GROUND-WATER LEVELS

WAKE COUNTY--Continued

354356078403503. County number, WK-279; DENR Lake Wheeler Research Station MW-1D (Bedrock well).

LOCATION.--Lat 35°43'56.2", long 78°40'34.1", North American Datum of 1983, Hydrologic Unit 03020201, .6 mi south of Tryon Road, .2 mi east of Lake Wheeler Road on NCSU Research Farm. Owner: DENR (North Carolina Department of Environment and Natural Resources), Division of Water Quality.

WATER-LEVEL RECORDS

AQUIFER.--Raleigh Gneiss.

- WELL CHARACTERISTICS. -- Drilled observation well, depth 302 ft, diameter 6 in., cased to 47 ft, open hole from 47 ft to 302 ft.
- INSTRUMENTATION.--Water-level recorder collecting data at 60-minute intervals. Satellite telemetry at station.
- DATUM.--Land-surface datum is 338.68 ft above NGVD of 1929. Measuring point: Top of instrument shelter floor, 2.60 ft above land-surface datum.
- REMARKS.--Well is part of Piedmont/Mountains groundwater project. Inflatable packer installed on July 16, 2001. Packer set at 75 ft below land surface.

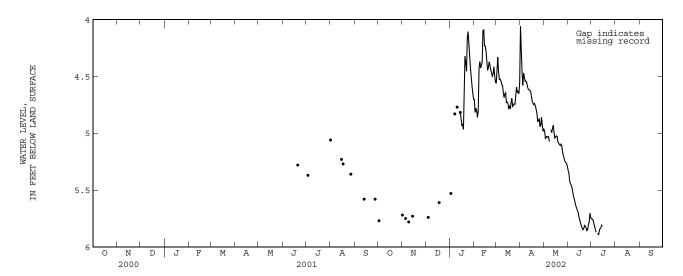
PERIOD OF RECORD.--June 2001 to July 2002 (discontinued). Continuous record began December 2001. Periodic measurements made by DENR, July 2001 to December 2001.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.85 ft below land-surface datum, Jan. 23, 2002; lowest water level recorded 5.94 ft below land-surface datum, July 10, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), FOR PERIOD OCTOBER 2001 TO JULY 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					4.70	4.56	4.06	4.96	5.32	5.75		
2					4.82	4.42	4.24	4.98	5.35	5.75		
3					4.78	4.33	4.45	5.05	5.42	5.76		
4					4.80	4.46	4.58	5.03	5.44	5.80		
5					4.86	4.53	4.47	5.03	5.46	5.82		
6					4.80	4.52	4.50	5.04	5.48	5.85		
7					4.43	4.54	4.54	5.03	5.52	5.87		
8					4.37	4.57	4.54	5.07	5.56			
9					4.43	4.58	4.56		5.58	5.88		
10					4.40	4.64	4.59	4.97	5.61	5.90		
11					4.37	4.69	4.61	5.00	5.64	5.86		
12					4.10	4.65	4.62	4.96	5.66	5.84		
13					4.09	4.64	4.62	4.93	5.68	5.83		
14				4.82	4.23	4.73	4.63	5.00	5.70	5.81		
15				4.87	4.23	4.73	4.67	5.04	5.74	5.82		
16				4.93	4.28	4.74	4.72	5.03	5.77			
17				4.92	4.37	4.78	4.73	5.02	5.79			
18				4.97	4.45	4.76	4.75	5.03	5.82			
19				4.73	4.42	4.79	4.74	5.07	5.83			
20				4.32	4.37	4.73	4.76	5.09	5.85			
21				4.38	4.40	4.69	4.79	5.10	5.84			
22				4.45	4.44	4.76	4.82	5.11	5.81			
23				4.16	4.47	4.75	4.89	5.10	5.82			
24				4.11	4.50	4.74	4.89	5.11	5.83			
25				4.21	4.48	4.75	4.87	5.17	5.86			
26				4 22	4 47	4 67	4 04	F 20	F 0F			
26 27				4.32 4.43	4.41 4.49	4.67 4.59	4.94 4.93	5.20 5.23	5.85 5.80			
27 28				4.43	4.49	4.59	4.93	5.23	5.80			
28 29				4.50	4.55	4.64	4.86	5.25	5.78			
29 30				4.58		4.63	4.93	5.26	5.70			
30				4.65		4.65	4.98	5.26	5.74			
51				4.70		4.55		5.29				

WTR YR 2002 MEAN 4.95 HIGH 4.06 LOW 5.90



354356078403503 WK-279 DENR LAKE WHEELER RESEARCH STATION MW-1D (BEDROCK WELL) -- Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD. -- December 2001 to July 2002 (discontinued).

PERIOD OF DAILY RECORD. --

SPECIFIC CONDUCTANCE: December 2001 to July 2002.

pH: December 2001 to July 2002.

WATER TEMPERATURE: December 2001 to July 2002.

DISSOLVED OXYGEN: December 2001 to July 2002.

DISSOLVED OXYGEN, PERCENT SATURATION: December 2001 to July 2002.

INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from December 2001 to July 2002.

REMARKS.--Station operated in cooperation with North Carolina Department of Environment and Natural Resources, Water Resources Division as part of the Piedmont/Mountains ground-water project. Dissolved oxygen, percent saturation, is computed using a barometric pressure of 760 mm Hg.

EXTREMES FOR CURRENT YEAR .--

CONSTITUENT	MAXIMUM RECORDED	MINIMUM RECORDED
SPECIFIC CONDUCTANCE, microsiemens	745, May 12, June 22, 23	620, April 1
pH, standard units	6.0, on several days during the year	5.5, on many days during the year
WATER TEMPERATURE, °C	16.1, on many days during the period	16.1, on many days during the period
DISSOLVED OXYGEN, mg/L	1.1, April 1	0.2, on many days during the year
DISSOLVED OXYGEN, PERCENT SATURATION,%	11, April 1	2, on many days during the year

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), FOR PERIOD DECEMBER 2001 TO JULY 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					656	717	656	724	742	731		
2					655	720	678	725	742	730		
3				723	667	723	665	725	742	729		
4				725	670	721	647	723	742	729		
5				728	672	720	660	723	742			
5				/20	072	720	000	123	/42			
6				731	686	720	669	725	742			
7				727	684	720	678	726	742			
8				721	682	719	680	728	742			
9				719	685	718	673	732	742	730		
10				717	690	716	676	738	741	730		
11				711	689	714	681	741	741	730		
12				707	707	714	688	743	739	730		
13				705	705	715	694	739	737	729		
14				701	699	714	700	736	738	728		
15				699	698	714	701	736	739	727		
16				698	697	715	697	736	739			
17				702	695	714	700	736	740			
18				701	694	715	705	737	740			
19				705	698	716	707	736	740			
20			683	696	701	721	709	736	740			
21			686	698	703	724	710	736	741			
22				695	706	725	710	737	744			
23			690	686	708	723	712	737	743			
24			692	683	710	722	714	738	740			
25			695	677	712	723	718	739	737			
26			700	672	715	714	717	739	736			
27			701	666	716	714	719	739	735			
28			706	661	715	713	722	740	735			
29			710	657		711	723	741	734			
30			710	653		711	722	741	732			
31			716	653		708		742				
MEAN					693	717	694	735	740			
MAX					716	725	723	743	744			
MIN					655	708	647	723	732			

WAKE COUNTY--Continued

354356078403503 WK-279 DENR LAKE WHEELER RESEARCH STATION MW-1D (BEDROCK WELL) -- Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, FOR PERIOD DECEMBER 2001 TO JULY 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					5.7	5.7	5.6	5.6	5.5	5.6		
2					5.7	5.7	5.6	5.6	5.6	5.6		
3				5.9	5.7	5.6	5.6	5.6	5.6	5.6		
4				5.9	5.7	5.6	5.6	5.6	5.6	5.6		
5				5.9	5.7	5.7	5.6	5.6	5.6			
6				5.9	5.7	5.7	5.6	5.5	5.5			
7				5.9	5.7	5.7	5.6	5.5	5.5			
8				5.9	5.7	5.7	5.6	5.5	5.5			
9				5.9	5.6	5.7	5.6	5.5	5.5	5.5		
10				5.8	5.7	5.7	5.6	5.5	5.5	5.5		
10				5.0	5.7	5.7	5.0	5.5	5.5	5.5		
11				5.8	5.7	5.7	5.6	5.5	5.5	5.5		
12				5.8	5.7	5.7	5.6	5.5	5.5	5.5		
13				5.8	5.7	5.7	5.6	5.6	5.5	5.6		
14				5.8	5.7	5.6	5.6	5.6	5.5	5.6		
15				5.8	5.8	5.6	5.6	5.6	5.5	5.6		
16				5.8	5.8	5.6	5.6	5.6	5.6			
17				5.8	5.8	5.6	5.6	5.6	5.6			
18				5.8	5.8	5.6	5.6	5.5	5.6			
19				5.8	5.7	5.6	5.6	5.5	5.6			
20			6.0	5.7	5.7	5.6	5.6	5.5	5.5			
21			6.0	5.7	5.7	5.6	5.6	5.5	5.5			
22				5.7	5.7	5.7	5.6	5.5	5.5			
23			6.0	5.8	5.7	5.7	5.5	5.5	5.5			
24			5.9	5.8	5.7	5.7	5.5	5.6	5.5			
25			5.9	5.8	5.7	5.7	5.5	5.6	5.5			
26			5.9	5.8	5.7	5.7	5.6	5.6	5.5			
27			5.9	5.8	5.7	5.6	5.6	5.6	5.5			
28			6.0	5.8	5.7	5.6	5.6	5.5	5.5			
29			6.0	5.8		5.6	5.6	5.5	5.5			
30			6.0	5.7		5.6	5.6	5.5	5.5			
31			6.0	5.7		5.6	5.6	5.5	5.5			
21			0.0	5.7		0.0		5.5				
MEAN					5.7	5.7	5.6	5.5	5.5			
MAX					5.8	5.7	5.6	5.6	5.6			
MIN					5.6	5.6	5.5	5.5	5.5			
-												

WATER TEMPERATURE, DEGREES CELSIUS, FOR PERIOD DECEMBER 2001 TO JULY 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					16.1	16.1	16.1	16.1	16.1	16.1		
2					16.1	16.1	16.1	16.1	16.1	16.1		
3				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
4				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
5				16.1	16.1	16.1	16.1	16.1	16.1			
6				16.1	16.1	16.1	16.1	16.1	16.1			
7				16.1	16.1	16.1	16.1	16.1	16.1			
8				16.1	16.1	16.1	16.1	16.1	16.1			
9				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
10				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
11				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
12				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
13				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
14				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
15				16.1	16.1	16.1	16.1	16.1	16.1	16.1		
16				16.1	16.1	16.1	16.1	16.1	16.1			
17				16.1	16.1	16.1	16.1	16.1	16.1			
18				16.1	16.1	16.1	16.1	16.1	16.1			
19				16.1	16.1	16.1	16.1	16.1	16.1			
20			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
21			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
22				16.1	16.1	16.1	16.1	16.1	16.1			
23			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
24			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
25			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
26			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
27			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
28			16.1	16.1	16.1	16.1	16.1	16.1	16.1			
29			16.1	16.1		16.1	16.1	16.1	16.1			
30			16.1	16.1		16.1	16.1	16.1	16.1			
31			16.1	16.1		16.1		16.1				
MEAN					16.1	16.1	16.1	16.1	16.1			
MAX					16.1	16.1	16.1	16.1	16.1			
MIN					16.1	16.1	16.1	16.1	16.1			

WAKE COUNTY--Continued

354356078403503 WK-279 DENR LAKE WHEELER RESEARCH STATION MW-1D (BEDROCK WELL) -- Continued

OXYGEN DISSOLVED (MG/L), FOR PERIOD DECEMBER 2001 TO JULY 2002 DAILY MEAN VALUES $% \left(\mathcal{M}_{\mathrm{M}}^{\mathrm{T}}\right) = \left(\mathcal{M}_{\mathrm{M}}^{\mathrm{T}}\right) \left(\mathcal{M}_{\mathrm{M}}^$

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0.5	0.3	0.8	0.2	0.2	0.2		
2					0.5	0.3	0.6	0.2	0.2	0.2		
3				0.4	0.4	0.3	0.7	0.2	0.2	0.2		
4				0.4	0.4	0.3	0.9	0.2	0.2	0.2		
5				0.3	0.4	0.3	0.8	0.2	0.2			
6				0.3	0.4	0.3	0.6	0.2	0.2			
7				0.4	0.4	0.3	0.5	0.2	0.2			
8				0.4	0.4	0.3	0.5	0.2	0.2			
9				0.4	0.4	0.3	0.6		0.2	0.2		
10				0.4	0.4	0.3	0.5	0.2	0.2	0.2		
11				0.4	0.4	0.4	0.4	0.2	0.2	0.2		
12				0.4	0.3	0.4	0.4	0.2	0.2	0.2		
13				0.4	0.3	0.4	0.4	0.2	0.2	0.2		
14				0.4	0.4	0.4	0.3	0.2	0.2	0.2		
15				0.4	0.3	0.4	0.3	0.2	0.2	0.2		
1.0					0.0	0.1	0.4					
16				0.4	0.3	0.4	0.4	0.2	0.2			
17				0.4	0.3	0.4	0.4	0.2	0.2			
18				0.3	0.3	0.4	0.4	0.2	0.2			
19				0.3	0.3	0.4	0.3	0.2	0.2			
20			0.6	0.4	0.3	0.3	0.3	0.2	0.2			
21			0.5	0.4	0.3	0.3	0.3	0.2	0.2			
22				0.4	0.4	0.3	0.3	0.2	0.2			
23			0.4	0.5	0.3	0.3	0.3	0.2	0.2			
24			0.4	0.4	0.3	0.3	0.3	0.2	0.2			
25			0.4	0.5	0.3	0.3	0.3	0.2	0.2			
26			0.3	0.5	0.3	0.3	0.2	0.2	0.2			
27			0.3	0.5	0.3	0.3	0.2	0.2	0.2			
28			0.3	0.5	0.3	0.3	0.2	0.2	0.2			
29			0.3	0.5		0.3	0.2	0.2	0.2			
30			0.3	0.5		0.3	0.2	0.2	0.2			
31			0.3	0.5		0.3		0.2				
MEAN					0.4	0.3	0.4		0.2			
MAX					0.5	0.4	0.9		0.2			
MIN					0.3	0.3	0.2		0.2			

OXYGEN DISSOLVED (% OF SATURATION), FOR PERIOD DECEMBER 2001 TO JULY 2002 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					5	3	8	2	2	2		
2					5	3	5	2	2	2		
3				3	4	3	6	2	2	2		
4				3	4	3	8	2	2	2		
5				2	4	3	7	2	2			
5				-	-	5	,	2	-			
6				2	4	3	6	2	2			
7				3	4	3	4	2	2			
8				3	4	3	4	2	2			
9				3	4	3	4		2	2		
10				3	4	3	4	2	2	2		
				-	-	-	-	-	_	_		
11				3	4	4	3	2	2	2		
12				3	3	4	3	2	2	2		
13				3	3	4	3	2	2	2		
14				3	4	4	2	2	2	2		
15				4	3	4	2	2	2	2		
				-	-	-	_	-	_	_		
16				4	3	4	3	2	2			
17				4	3	4	3	2	2			
18				3	3	4	4	2	2			
19				3	3	4	3	2	2			
20			6	4	3	3	3	2	2			
21			5	4	3	3	3	2	2			
22				4	4	3	3	2	2			
23			4	5	4	3	3	2	2			
24			4	4	3	3	3	2	2			
25			4	5	3	3	3	2	2			
26			3	5	3	3	2	2	2			
27			3	5	3	3	2	2	2			
28			3	5	3	3	2	2	2			
29			3	5		3	2	2	2			
30			3	5		3	2	2	2			
31			3	5		3		2				
MEAN					4	3	4		2			
MAX					5	4	8		2			
MIN					3	3	2		2			

WAKE COUNTY--Continued

354356078403503 WK-279 DENR LAKE WHEELER RESEARCH STATION MW-1D (BEDROCK WELL) -- Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to September 2002.

REMARKS.--Station operated in cooperation with North Carolina Department of Environment and Natural Resources, Water Resources Division as part of the Piedmont/Mountains ground-water project. Samples collected on May 9, 2002 correspond to the reported depths.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	SAM- PLING DEPTH (FEET) (00003)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
NOV						17.0							
14 MAY	1002		.2	5.7	681	17.2	130	33.7	11.9	23.3	28.4		164
09 09	1045 1200	277 62.0	1.2 3.7	5.7 5.7	661 680	16.1 16.1	290 120	109 28.7	4.05 11.9	1.06 27.2	25.3 27.8	60 151	73 184
Date	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORTHO- PHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)
NOV													
14 MAY	.28	60.2	.2	18.4	20.9	294	28.5	26	3.10	<.008	E.01		
09	.04	8.60 59.3	2.2 E.1	20.0 17.5	264 13.1	503 294	.10 28.4	E.07 31	<.05 4.04	<.008 E.004	<.02 E.01	2 <1	<.05 <.05
Date	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
NOV 14 MAY	E2			М					<10		4280		
09 09	<2 <2	14 420	<.06 .18	60 <10	E.03 .26	<.8 <4.0	.20 2.42	1.2 3.0	E9 <10	<.08 <.08	75.5 4310	<.01 E.01	14.8 3.1
							ALF	PHA GRO	SS				

					ALPHA	GRUSS			
		SELE-			RADIO.	BETA,		URANIUM	
	NICKEL,	NIUM,	SILVER,	ZINC,	WATER	DIS-		NATURAL	
	DIS-	DIS-	DIS-	DIS-	DISS	SOLVED	RADON	DIS-	
	SOLVED	SOLVED	SOLVED	SOLVED	AS	(PCI/L	222	SOLVED	
Date	(UG/L	(UG/L	(UG/L	(UG/L	TH-230	AS	TOTAL	(UG/L	
	AS NI)	AS SE)	AS AG)	AS ZN)	(PCI/L)	CS-137)	(PCI/L)	AS U)	
	(01065)	(01145)	(01075)	(01090)	(04126)	(03515)	(82303)	(22703)	
NOV									
NOV									
14					10.8	31.5	4320		
MAY									
09	.84	<2	<1	1	104	41.0	7030	31.9	
09	1.55	<2	<1	12	8.7	34.4	4500	1.60	

Remark codes used in this table: < -- Less than E -- Estimated value M -- Presence verified, not quantified