

Water-Data Report 2008

**361646081433001 Local number WT-098, NCDENR Tater Hill Research Station ASU-1D near Boone, NC
(Bedrock)**

Piedmont and Blue Ridge crystalline-rock aquifers
Mafic Gneiss

Watauga County, NC

LOCATION.--Lat 36°16'46", long 81°43'03" referenced to North American Datum of 1983, Watauga County, NC, Hydrologic Unit 05050001, 2.1 mi east of U.S. Highway 421, 0.1 mi north of Howards Creek Road. Owner: Appalachian State University and NCDENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

GROUND-WATER RECORDS

WELL CHARACTERISTICS.--Drilled observation well, depth 345 ft, diameter 6 in., cased to 20 ft, open hole from 20 ft to 345 ft.

DATUM.--Land-surface datum is 4,060 ft above North American Vertical Datum of 1988. Measuring point: black mark on instrument shelter floor, 1.35 ft above land-surface datum, December 21, 2006, to present.

PERIOD OF RECORD.--December 2006 to current year.

GAGE.--Water-level recorder collecting data at 60-minute intervals. Satellite telemetry at station.

REMARKS.--Well is part of Piedmont/Mountains ground-water project.

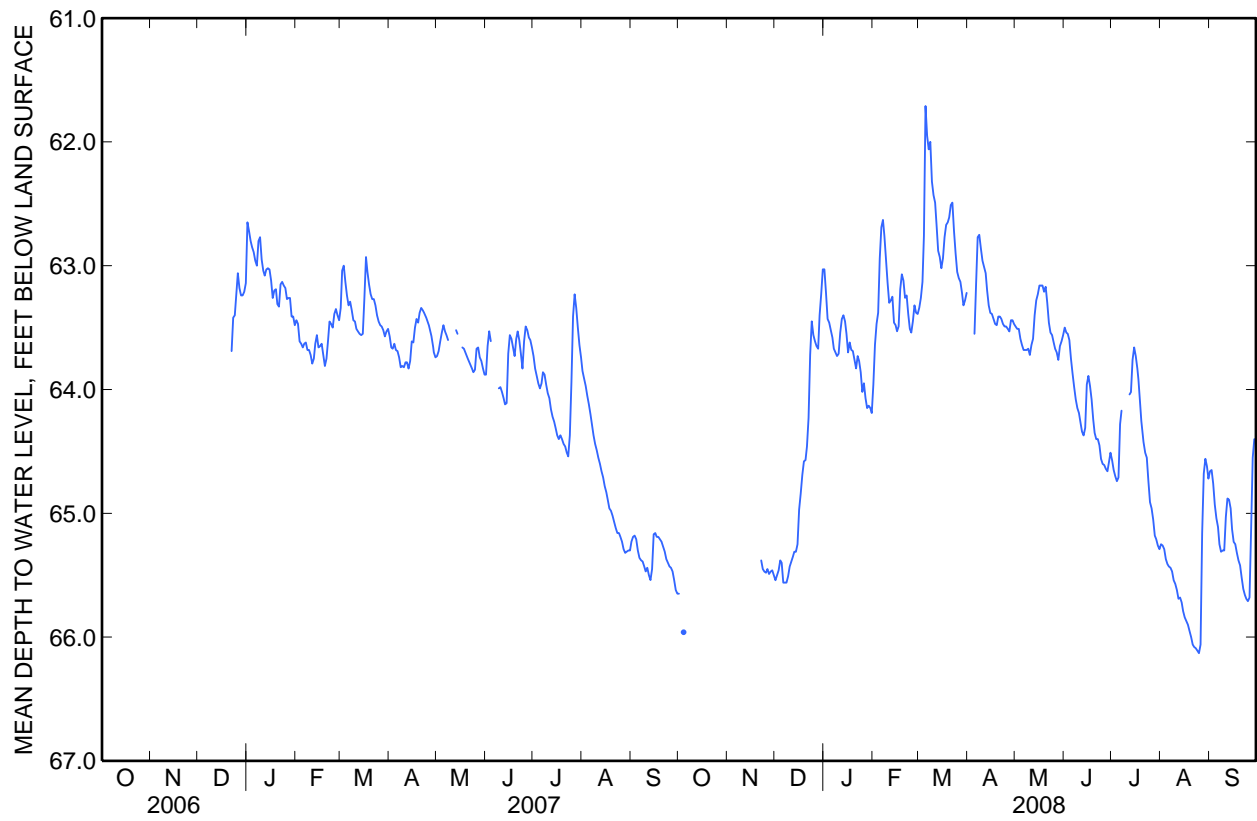
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 61.59 ft below land-surface datum, March 5, 2008; lowest water level recorded 66.20 ft below land-surface datum, August 25, 26, 2008.

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DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	65.65	---	65.54	63.03	63.96	63.34	---	63.49	63.50	64.57	65.25	64.66
2	---	---	65.50	63.22	63.64	63.26	---	63.51	63.54	64.65	65.26	64.65
3	---	---	65.46	63.43	63.47	63.13	---	63.51	63.55	64.70	65.29	64.76
4	65.96	---	65.38	63.46	63.38	62.76	---	63.59	63.60	64.74	65.37	64.93
5	---	---	65.40	63.52	62.94	61.71	63.55	63.64	63.75	64.71	65.41	65.04
6	---	---	65.56	63.58	62.69	61.95	63.15	63.68	63.87	64.28	65.43	65.11
7	---	---	65.56	63.67	62.63	62.06	62.77	63.68	63.98	64.17	65.44	65.25
8	---	---	65.56	63.70	62.76	62.00	62.75	63.68	64.08	---	65.47	65.31
9	---	---	65.51	63.73	62.95	62.32	62.86	63.67	64.15	---	65.54	65.30
10	---	---	65.43	63.71	63.14	62.43	62.96	63.72	64.19	---	65.57	65.30
11	---	---	65.39	63.54	63.30	62.49	63.01	63.64	64.27	---	65.62	65.03
12	---	---	65.35	63.43	63.28	62.67	63.06	63.59	64.34	64.04	65.69	64.88
13	---	---	65.31	63.40	63.25	62.88	63.20	63.40	64.37	64.02	65.68	64.89
14	---	---	65.31	63.45	63.46	62.93	63.32	63.28	64.31	63.76	65.72	64.96
15	---	---	65.25	63.55	63.48	63.02	63.38	63.23	63.96	63.66	65.79	65.13
16	---	---	64.97	63.70	63.53	62.94	63.39	63.16	63.89	63.73	65.84	65.23
17	---	---	64.84	63.62	63.49	62.77	63.43	63.16	63.97	63.83	65.87	65.25
18	---	---	64.69	63.68	63.19	62.67	63.47	63.16	64.08	63.97	65.90	65.32
19	---	---	64.58	63.69	63.07	62.65	63.48	63.21	64.24	64.17	65.95	65.38
20	---	---	64.57	63.76	63.12	62.61	63.41	63.17	64.35	64.34	66.00	65.42
21	---	---	64.46	63.83	63.26	62.51	63.41	63.30	64.40	64.42	66.06	65.52
22	---	65.38	64.23	63.73	63.24	62.49	63.43	63.46	64.40	64.51	66.08	65.61
23	---	65.45	63.72	63.77	63.39	62.72	63.47	63.54	64.45	64.55	66.09	65.66
24	---	65.47	63.45	63.86	63.51	62.90	63.49	63.56	64.56	64.74	66.11	65.69
25	---	65.48	63.56	64.02	63.54	63.05	63.49	63.62	64.60	64.91	66.13	65.71
26	---	65.45	63.61	63.95	63.45	63.10	63.51	63.67	64.61	64.96	66.06	65.68
27	---	65.49	63.65	64.07	63.32	63.13	63.53	63.70	64.64	65.05	65.16	65.13
28	---	65.47	63.67	64.15	63.38	63.22	63.44	63.76	64.66	65.18	64.68	64.55
29	---	65.46	63.40	64.13	63.39	63.32	63.44	63.65	64.59	65.21	64.56	64.40
30	---	65.50	63.23	64.15	---	63.28	63.47	63.61	64.51	65.26	64.62	64.41
31	---	---	63.03	64.19	---	63.22	---	63.56	---	65.29	64.72	---
Mean	---	---	64.68	63.70	63.28	62.76	---	63.50	64.18	---	65.56	65.14
Max	---	---	65.56	64.19	63.96	63.34	---	63.76	64.66	---	66.13	65.71
Min	---	---	63.03	63.03	62.63	61.71	---	63.16	63.50	---	64.56	64.40

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2007.

REMARKS.--Well is part of the Piedmont/Mountains ground-water project.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 1 of 4

[Remark codes: <, less than; E, estimated.]

Date	Time	Sample medium and type	Depth of well, feet below LSD (72008)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
Oct 02...	1245	Ground water, regular	345.00	669	1.6	17	7.9	87	11.6

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 2 of 4

[Remark codes: <, less than; E, estimated.]

Date	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf infl pt titr., field, mg/L as CaCO3 (00419)	Bicar- bonate, wat unf infl pt titr., field, mg/L (00450)	Bromide water, fltrd, mg/L (71870)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)
Oct 02...	37	12.1	1.69	1.17	4.07	39	48	<.02	.56	.22	15.7	9.68	66

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 3 of 4

[Remark codes: <, less than; E, estimated.]

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitro- gen, wat flt by anal ysis, mg/L (62854)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Alum- inum, water, fltrd, μg/L (01106)	Anti- mony, water, fltrd, μg/L (01095)	Arsenic water, fltrd, μg/L (01000)	Barium, water, fltrd, μg/L (01005)	Beryll- ium, water, fltrd, μg/L (01010)	Boron, water, fltrd, μg/L (01020)	Cadmium water, fltrd, μg/L (01025)	Chrom- ium, water, fltrd, μg/L (01030)
Oct 02...	<.020	E.03	E.002	<.06	.007	3.4	<.14	E.05	6	<.01	27	<.04	.26

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 4 of 4

[Remark codes: <, less than; E, estimated.]

Date	Cobalt water, fltrd, µg/L (01035)	Copper, water, fltrd, µg/L (01040)	Iron, water, fltrd, µg/L (01046)	Lead, water, fltrd, µg/L (01049)	Mangan- ese, water, fltrd, µg/L (01056)	Molyb- denum, water, fltrd, µg/L (01060)	Nickel, water, fltrd, µg/L (01065)	Selen- ium, water, fltrd, µg/L (01145)	Silver, water, fltrd, µg/L (01075)	Zinc, water, fltrd, µg/L (01090)	Uranium natural water, fltrd, µg/L (22703)
Oct											
02...	.02	<1.0	E4	<.08	.5	.6	.47	.23	<.1	E1.4	.25