WAKE COUNTY--Continued
354356078403504. County number, WK-279A; DENR Lake Wheeler Research Station MW-1D Upper Zone (Bedrock well).

LOCATION.--Lat $35^{\circ} 43^{\prime} 56.2^{\prime \prime}$, long $78^{\circ} 40^{\prime} 34.1 "$, 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 75 ft , diameter 6 in., cased to 47 ft , open hole from 47 to 75 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. Well is upper zone of MW-1D (WK-279, 354356078403503).

PERIOD OF RECORD.--July 2002 to September 2002.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.77 ft below land-surface datum, Sept. 1, 2002 ; lowest water level recorded 6.02 ft below land-surface datum, Aug. 13, 29, 2002.

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

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.68 | 4.82 |
| 2 | --- | --- | --- | --- | --- | --- | - | - | - | - | 5.72 | 4.95 |
| 3 | - | - | -- | -- | -- | - | - | --- | --- | --- | 5.76 | 5.04 |
| 4 | --- | -- | -- | -- | -- | --- | --- | - | - | - | 5.78 | 5.11 |
| 5 | --- | --- | -- | -- | -- | - | --- | - | - | -- | 5.79 | 5.17 |
| 6 | --- | --- | --- | --- | --- | --- | --- | -- | -- | --- | 5.80 | 5.23 |
| 7 | --- | - | -- | -- | -- | --- | - | -- | -- | -- | 5.86 | 5.28 |
| 8 | --- | --- | -- | -- | - | - | --- | --- | --- | --- | 5.88 | 5.30 |
| 9 | --- | --- | -- | -- | --- | --- | - | --- | --- | --- | 5.91 | 5.30 |
| 10 | --- | --- | --- | -- | - | --- | -- | - | - | - | 5.92 | 5.30 |
| 11 | -- | - | - | - | -- | --- | --- | --- | --- | --- | 5.94 | 5.36 |
| 12 | --- | --- | - | -- | - | --- | --- | --- | --- | --- | 5.96 | 5.44 |
| 13 | --- | --- | --- | --- | --- | --- | --- | -- | -- | --- | 5.99 | 5.46 |
| 14 | -- | --- | - | --- | --- | --- | --- | --- | --- | --- | 5.98 | 5.45 |
| 15 | --- | --- | --- | --- | --- | --- | -- | - | -- | -- | 5.96 | 5.40 |
|  | - | --- | --- | --- | - | --- | --- | --- | --- | --- | 5.93 | 5.23 |
| 17 | --- | --- | --- | --- | --- | --- | -- | -- | -- | --- | 5.89 | 5.22 |
| 18 | - | - | --- | --- | --- | --- | --- | --- | --- | --- | 5.86 | 5.28 |
| 19 | --- | --- | --- | - | --- | --- | - | --- | - | --- | 5.81 | 5.32 |
| 20 | --- | --- | --- | -- | -- | - | - | - | - | --- | -- | 5.35 |
| 21 | --- | --- | --- | --- | --- | --- | --- | --- | -- | --- | 5.87 | 5.38 |
| 22 | --- | --- | -- | -- | --- | - | -- | --- | - | 5.93 | 5.86 | 5.41 |
| 23 | --- | --- | --- | --- | --- | --- | --- | --- | - | 5.87 | 5.85 | 5.45 |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | -- | 5.82 | 5.87 | 5.48 |
| 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.68 | 5.89 | --- |
|  | --- | --- | --- | --- | --- | --- | -- | -- | -- | 5.55 | 5.88 |  |
| 27 | --- | --- | --- | --- | --- | --- | --- | -- | - | 5.53 | 5.83 | 5.43 |
| 28 | --- | --- | --- | --- | --- | --- | --- | - | --- | 5.55 | 5.74 | 5.50 |
| 29 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.58 | 5.73 | 5.52 |
| 30 | --- | --- | - | - | -- | --- | --- | --- | - | 5.62 | 5.54 | 5.51 |
| 31 | --- | --- | --- | --- | --- | -- | -- - | --- | --- | 5.65 | 5.21 | --- |

WTR YR 2002 MEAN 5.59 HIGH 4.82 LOW 5.99


PERIOD OF RECORD.--July to September 2002.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July to September 2002.
pH: July to September 2002.
WATER TEMPERATURE: July to September 2002.
DISSOLVED OXYGEN: July to September 2002.
DISSOLVED OXYGEN, PERCENT SATURATION: July to September 2002.
INSTRUMENTATION.-- Water-quality monitor with satellite telemetry from July 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. Inflatable packer was installed on July 16, 2002. Packer was set at a depth of 75 ft below land surface. Well is upper zone of MW-1D (WK-279, station number 354356078403503). 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 | 703, August 15,16 | 599, September 7 |
| pH, standard units | 5.7, September $21-28$ | 5.5, on many days during the year |
| WATER TEMPERATURE, ${ }^{\circ} \mathrm{C}$ | 16.1, on many days during the period | 16.1, on many days during the period |
| DISSOLVED OXYGEN, mg/L | 0.3, July $28-30$, September $25-29$ | 0.2, on many days during the year |
| DISSOLVED OXYGEN, PERCENT <br> SATURATION, $\%$ | 3, July $28-30$, September $25-29$ | 2, on many days during the year |

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

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | --- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 674 | 677 |
| 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 676 | 670 |
| 3 | -- | --- | --- | - | --- | -- | -- | -- | -- | --- | 677 | 654 |
| 4 | --- | -- | - | --- | - | - | -- | --- | -- | --- | 680 | 635 |
| 5 | -- | --- | --- | --- | - | --- | --- | --- | -- | --- | 682 | 627 |
| 6 | - | --- | --- | --- | - | --- | --- | -- | -- | -- | 684 | 624 |
| 7 | - | --- | --- | --- | --- | --- | --- | - | - | --- | 686 | 625 |
| 8 | -- | -- | - | --- | - | --- | --- | --- | --- | --- | 689 | 625 |
| 9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 691 | 630 |
| 10 | --- | --- | -- | --- | -- | -- | - | --- | -- | --- | 694 | 633 |
| 11 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 695 | 634 |
| 12 | --- | -- | -- | --- | --- | --- | --- | --- | --- | --- | 696 | 636 |
| 13 | -- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 698 | 640 |
| 14 | --- | - | - | --- | --- | --- | --- | -- | --- | --- | 700 | 643 |
| 15 | -- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 702 | 644 |
| 16 | --- | --- | --- | - | --- | --- | --- | - | -- | --- | 702 | 647 |
| 17 | --- | - | - | - | --- | --- | --- | -- | --- | -- | 701 | 648 |
| 18 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 625 | 699 | 647 |
| 19 | --- | -- | -- | - | --- | --- | --- | -- | -- | 654 | --- | 648 |
| 20 | -- | --- | --- | --- | --- | --- | --- | --- | --- | 671 | --- | 647 |
| 21 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 682 | 691 | 647 |
| 22 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 690 | 689 | 647 |
| 23 | -- | -- | -- | - | - | --- | -- | --- | -- | 695 | 686 | 651 |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 696 | 685 | 655 |
| 25 | --- | -- | --- | - | - | --- | --- | --- | --- | 698 | 685 | 659 |
| 26 | --- | --- | --- | --- | --- | --- | --- | -- | -- | 698 | 686 | 664 |
| 27 | -- | -- | -- | - | - | - | -- | -- | -- | 693 | 688 | 666 |
| 28 | --- | -- | - | --- | --- | --- | --- | -- | -- | 684 | 688 | 667 |
| 29 | - | - | - | --- | --- | --- | --- | --- | --- | 677 | 686 | 668 |
| 30 | --- | -- | -- | - | --- | --- | --- | --- | -- | 673 | 683 | 669 |
| 31 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 672 | 680 | --- |
| MEAN | --- | --- | - | - | --- | --- | --- | --- | --- | --- | --- | 648 |
| MAX | --- | - | --- | --- | --- | --- | --- | --- | --- | - | --- | 677 |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 624 |

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

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

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

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


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

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


