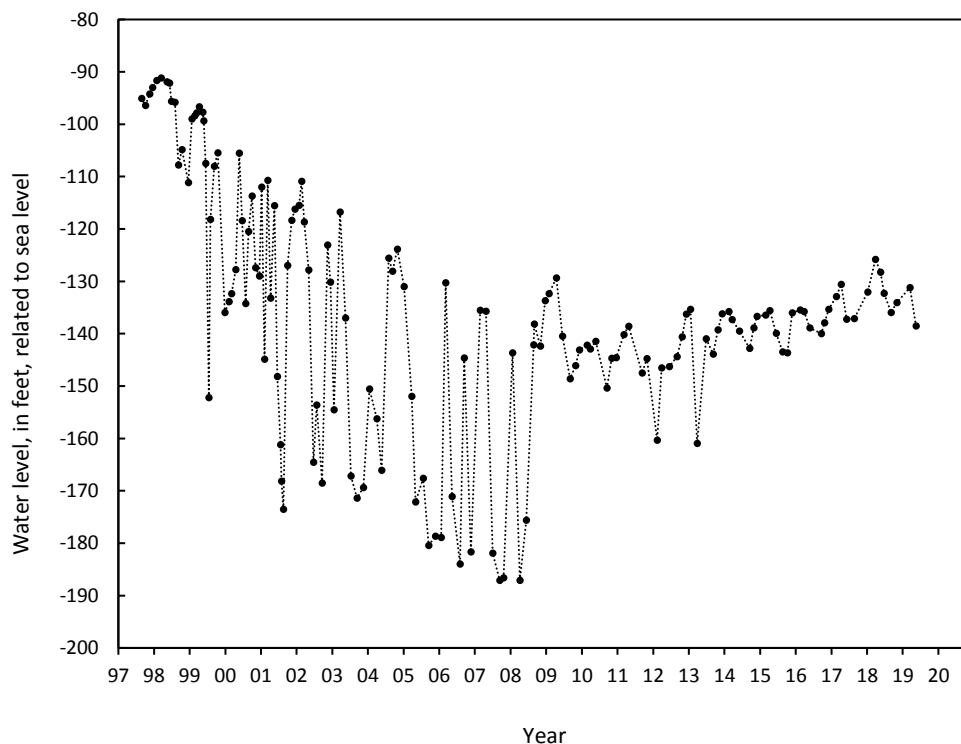
MEASURING POINT: Top of recorder platform 2.85 ft above land surface.

PERIOD OF RECORD: March 1997 to current year.

EXTREMES FOR RECORD: Highest water level measured, 287.66 ft below land surface, on March 16, 1998; lowest measured, 383.59 ft below land surface, on September 21, 2007.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	328.74	Nov 19, 2018	330.56	Jun 03, 2019	334.99
Sep 19, 2018	332.40	Apr 02, 2019	327.68		



WELL NUMBER: CH Da 20

PERMIT NUMBER: CH-73-0590

LOCATION: Douglas Point

LAT. 38° 26' 54", LONG. 77° 15' 27"

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 522 ft;

Casing diameter: 6 in. to 420 ft, 425 to 444 ft, 449 to 481 ft, and 486 to 517 ft;

Screen diameter: 6 in. from 420 to 425 ft, 444 to 449 ft, 481 to 486 ft, and 517 to 522 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 90 ft above NGVD of 1929.

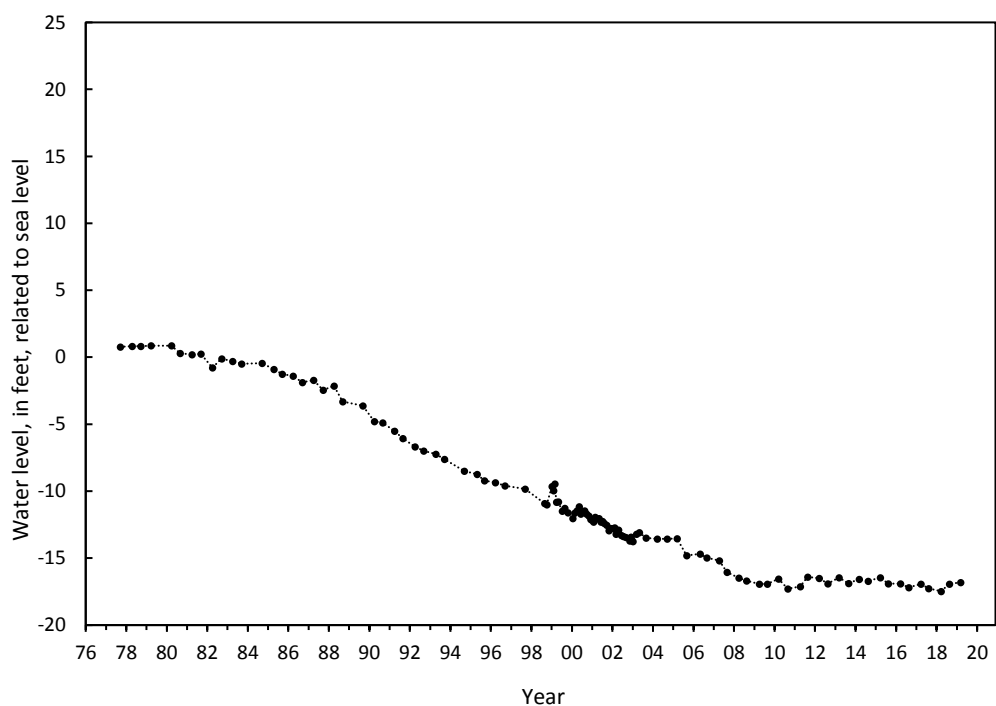
MEASURING POINT: Top of casing 1.75 ft above land surface.

PERIOD OF RECORD: September 1976 to current year.

EXTREMES FOR RECORD: Highest water level measured, 68 ft below land surface, on September 21, 1976; lowest measured, 107.47 ft below land surface, on April 20, 2018.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 20, 2018	106.94
Apr 09, 2019	106.80



WELL NUMBER: CH De 52

PERMIT NUMBER: CH-94-6280

LOCATION: Chapel Point Woods

LAT. 38° 27' 52", LONG. 76° 59' 36"

AQUIFER: Lower Patapsco aquifer of the Patapsco Formation of Lower Cretaceous age

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1220 ft;

Casing diameter: 6 in. to 1128 ft, and 1158 to 1190 ft, and 1210 to 1220 ft;

Screen diameter: 6 in. from 1128 to 1158 ft, and 1190 to 1210 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 165 ft above NAVD88.

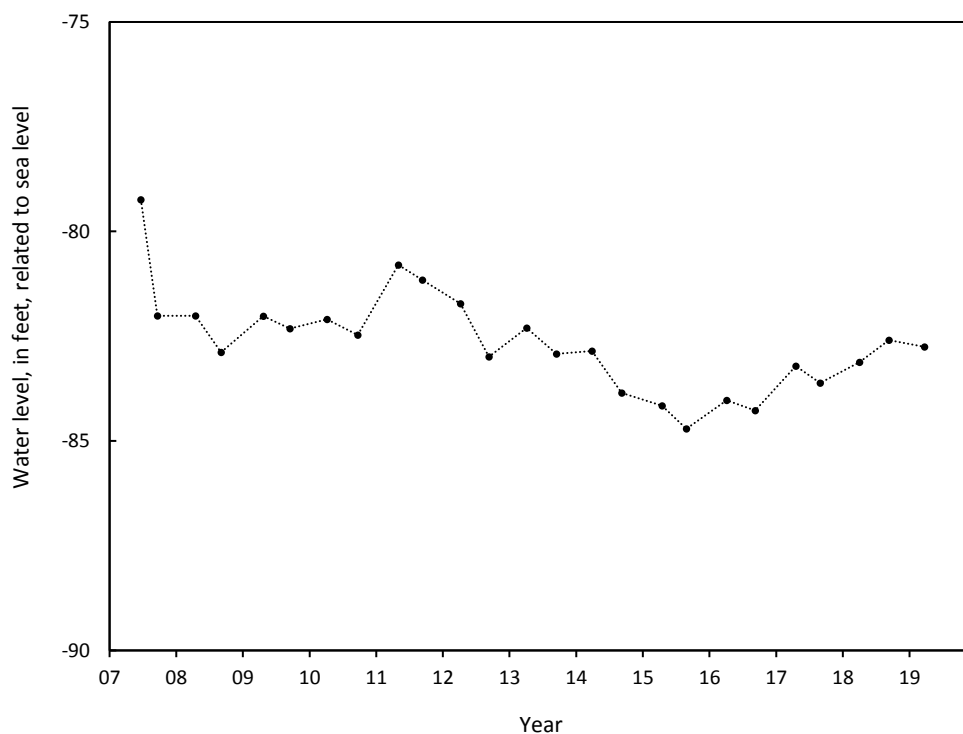
MEASURING POINT: Top of steel casing 1.09 ft above land surface.

PERIOD OF RECORD: June 2007 to current year.

EXTREMES FOR RECORD: Highest water level measured, 244.24 ft below land surface, on June 22, 2007; lowest measured, 249.71 ft below land surface, on September 2, 2015.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 19, 2018	247.59
Apr 02, 2019	247.75



## **PATUXENT AQUIFER SYSTEM**

WELL NUMBER: CH Bc 75

PERMIT NUMBER: CH-92-0500

LOCATION: Chapman's Landing Well 2

LAT. 38° 36' 45", LONG. 77° 06' 24"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, artesian well, depth 940 ft;

Casing diameter: 8 in. to 820 ft, 825 to 860 ft, 880 to 898 ft, and 923 to 940 ft;

Screen diameter: 8 in. from 820 to 825 ft, 860 to 880 ft, and 898 to 923 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 124.59 ft above NGVD of 1929.

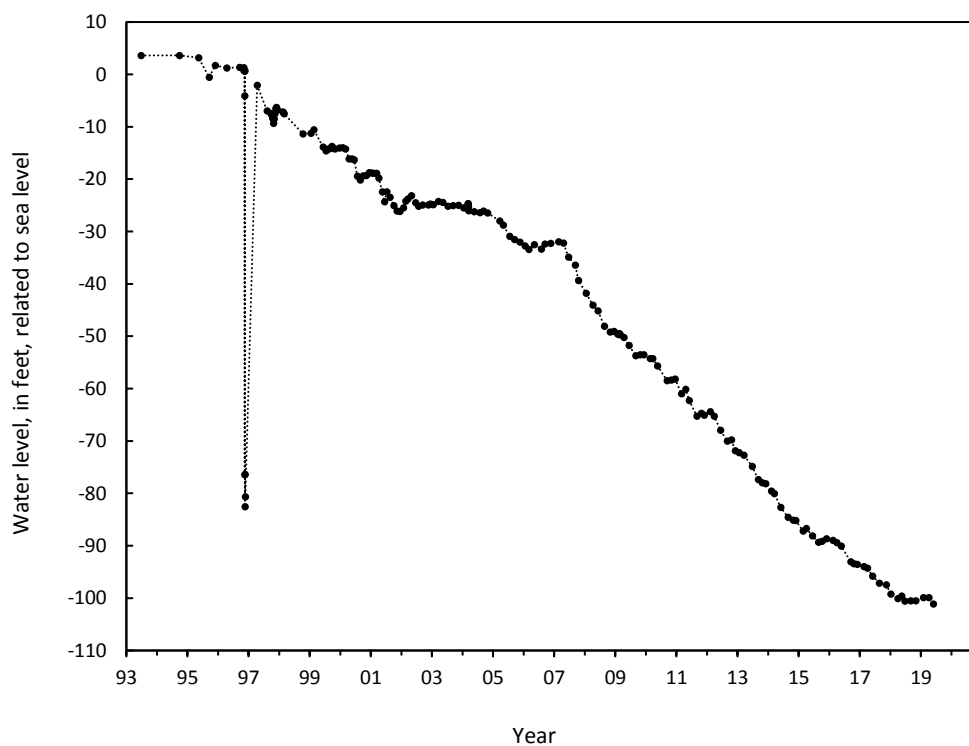
MEASURING POINT: Top of casing 12.45 ft below original land surface.

PERIOD OF RECORD: June 1993 to current year.

EXTREMES FOR RECORD: Highest water level measured, 120.95 ft below land surface, on September 26, 1994; lowest measured, 225.69 ft below land surface, on June 19, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	225.16	Nov 19, 2018	225.08	Apr 25, 2019	224.49
Sep 20, 2018	225.07	Feb 19, 2019	224.51	Jun 19, 2019	225.69





WELL NUMBER: CH Bc 77

PERMIT NUMBER: CH-88-1028

LOCATION: Chapman's Landing Well 1

LAT. 38° 36' 44", LONG. 77° 05' 55"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 955 ft;

Casing diameter: 16 in. to 60 ft; 8 in. from 0 to 845 ft; and 6 in. from 845 to 925 ft;

Screen diameter: 6 in. from 925 to 955 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 96.64 ft above NGVD of 1929.

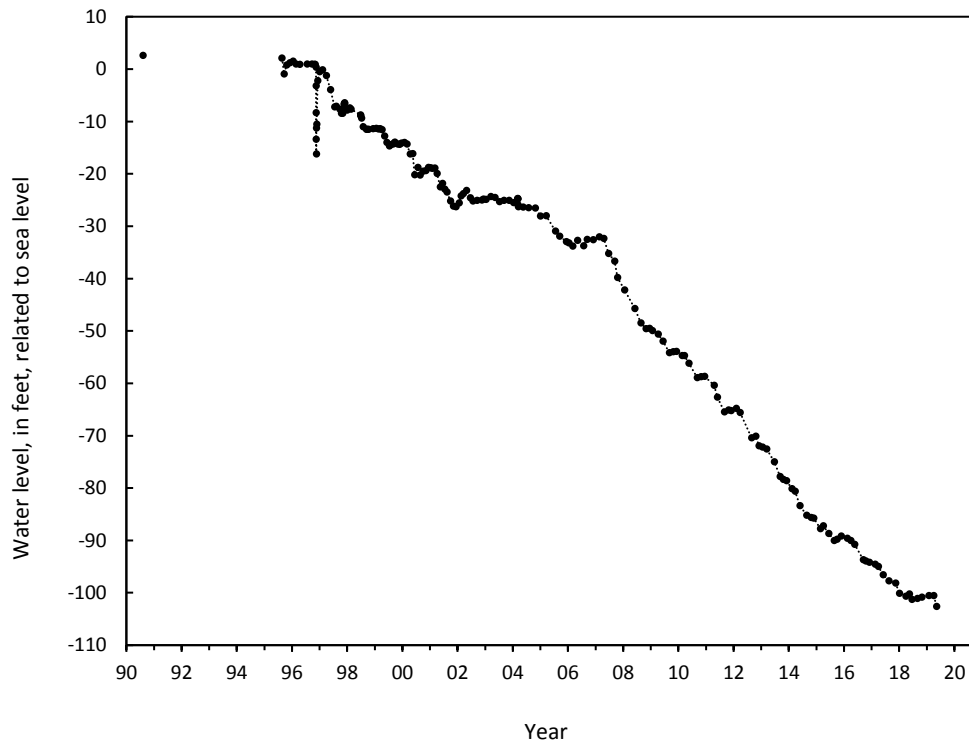
MEASURING POINT: Top of recorder platform 3.38 ft above land surface.

PERIOD OF RECORD: August 1990 to current year.

EXTREMES FOR RECORD: Highest water level measured, 94 ft below land surface, on August 10, 1990; lowest measured, 199.24 ft below land surface, on June 3, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	197.92	Nov 19, 2018	197.48	Apr 25, 2019	197.14
Sep 20, 2018	197.73	Feb 19, 2019	197.18	Jun 03, 2019	199.24



WELL NUMBER: CH Bc 78

PERMIT NUMBER: CH-94-0394

LOCATION: Bryans Road Well 5

LAT. 38° 38' 09", LONG. 77° 05' 34"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, artesian well, depth 790 ft;

Casing diameter: 10 in. to 550 ft; 6 in. from 550 to 675 ft, and 685 to 710 ft;

Screen diameter: 6 in. from 675 to 710 ft, and 685 to 790 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 20.13 ft above NGVD of 1929.

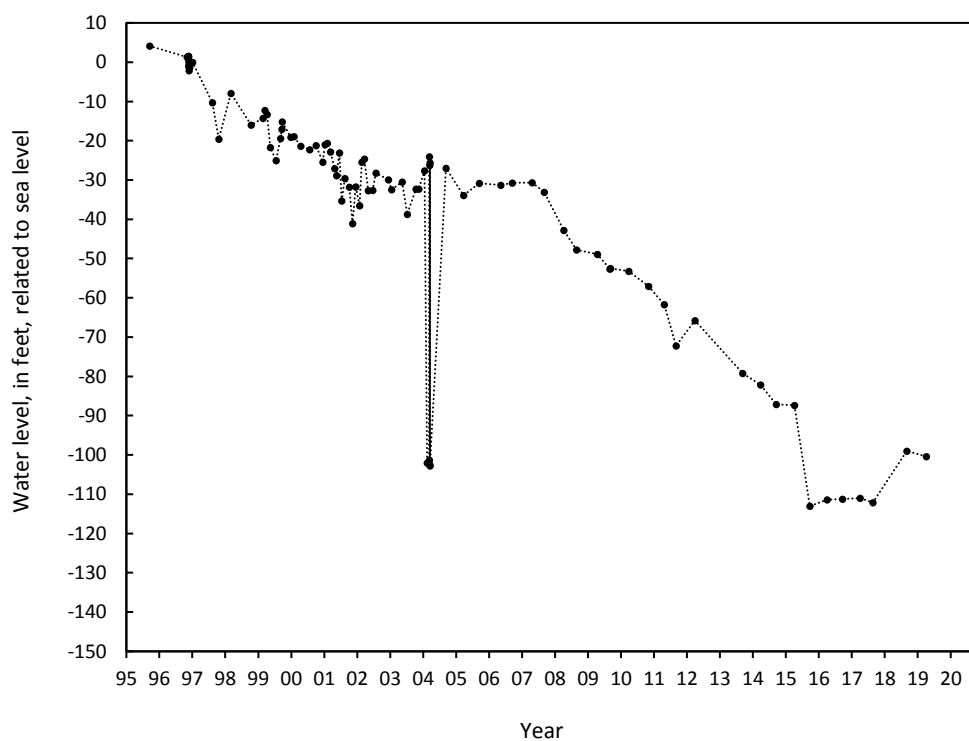
MEASURING POINT: Top of 2 in riser pipe 1.0 ft above land surface.

PERIOD OF RECORD: September 1995 to current year.

EXTREMES FOR RECORD: Highest water level measured, 16 ft below land surface, on September 15, 1995; lowest measured, 133.16 ft below land surface, on October 7, 2015.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 20, 2018	119.16
Apr 25, 2019	120.55



WELL NUMBER: CH Bd 52

PERMIT NUMBER: CH-94-0899

LOCATION: Route 227 test site

LAT. 38° 35' 53", LONG. 77° 03' 24"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1,105 ft;

Casing diameter: 4 in. to 1,040 ft, and 1,050 to 1,085 ft, and 1,095 to 1,105 ft;

Screen diameter: 4 in. from 1,043 to 1,050 ft, and 1,085 to 1,095 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 47.5 ft above NGVD of 1929.

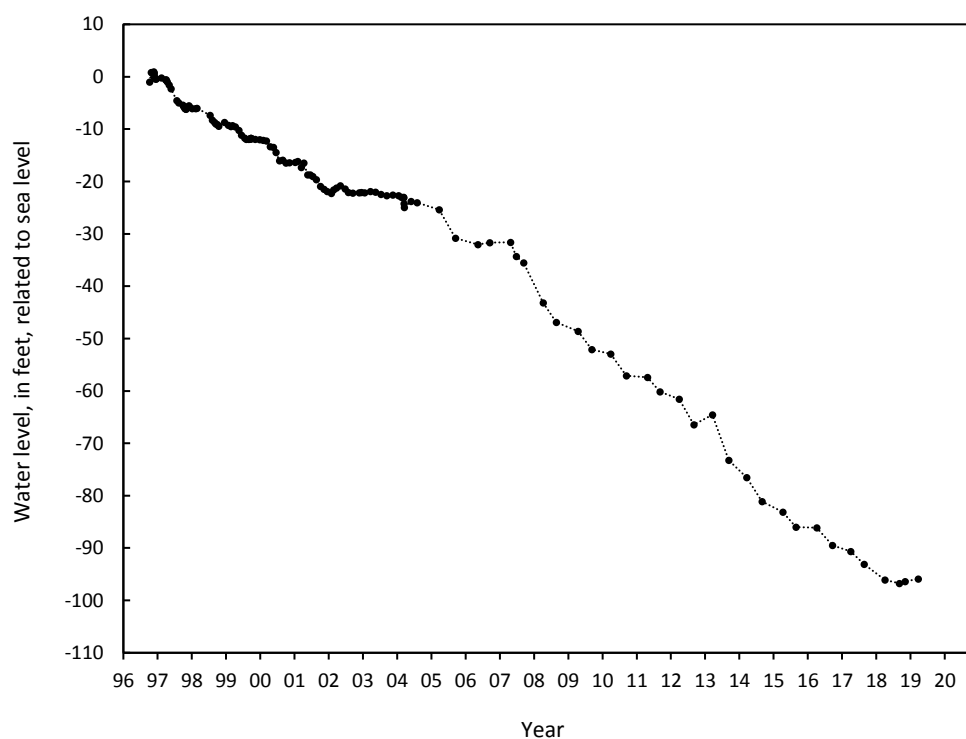
MEASURING POINT: Top of casing 3.0 ft above land surface.

PERIOD OF RECORD: October 1996 to current year.

EXTREMES FOR RECORD: Highest water level measured, 46.55 ft below land surface, on November 20, 1996; lowest measured, 144.24 ft below land surface, on September 20, 2018.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL
Sep 20, 2018	144.24	Apr 09, 2019	143.38
Nov 19, 2018	143.90		



WELL NUMBER: CH Be 57  
LOCATION: Smallwood West

PERMIT NUMBER: CH-81-1194  
LAT. 38° 37' 06", LONG. 76° 57' 56"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1,696 ft;

Casing diameter: 6 in. to 400 ft; 4 in. from 400 to 1,660 ft;

Screen diameter: 4 in. from 1,660 to 1,696 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 212.26 ft above NGVD of 1929.

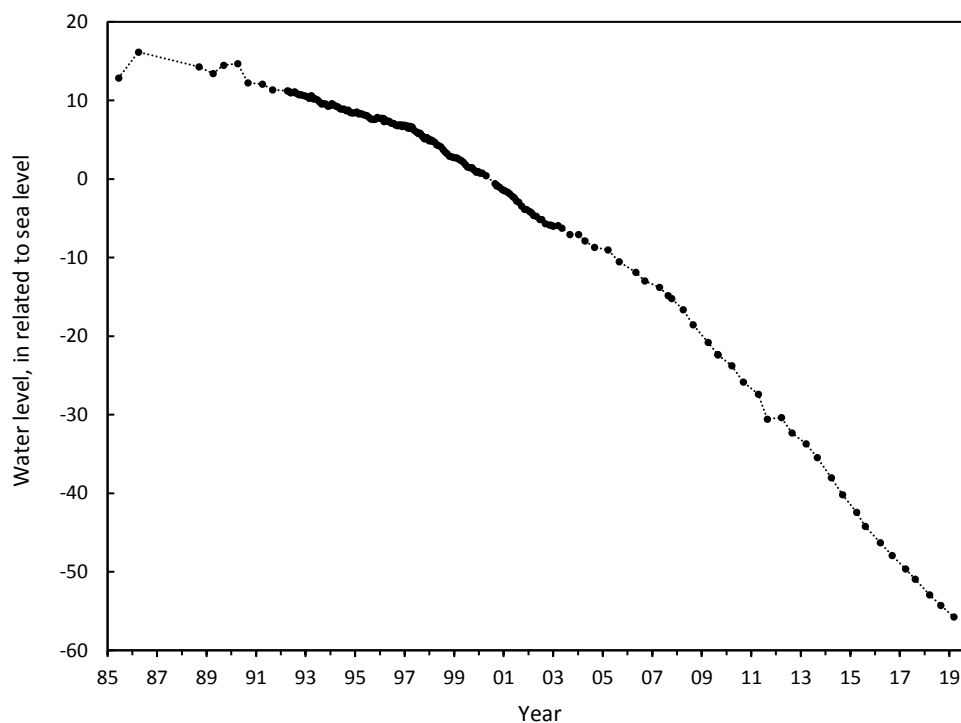
MEASURING POINT: Top of casing 2.0 ft above land surface.

PERIOD OF RECORD: June 1985 to current year.

EXTREMES FOR RECORD: Highest water level measured, 196.1 ft below land surface, on April 3, 1986; lowest measured, 267.99 ft below land surface, on April 2, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 19, 2018	266.55
Apr 02, 2019	267.99



WELL NUMBER: CH Be 73

PERMIT NUMBER: CH-12-0183

LOCATION: Saw Mill Place

LAT. 38° 39' 03", LONG. 76° 59' 43"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1400 ft;

Casing diameter: 4 in. to 1120 ft; 1135 to 1140 ft; 1150 to 1186 ft; 1196 to 1256 ft; 1261 to 1314 ft; 1324 to 1357 ft.; 1362 to 1372 ft.; 1377 to 1385 ft.; 1395 to 1400 ft.;

Screen diameter: 4 in. from 1120 to 1135 ft.; 1140 to 1150 ft.; 1186 to 1196 ft.; 1256 to 1261 ft.; 1314 to 1324 ft.; 1357 to 1362 ft.; 1372 to 1377 ft.; 1385 to 1395 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 106 ft above NAVD of 1988.

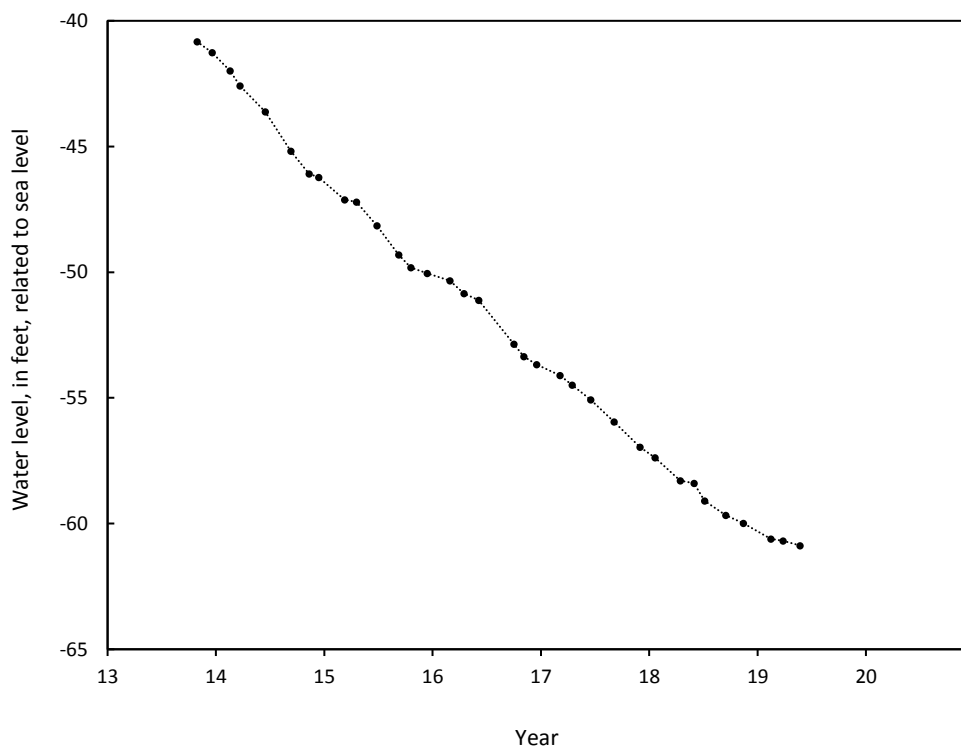
MEASURING POINT: Top of casing 2.3 ft above land surface.

PERIOD OF RECORD: June 2013 to current year.

EXTREMES FOR RECORD: Highest water level measured, 146.83 ft below land surface, on October 30, 2013; lowest measured, 166.87 ft below land surface, on May 29, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	165.09	Nov 19, 2018	165.98	Apr 02, 2019	166.69
Sep 20, 2018	165.67	Feb 19, 2019	166.61	May 29, 2019	166.87



WELL NUMBER: CH Bf 166

PERMIT NUMBER: CH-12-0182

LOCATION: Pinefield

LAT. 38° 38' 47", LONG. 76° 51' 20"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1975 ft;

Casing diameter: 4 in. to 1717 ft; 1727 to 1747 ft; 1752 to 1774 ft; 1784 to 1819 ft; 1854 to 1960 ft; 1970 to 1975 ft.;

Screen diameter: 4 in. from 1717 to 1727 ft.; 1747 to 1752 ft.; 1774 to 1784 ft.; 1819 to 1854 ft.; 1960 to 1970 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 211 ft above NAVD of 1988.

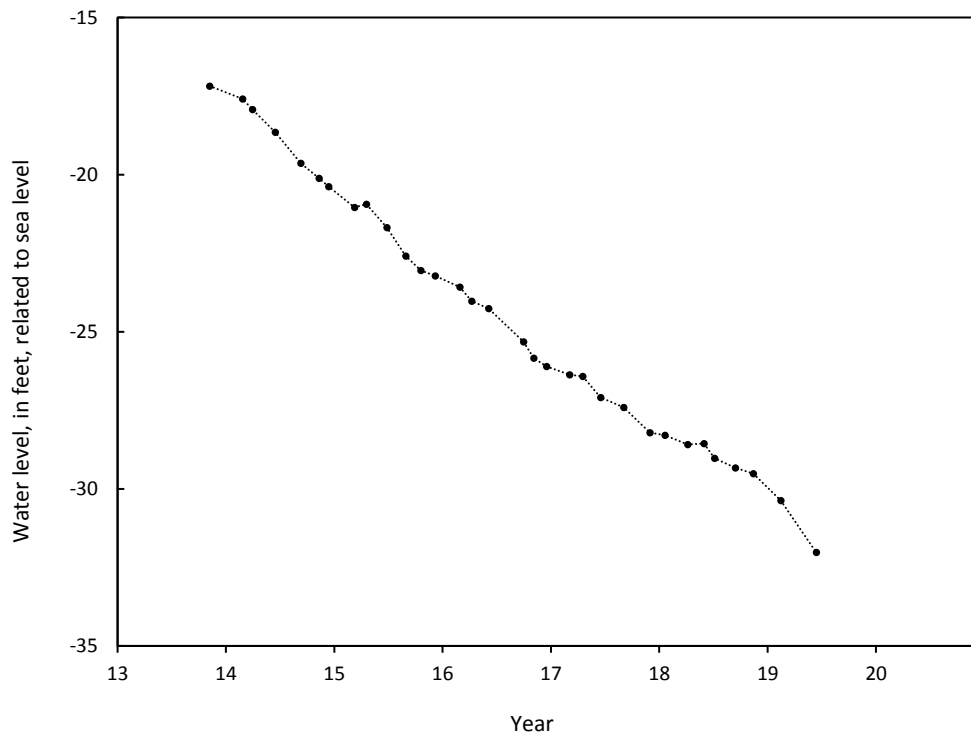
MEASURING POINT: Top of casing 2.6 ft above land surface.

PERIOD OF RECORD: November 2013 to current year.

EXTREMES FOR RECORD: Highest water level measured, 228.18 ft below land surface, on November 8, 2013; lowest measured, 243.02 ft below land surface, on June 19, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	240.03	Nov 19, 2018	240.52	Jun 19, 2019	243.02
Sep 20, 2018	240.33	Feb 19, 2019	241.37		



WELL NUMBER: CH Bf 167

PERMIT NUMBER: CH-12-0185

LOCATION: Gardiner Road

LAT. 38° 35' 56", LONG. 76° 50' 52"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 2073 ft;

Casing diameter: 4 in. to 1818 ft; 1848 to 1934 ft; 1954 to 2008 ft; 2018 to 2048 ft; 2068 to 2073 ft.;

Screen diameter: 4 in. from 1818 to 1848 ft.; 1934 to 1954 ft.; 2008 to 2018 ft.; 2048 to 2068 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 182 ft above NAVD of 1988.

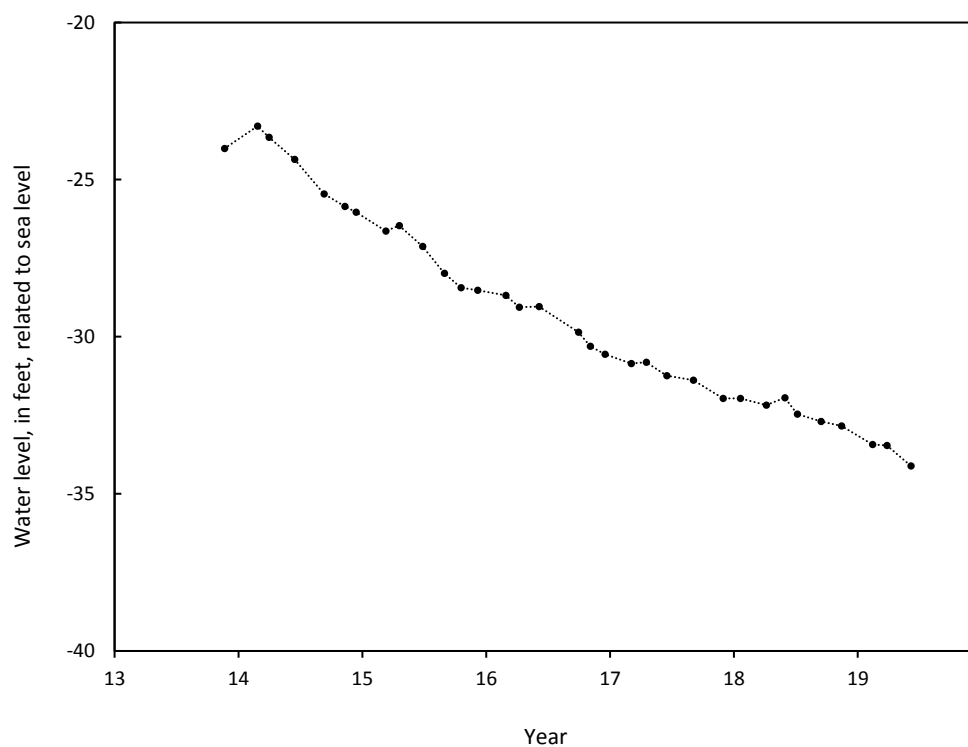
MEASURING POINT: Top of casing 2.5 ft above land surface.

PERIOD OF RECORD: November 2013 to current year.

EXTREMES FOR RECORD: Highest water level measured, 205.3 ft below land surface, on February 27, 2014; lowest measured, 216.11 ft below land surface, on June 12, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	214.46	Nov 19, 2018	214.84	Apr 02, 2019	215.46
Sep 19, 2018	214.70	Feb 19, 2019	215.43	Jun 12, 2019	216.11



WELL NUMBER: CH Bg 18

LOCATION: near Malcolm

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 2300 ft;

Casing diameter: 4 in. to 1914 ft; 1924 to 2034 ft; 2049 to 2151 ft; 2161 to 2200 ft; 2205 to 2228 ft; 2233 to 2257 ft; 2267 to 2288 ft; 2298 to 2300 ft;

Screen diameter: 4 in. from 1914 to 1924 ft; 2035 to 2049 ft; 2151 to 2161 ft; 2200 to 2205 ft; 2228 to 2233 ft; 2257 to 2267 ft; 2288 to 2298 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 187.16 ft above NAVD88.

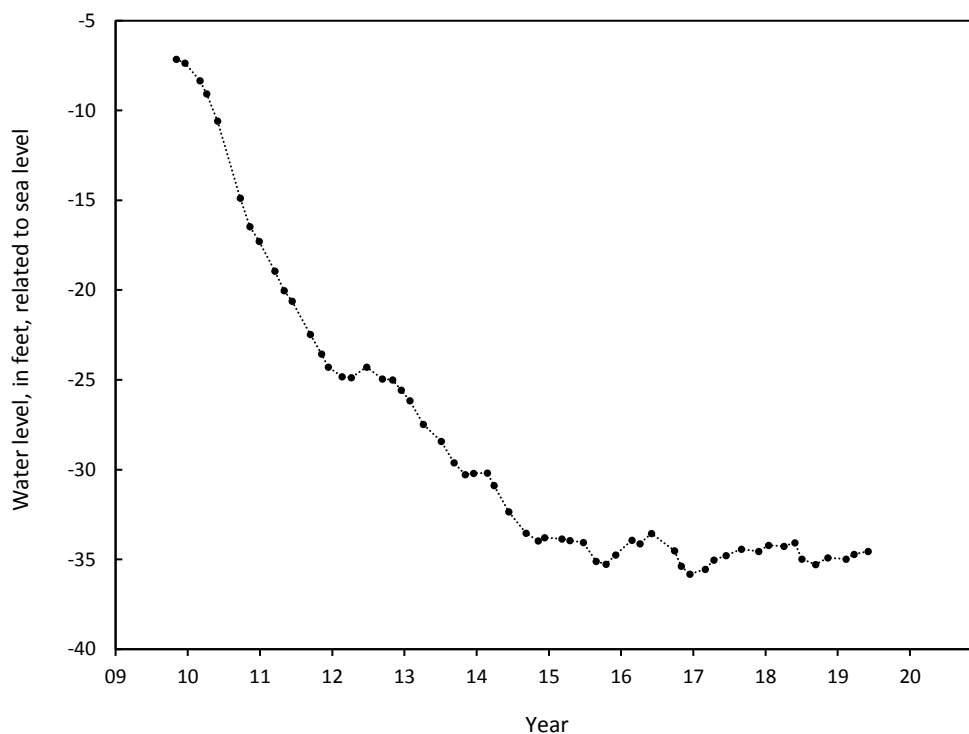
MEASURING POINT: Top of casing 2.6 ft above land surface.

PERIOD OF RECORD: November 2009 to current year.

EXTREMES FOR RECORD: Highest water level measured, 194.31 ft below land surface, on November 5, 2009; lowest measured, 222.98 ft below land surface, on December 20, 2016.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	222.14	Nov 19, 2018	222.07	Apr 02, 2019	221.87
Sep 19, 2018	222.44	Feb 19, 2019	222.14	Jun 12, 2019	221.72





WELL NUMBER: CH Cc 34

PERMIT NUMBER: CH-94-0897

LOCATION: Mattawoman Waste -Water Treatment Plant

LAT. 38° 34' 41", LONG. 77° 06' 39"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 975 ft;

Casing diameter: 4 in. to 874 ft, 884 to 945 ft, and 955 to 975 ft;

Screen diameter: 4 in. from 874 to 884 ft, and 945 to 955 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 41.82 ft above NGVD of 1929.

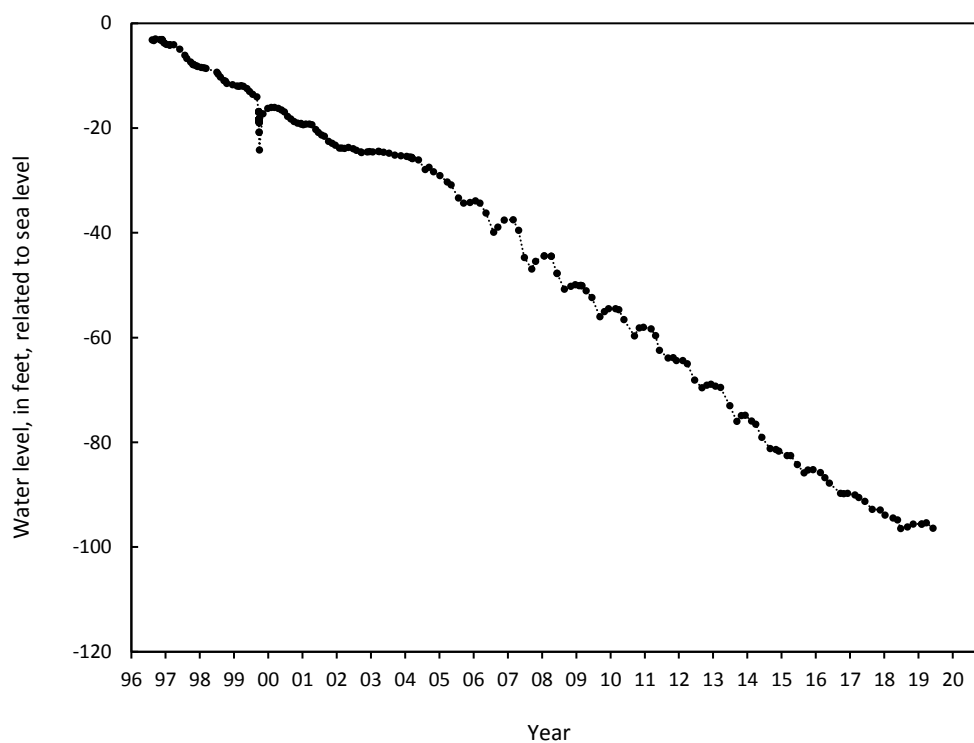
MEASURING POINT: Top of recorder platform 3.0 ft above land surface.

PERIOD OF RECORD: August 1996 to current year.

EXTREMES FOR RECORD: Highest water level measured, 44.78 ft below land surface, on September 12, 1996; lowest measured, 138.26 ft below land surface, on July 11, 2018.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Jul 11, 2018	138.26	Feb 19, 2019	137.42	Apr 09, 2019	137.16
Sep 20, 2018	137.97	Feb 21, 2019	137.41	Jun 19, 2019	138.20
Nov 19, 2018	137.41				



WELL NUMBER: CH Ce 57

PERMIT NUMBER: CH-94-1112

LOCATION: Heritage Green, La Plata

LAT. 38° 32' 50", LONG. 76° 58' 40"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1,703 ft;

Casing diameter: 6 in. to 400 ft; 4 in. from 400 to 1,406 ft, 1,421 to 1,500 ft, 1,515 to 1,668 ft, and 1,698 to 1,703 ft;

Screen diameter: 4 in. from 1,406 to 1,421 ft, 1,500 to 1,515 ft, and 1,668 to 1,698 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 193.47 ft above NGVD of 1929.

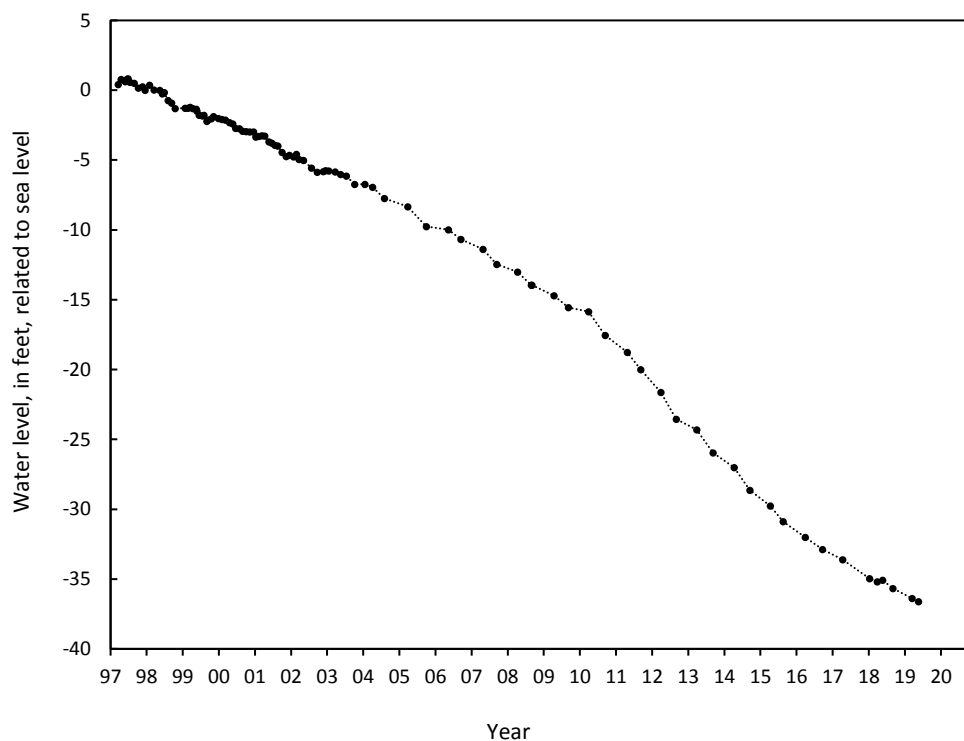
MEASURING POINT: Top of casing 5.0 ft above land surface.

PERIOD OF RECORD: March 1997 to current year.

EXTREMES FOR RECORD: Highest water level measured, 192.64 ft below land surface, on June 26, 1997; lowest measured, 230.09 ft below land surface, on June 3, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL
Sep 19, 2018	229.15	Jun 03, 2019	230.09
Apr 02, 2019	229.86		



WELL NUMBER: CH Ce 66

PERMIT NUMBER: CH-12-0184

LOCATION: White Plains Regional Park

LAT. 38° 34' 44", LONG. 76° 55' 12"

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 1925 ft;

Casing diameter: 4 in. to 1512 ft; 1522 to 1605 ft; 1645 to 1714 ft; 1724 to 1794 ft; 1809 to 1814 ft.; 1824 to 1876 ft.; 1886 to 1900 ft.; 1910 to 1925 ft.;

Screen diameter: 4 in. from 1512 to 1522 ft.; 1605 to 1645 ft.; 1714 to 1724 ft.; 1794 to 1809 ft.; 1814 to 1824 ft.; 1876 to 1886 ft.; 1900 to 1910 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 179 ft above NAVD of 1988.

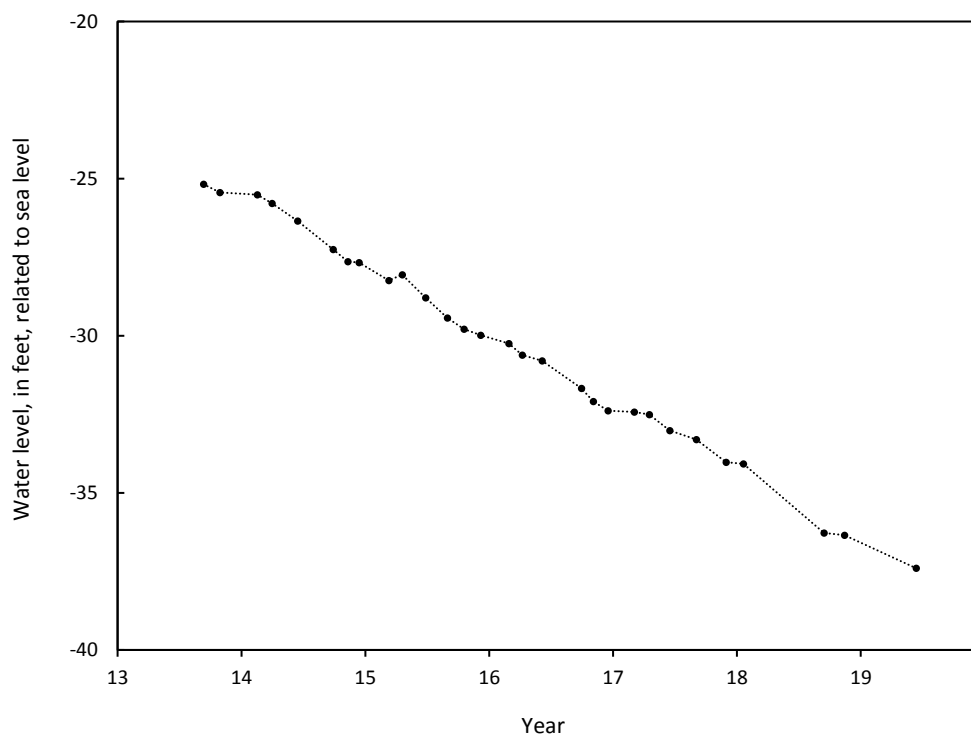
MEASURING POINT: Top of casing 2.35 ft above land surface.

PERIOD OF RECORD: September 2013 to current year.

EXTREMES FOR RECORD: Highest water level measured, 204.18 ft below land surface, on September 12, 2013; lowest measured, 216.4 ft below land surface, on June 19, 2019.

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL	DATE	WATER LEVEL
Sep 19, 2018	215.28	Jun 19, 2019	216.40
Nov 19, 2018	215.35		



WELL NUMBER: CH Da 18

LOCATION: Douglas Point

AQUIFER: Patuxent aquifer of the Patuxent Formation of Lower Cretaceous age.

WELL CHARACTERISTICS: Drilled, observation, artesian well, depth 740 ft;

Casing diameter: 8 in. to 684 ft, and 694 to 730 ft;

Screen diameter: 8 in. from 684 to 694 ft, and 730 to 740 ft.

INSTRUMENTATION: Periodic measurements.

DATUM: Altitude of land surface is 89.9 ft above NGVD of 1929.

MEASURING POINT: Top of recorder platform 3.10 ft above land surface.

PERIOD OF RECORD: September 1976 to current year.

EXTREMES FOR RECORD: Highest water level measured, 81.11 ft below land surface, on September 21, 1976; lowest measured, 103.01 ft below land surface, on April 20, 2018.

PERMIT NUMBER: CH-73-0586

LAT. 38° 26' 54", LONG. 77° 15' 25"

#### WATER LEVELS IN FEET BELOW LAND SURFACE DATUM

DATE	WATER LEVEL
Sep 20, 2018	102.74
Apr 09, 2019	102.91

