

GROUND-WATER-QUALITY RECORDS

Remark Codes

The following remark codes may appear with the water-quality data in this section:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{g/L}$) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the $\mu\text{g/L}$ level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Water-Quality Control Data

NOTE.--See information related to quality-control data beginning on page 24.

GROUND-WATER RECORDS

GROUND-WATER LEVELS

BERKELEY COUNTY

392725077582401. Local number, Ber-0445.

LOCATION.--Lat 39°27'25", long 77°58'24", NAD 27, Hydrologic Unit 02070004, at John Street and Porter Avenue, Martinsburg.

AQUIFER.--Beekmantown Group of Lower Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 154 ft, cased with steel to 10 ft.

INSTRUMENTATION.--Periodic water-level measurements, November 1956 to October 1970. Digital water-level recorder--60-minute interval, October 1970 to September 2000. Electronic data logger at 60-minute interval with satellite telemetry, October 2003 to present.

DATUM.--Elevation of land-surface datum is about 465 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 3.30 ft above land-surface datum.

REMARKS.--Aquifer test data available. No water-level record November 8-24, December 8-17, and June 6-7.

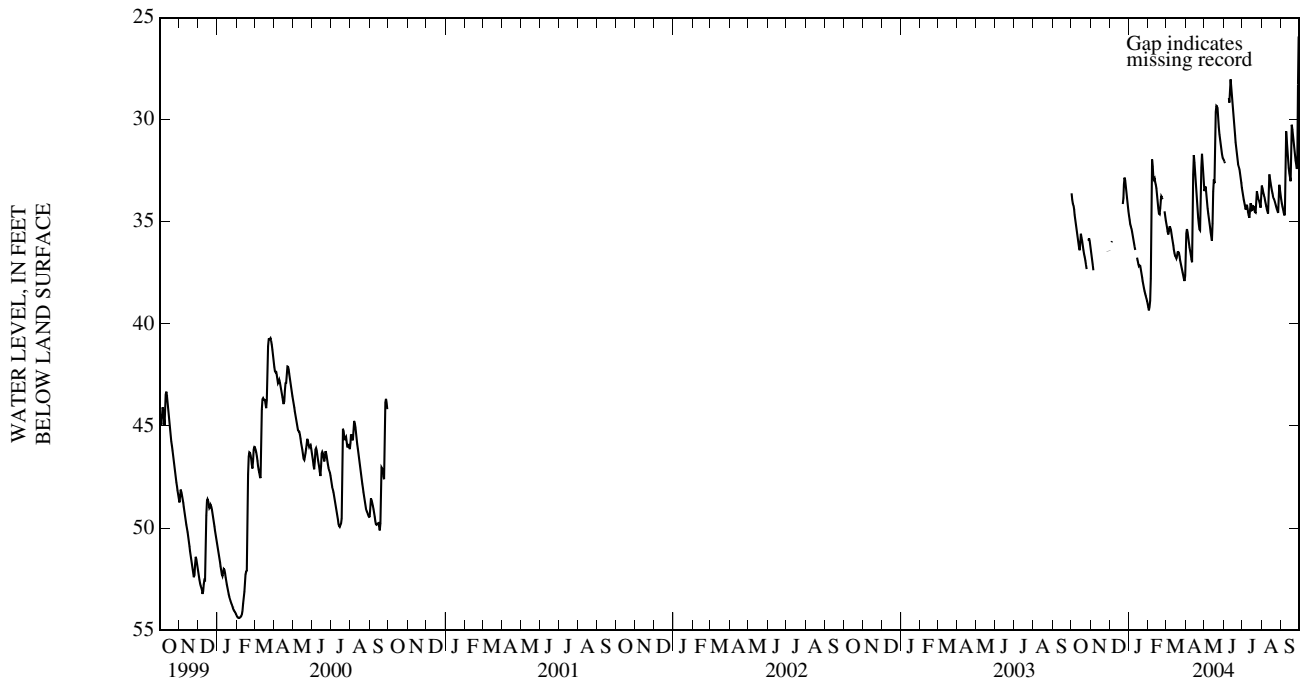
PERIOD OF RECORD.--November 1956 to September 30, 2000; October 2003 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.00 ft, estimated, below land-surface datum, June 24, 1972; lowest, 68.45 ft below land-surface datum, Dec. 7, 1969.

EXTREMES FOR CURRENT YEAR.--Highest water level, 25.27 ft, below land-surface datum, Sept. 29; lowest, 39.41 ft below land-surface datum, Feb. 3.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.28	37.28	36.02	35.25	38.79	35.70	35.64	33.81	---	34.15	33.68	34.47
10	35.52	---	---	36.15	33.05	35.68	36.72	35.18	29.04	34.45	34.44	30.78
15	36.39	---	---	36.82	33.51	36.61	31.83	34.17	29.06	34.14	33.00	32.71
20	36.29	---	---	37.26	34.55	36.51	34.29	29.16	30.95	34.33	33.84	30.67
25	37.22	---	32.82	38.16	33.92	37.11	35.36	30.61	32.31	33.59	34.32	32.11
EOM	36.05	---	34.33	38.97	34.84	37.92	32.85	31.92	33.22	34.37	33.53	26.41



BROOKE COUNTY

401216080362703. Local number, Brk-0066.

LOCATION.--Lat 40°12'16", long 80°36'27", NAD 27, Hydrologic Unit 05030106, about 2.5 mi west of Bethany on hilltop about 1,700 ft west of Buffalo Creek.

AQUIFER.--Waynesburg coal in the Monongahela Group of Upper Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 50.5 ft, cased with steel to 46.5 ft and set in bentonite clay seal.

INSTRUMENTATION.--July 1982 to June 1999, continuous strip-chart water-level recorder. June 1999 to October 30, 2000, digital water-level recorder--60-minute punch. Electronic data logger at 60-minute interval, October 30, 2000 to present. Satellite telemetry installed at site on February 28, 2002.

DATUM.--Elevation of land-surface datum is about 1,150 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 2.14 ft above land-surface datum. For the period from June 3, 1999 to February 28, 2002, measuring point was top edge of recorder shelter floor, 2.18 ft above land-surface datum. Prior to June 3, 1999, measuring point was top edge of recorder shelter floor, 2.20 ft above land-surface datum.

REMARKS.--Aquifer test data available.

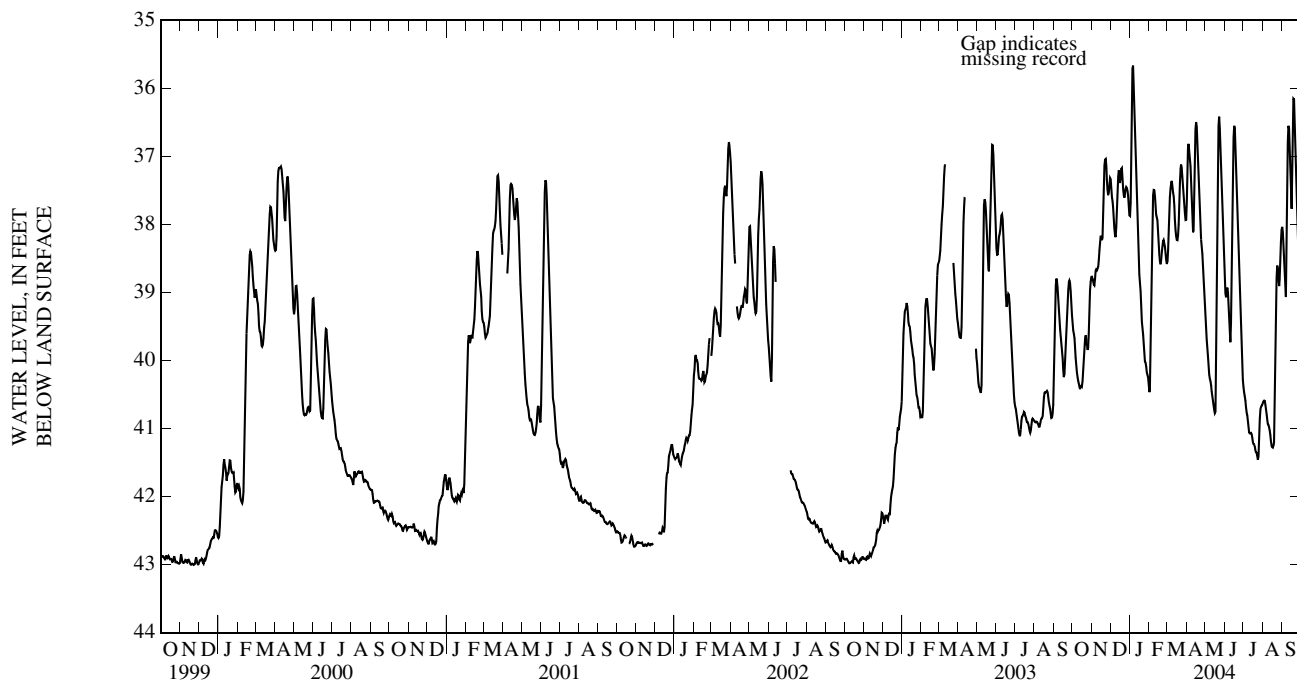
PERIOD OF RECORD.--July 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 34.87 ft below land-surface datum, Apr. 3, 1985; lowest, 43.15 ft below land-surface datum, Dec. 13, 1994.

EXTREMES FOR CURRENT YEAR.--Highest water level, 35.60 ft below land-surface datum, Jan. 6; lowest, 41.48 ft below land-surface datum, July 25, 2004.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.75	38.90	37.68	35.82	39.06	37.69	36.85	39.86	38.93	40.63	40.60	38.63
10	40.27	38.67	38.18	36.55	37.52	37.50	37.77	40.33	39.67	41.03	40.94	37.00
15	40.34	38.20	37.22	38.25	37.98	38.14	36.69	40.69	36.87	41.10	41.24	37.32
20	39.96	37.64	37.21	39.34	38.59	37.88	37.15	38.27	37.41	41.29	41.18	36.10
25	39.83	37.26	37.51	40.00	38.26	37.22	38.28	36.73	39.25	41.48	38.59	37.68
EOM	38.79	37.36	37.82	40.29	38.56	37.98	39.15	38.39	40.22	40.66	38.14	39.12



GRANT COUNTY

391652079181401. Local number, Grt-0090.

LOCATION.--Lat 39°16'52", long 79°18'14", NAD 27, Hydrologic Unit 02070002, about 200 ft north of U.S. Route 50, about 3.5 mi west of Mount Storm.

AQUIFER.--Thin bed of coal in the Conemaugh Group of Upper Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in., depth 24 ft, cased with plastic to 23 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to May 16, 2000. Electronic data logger at 60-minute interval, May 16, 2000 to present.

DATUM.--Elevation of land-surface datum is about 2,890 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 1.49 ft above land-surface datum. Prior to July 30, 2003, measuring point was the top edge of the recorder shelter floor 1.50 ft above land-surface datum.

REMARKS.--Well is near reclaimed surface mine. No water-level record January 24 - February 3.

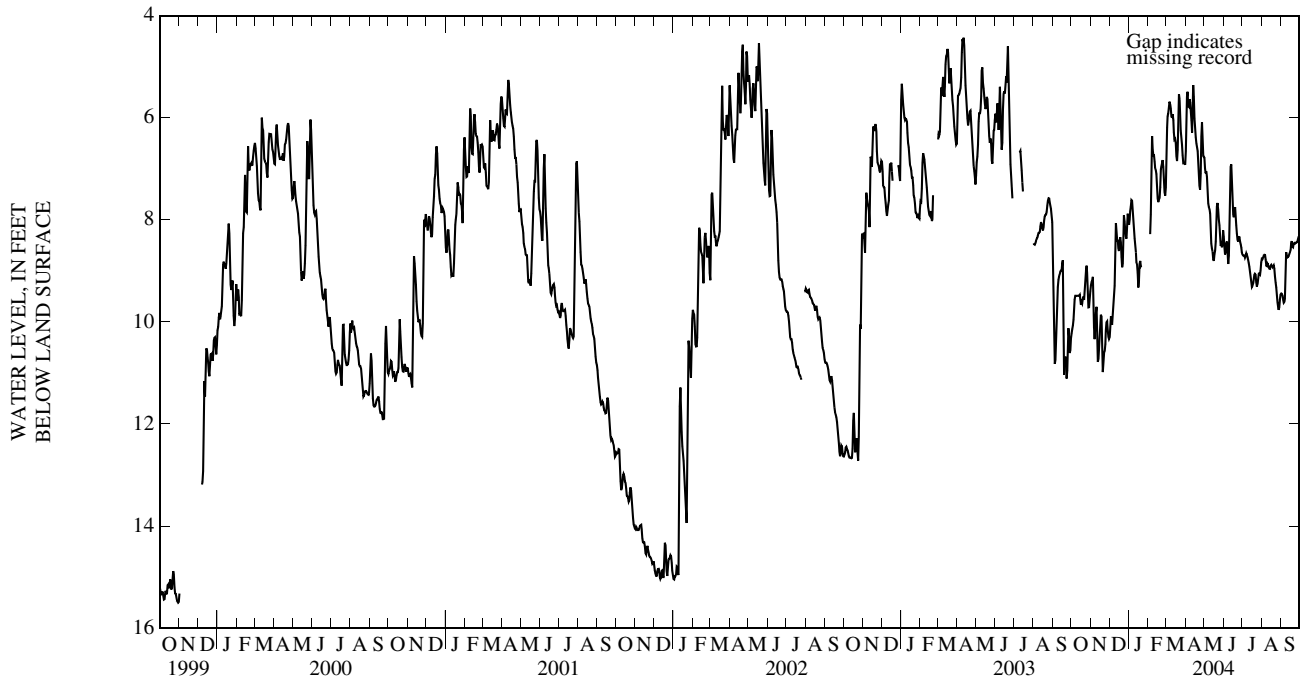
PERIOD OF RECORD.--June 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.12 ft below land-surface datum, Apr. 22, 2002; lowest, 21.24 ft below land-surface datum, Nov. 28, 29, 1982.

EXTREMES FOR CURRENT YEAR.--Highest water level, 5.12 ft below land-surface datum, Apr. 13; lowest, 11.08 ft below land-surface datum, Nov. 20.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.80	9.05	10.19	7.68	8.31	5.96	5.63	7.03	8.56	8.71	8.69	9.62
10	9.49	9.73	9.13	8.25	6.73	6.04	5.99	7.83	8.46	8.76	8.87	8.69
15	9.45	10.45	8.38	8.83	7.15	6.46	5.88	8.69	7.38	9.15	8.94	8.64
20	9.41	11.07	8.55	8.86	7.59	6.45	6.61	8.24	7.77	9.06	8.88	8.60
25	8.85	10.25	7.92	---	6.89	6.33	7.40	8.04	8.40	9.31	9.40	8.44
EOM	9.47	10.29	7.91	---	7.50	6.93	6.87	8.17	8.60	8.93	9.48	8.48



HARDY COUNTY

390333078370801. Local Number, Hrd-0301.

LOCATION.--Lat 39°03'33.06", long 78°37'07.61", NAD 83, Hydrologic Unit 02070003, about 200 ft east of Trout Run Rd, 1.5 miles southwest of Wardensville.

AQUIFER.--Marcellus Formation near the contact with the Oriskany Sandstone Group.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 160 ft, cased with steel to 58 ft.

INSTRUMENTATION.--Electronic data logger at 60-minute interval with satellite telemetry, June 24, 2004 to present.

DATUM.--Elevation of land-surface datum is about 1,165 ft above NGVD 29. Measuring point: Top of casing, 1.76 ft above land-surface datum.

REMARKS.--Aquifer test data and water-quality data available. No water-level record July 10-14, July 31-August 9, and September 10-12, 26-30, due to recorder malfunction.

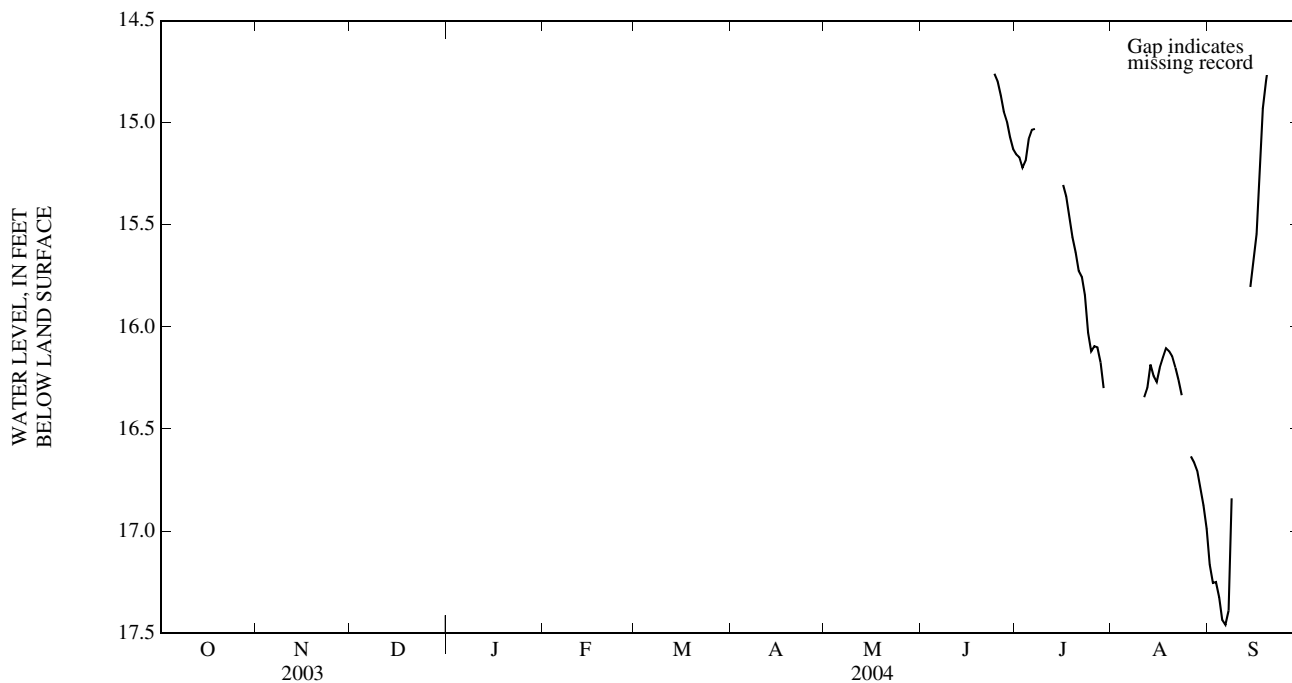
PERIOD OF RECORD.--June 24, 2004 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.31 ft below land-surface datum, Sept. 30, 2004; lowest, 17.53 ft below land-surface datum, Sept. 6, 2004.

EXTREMES FOR CURRENT YEAR.--Same as above.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	15.11	---	17.41
10	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	16.32	15.73
20	---	---	---	---	---	---	---	---	---	15.58	16.15	14.73
25	---	---	---	---	---	---	---	---	14.79	16.12	---	---
EOM	---	---	---	---	---	---	---	---	15.11	---	16.90	---



JEFFERSON COUNTY

392104077554801. Local number, Jef-0526.

LOCATION.--Lat 39°21'04", long 77°55'48", NAD 27, Hydrologic Unit 02070004, at Leetown Fish Research Station, Leetown.

AQUIFER.--Beekmantown Group of Lower Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 155 ft, cased with steel to 36.7 ft, screened from 36.7 ft to 155 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to August 3, 2000. Electronic data logger at 60-minute interval, August 3, 2000 to present. Satellite telemetry installed at this site on May 29, 2001.

DATUM.--Elevation of land-surface datum is about 480 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 1.68 ft above land-surface datum. Prior to May 23, 2001, measuring point was top edge of recorder shelter, 2.20 ft above land surface datum.

REMARKS.--Water-quality and well log data available. No water-level record January 19, 21-22, April 28-May 1, May 3-9, and 13-18.

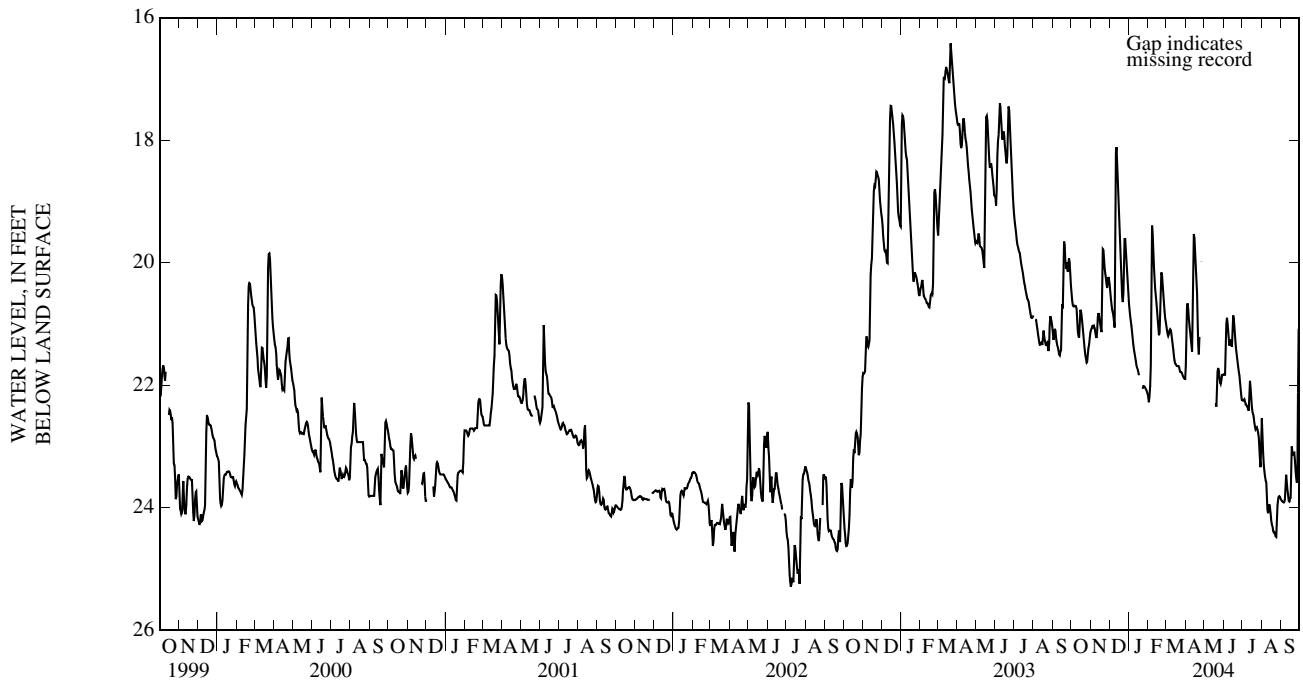
PERIOD OF RECORD.--March 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.87 ft below land-surface datum, May 21, 1988; lowest, 25.39 ft below land-surface datum, July 23, 2002.

EXTREMES FOR CURRENT YEAR.--Highest water level, 17.98 ft below land-surface datum, Dec. 12; lowest, 24.59 ft below land-surface datum, Aug. 25.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.72	21.06	20.74	20.99	21.99	21.22	20.67	---	21.14	22.23	23.37	23.91
10	20.79	21.22	21.09	21.46	19.98	21.21	21.32	21.40	21.30	22.37	23.98	23.51
15	20.79	20.90	18.99	21.72	20.72	21.64	19.51	---	21.42	22.14	24.04	23.84
20	21.17	19.82	20.33	21.92	21.04	21.70	20.62	22.28	21.26	22.59	24.40	23.14
25	21.60	20.19	19.68	22.02	20.38	21.80	---	21.81	21.75	22.71	24.48	23.48
EOM	21.17	20.25	20.46	22.13	20.95	21.90	---	21.84	22.25	23.36	23.84	21.28



MINGO COUNTY

373554081493401. Local number, Mig-0131.

LOCATION.--Lat 37°35'54", long 81°49'34", NAD 27, Hydrologic Unit 05070101, downstream of toe of R. D. Bailey Dam northeast of Justice.

AQUIFER.--New River Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 66 ft, cased with steel.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch to November 14, 2000. Electronic data logger at 60-minute interval November 16, 2000 to present.

DATUM.--Elevation of land-surface datum is about 920 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 1.57 ft above land-surface datum. Prior to November 18, 1999, measuring point was top edge of recorder shelter floor, 1.06 ft above land-surface datum.

REMARKS.--At times, water level affected by Guyandotte River. No water-level record October 16-December 2 due to recorder malfunction.

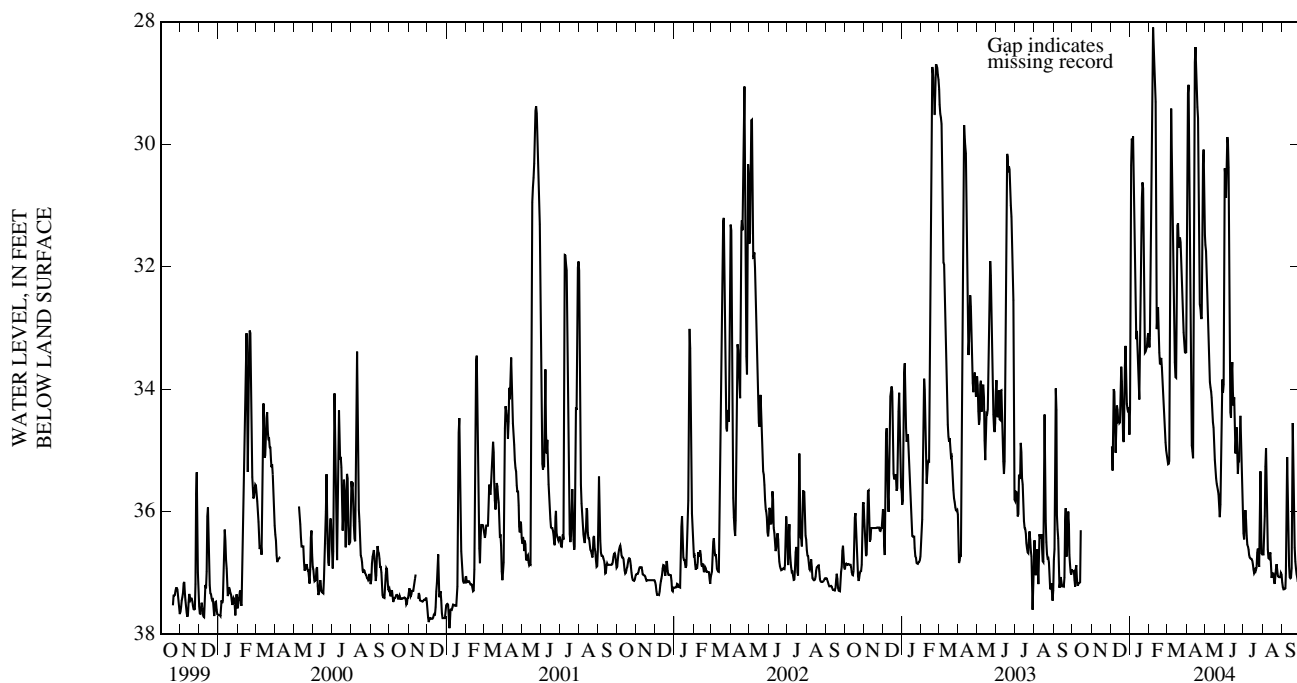
PERIOD OF RECORD.--March 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.78 ft below land-surface datum, Feb. 7, 2004; lowest, 44.29 ft below land-surface datum, Oct. 6, 1982.

EXTREMES FOR CURRENT YEAR.--Highest water level, 27.78 ft below land-surface datum, Feb. 7; lowest, 37.28 ft below land-surface datum, Oct. 5.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	37.27	---	35.21	30.13	30.95	35.17	29.17	32.68	29.99	36.01	36.06	37.27
10	37.23	---	35.10	32.32	28.77	31.98	34.95	34.00	34.10	36.67	36.75	35.44
15	35.46	---	34.47	33.60	32.52	33.90	28.34	34.68	34.29	36.78	37.15	37.09
20	---	---	33.99	31.15	33.48	31.82	29.57	35.59	34.58	36.95	37.25	35.73
25	---	---	33.36	33.42	34.39	32.24	33.07	36.13	35.46	36.67	37.04	37.05
EOM	---	---	34.20	33.17	35.04	33.34	31.37	33.52	35.90	36.70	36.93	35.83



POCAHONTAS COUNTY

380653080155301. Local number, Poc-0256.

LOCATION.--Lat 38°06'53", long 80°15'53", NAD 27, Hydrologic Unit 05050003, on Droop Mountain State Park north of Droop on U.S. Route 219.

AQUIFER.--Mauch Chunk Group of Upper Mississippian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 86 ft, cased with steel.

INSTRUMENTATION.--Weekly measurement with chalked tape by observer, 1970-76; periodic measurement by USGS personnel, 1978-80; digital water-level recorder--60-minute punch, 1980 to Sept. 11, 2000. Electronic data logger at 60-minute interval, September 11, 2000 to present.

DATUM.--Elevation of land-surface datum is about 3,000 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 1.92 ft above land surface datum. July 7, 1983 to July 8, 2004, measuring point was top edge of recorder shelter at land-surface datum. May 28, 1980 to July 7, 1983, measuring point was top edge of recorder shelter floor 0.65 ft above land-surface datum. Prior to May 28, 1980, the measuring point was the top edge of casing at land-surface datum.

REMARKS.--No water-level record July 7 due to gage construction.

PERIOD OF RECORD.--December 1970 to January 1976, April 1978 to current year. Published as local well number "44-4-1", 1973-78.

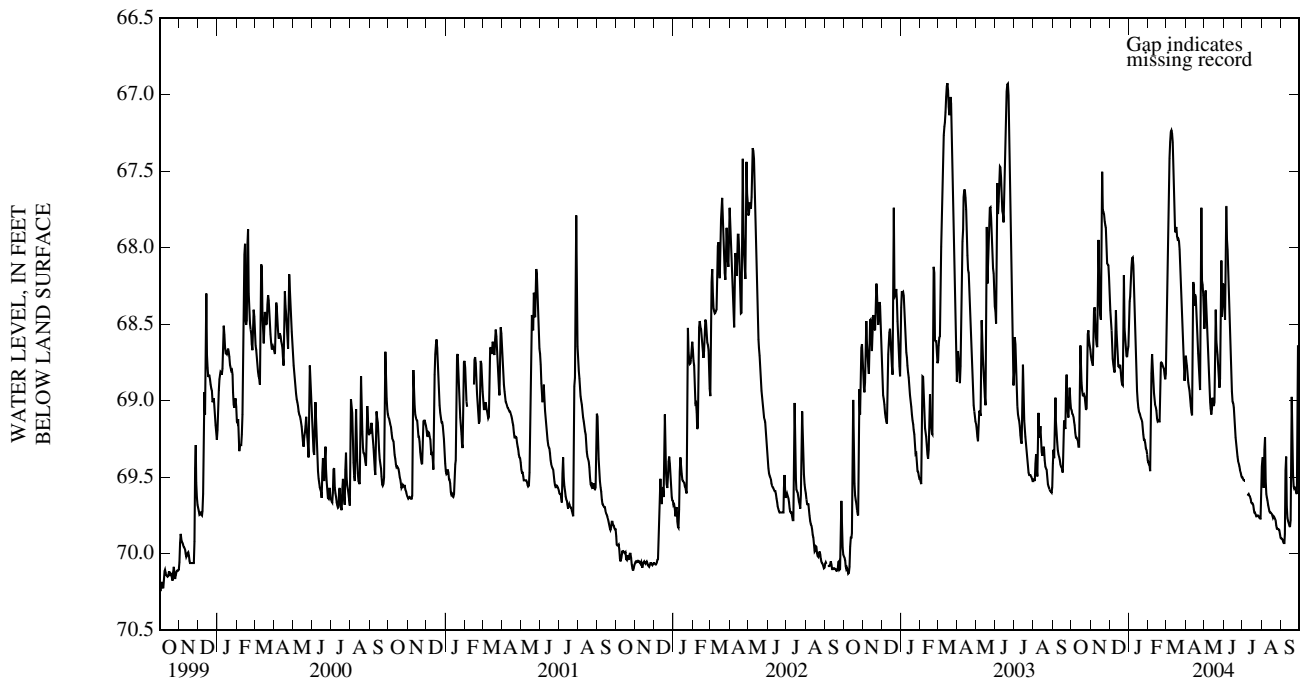
REVISED RECORDS.--WDR WV-79-1: Well location, well characteristics, and water levels. WDR WV-83-1: Station identification number and lowest water level.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 62.86 ft below land-surface datum, May 30, 1982; lowest, 70.37 ft below land-surface datum, July 22, 1997. (73.39 ft below land-surface datum, Oct. 25, 1984, due to pumping.)

EXTREMES FOR CURRENT YEAR.--Highest water level, 67.03 ft below land-surface datum, Nov. 19; lowest, 69.93 ft below land-surface datum, Sept. 5-8.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	69.14	68.78	68.58	68.18	69.46	67.94	68.86	68.40	67.53	69.52	69.61	69.93
10	69.24	68.62	68.82	68.32	68.92	67.24	69.06	68.98	68.38	69.62	69.63	69.63
15	68.58	68.28	68.77	68.98	69.09	67.87	68.44	68.97	68.98	69.66	69.73	69.82
20	68.98	67.72	68.85	69.10	69.13	67.94	68.52	68.59	69.22	69.73	69.76	69.43
25	69.06	67.86	68.49	69.25	68.78	68.34	68.96	68.90	69.41	69.75	69.84	69.59
EOM	68.64	68.13	68.64	69.38	68.86	68.89	68.36	68.25	69.50	69.77	69.89	68.91



WEBSTER COUNTY

382008080292801. Local number, Web-0167.

LOCATION.--Lat 38°20'08", long 80°29'28", NAD 27, Hydrologic Unit 05050005, at Bishop Knob Campground about 0.50 mi from junction of U.S. Forest Service Roads 81 and 82 and about 4 mi from Dyer.

AQUIFER.--Kanawha Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 80 ft, cased with galvanized iron to 60 ft.

INSTRUMENTATION.--Periodic measurement with chalked tape by USGS personnel, 1980-82. Digital water-level recorder--60-minute punch, 1982 to November 1, 2000. Electronic data logger at 60-minute interval November 1, 2000 to present.

DATUM.--Elevation of land-surface datum is about 3,100 ft above NGVD 29. Measuring point: Top of extended casing, 2.00 ft above land-surface datum.

REMARKS.--No water-level record October 30, June 7-July 28, due to equipment malfunction.

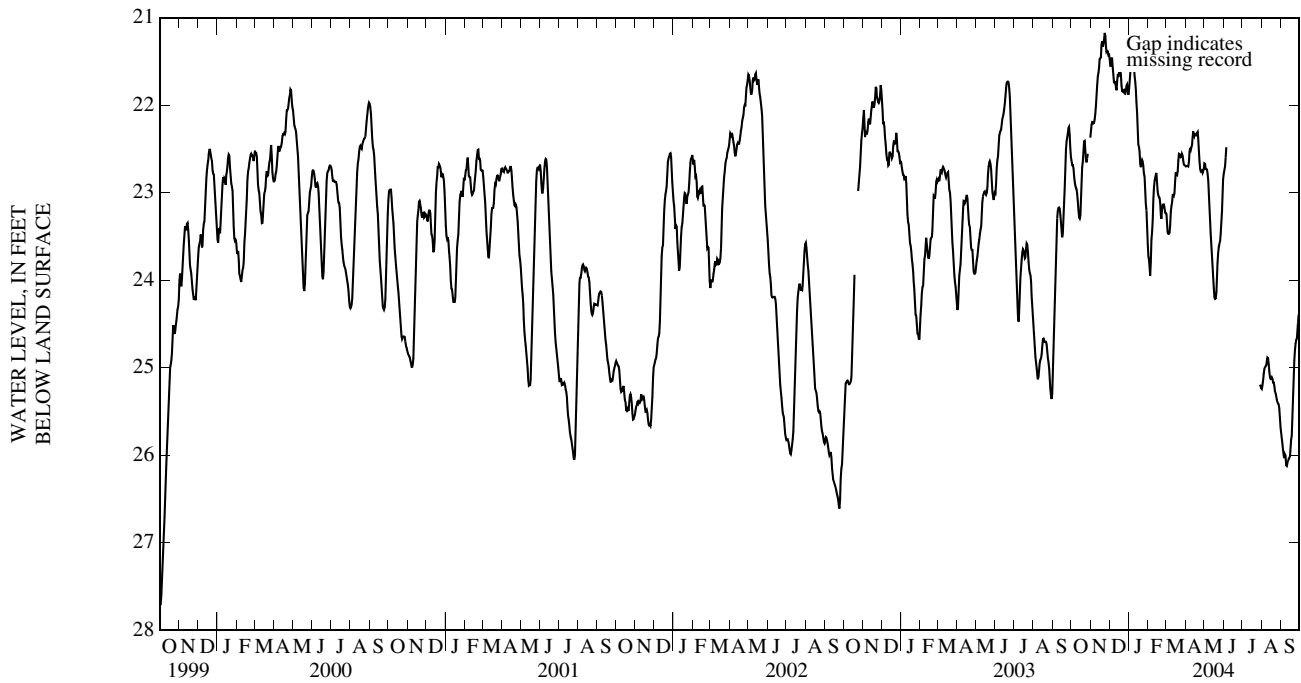
PERIOD OF RECORD.--March 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.00 ft below land-surface datum, Dec. 5, 1996; lowest, 28.01 ft below land-surface datum, Oct. 17, 1995.

EXTREMES FOR CURRENT YEAR.--Highest water level, 21.13 ft below land-surface datum, Nov. 24; lowest, 26.15 ft below land-surface datum, Sept. 10.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.78	22.21	21.41	21.50	23.95	23.48	22.70	22.71	22.52	---	25.02	25.99
10	22.97	21.95	21.69	21.63	22.98	23.16	22.50	23.18	---	---	24.89	26.15
15	23.31	21.51	21.68	22.14	22.78	23.00	22.36	23.86	---	---	25.13	26.02
20	22.65	21.34	21.71	22.72	23.07	22.71	22.30	24.21	---	---	25.18	25.41
25	22.66	21.27	21.84	22.76	23.14	22.61	22.74	23.60	---	---	25.36	24.69
EOM	22.39	21.43	21.87	23.49	23.24	22.68	22.73	22.87	---	25.21	25.65	24.32



WYOMING COUNTY

373839081255201. Local number, Wyo-0148.

LOCATION.--Lat 37°38'39", long 81°25'52", NAD 27, Hydrologic Unit 05070101, at Twin Falls State Park.

AQUIFER.--New River Formation of Lower Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 80 ft, cased with steel to 28 ft.

INSTRUMENTATION.--Digital water-level recorder--60-minute punch January 25, 1977, to September 27, 2000. Electronic data logger and satellite telemetry at 60-minute interval, October 2, 2000 to present.

DATUM.--Elevation of land-surface datum is about 2,015 ft above NGVD 29. Measuring point: Top edge of recorder shelter floor, 3.39 ft above land-surface datum. Prior to September 27, 2000, measuring point was top edge of recorder shelter floor, 2.62 ft above land-surface datum.

REMARKS.--Aquifer test data available. Water-level record affected by nearby pumping at times. No water-level record February 22- March 23 due to equipment malfunction.

PERIOD OF RECORD.--December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.19 ft below land-surface datum, Mar. 13, 1980; lowest, 52.40 ft below land-surface datum, Nov. 24, 1987.

EXTREMES FOR CURRENT YEAR.--Highest water level, 23.31 ft below land-surface datum, Dec. 10; lowest, 27.33 ft below land-surface datum, Sept. 7.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.74	24.69	23.67	23.48	24.02	---	23.95	24.26	24.69	24.77	25.52	27.29
10	25.34	24.74	23.46	23.71	23.96	---	24.01	24.83	24.78	25.26	25.39	27.08
15	25.36	24.25	23.82	23.65	23.86	---	24.00	25.20	24.98	25.29	25.37	26.37
20	25.01	23.92	23.82	23.84	23.77	---	23.83	25.39	24.94	25.93	25.39	25.96
25	25.07	23.89	23.73	23.83	---	24.23	24.03	25.40	24.89	26.32	25.77	25.89
EOM	24.93	23.93	23.95	23.99	---	23.82	24.31	24.73	24.80	25.92	26.40	25.73

