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Title: Hydrologic Data for the Great and Denbow Heaths in Eastern Maine, October 1980 through September 1981*

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CONVERSION FACTORS

For use of readers who prefer to use metric units, conversion factors for terms used in this report are listed below.

Multiply	To Obtain	By
inch (in)	millimeter (mm)	25.40
	centimeter (cm)	2.540
	meter (m)	.0254
foot (ft)	meter (m)	.3048
mile (mi)	kilometer (km)	1.609
square mile (mi^2)	square kilometer (km^2)	2.590
gallon (gal)	liter (L)	3.785
	cubic meter (m^3)	.003785
cubic feet (ft^3)	cubic meter per second (m^3/s)	.02832
cfs-days	cubic meter (m^3)	2447
cubic feet per second (ft^3/s)	liters per second (L/s)	28.32
tons (short)	megagram (metric ton)	.9072

Temperatures given in degrees Celsius (°C) can be converted to degrees Fahrenheit by the equation: $°F = 1.8°C + 32$.

National Geodetic Vertical Datum of 1929 (NGVD of 1929): A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, called NGVD of 1929, is referred to as sea level in this report.

HYDROLOGIC DATA FOR THE GREAT AND DENBOW HEATHS IN EASTERN MAINE, OCTOBER 1980 THROUGH SEPTEMBER 1981

By William J. Nichols, Jr., Joseph A. Smath, and James T. Adamik

ABSTRACT

Hydrologic data collected on the Great and Denbow Heaths, Maine, from October 1, 1980, through September 30, 1981, include precipitation, pan evaporation, air temperatures, streamflow, ground-water levels, and water-quality constituents. These data were collected for a peat-bog hydrology study conducted in cooperation with the Maine Geological Survey.

The data network consisted of climate information from three rain gages, an evaporation pan, and two maximum-minimum thermometers; surface water information from two continuous gaging stations and nineteen partial record sites; ground-water information from an observation well equipped with a continuous recorder and one hundred and six piezometers; and water-quality information from thirteen wells and seven surface-water sites. Water-quality constituents include: field determinations of pH, specific conductance, and temperature; and laboratory determinations of common inorganic cations and anions, trace elements, and selected organic compounds.

Methods used for the collection and analyses of data included standard Survey techniques modified for the unique hydrologic environment of the study area.

INTRODUCTION

Peat resources in Maine represent a potentially significant ecomomic resource. However, little information is available about the impact the resource development will have on the peat bogs and their watersheds.

The MGS (Maine Geological Survey) and U.S.Geological Survey began a joint study in April 1980 to describe the hydrology of two Maine peat bogs. The results of this study will help resource managers to make sound decisions on the development of the resource.

Purpose and Scope

The purpose of this report is to make data available to those interested in Maine's peat resource, to those assessing water resources that may be affected by peat mining, and to supplement an interpretive report to be published at the completion of the study. The data presented in this report were collected from October 1980 through October 1981, by the U.S. Geological Survey with assistance from MGS personnel and field observers.

The two bogs studied were the Great Heath and Denbow Heath in eastern Maine. The Great Heath, which has not been mined, is the largest sphagnum peat bog in the state with an estimated peat resource of seven million short tons. The Denbow Heath, which is being mined for horticultural peat, has peat resources estimated at two and three-quarter million short tons. (Cameron, 1980)

Acknowledgments

The authors extend their thanks to Jonathan Bedard of Columbia, Peter Grant of Deblois, and David Livingston of Cherryfield, Maine, for serving as field observers. Their assistance made possible the collection of valuable climatologic data.

LOCATION OF STUDY AREA

The Great and Denbow Heaths are located in the coastal counties of Washington and Hancock, Maine (fig. 1). The Great Heath study area (fig. 2) lies within the region bounded by 67°47' and 67°52' longitude and 44°41' and 44°45' latitude and is located within the townships of Columbia, T18MD, and T19MD. It is approximately 6 miles northeast of Cherryfield and about 8 miles east of Deblois. The Denbow Heath (fig. 3) lies within 68°02' and 68°05' longitude and 44°43' and 44°45' latitude and is located within the townships of Deblois and T16MD. It is approximately one mile west of the town center of Deblois.

DATA-COLLECTION SITE NUMBERING SYSTEM

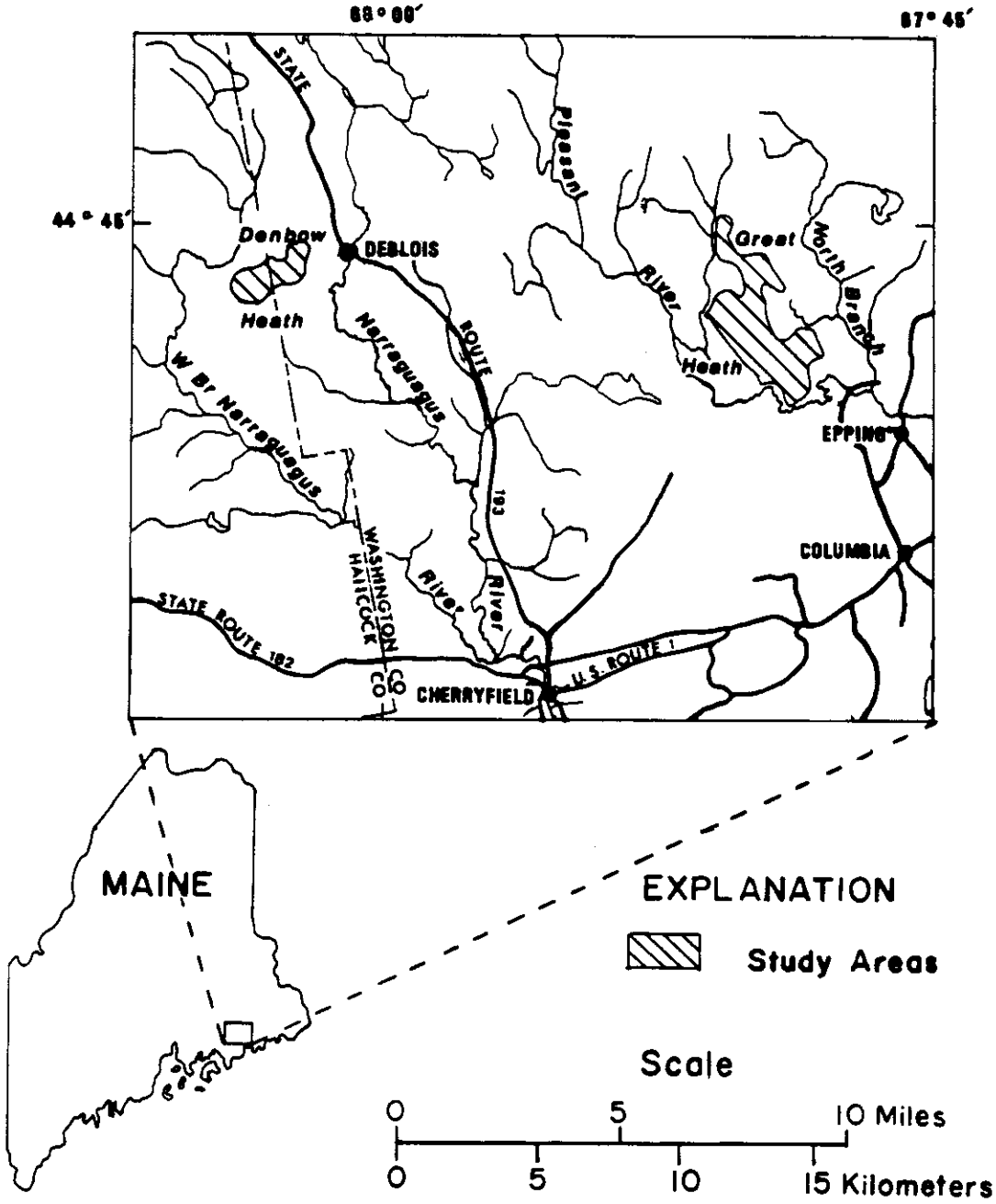
Piezometers

Great Heath

The system of numbering piezometers was adapted from Cameron (1980). It consists of local identifiers, which are one- or two-digit numbers, that are unique to the site. At each site the unique number is followed by a sequence number, which indicates the relative depth of a piezometer to others in the same cluster. The sequence number ranges from one to four with one being the deepest piezometer in the cluster. Sites located along the perimeter of the heath have a letter designation of "M" preceding the local number. In addition, sites G-C and G-P have no site numbers. Piezometer G-C is installed in clay and G-P is in peat.

Denbow Heath

The system of numbering the piezometers is based on pace and compass traverses. Three north-south transects were established on the heath. There are four sites located on each transect. They are labeled "D" for Denbow. Each piezometer cluster is assigned a sequential number, starting with the northwest site. For example, D-1 identifies the northern-most piezometer cluster on the first transect. D-2 identifies the piezometer cluster south of D-1 on transect 1. An exception is piezometer cluster D-12 which is on the eastern section of the heath, north of D-11.



Base from U.S. Geological Survey 1:250,000 quadrangles: Bangor, Eastport 1956.

Figure 1.- Location of the Great and Denbow Heaths.

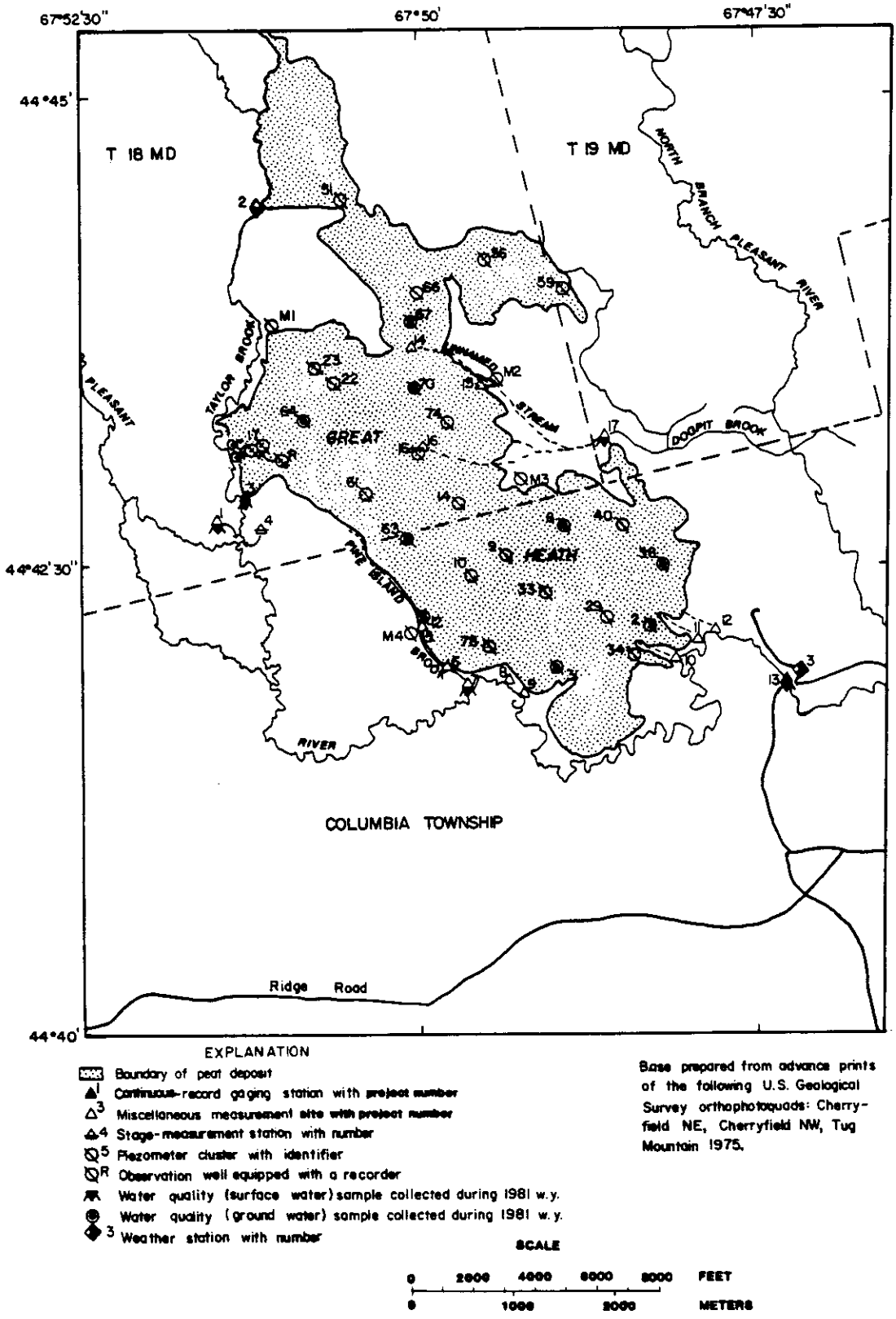


Figure 2.—Location of data collection sites for Great Heath.

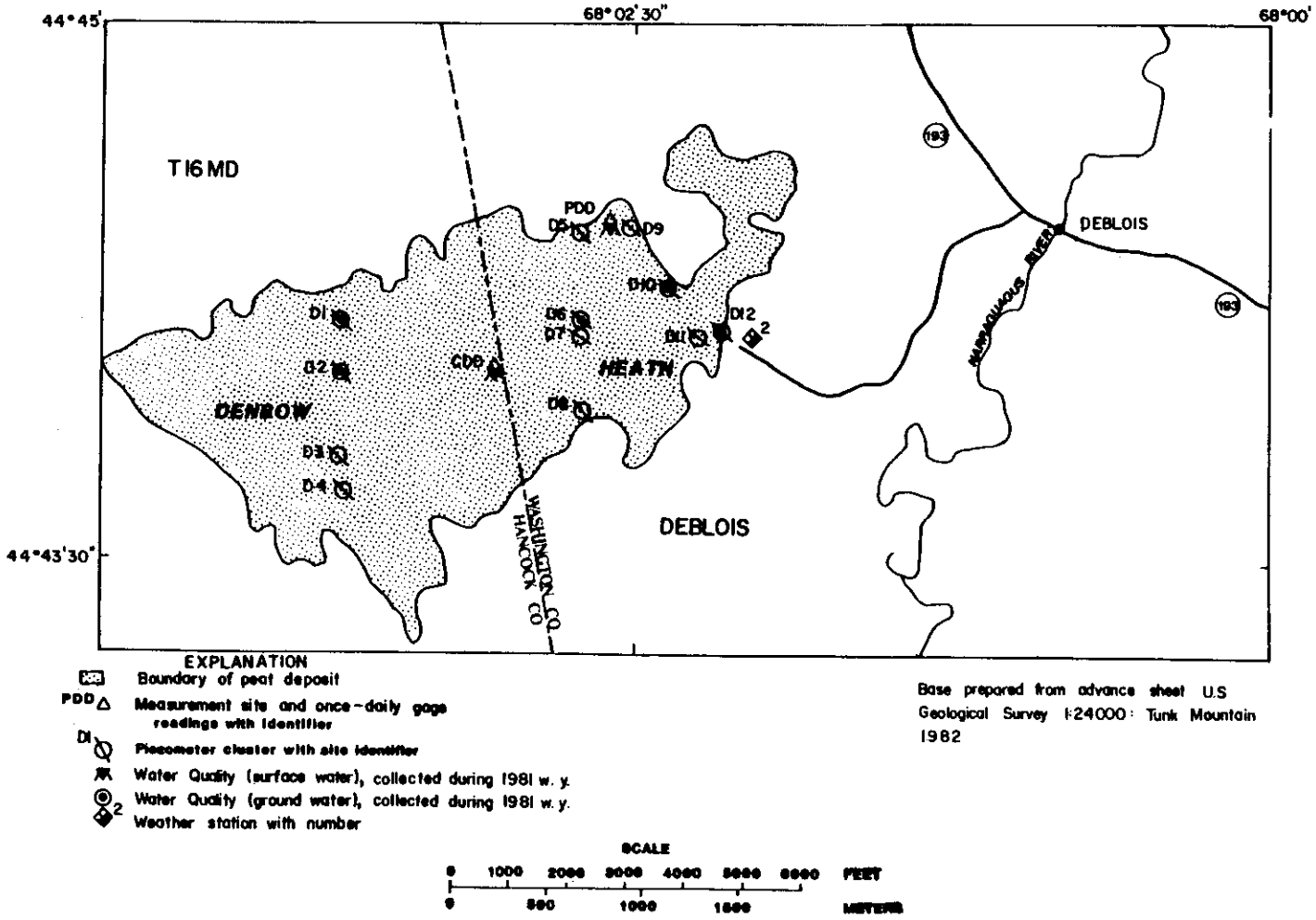


Figure 3.—Location of data collection sites for Denbow Heath.

Surface-water sites

On the Great Heath (fig. 2), project numbers are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. The surface-water sites are numbered from 1 through 17, with 1 being the most upstream site. In addition, the two continuous-record gaging stations in this study area have also been assigned Survey station numbers. The project number and Survey number are both identified in the data tables 2 and 3.

The two Denbow Heath sites are denoted by letters CDD (central drainage ditch) and PDD (perimeter drainage ditch) (fig. 3).

DATA-COLLECTION NETWORK

The data-collection network consisted of three climatological stations, two continuous streamflow gages, 15 miscellaneous streamflow measurement sites, 106 ground-water level measurement sites (1 continuous recorder site), 13 ground-water quality sampling sites and 8 surface-water quality sampling sites. The methods of data collection and the data collected for each part of the network are presented in the following sections.

Climatology

Three climate stations were established: Cherryfield - latitude 44°35'52", longitude 67°55'20"; Deblois - latitude 44°44'04", longitude 68°02'17"; and Columbia - latitude 44°41'55", longitude 67°47'16". The Cherryfield site is located in the town of Cherryfield (fig. 1). The Columbia and Deblois sites are indicated on figures 2 and 3, respectively.

Mean monthly temperatures (table 1) were computed from the maximum and minimum daily readings at the Columbia and Deblois sites. The temperature data were obtained using maximum and minimum thermometers. The instruments were located approximately 5 feet above sodded ground and were positioned so that they had a northerly exposure.

Monthly precipitation values (table 1) are reported for all three sites. The monthly values were computed from daily observer readings. The instruments used were 8-inch diameter nonrecording precipitation gages. During periods of frozen precipitation, the amount collected was melted and then measured. At the Cherryfield and Columbia locations, the gage orifice was located approximately 3 feet above land surface. At Deblois, the gage orifice was placed 11 inches above land surface.

Table 1. Climatological data, October 1980 to September 1981, Washington County, Maine.

Mean-monthly temperature at the Columbia and Deblois climate stations, (degrees Celsius).

Station number	name	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
2	Deblois	-	0.5	-9.0	-11.8	-1.3	0.6	6.9	13.9	17.5	21.2	19.3	13.6
3	Columbia	6.4	0.2	-10.5	-13.0	-2.6	-0.4	5.3	12.1	15.7	19.1	17.5	12.7

Monthly precipitation at the Cherryfield, Deblois and Columbia climate stations, (inches).

Station number	name	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	Cherryfield	7.42	6.51	3.19	2.45	3.85	7.99*		3.11	3.74	7.35	6.35	6.58
2	Deblois	5.59	5.64	5.47	4.01	4.10	1.30	4.58	3.52	2.84	6.52	4.03	6.06
3	Columbia	6.33	5.08	2.92	1.13	2.51	1.02	4.94	3.20	3.64	6.96	4.08	5.16

Monthly pan evaporation** at the Columbia climate station, (inches).

Station number	name	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
3	Columbia	1.90	0.47	-	-	-	-	1.75	3.44	4.62	4.73	3.64	2.50

* Mar., Apr. values combined.
** Pan coefficient not applied.

Monthly evaporation values (table 1) are reported for the Columbia site. A standard National Weather Service 4-foot diameter pan was used. It was exposed over sodded ground with no free air space under it. Daily values were obtained by following the guidelines from the U.S. Department of Commerce, Weather Bureau (1955).

Surface-Water Data

Measurements of streamflow were made periodically by wading or boat, using current meters. A complete explanation of the methodology used to obtain these data is contained in the U.S. Geological Survey Techniques of Water Resources Investigations, Book 3, Chapters A6 (Carter and Davidian, 1968) and A8 (Buchanan and Somers, 1969). All gage heights and flow data for each heath are summarized in tables 2 through 6.

Great Heath

Streamflow information was calculated at the gage on the Pleasant River near Epping, Maine, since July 1980 (table 2). A second gage on Taylor Brook has recorded stage since June 1980 (table 3). Reconnaissance streamflow data for the period June through September 1980 can be obtained from the Survey office in Augusta, Maine. This data was used in planning the data collection network. There are numerous rivulets draining the Great Heath. Some of these converge to form Dogpit Brook, tributary to the North Branch Pleasant River, and Pine Island Brook, tributary to the Pleasant River. The remaining rivulets are unnamed and drain into Taylor Brook or the Pleasant River.

Denbow Heath

This peatland is currently being mined and has many surface drainage ditches to facilitate peat harvesting. Two of these ditches were selected for periodic streamflow measurements. The central drainage ditch drains an area mined approximately 30 years ago, while the perimeter drainage ditch drains an area currently being mined.

Ground-Water Data

Great Heath

Seventy-two piezometers were installed in this peat bog and around its perimeters. Materials used to construct the piezometers were 1-1/2-inch diameter PVC pipe with 1-foot long, 0.006-inch slot-size well screen attached. The piezometers were installed in clusters depending on depth, by driving the screen and pipe into the peat deposit. During piezometer construction, depth of peat deposit was recorded. Descriptions of piezometers and water levels for Great Heath are reported in table 7.

Table 2.--Streamflow for Pleasant River near Epping, Me.,(Site 13, USGS station number 01022260) October 1980 to September 1981

LOCATION.- Lat. 44°41'52", long. 67°47'16", Washington County, Hydrologic Unit 01050002, on right bank on road to Columbia, 100 ft (30 m) upstream from highway bridge, 1.6 mi (2.6 km) northeast of Epping, and 0.6 mi (1.0 km) upstream from the junction of North Branch Pleasant River and Pleasant River.

DRAINAGE AREA.--60.6 mi² (157 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 127.02 ft (38.7 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are fair. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 840 ft³/s (23.8 m³/s) Feb. 6, 1981, gage height, 9.42 ft (2.871 m); minimum, 17 ft³/s (0.48 m³/s) Sept. 10, 1980, gage height 4.99 ft (1.521 m).

EXTREMES FOR PERIOD JULY 20 TO SEPT. 30, 1980.--Maximum discharge, 99 ft³/s (2.80 m³/s) Sept. 27, 1980, gage height, 6.05 ft (1.844 m); minimum, 17 ft³/s (0.48 m³/s) Sept. 10, 1980, gage height 4.99 ft (1.521 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 440 ft³/s (12.5 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 1	1400	530	15.0	8.29	2.527	Feb. 15	--	595	16.9	ice jam	
Dec. 24	1000	ice jam		* 9.44	2.887	Apr. 4	2215	452	12.8	7.96	2.426
Feb. 6	1130	* 840	23.8	9.42	2.871						

Minimum discharge 34 ft³/s (0.963 m³/s) Oct. 3, gage height 5.33 ft (1.625 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	115	520	82	52	185	224	214	154	65	154	54
2	36	99	452	82	61	174	257	205	148	59	120	44
3	34	89	413	82	170	165	320	174	120	54	96	43
4	84	82	382	81	430	148	408	148	102	50	81	44
5	171	80	335	81	450	138	439	136	95	48	74	45
6	169	80	350	80	790	131	396	128	92	67	89	44
7	128	75	333	80	620	126	359	126	86	78	122	42
8	106	80	283	84	430	124	341	118	84	68	140	41
9	87	95	267	88	330	118	322	106	81	63	144	44
10	75	98	253	90	280	114	295	98	116	62	124	57
11	70	115	215	88	260	109	261	94	135	57	103	61
12	135	127	190	85	325	105	233	91	132	50	91	58
13	169	121	180	84	430	103	203	117	118	48	82	52
14	153	105	160	81	530	101	179	157	104	68	77	48
15	120	97	150	78	570	93	190	148	85	83	72	45
16	96	89	140	76	466	104	202	126	80	70	154	45
17	83	80	130	74	384	83	190	140	79	59	220	43
18	78	79	125	72	330	64	173	180	75	50	253	42
19	85	73	120	70	290	87	177	185	66	46	263	47
20	94	81	115	68	290	112	174	157	59	45	237	120
21	103	87	115	66	310	112	160	131	60	92	192	244
22	101	98	110	66	333	105	148	114	72	202	151	299
23	80	140	105	64	337	110	133	104	118	244	105	312
24	68	147	100	62	320	110	131	102	126	293	86	299
25	61	171	98	60	277	116	160	94	101	287	102	305
26	129	242	96	60	226	118	168	86	126	219	106	366
27	202	271	94	58	202	126	153	83	140	163	90	418
28	222	285	91	58	195	144	137	79	112	173	81	375
29	197	307	88	56	---	148	133	75	87	184	75	309
30	157	361	86	54	---	165	182	96	73	185	65	257
31	139	---	84	52	---	202	---	122	---	177	57	---
TOTAL	3472	3969	6180	2262	9868	3840	6848	3934	3026	3409	3806	4203
MEAN	112	132	199	73.0	352	124	228	127	101	110	123	140
MAX	222	361	520	90	790	202	439	214	154	293	263	418
MIN	34	73	84	52	52	64	131	75	59	45	57	41
CFSM	1.85	2.18	3.28	1.21	5.81	2.05	3.76	2.10	1.67	1.82	2.03	2.31
IN.	2.13	2.44	3.79	1.39	6.06	2.36	4.20	2.41	1.86	2.09	2.34	2.58

WTR YR 1981 TOTAL 54817 MEAN 150 MAX 790 MIN 34 CFSM 2.48 IN 33.65

Table 3.--Gage heights for Taylor Brook at the Great Heath, Me. (Site 3, USGS station number 01022250), October 1980 to September 1981

LOCATION.--Lat 44°42'51", long 67°51'16", Washington County, Hydrologic Unit 010500002, on left bank 1000 ft (305 m) upstream from the mouth and 4.7 mi (7.6 km) north west of Epping.

DRAINAGE AREA.--7.06 mi² (18.3 km²)

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

GAGE.--Water stage recorder. Datum of gage is 151.01 ft (46.028 m) National Geodectic Vertical Datum of 1929.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD. Maximum gage height 7.12 ft (2.170 m) Feb. 13, 1981; minimum gage height, 1.71 ft (0.521 m) July 19, 1980.

EXTREMES FOR 1980 WATER YEAR JUNE 18 TO SEPT. 30.--Maximum gage height 3.51 (1.070 m) July 24; minimum gage height 1.71 (0.521 m) July 19.

EXTREMES FOR CURRENT YEAR.--Maximum gage height 7.12 (2.170 m) Feb. 13, minimum gage height 2.41 ft (0.735 m) Sept. 19.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.79	3.83	6.37	4.49	4.08	5.08	5.50	5.33	4.79	2.80	4.53	2.87
2	2.75	3.60	6.09	4.34	4.90	4.94	5.63	5.01	4.30	2.68	3.96	2.82
3	2.69	3.42	6.07	4.30	6.27	4.74	6.35	4.62	3.77	2.60	3.54	2.79
4	4.14	3.27	6.26	4.24	6.68	4.51	6.21	4.31	3.52	2.52	3.31	2.78
5	5.27	3.31	6.24	4.22	6.38	4.32	5.97	4.12	3.48	2.59	3.22	2.75
6	4.38	3.21	5.96	4.18	6.18	4.19	5.90	4.01	3.33	3.18	3.92	2.70
7	3.79	3.15	5.76	4.43	6.07	4.15	5.93	3.98	3.30	3.14	4.50	2.65
8	3.51	3.46	5.66	4.98	6.00	4.11	5.82	3.82	3.19	2.84	4.87	2.62
9	3.34	3.68	5.76	5.31	5.96	3.99	5.68	3.60	3.18	2.87	4.63	2.78
10	3.13	3.73	5.61	5.23	5.90	3.88	5.59	3.48	4.35	2.84	4.10	3.20
11	3.14	4.17	5.27	5.03	5.97	3.81	5.46	3.40	4.17	2.68	3.77	3.01
12	4.65	4.30	4.85	4.89	6.62	3.73	5.31	3.44	4.05	2.53	3.56	3.00
13	4.86	3.99	5.11	4.67	7.01	3.67	5.06	4.29	3.80	2.54	3.40	2.90
14	4.27	3.69	5.16	4.45	6.61	3.64	4.82	4.75	3.48	2.82	3.31	2.76
15	3.77	3.59	4.83	4.44	6.39	3.64	5.26	4.29	3.17	2.86	3.12	2.64
16	3.46	3.42	4.60	4.49	6.24	3.66	5.25	3.95	3.13	2.80	5.06	2.59
17	3.27	3.31	4.74	4.50	6.17	3.79	4.92	4.69	3.11	2.62	6.13	2.54
18	3.19	3.19	4.60	4.55	6.16	4.91	4.83	5.24	2.96	2.51	5.81	2.46
19	3.52	3.47	4.58	4.58	6.16	5.32	5.02	4.92	2.77	2.48	5.64	2.92
20	3.74	3.51	4.49	4.53	6.17	5.12	4.82	4.45	2.67	2.51	5.42	5.85
21	3.97	3.36	4.36	4.43	6.23	4.70	4.64	4.08	2.79	3.92	5.07	6.29
22	3.58	3.89	4.25	4.39	6.13	4.28	4.42	3.81	3.09	6.06	4.24	5.80
23	3.15	4.72	4.24	4.43	5.91	3.75	4.18	3.66	4.26	6.23	3.68	5.45
24	3.01	4.47	4.37	4.48	5.67	3.81	4.28	3.63	3.89	5.82	3.59	5.82
25	2.91	5.00	4.42	4.52	5.45	3.94	4.91	3.42	3.50	5.35	4.11	6.56
26	5.04	6.04	4.29	4.47	5.31	3.93	4.75	3.28	4.61	4.69	3.92	6.42
27	5.78	6.13	4.32	4.57	5.31	4.15	4.43	3.25	4.27	4.64	3.61	6.06
28	5.42	5.84	4.25	4.60	5.23	4.44	4.15	3.16	3.62	5.34	3.49	5.82
29	4.89	6.23	4.27	4.25	---	4.44	4.20	3.08	3.20	5.20	3.29	5.64
30	4.68	6.67	4.49	4.37	---	4.89	5.23	3.72	2.94	5.28	3.05	5.40
31	4.21	---	4.72	4.18	---	5.35	---	4.15	---	5.04	2.95	---
MEAN	3.88	4.12	5.03	4.53	5.97	4.29	5.15	4.03	3.56	3.61	4.09	3.93
MAX	5.78	6.67	6.37	5.31	7.01	5.35	6.35	5.33	4.79	6.23	6.13	6.56
MIN	2.69	3.15	4.24	4.18	4.08	3.64	4.15	3.08	2.67	2.48	2.95	2.46

WTR YR 1981 MEAN 4.34 MAX 7.01 MIN 2.46

Table 4.--Summary of hydrologic data for surface-water sites, Great Heath, October 1980 to September 1981

Entries include: site number, site name, location, measurement date, water stage (in feet above sea level), and streamflow measured (in cubic feet per second; ft^3/s).

Site number: A project number assigned to each surface water site. A sequential numbering system is used with the numbers increasing from the most upstream to the most downstream sites. These numbers are used to identify the site location on figure 2.

Location: Identification number (example 444238067512100) which defines site location by use of latitude, longitude, and sequence number; and a description of site location.

1.-- Pleasant River above Taylor Brook, 444238067512100, 10 ft upstream from mouth of Taylor Brook and approximately 4.8 mi northwest of Epping.

Date	Stage	Streamflow
Oct. 22, 1980		53.3
Nov. 06, 1980		49.0
Apr. 09, 1981		161
May 12, 1981		62.6

2.-- Taylor Brook (north lobe). 444424067511100, approximately 0.6 mi south of confluence of Taylor Brook and Bill Smith Brook, and 3.4 mi north of confluence of Taylor Brook and Pleasant River.

Date	Stage	Streamflow
Oct. 23, 1980	165.24	4.77
May 11, 1981	165.35	7.02

3.-- Taylor Brook at Great Heath. 444251067511600, 1,000 ft upstream from mouth and 4.7 mi northwest of Epping USGS Station number 01022250 drainage area 7.06 mi^2.

Date	Stage	Streamflow
Oct. 07, 1980	154.83	25.0
Oct. 09, 1980	154.36	13.8
Apr. 01, 1981	156.53	39.3
Apr. 09, 1981	156.70	36.0
	156.69	41.1
May 12, 1981	154.35	10.9

4.-- Taylor Brook at Great Heath. 444238067512000, at the junction of the Pleasant River and Taylor Brook and approximately 4.6 mi northwest of Epping stage only.

Date	Stage	Streamflow
Oct. 07, 1980	154.48	

5.-- Pine Island Brook at Great Heath. 4442170675000, approximately 50 ft east of piezometer M_4 at a point 1.0 mi upstream from mouth, approximately 3.5 mi northwest of Epping.

Date	Stage	Streamflow
May 26, 1981		0.36
Aug. 20, 1981		1.22

6.-- Pine Island Brook at Great Heath. 444155067494600, at a point 500 ft upstream from mouth, 3.5 mi northwest of Epping and 3.3 mi east of camp on Schoodic Lake near Columbia.

Date	Stage	Streamflow
Aug. 21, 1981		1.5

7.-- Pine Island Brook at Great Heath. 444150067493900, at a point 50 ft upstream from mouth near southeastern tip of Pine Island.

Date	Stage	Streamflow
Oct. 24, 1980		0.72
Apr. 01, 1981	148.94	2.64
Apr. 07, 1981		4.65
May 13, 1981	147.27	3.71
May 26, 1981		.29

8.-- Unnamed tributary to Plasant River at Great Heath. 444152067492200, at a point approximately 20 ft upstream from mouth and about 0.20 mi downstream Pine Island Brook.

Date	Stage	Streamflow
Apr. 02, 1981		1.86
May 26, 1981		.29

9.-- Unnamed tributary to Pleasant River at Great Heath. 444149067491700, at a point approximately 30 ft upstream from mouth and about 0.35 mi downstream Pine Island Brook.

Date	Stage	Streamflow
May 26, 1981		0.03

10.-- Unnamed tributary to Pleasant River at Great Heath. 444159067490700, at a point approximately 20 ft upstream from mouth and about 0.7 mi upstream gage Pleasant River near Epping.

Date	Stage	Streamflow
May 29, 1981	(estimated)	$\geq$.02

11.-- Unnamed tributary to Pleasant River at Great Heath. 444209067475700, at a point approximately 50 ft upstream from mouth and about 0.55 mi upstream gage Pleasant River near Epping.

Date	Stage	Streamflow
Mar. 25, 1981		0.67
Mar. 31, 1981		1.66
May 29, 1981		.24
Aug. 21, 1981		1.50

12.-- Unnamed tributary to Pleasant River at Great Heath. 4442100674900, at a point approximately 30 ft upstream from mouth and about 0.5 mi upstream gage Pleasant River near Epping.

Date	Stage	Streamflow
Mar. 25, 1981		0.10
Mar. 31, 1981		1.45
May 29, 1981		.02
Aug. 21, 1981		.10

Table 4.--Summary for hydrologic data for surface-water sites-continued

13.-- Pleasant River near Epping, Maine. 4441520674716, on right bank on road to Columbia, 100 ft upstream from highway bridge, 1.6 mi northeast of Epping, and 0.6 mi upstream from the junction of North Branch Pleasant River and Pleasant River. USGS station number 01022260, drainage area 60.6 mi²

Date	Stage	Streamflow
Oct. 10, 1980	133.56	162
Oct. 09, 1980	132.92	89
Nov. 05, 1980	132.90	74.3
Dec. 09, 1980	134.18	254
Jan. 22, 1981	132.98	65.8
Jan. 30, 1981	132.96	52.8
Mar. 25,.1981	133.23	120
Apr. 06, 1981	134.73	379
Apr. 07, 1981	134.57	358
Apr. 08, 1981	134.52	333
May 28, 1981	132.85	73.5
Sept.04, 1981	132.46	49.7

14.-- Unnamed tributary to Dogpit Brook at Great Heath. 444340067500400, approximately 0.2 mi northwest of piezometer site 70. Stage only, no information 1981 water year.

15.-- Unnamed tributary to Dogpit Brook at Great Heath. 444327067492600, about 30 ft west of piezometer site M_2.

Date	Stage	Streamflow
May 28, 1981	159.47	0.65
Aug. 19, 1981	157.69	1.14

16.-- Unnamed tributary to Dogpit Brook at Great Heath. 444350067500000, at piezometer site 16.

Date	Stage	Streamflow
May 28, 1981		0.12
Aug. 19, 1981		.47

17.-- Dogpit Brook at Great Heath. 444347067484000, at a point 0.7 mi upstream of mouth and 3.3 mi northwest of Epping.

Date	Stage	Streamflow
Oct. 10, 1980	142.95	4.74
Oct. 28, 1980	143.38	6.89
Nov. 07, 1980	142.46	1.98
Dec. 05, 1980	143.97	14.2
Apr. 08, 1981	143.58	9.18
May 08, 1981	142.72	3.49
May 29, 1981	142.23	.96
Aug. 19, 1981	142.83	5.83

Table 5.--Summary of hydrologic data for surface-water sites, Denbow Heath, October 1980 to September 1981.

Entries include: Local identifier, site name, location, remarks, measurement date, water stage (in feet above sea level) and streamflow measured (in cubic feet per second; ft^3/s)

Local identifier: Project code assigned to each surface-water site. These codes are used to identify the site location on figure 3.

Location: Identification number (example 444402008030200) which defines site location by use of latitude, longitude, and sequence number; county, and a description of site location.

Stage: Water level in feet above sea level.

CDD. Central drainage ditch, 444402068030200, Hancock County, vertical enamel staff section located on east-west road about 50 ft north of road where ditch crosses, T16MD.

Date	Stage	Streamflow
Apr. 23, 1981	169.13	0.07
May 27, 1981	169.05	.04
June 02, 1981	169.09	.09
Aug. 26, 1981	169.08	<.01

PDD. Perimeter drainage ditch, 444426068023500, Washington County, vertical enamel staff section; take first road going north on east-west road to end; site is approximately 100 ft northwest of turn, township Deblois.

Date	Stage	Streamflow
Apr. 23, 1981	170.86	<0.01
May 27, 1981		<.01
June 02, 1981	171.04	<.02
Aug. 26, 1981	171.08	<.02

Table 6.--Daily mean gage-height readings, central drainage ditch, Denbow Heath, April to September 1981 (feet above sea level)

Day	Apr.	May	June	July	Aug.	Sept.
1	169.23	169.21	169.15	168.99	169.07	169.03
2	169.27	169.18	169.09	168.99	169.01	168.95
3	169.60	169.14	169.07	168.98	168.98	168.95
4	169.28	169.13	169.09	168.96	168.99	168.95
5	169.24	169.13	169.07	169.05	168.97	168.95
6	169.49	169.13	169.08	169.09	169.53	168.95
7	169.25	169.14	169.07	169.03	169.35	168.95
8	169.24	169.13	169.05	169.04	169.20	168.95
9	169.19	169.13	169.12	169.01	169.09	168.97
10	169.18	169.13	169.13	169.00	169.04	168.96
11	169.19	169.08	169.11	168.99	169.03	168.97
12	169.15	169.09	169.09	168.99	169.02	168.97
13	169.14	169.19	169.07	169.00	169.01	168.95
14	169.15	169.15	169.05	169.02	168.99	168.95
15	169.21	169.10	169.06	168.99	168.99	168.95
16	169.17	169.12	169.07	168.99	169.69	168.95
17	169.16	169.39	169.05	168.98	169.34	168.95
18	169.19	169.25	169.04	168.97	169.15	168.94
19	169.18	169.17	169.03	168.97	169.07	169.09
20	169.17	169.14	169.02	168.97	169.05	169.79
21	169.15	169.09	169.02	169.81	169.03	169.26
22	169.14	169.09	169.10	169.83	169.02	169.10
23	169.13	169.10	169.08	169.27	169.01	169.09
24	169.21	169.08	169.05	169.15	168.99	170.21
25	169.20	169.05	169.06	169.06	168.98	169.79
26	169.17	169.06	169.09	169.01	168.98	169.37
27	169.15	169.06	169.03	169.19	169.00	169.12
28	169.13	169.05	169.02	169.07	168.99	169.09
29	169.22	169.04	169.02	169.17	168.99	169.05
30	169.31	169.10	168.99	169.15	168.98	169.03
31		169.19		169.12	168.97	

Table 6A.--Daily mean gage-height readings, perimeter drainage ditch, Denbow Heath, April to September 1981 (feet above sea level)

Day	Apr.	May	June	July	Aug.	Sept.
1	170.93	171.05		171.09	171.13	171.06
2	171.26	171.03		171.09	171.09	171.07
3	171.15	170.98		171.07	171.09	171.11
4	171.08	170.93	171.07	171.06	171.11	171.10
5	171.10	170.94	171.06	171.14	171.11	171.11
6	171.27	170.98	171.02	171.15	171.34	171.11
7	171.07	170.98	171.19	171.10	171.21	171.11
8	171.03	170.93	171.04	171.10	171.15	171.10
9	171.00	170.92	171.15	171.11	171.15	171.11
10	171.00	170.92	171.15	171.11	171.11	171.07
11	171.03	170.91	171.14	171.08	171.11	171.07
12	170.95		171.13	171.08	171.11	171.08
13	170.93		171.12	171.11	171.13	171.07
14	170.93		171.13	171.11	171.15	171.07
15	171.01		171.17	171.10	171.15	171.09
16	170.93		171.19	171.09	171.34	171.07
17	170.93		171.16	171.09	171.25	171.08
18	171.05		171.15	171.09	171.16	171.08
19	170.99		171.18	171.09	171.11	171.14
20	171.16		171.19	171.09	171.09	171.26
21	170.93		171.20	171.39	171.10	171.19
22	170.92		171.21	171.49	171.07	171.19
23	170.86		171.11	171.43	171.05	171.13
24	171.01		171.13	171.21	171.07	171.67
25	171.01		171.14	171.17	171.06	171.33
26	170.96		171.15	171.14	171.06	171.26
27	170.95		171.12	171.17	171.08	171.22
28	170.94		171.12	171.22	171.07	171.19
29	171.09		171.15	171.28	171.06	171.16
30	171.13		171.16	171.18	171.06	171.13
31				171.16	171.05	

Table 7.—Descriptions of piezometers and water levels for the Great Heath, October 1980 through September 1981.

Entries include identification number, location number, type of material the piezometer is finished in, installation date, altitude of the land surface, piezometer depth, total depth of peat at the site, and water-level information.

Identification number: (Example 51-3) A project number assigned to each piezometer. The first portion of the number (51) identifies the location of a cluster of piezometers on figure 2. The second number (-3) denotes relative piezometer depth at that particular cluster (1=deep in clay, 2=deep, 3=intermediate, and 4=shallow)

Location number: (Example 444425069503203) Latitude and longitude of each piezometer site. The last two digits are sequential numbers attached to the latitude-longitude used to identify closely spaced wells.

Altitude: Land-surface datum at piezometer site in feet above sea level. Determined by differential leveling, except at clusters 23, 9, 78, 33, 54, and 2 which were done to the nearest foot with an altimeter.

Water level: Static water level in feet below land surface. Measurements made by steel tape to 0.01 ft accuracy.

51-3. 444425069503203. Installed in peat June 10, 1980. Land surface 178.19 ft. Well depth 4 ft. Total depth of peat 8 ft.

Oct. 15, 1980	0.17
Dec. 02, 1980	.11
Apr. 28, 1981	.24
June 28, 1981	.29
Aug. 17, 1981	.20

51-2. 444425067503202. Installed in peat June 10, 1980. Land surface 178.19 ft. Well depth 8 ft. Total depth of peat 8 ft.

Oct. 15, 1980	0.41
Dec. 02, 1980	.90
Apr. 28, 1981	.43
June 28, 1981	.54
Aug. 17, 1981	.30

66-4. 444357067500004. Installed in peat June 10, 1980. Land surface 180.97 ft. Well depth 6 ft. Total depth of peat 16 ft.

Oct. 15, 1980	0.14
Dec. 02, 1980	.09
Apr. 28, 1981	.07
June 28, 1981	.16
Aug. 17, 1981	.15

66-3. 444357067500003. Installed in peat June 10, 1980. Land surface 180.97 ft. Well depth 12 ft. Total depth of peat 16 ft.

Oct. 15, 1980	1.20
Dec. 02, 1980	1.15
Apr. 28, 1981	1.12
June 28, 1981	1.18
Aug. 17, 1981	1.16

66-2. 444357067500002. Installed in peat June 10, 1980. Land surface 180.97 ft. Well depth 16 ft. Total depth of peat 16 ft.

Oct. 15, 1980	0.22
Dec. 02, 1980	.17
Apr. 28, 1981	.16
June 28, 1981	.23
Aug. 17, 1981	2.24

56-4. 444406067492904. Installed in peat June 10, 1980. Land surface 180.55 ft. Well depth 6 ft. Total depth of peat 17 ft.

Oct. 15, 1980	0.00
Dec. 02, 1980	- .21
Apr. 28, 1981	- .38
June 28, 1981	- .27
Aug. 17, 1981	.00

56-3. 444406067492903. Installed in peat June 10, 1980. Land surface 180.55 ft. Well depth 12 ft. Total depth of peat 17 ft.

Oct. 15, 1980	0.14
Dec. 02, 1980	.06
Apr. 28, 1981	.16
June 28, 1981	.24
Aug. 17, 1981	.15

56-2. 444406067492902. Installed in peat June 10, 1980. Land surface 180.55 ft. Well depth 16 ft. Total depth of peat 17 ft.

Oct. 15, 1980	0.09
Dec. 02, 1980	- .03
Apr. 28, 1981	.57
June 28, 1981	.28
Aug. 17, 1981	.16

59-3. 444356067485503. Installed in peat June 10, 1980. Land surface 170.21 ft. Well depth 3 ft. Total depth of peat 6 ft.

Oct. 15, 1980	- 0.17
Dec. 02, 1980	- .28
Apr. 28, 1981	- .08
June 28, 1981	- .04
Aug. 17, 1981	- .22

59-2. 444356067485502. Installed in peat June 10, 1980. Land surface 170.21 ft. Well depth 6 ft. Total depth of peat 6 ft.

Oct. 15, 1980	- 0.11
Dec. 02, 1980	- .15
Apr. 28, 1981	- .12
June 28, 1981	.00
Aug. 17, 1981	- .05

Table 7.–Descriptions of piezometers and water levels.–continued

67-4. 444346067500204. Installed in peat June 11, 1980. Land surface 181.28 ft. Well depth 6 ft. Total depth of peat 21 ft.

Oct. 15, 1980	0.21
Dec. 02, 1980	.22
Apr. 28, 1981	.18
June 28, 1981	.28
Aug. 17, 1981	.32

67-3. 444346067500203. Installed in peat June 11, 1980. Land surface 181.28 ft. Well depth 13 ft. Total depth of peat 21 ft.

Oct. 15, 1980	0.10
Dec. 02, 1980	.04
Apr. 28, 1981	.23
June 28, 1981	.27
Aug. 17, 1981	.26

67-2. 444346067500202. Installed in peat June 11, 1980. Land surface 181.28 ft. Well depth 21 ft. Total depth of peat 21 ft.

Oct. 15, 1980	0.41
Dec. 02, 1980	.39
Apr. 28, 1981	.34
June 28, 1981	.46
Aug. 17, 1981	.42

70.4. 444326067500104. Installed in peat June 11, 1980. Land surface 182.47 ft. Well depth 6 ft. Total depth of peat 23 ft.

Oct. 15, 1980	0.22
Dec. 02, 1980	.15
Apr. 29, 1981	.07
June 27, 1981	.23
Aug. 17, 1981	.19

70.3. 444326067500103. Installed in peat June 11, 1980. Land surface 182.37 ft. Well depth 13 ft. Total depth of peat 23 ft.

Oct. 15, 1980	0.43
Dec. 02, 1980	.36
Apr. 29, 1981	.21
June 27, 1981	.40
Aug. 17, 1981	.37

70-2. 444326067500102. Installed in peat June 11, 1980. Land surface 182.47 ft. Well depth 21 ft. Total depth of peat 23 ft.

Oct. 15, 1980	0.60
Dec. 02, 1980	.60
Apr. 29, 1981	.45
June 27, 1981	.67
Aug. 17, 1981	.71

M2-4 444327067492602. Installed in organic soil-clay July 22, 1980. Land surface 159.27 ft. Well depth 3 ft.

Oct. 16, 1980	0.03
Dec. 02, 1980	- .26
Apr. 29, 1981	- .18
June 27, 1981	- .02
Aug. 17, 1981	.07

M2-1. 444327067492601. Installed in clay July 22, 1980. Land surface 159.27 ft. Well depth 26 ft.

Oct. 15, 1980	- 1.72
Dec. 02, 1980	- 1.72
Apr. 29, 1981	- 1.56
June 27, 1981	- 1.57
Aug. 17, 1981	- 1.02

63-4. 444239067500504. Installed in peat June 6, 1980. Land surface 171.43 ft. Well depth 5 ft. Total depth of peat 16 ft.

Oct. 15, 1980	0.48
Dec. 03, 1980	.48
Apr. 30, 1981	.44
June 25, 1981	.53
Aug. 18, 1981	.38

63-3. 444239067500503. Installed in peat June 6, 1980. Land surface 171.43 ft. Well depth 10 ft. Total depth of peat 16 ft.

Oct. 15, 1980	0.48
Dec. 03, 1980	.47
Apr. 30, 1981	.46
June 25, 1981	.58
Aug. 18, 1981	.40

63-2. 444239067500504. Installed in peat June 6, 1980. Land surface 171.43 ft. Well depth 10 ft. Total depth of peat 16 ft.

Oct. 15, 1980	0.44
Dec. 03, 1980	.42
Apr. 30, 1981	.46
June 25, 1981	.62
Aug. 18, 1981	.47

M3-4. 444257067491401. Installed in organic-mineral soils July 22, 1980. Land surface 167.97 ft. Well depth 4 ft.

Oct. 15, 1980	dry
Dec. 04, 1980	2.85
Apr. 30, 1981	3.11
June 27, 1981	3.47
Aug. 17, 1981	2.96
Sep. 30. 1981	3.03

M3-3. 444257067491402. Installed in organic soils July 22, 1980. Land surface 167.97 ft. Well depth 5 ft.

Oct. 15, 1980	3.77
Dec. 04, 1980	3.01
Apr. 30, 1981	2.49
June 27, 1981	1.85
Aug. 17, 1981	.01
Sep. 30, 1981	- .74

M4. 444209067500301. Installed in organic soil-clay July 24, 1980. Land surface 154.86 ft. Well depth 3 ft.

Oct. 15, 1980	0.44
Dec. 04, 1980	- .08
Apr. 30, 1981	- .27
June 27, 1981	- .02
Aug. 17, 1981	.00
Sep. 30, 1981	.42

Table 7.–Descriptions of piezometers and water levels.–continued

12-4. 444214067493603. Installed in peat June 18, 1980. Land surface 161.65 ft. Well depth 6 ft. Total depth of peat 13 ft.

Apr. 30, 1981	0.63
June 25, 1981	.91
Aug. 17, 1981	.72
Sep. 30, 1981	.95

12-3. 444214067493602. Installed in peat June 18, 1980. Land surface 161.65 ft. Well depth 13 ft. Total depth of peat 13 ft.

Apr. 30, 1981	0.72
June 25, 1981	1.07
Aug. 17, 1981	.56
Sep. 30, 1981	1.01

10-4. 444227067493604. Installed in peat June 18, 1980. Land surface 174.98 ft. Well depth 6 ft. Total depth of peat 26 ft.

Oct. 15, 1980	0.23
Dec. 04, 1980	.27
Apr. 30, 1981	.27
June 25, 1981	.38
Aug. 17, 1981	.27
Sep. 30, 1981	.22

10-3. 444227067493603. Installed in peat June 18, 1980. Land surface 174.98 ft. Well depth 16 ft. Total depth of peat 26 ft.

Oct. 15, 1980	0.24
Dec. 04, 1980	.41
Apr. 30, 1981	.25
June 25, 1981	.37
Aug. 17, 1981	.31
Sep. 30, 1981	.49

10-2. 444227067493602. Installed in peat June 18, 1980. Land surface 174.98 ft. Well depth 26 ft. Total depth of peat 26 ft.

Dec. 04, 1980	1.77
Apr. 30, 1981	.97
June 25, 1981	1.13
Aug. 17, 1981	1.22

M1. 444347067510401. Installed in organic soil-clay June 24, 1980. Land surface 163.51 ft. Well depth 3 ft.

Oct. 16, 1980	0.11
Dec. 03, 1980	- .05
Apr. 29, 1981	.03
June 27, 1981	.21
Aug. 17, 1981	.10

17-4. 444308067510904. Installed in peat May 13, 1980. Land surface 171.72 ft. Well depth 5 ft. Total depth of peat 15 ft.

Oct. 16, 1980	0.24
Dec. 03, 1980	.12
Apr. 29, 1981	.11
June 26, 1981	.25
Aug. 17, 1981	.09

17-3. 444308067510903. Installed in peat May 13, 1980. Land surface 171.72 ft. Well depth 10 ft. Total depth of peat 15 ft.

Oct. 16, 1980	0.35
Dec. 03, 1980	.20
Apr. 29, 1981	.25
June 26, 1981	.43
Aug. 17, 1981	.23

17-2. 444308067510902. Installed in peat May 13, 1980. Land surface 171.72 ft. Well depth 15 ft. Total depth of peat 15 ft.

Apr. 29, 1981	1.25
June 26, 1981	1.33
Aug. 17, 1981	1.27

17-5. 444308067510905. Installed in peat October 08, 1980. Land surface 172.69 ft. Well depth 6 ft. Total depth of peat 15 ft.

Continuous recording well (seasonal)

64-4. 444316067505004. Installed in peat May 13, 1980. Land surface 180.32 ft. Well depth 5 ft. Total depth of peat 25 ft.

Oct. 16, 1980	0.27
Dec. 03, 1980	.15
Apr. 29, 1981	.25
June 26, 1981	.30
Aug. 17, 1981	.11

64-3. 444316067505003. Installed in peat May 13, 1980. Land surface 180.32 ft. Well depth 15 ft. Total depth of peat 25 ft.

Oct. 16, 1980	0.50
Dec. 03, 1980	.49
Apr. 29, 1981	.38
June 26, 1981	.54
Aug. 17, 1981	.33

64-2. 444316067505002. Installed in peat May 13, 1980. Land surface 180.32 ft. Well depth 23 ft. Total depth of peat 25 ft.

Oct. 16, 1980	0.51
Dec. 03, 1980	.55
Apr. 29, 1981	.48
June 26, 1981	.64
Aug. 17, 1981	.50

74-4. 444315067494604. Installed in peat June 11, 1980. Land surface 177.43 ft. Well depth 6 ft. Total depth of peat 26 ft.

Oct. 17, 1980	- 0.41
Dec. 02, 1980	- .44
Apr. 30, 1981	- .42
June 27, 1981	- .33
Aug. 18, 1981	- .42

Table 7.–Descriptions of piezometers and water levels.–continued

74-3. 444315067494603. Installed in peat June 11, 1980. Land surface 177.43 ft. Well depth 16 ft. Total depth of peat 26 ft.

Oct. 17, 1980	- 0.33
Dec. 02, 1980	- .34
Apr. 30, 1981	- .32
June 27, 1981	- .20
Aug. 18, 1981	- .24

74-2. 444315067494602. Installed in peat June 11, 1980. Land surface 177.43 ft. Well depth 22 ft. Total depth of peat 26 ft.

Oct. 17, 1980	- 0.26
Dec. 02, 1980	- .29
Apr. 30, 1981	- .27
June 27, 1981	- .15
Aug. 18, 1981	- .12

16-4. 444350067500004. Installed in peat June 12, 1980. Land surface 172.39 ft. Well depth 4 ft. Total depth of peat 14 ft.

Oct. 17, 1980	0.06
Dec. 04, 1980	.15
June 26, 1981	.54
Aug. 17, 1981	.25

16-3. 444350067500003. Installed in peat June 12, 1980. Land surface 172.39 ft. Well depth 9 ft. Total depth of peat 14 ft.

Oct. 17, 1980	0.88
Dec. 04, 1980	.37
June 26, 1981	.75
Aug. 17, 1981	.37

16-2. 444350067500004. Installed in peat June 12, 1980. Land surface 172.39 ft. Well depth 14 ft. Total depth of peat 14 ft.

June 26, 1981	0.74
Aug. 17, 1981	.31

14-4. 444250067494204. Installed in peat June 5, 1980. Land surface 177.65 ft. Well depth 6 ft. Total depth of peat 23 ft.

Oct. 17, 1980	0.11
Dec. 04, 1980	- .05
Apr. 30, 1981	.23
June 26, 1981	.19
Aug. 18, 1981	.21

14-3. 444250067494203. Installed in peat June 5, 1980. Land surface 177.65 ft. Well depth 15 ft. Total depth of peat 23 ft.

Oct. 17, 1980	0.03
Dec. 04, 1980	.14
Apr. 30, 1981	.36
June 26, 1981	.47
Aug. 18, 1981	.24

14-2. 444250067494202. Installed in peat June 5, 1980. Land surface 177.65 ft. Well depth 23 ft. Total depth of peat 23 ft.

Oct. 17, 1980	0.38
Dec. 04, 1980	.31
Apr. 30, 1981	.48
June 26, 1981	.58
Aug. 18, 1981	.39

6-4. 444242067485504. Installed in peat June 8, 1980. Land surface 177.04 ft. Well depth 6 ft. Total depth of peat 28 ft.

Oct. 20, 1980	0.17
Dec. 05, 1980	.15
Apr. 30, 1981	.16
June 27, 1981	.27
Aug. 17, 1981	.21
Sep. 30, 1981	.28

6-3. 444242067485503. Installed in peat June 8, 1980. Land surface 177.04 ft. Well depth 16 ft. Total depth of peat 28 ft.

Oct. 20, 1981	0.33
Dec. 05, 1980	.35
Apr. 30, 1981	.38
June 27, 1981	.68
Aug. 17. 1981	.44
Sep. 30, 1981	.44

6-2. 444242067485502. Installed in peat June 8, 1980. Land surface 177.04 ft. Well depth 28 ft. Total depth of peat 28 ft.

Oct. 20, 1980	0.54
Dec. 05, 1980	.62
Apr. 30, 1981	.58
June 27, 1981	.68
Aug. 17, 1981	.66
Sep. 30, 1981	.61

38-4. 444230067481103. Installed in peat June 19, 1980. Land surface 163.29 ft. Well depth 6 ft. Total depth of peat 13 ft.

Oct. 20, 1980	0.27
Dec. 01. 1980	.33
Apr. 27, 1981	.30
June 27, 1981	.39
Aug. 17. 1981	.34
Sep. 30, 1981	.30

38-3. 444230067481102. Installed in peat June 19, 1980. Land surface 163.29 ft. Well depth 13 ft. Total depth of peat 13 ft.

Oct. 20, 1980	0.14
Dec. 01, 1980	1.02
Apr. 27, 1981	.32
June 27, 1981	.50
Aug. 17, 1981	.41
Sep. 30, 1981	.39

29-4. 444213067483604. Installed in peat June 19, 1980. Land surface 169.65 ft. Well depth 6 ft. Total depth of peat 20 ft.

Oct. 20, 1980	0.10
Dec. 01, 1980	.13
Apr. 27, 1981	.09
June 27, 1981	.21
Aug. 17, 1981	.07
Sep. 30, 1981	.10

Table 7.–Descriptions of piezometers and water levels.–continued

29-3. 444213067483603. Installed in peat June 19, 1980. Land surface 169.65 ft. Well depth 13 ft. Total depth of peat 20 ft.

Oct. 20, 1980	0.29
Dec. 01, 1980	.36
Apr. 27, 1981	.20
June 27, 1981	.34
Aug. 17, 1981	.22
Sep. 30, 1981	.18

29-2. 444213067483604. Installed in peat June 19, 1980. Land surface 169.65 ft. Well depth 20 ft. Total depth of peat 20 ft.

Oct. 20, 1980	0.45
Dec. 01, 1980	.55
Apr. 27, 1981	.40
June 27, 1981	.55
Aug. 17, 1981	.43
Sep. 30, 1981	.43

61-4. 442553067502204. Installed in peat June 12, 1980. Land surface 177.86 ft. Well depth 6 ft. Total depth of peat 24 ft.

Oct. 17, 1980	0.42
Dec. 03, 1980	.37
Apr. 30, 1981	.30
June 25, 1981	.28
Aug. 17, 1981	.40

61-3. 442553067502203. Installed in peat June 12, 1980. Land surface 177.86 ft. Well depth 15 ft. Total depth of peat 24 ft.

Oct. 17, 1980	0.47
Dec. 03, 1980	.47
Apr. 30, 1981	.43
June 25, 1981	.58
Aug. 17, 1981	.58

61-2. 442553067502202. Installed in peat June 12, 1980. Land surface 177.86 ft. Well depth 23 ft. Total depth of peat 24 ft.

Oct. 17, 1980	0.58
Dec. 03, 1980	.62
Apr. 30, 1981	.56
June 25, 1981	.53
Aug. 17, 1981	.53

31-4. 444157067485803. Installed in peat June 19, 1980. Land surface 154.41 ft. Well depth 2 ft. Total depth of peat 4 ft

Oct. 20, 1980	- 0.80
Dec. 01, 1980	- .75
Apr. 27, 1981	- .77
June 27, 1981	- .72
Aug. 17, 1981	- .76
Sep. 30, 1981	- .83

31-3. 444157067485802. Installed in peat June 19, 1980. Land surface 154.41 ft. Well depth 4 ft. Total depth of peat 4 ft.

Oct. 20, 1980	- 0.71
Dec. 01, 1980	- .73
Apr. 27, 1981	- .76
June 27, 1981	- .67
Aug. 17, 1981	- .81
Sep. 30, 1981	- .80

22-4. 444328067503604. Installed in peat May 14, 1980. Land surface 187.21 ft. Well depth 5 ft. Total depth of peat 24 ft.

Dec. 03, 1980	0.66
Apr. 29, 1981	.22
June 27, 1981	.63
Aug. 17, 1981	.62

22-3. 444328067503603. Installed in peat May 14, 1980. Land surface 187.21 ft. Well depth 15 ft. Total depth of peat 24 ft.

Dec. 03, 1980	0.38
Apr. 29, 1981	.37
June 27, 1981	.49
Aug. 17, 1981	.48

22-2. 444328067503602. Installed in peat May 14, 1980. Land surface 187.21 ft. Well depth 23 ft. Total depth of peat 24 ft.

Dec. 03, 1980	0.50
Apr. 29, 1981	.46
June 27, 1981	.71
Aug. 17, 1981	.63

G-C. 444307067511401. Installed in clay November 1980. Land surface 164.32 ft. Well depth 10 ft. Total depth of peat 6 ft.

Apr. 29, 1981	0.47
June 26, 1981	.59
Aug. 17, 1981	.39

G-P. 444307067511402. Installed in peat April 1982. Land surface 164.32 ft. Well depth 6 ft. Total depth of peat 6 ft. No water level data for 1981 water year.

23-4. 444333067504604. Installed in peat May 1981. Land surface 186.35 ft. Well depth 5 ft.

June 27, 1981	0.48
Aug. 17, 1981	.48

9-4. 444233067492204. Installed in peat May 1981. Land surface 171.35 ft. Well depth 5 ft.

June 25, 1981	0.41
Aug. 17, 1981	.23
Sep. 30, 1981	.18

78-4. 444204067492804. Installed in peat May 1981. Land surface 180.15 ft. Well depth 5 ft.

June 26, 1981	0.99
Aug. 17, 1981	.98
Sep. 30, 1981	- .07

33-4. 444221067490304. Installed in peat May 1981. Land surface 152.10 ft. Well depth 5 ft.

June 26, 1981	0.94
Aug. 17, 1981	.03
Sep. 30, 1981	- .19

Table 7.–Descriptions of piezometers and water levels.–continued

34-4. 444201067482404. Installed in peat May 1981. Land surface 155.30 ft. Well depth 5 ft.

June 27, 1981	0.58
Aug. 17, 1981	.25
Sep. 30, 1981	.43

40-4. 444243067483004. Installed in peat May 1981. Land surface 171.0 ft. Well depth 5 ft.

June 27, 1981	0.32
Aug. 17, 1981	.38
Sep. 30, 1981	.24

2-4. 444210067481604. Installed in peat May 1981. Land surface 162.15 ft. Well depth 5 ft.

June 27, 1981	0.61
Aug. 17, 1981	.55
Sep. 30, 1981	.56

One observation well (number 17-5) consisting of a 4-inch diameter PVC pipe with one-foot well screen (.010-inch slot size) was instrumented with a stage recorder. The analog-digital recorder and float counterweight assembly were installed to provide a continuous record of water-level fluctuations. Daily mean values of these data are presented in table 8.

Denbow Heath

A total of 33 piezometers were installed in this peat bog using the same materials and techniques as described for the Great Heath. Descriptions of piezometers and water levels for Denbow Heath are reported in table 9.

Table 8.--Water levels in Great Heath observation well 17-5, October 1980 to September 1981

WASHINGTON COUNTY

444308067510905

LOCATION.--Lat. 44°43'08", long 67°51'09", Hydrologic Unit 01050002, in T18MD, about 0.4 mi (0.6 km) northeast of Taylor Branch at The Great Heath gaging station and about 1.9 mi (3.1 km) northwest of Epping.

AQUIFER.--Peat Bog

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 4 in. (0.10 m), depth 5 ft (1.5 m) screened 0 to 5 ft (0 to 1.5 m) with a .01 in. (0.25 mm) mesh.

DATUM.--Elevation of land surface datum is 172.69 ft (52.636 m, National Geodetic Vertical Datum of 1929). Measuring point: Top of casing indicated by black mark, 1.0 ft (0.3 m) above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level 0.77 ft (0.23 m) below land-surface datum, Sept. 24, 1981; lowest 2.14 ft (0.65 m) below land-surface datum July 18-19, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.12				---	1.03	1.11	1.44	1.23	1.69
2	---	---	1.19				---	1.07	1.19	1.50	1.31	1.69
3	---	---	.89				---	1.11	1.25	1.57	1.39	1.74
4	---	---	.91				---	1.15	1.28	1.63	1.43	1.77
5	---	---	.98				---	1.17	1.32	1.52	1.43	1.81
6	---	1.25	1.03				---	1.19	1.36	1.34	1.21	1.84
7	---	1.25	1.07				---	1.18	1.39	1.40	1.14	1.87
8	1.05	1.12	1.10				---	1.22	1.44	1.48	1.11	1.89
9	1.07	1.11	1.06				.96	1.25	1.35	1.43	1.18	1.64
10	1.11	1.05	1.10				1.01	1.28	1.20	1.50	1.25	1.54
11	1.08	.99	1.13				1.06	1.31	1.25	1.60	1.30	1.49
12	.88	1.02	1.13				1.07	1.32	1.25	1.67	1.35	1.49
13	.94	1.07	1.18				1.07	1.07	1.29	1.53	1.38	1.54
14	1.01	1.10	1.24				1.06	1.07	1.35	1.32	1.41	1.61
15	1.06	1.13	---				.98	1.12	1.38	1.34	1.43	1.67
16	1.10	1.19	---				.98	1.15	1.38	1.45	.95	1.70
17	1.15	1.25	---				.98	1.03	1.40	1.55	1.01	1.74
18	1.15	1.27	---				.98	1.08	1.47	1.63	1.09	1.79
19	1.07	1.29	---				.99	1.13	1.53	1.67	1.17	1.40
20	1.08	1.32	---				1.00	1.20	1.57	1.69	1.24	.91
21	1.05	1.34	---				1.00	1.26	1.47	1.05	1.30	1.02
22	1.09	1.09	---				1.00	1.30	1.33	.96	1.37	1.06
23	1.21	1.09	---				1.01	1.32	1.15	1.06	1.43	1.00
24	1.25	1.10	---				1.01	1.33	1.25	1.14	1.44	.82
25	1.24	.94	---				1.01	1.38	1.22	1.24	1.34	.93
26	---	.97	---				1.02	1.41	1.04	1.31	1.42	1.01
27	---	1.07	---				1.06	1.45	1.10	1.11	1.47	1.07
28	---	1.12	---				1.10	1.48	1.20	1.09	1.51	1.10
29	---	.91	---				1.06	1.46	1.30	1.03	1.56	1.14
30	---	1.05	---				.96	1.22	1.38	1.06	1.62	1.19
31	---	---	---				---	1.13	---	1.14	1.65	---
MEAN	1.09	1.12	1.08				1.02	1.22	1.31	1.37	1.33	1.44
MAX	1.25	1.34	1.24				1.10	1.48	1.57	1.69	1.65	1.89
MIN	.88	.91	.89				.96	1.03	1.04	.96	.95	.82

WTR YR 1981 MEAN 1.25 HIGH .82 LOW 1.89

Table 9.— Descriptions of piezometers and water levels for the Denbow Heath, October 1980 through September 1981.

Entries include identification number, location number, type of material the piezometer is finished in, installation date, altitude of the land surface, piezometer depth, total depth of peat at the site, and water-level information.

Identification number: (Example D1-4) A project number assigned to each piezometer. The first portion of the number (D1) identifies the location of a cluster of piezometers on figure 3. The second number (-4) denotes relative piezometer depth at that particular cluster (0=till, 1=deep in clay, 2=deep, 3=intermediate, and 4=shallow)

Location number: (Example 444410068033804) Latitude and longitude of each piezometer site. The last two digits are sequential numbers attached to the latitude- longitude used to identify closely spaced piezometers.

Altitude: Land surface datum at piezometer site in feet above mean sea level. Determined by differential leveling.

Water level: Static water level in feet below land surface. Measurements made by steel tape to 0.01 ft accuracy.

D1-3. 444410068033803. Installed in peat November 18, 1980 (relocated June 05, 1981). Land surface 74.12 ft. Well depth 6/12 ft. Total depth of peat 18/20 ft.

June 24, 1981	1.43
Aug. 26, 1981	1.55

D1-2. 444410068033802. Installed in peat November 18, 1980 (relocated June 05, 1981). Land surface 74.12 ft. Well depth 15/16 ft. Total depth of peat 18/20 ft.

June 24, 1981	- 0.23
Aug. 26, 1981	- .18

D1-1. 444410068033801. Installed in clay November 18, 1980 (relocated June 05, 1981). Land surface 74.12 ft. Well depth 20 ft. Total depth of peat 18 ft.

Aug. 26, 1981	- 0.79

D2-4. 444401068033804. Installed in peat November 18, 1980. Land surface 78.30 ft. Well depth 4 ft. Total depth of peat 24 ft.

Mar. 19, 1981	0.87
Apr. 22, 1981	.61
May 27, 1981	.78
June 24, 1981	.63
Aug. 26, 1981	.74

D2-3. 444401068033803. Installed in peat November 18, 1980. Land surface 78.30 ft. Well depth 15 ft. Total depth of peat 24 ft.

Mar. 19, 1981	0.67
Apr. 22, 1981	.63
May 27, 1981	.75
June 24, 1981	.67
Aug. 26, 1981	.72

D2-2. 444401068033802. Installed in peat November 18, 1980. Land surface 78.30 ft. Well depth 24 ft. Total depth of peat 24 ft.

Mar. 19, 1981	0.71
Apr. 22, 1981	.60
May 27, 1981	.82
June 24, 1981	.79
Aug. 26, 1981	.76

D2-1. 444401068033801. Installed in clay November 18, 1980. Land surface 78.30 ft. Well depth 25 ft. Total depth of peat 24 ft.

Mar. 19, 1981	0.79
Apr. 22, 1981	.68
May 27, 1981	.78
June 24, 1981	.67
Aug. 26, 1981	.72

D3-4. 444347068033804. Installed in peat November 18, 1980. Land surface 76.85 ft. Well depth 6 ft. Total depth of peat 24 ft.

Mar. 19, 1981	1.27
Apr. 22, 1981	1.08
May 27, 1981	1.15
June 24, 1981	1.12
Aug. 26, 1981	1.21

D3-3. 444347068033803. Installed in peat November 18, 1980. Land surface 76.85 ft. Well depth 15 ft. Total depth of peat 24 ft.

Mar. 19, 1981	1.14
Apr. 22, 1981	1.09
May 27, 1981	1.25
June 24, 1981	1.13
Aug. 26, 1981	1.27

D3-2. 444347068033802. Installed in peat November 18, 1980. Land surface 76.85 ft. Well depth 24 ft. Total depth of peat 24 ft.

Mar. 19, 1981	1.14
Apr. 22, 1981	1.05
May 27, 1981	1.18
June 24, 1981	1.15
Aug. 26, 1981	1.19

D3-1. 444347068033801. Installed in clay November 18, 1980. Land surface 76.85 ft. Well depth 25 ft. Total depth of peat 24 ft.

May 27, 1981	2.19
June 24, 1981	1.79
Aug. 26, 1981	1.59

Table 9.— Descriptions of piezometers and water levels. —continued

D4-4. 444341068033704. Installed in peat November 18, 1980. Land surface 67.75 ft. Well depth 3 ft. Total depth of peat 9 ft.

Mar. 19, 1981	0.37
Apr. 22, 1981	.07
May 27, 1981	.06
June 24, 1981	.22
Aug. 26, 1981	.18

D4-3. 444341068033703. Installed in clayey-peat November 18, 1980. Land surface 67.75 ft. Well depth 10 ft. Total depth of peat 9 ft.

Mar. 19, 1981	0.84
Apr. 22, 1981	.38
May 27, 1981	.45
June 24, 1981	.49
Aug. 26, 1981	.62

D5-4. 444425068024204. Installed in peat November 20, 1980. Land surface 72.85 ft. Well depth 5 ft. Total depth of peat 11 ft.

Mar. 19, 1981	0.33
Apr. 22, 1981	- .04
May 27, 1981	.86
June 24, 1981	.80
Aug. 26, 1981	.91

D5-3. 444425068024203. Installed in peat November 20, 1980. Land surface 72.85 ft. Well depth 9 ft. Total depth of peat 11 ft.

Mar. 19, 1981	1.64
Apr. 22, 1981	1.88
May 27, 1981	.81
June 24, 1981	.92
Aug. 26, 1981	1.04

D5-1. 444425068024201. Installed in peaty sand clay November 20, 1980. Land surface 72.85 ft. Well depth 13 ft. Total depth of peat 11 ft.

Mar. 19, 1981	1.10
Apr. 22, 1981	.66
May 27, 1981	.85
June 24, 1981	.87
Aug. 26, 1981	1.91

D6-4. 444410068024204. Installed in peat November 18, 1980. Land surface 76.05 ft. Well depth 5 ft. Total depth of peat 16 ft.

Mar. 19, 1981	1.15
Apr. 22, 1981	.85
May 27, 1981	1.02
June 24, 1981	1.02
Aug. 26, 1981	1.04

D6-3. 444410068024203. Installed in peat November 18, 1980. Land surface 76.05 ft. Well depth 13 ft. Total depth of peat 16 ft.

Mar. 19, 1981	0.83
Apr. 22, 1981	.81
May 27, 1981	.91
June 24, 1981	.84
Aug. 26, 1981	.90

D6-1. 444410068024203. Installed in sandy clay November 18, 1980. Land surface 76.05 ft. Well depth 17 ft. Total depth of peat 16 ft.

Mar. 19, 1981	0.84
Apr. 22, 1981	.80
May 27, 1981	.89
June 24, 1981	.79
Aug. 26, 1981	.84

D7-4. 444407068024204. Installed in peat November 18, 1980. Land surface 75.38 ft. Well depth 6 ft. Total depth of peat 19 ft.

Apr. 22, 1981	0.63
May 27, 1981	.77
June 24, 1981	.72
Aug. 26, 1981	.78

D7-3. 444407068024203. Installed in peat November 18, 1980. Land surface 75.38 ft. Well depth 11 ft. Total depth of peat 19 ft.

Apr. 22, 1981	0.83
May 27, 1981	1.00
June 24, 1981	.98
Aug. 26, 1981	.97

D7-1. 444407068024201. Installed in clay November 18, 1980. Land surface 75.38 ft. Well depth 22 ft. Total depth of peat 19 ft.

Apr. 22, 1981	0.63
May 27, 1981	.78
June 24, 1981	.73
Aug. 26, 1981	.77

D8-4. 444355068024104. Installed in peat November 18, 1980. Land surface 73.40 ft. Well depth 4 ft. Total depth of peat 17 ft.

Mar. 19, 1981	1.54
Apr. 22, 1981	1.07
May 27, 1981	1.28
June 24, 1981	1.26
Aug. 26, 1981	1.34

D8-3. 444355068024103. Installed in peat November 18, 1980. Land surface 73.40 ft. Well depth 15 ft. Total depth of peat 17 ft.

Mar. 19, 1981	2.09
Apr. 22, 1981	1.97
May 27, 1981	1.89
June 24, 1981	2.81
Aug. 26, 1981	1.90

D9-4. 444426068023004. Installed in peat November 18, 1980. Land surface 76.00 ft. Well depth 5 ft. Total depth of peat 12 ft.

Mar. 19, 1981	1.42
Apr. 22, 1981	1.00
May 27, 1981	1.30
June 24, 1981	1.34
Aug. 26, 1981	1.38

Table 9.— Descriptions of piezometers and water levels. —continued

D9-3. 444426068023003. Installed in peat November 18, 1980. Land surface 76.00 ft. Well depth 12 ft. Total depth of peat 12 ft.

Mar. 19, 1981	2.25
Apr. 22, 1981	1.91
May 27, 1981	2.08
June 24, 1981	2.06
Aug. 26, 1981	2.24

D10-4. 444415068022104. Installed in peat November 18, 1980. Land surface 85.32 ft. Well depth 6 ft. Total depth of peat 15 ft.

Mar. 19, 1981	- 1.99
Apr. 22, 1981	- 2.15
May 27, 1981	- 2.00
June 24, 1981	- 2.04
Aug. 26, 1981	- 2.02

D10-3 444415068022103. Installed in peat November 19, 1980. Land surface 85.32 ft. Well depth 15 ft. Total depth of peat 15 ft.

Mar. 19, 1981	5.27
Apr. 22, 1981	5.38
May 27, 1981	5.47
June 24, 1981	5.44
Aug. 26, 1981	5.51

D11-4. 444407068021404. Installed in peat November 19, 1980. Land surface 69.87 ft. Well depth 1 ft. Total depth of peat 7 ft.

Mar. 19, 1981	0.65
Apr. 22, 1981	.39
May 27, 1981	.52
June 24, 1981	- .43
Aug. 26, 1981	.60

D11-3. 444407068021403. Installed in peat November 19, 1980. Land surface 69.87 ft. Well depth 6 ft. Total depth of peat 7 ft.

Mar. 19, 1981	0.71
Apr. 22, 1981	.40
May 27, 1981	.50
June 24, 1981	.54
Aug. 26, 1981	.51

D12-2. 444408068020802. Installed in peat May, 1981. Land surface 73.50 ft. Well depth 9 ft. Total depth of peat 10 ft.

May 27, 1981	1.33
June 24, 1981	.84
Aug. 26, 1981	1.02

D12-1. 444408068020801. Installed in clay May, 1981. Land surface 73.50 ft. Well depth 15 ft. Total depth of peat 10 ft.

May 27, 1981	1.22
June 24, 1981	1.14
Aug. 26, 1981	1.06

D12-0. 444408068020800. Installed in till May, 1981. Land surface 73.50 ft. Well depth 57 ft. Total depth of peat 10 ft.

May 27, 1981	dry
June 24, 1981	dry
Aug. 26, 1981	dry

Water-Quality Data

Several ground-water and surface-water sites at the Great Heath and Denbow Heath were chosen for water-quality sampling and analysis (tables 10-13). At the Great Heath, piezometer clusters 6, 12, 38, 63, 64, 67, and 70 and surface-water sites 1, 2, 3, 7, 13, and 17 were selected for sampling. Water-quality sites at the Denbow Heath included piezometer cluster numbers 1 in the mined portion; 2, 6, 10, and 12 in the unmined portion, as well as the two surface-water sites CDD and PDD on the system of drainage ditches.

Water from the shallow, intermediate, and deep layers of peat were sampled at each piezometer cluster. Installation of additional, large-diameter wells was necessary to collect water samples from the shallow layers of peat. These wells were generally screened from 1 to 5 feet below land surface.

Water-quality sites at the Great Heath were sampled during October 1980 and May 1981. The Denbow Heath was sampled only during June 1981. Prior to sampling, the piezometers were de-watered using a hand pump. The time interval between de-watering and sample collection ranged from 6 to 9 days at most clusters to allow for sufficient recovery.

Field determinations included water temperature, pH, and specific conductance. Dissolved oxygen was also measured at the surface-water sites. Ground-water temperature was measured using a thermistor-type temperature probe at the lowest point of the piezometer screen. Surface-water temperature was measured with a mercury thermometer.

An Orion 1/ Model 399A analog meter in conjunction with an Orion Model 91-05 combination electrode was used for pH measurement. At surface-water sites, pH was measured in a freshly collected sample. At the piezometer sites, samples for pH determinations were withdrawn from the piezometers with a peristaltic pump equipped with plastic tubing and a stainless-steel tubing weight. The outlet from the pump and the pH probe were placed directly into a modified plastic bottle to lessen the effect that atmospheric contact might have on the pH value of the sample. A constant flow of sample into the bottle insured that the sample was continuously renewed during the determination.

Specific conductance was measured with a YSI (Yellow Spring Instrument) Model 33 conductivity meter and temperature corrected to 25°C. The probe was placed directly into the flow at the surface-water sites. At piezometric installations, conductivity was measured in a sample withdrawn by a peristaltic pump.

1/ The use of brand names in this report is for identification purposes only and does not imply endorsement by the U.S. Geological Survey.

Table 10.--Chemical analyses of samples from ground-water sites at the Great Heath

LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	ALKALINITY LAB (MG/L AS CACO3)	ACIDITY (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
GREAT HEATH 6-2	80-10-21	1100	147	5.1	6.5	52	--	8.0	3.1	5.0
	81-05-06	1100	155	5.0	6.5	70	99	8.5	3.1	4.2
GREAT HEATH 6-3	80-10-21	1330	52	4.5	6.0	6.0	--	.2	.3	1.5
	81-05-06	1100	52	4.2	6.0	17	45	.3	.4	1.6
GREAT HEATH 6-4	80-10-21	1330	88	3.7	8.5	.00	30	.3	.5	2.0
	81-05-06	1100	44	3.8	3.5	.00	20	.2	.1	1.1
GREAT HEATH 12-3	80-10-30	1030	286	5.7	6.0	--	--	--	--	--
	81-05-07	1450	282	5.9	5.0	160	70	2.5	3.9	52
GREAT HEATH 12-4	80-10-30	1030	49	3.5	8.0	.00	20	1.8	.5	2.8
	81-05-07	1450	34	3.6	3.0	.00	20	.2	.3	2.8
GREAT HEATH 31-3	80-10-28	1530	33	3.8	8.0	6.0	--	1.2	.3	2.2
	81-05-06	1435	30	4.2	3.0	1.0	10	.6	.2	1.2
GREAT HEATH 38-3	80-10-28	1030	167	5.6	5.0	64	--	.9	.8	11
	81-05-04	1630	119	5.1	6.0	29	35	2.1	1.5	18
GREAT HEATH 38-4	80-10-28	1030	72	3.6	8.0	.00	25	.2	.3	2.8
	81-05-04	1630	40	3.3	3.5	1.0	15	.5	.3	1.6
GREAT HEATH 63-2	80-10-30	1230	135	5.1	5.5	50	--	4.1	3.4	16
	81-05-07	1615	130	5.2	5.0	68	109	3.9	3.3	15
GREAT HEATH 63-3	80-10-30	1230	52	3.8	5.0	.00	20	.5	.5	4.6
	81-05-07	1615	51	4.2	5.0	--	--	--	--	--
GREAT HEATH 63-4	80-10-30	1230	80	3.2	6.5	.00	25	.5	.5	2.2
	81-05-07	1615	42	3.7	3.0	.00	15	.2	.1	1.4
GREAT HEATH 64-2	80-10-23	1530	206	5.4	6.0	46	--	6.8	5.2	12
	81-05-07	1105	197	5.2	6.5	98	139	7.3	6.0	13
GREAT HEATH 64-3	80-10-23	1530	59	4.3	5.0	9.0	35	.9	.9	3.8
	81-05-07	1105	55	4.1	6.5	21	129	.7	.9	3.6
GREAT HEATH 64-4	80-10-23	1530	54	3.2	7.5	.00	20	.5	.2	1.6
	81-05-07	1105	43	3.8	4.5	.00	15	.1	.1	1.2
GREAT HEATH 67-2	80-10-29	1400	196	4.9	6.5	79	--	7.5	7.6	17
	81-05-05	1415	174	5.4	6.5	1.0	174	7.1	7.2	17
GREAT HEATH 67-3	80-10-29	1400	48	4.0	7.0	--	--	.9	.4	3.0
	81-05-05	1415	35	3.9	5.5	2.0	15	.2	.1	1.7
GREAT HEATH 67-4	80-10-29	1400	64	3.0	9.0	--	15	.4	.3	2.8
	81-05-05	1415	38	4.6	4.5	.00	15	.1	.1	1.3
GREAT HEATH 70-2	80-10-29	1045	60	4.3	6.5	21	--	1.3	.5	2.6
	81-05-05	1130	58	4.8	6.5	26	74	1.3	.5	2.1
GREAT HEATH 70-3	80-10-29	1045	42	3.6	6.5	.00	30	.3	.3	1.6
	81-05-05	1130	37	4.1	6.0	13	55	.2	.1	1.2
GREAT HEATH 70-4	80-10-29	1045	63	3.0	8.0	.00	10	.3	.3	2.0
	81-05-05	1130	40	3.8	5.0	.00	25	.1	.0	1.4

Table 10.--Chemical analyses of samples from ground-water sites at the Great Heath --continued

LOCAL IDENTIFIER	DATE OF SAMPLE	POTASSIUM, DISSOLVED (MG/L AS K)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
GREAT HEATH 6-2	80-10-21	2.5	.0	4.1	.0	18	.05	6.80	8.8	1.6
	81-05-06	1.8	<1.0	7.6	<.1	19	.03	4.70	6.1	7.3
GREAT HEATH 6-3	80-10-21	.5	8.4	6.2	.0	2.7	.02	3.80	4.9	.10
	81-05-06	.5	<1.0	6.2	<.1	3.2	.01	2.10	2.7	2.5
GREAT HEATH 6-4	80-10-21	.2	9.0	3.9	.0	.5	.00	.040	.05	.38
	81-05-06	.1	1.0	3.3	<.1	.3	<.01	.070	.09	.53
GREAT HEATH 12-3	80-10-30	--	--	--	--	--	--	--	--	--
	81-05-07	3.2	<1.0	9.2	.2	20	.02	5.00	6.4	4.4
GREAT HEATH 12-4	80-10-30	.2	9.8	4.4	.0	1.0	.02	.080	.10	.59
	81-05-07	.2	2.0	3.8	<.1	.9	.01	.120	.15	.64
GREAT HEATH 31-3	80-10-28	.6	5.8	5.5	.0	1.6	--	--	--	--
	81-05-06	.2	1.0	3.3	<.1	.5	.01	.120	.15	.36
GREAT HEATH 38-3	80-10-28	1.6	.0	6.3	.0	4.4	--	--	--	--
	81-05-04	2.9	1.0	15	<.1	8.6	.06	1.60	2.1	2.6
GREAT HEATH 38-4	80-10-28	.2	7.3	4.2	.0	.5	.01	.020	.03	.20
	81-05-04	.1	2.0	3.4	<.1	1.1	.01	.070	.09	.32
GREAT HEATH 63-2	80-10-30	1.7	.0	3.7	.0	22	.06	2.70	3.5	.60
	81-05-07	1.7	<1.0	15	<.1	22	.07	1.70	2.2	2.5
GREAT HEATH 63-3	80-10-30	.9	.0	4.3	.0	9.4	.03	1.90	2.4	.60
	81-05-07	--	--	--	--	--	--	--	--	--
GREAT HEATH 63-4	80-10-30	.2	9.2	4.2	.0	1.1	.01	.090	.12	.29
	81-05-07	.2	1.0	3.3	<.1	.8	.01	.090	.12	.44
GREAT HEATH 64-2	80-10-23	2.1	.0	3.3	.0	22	.03	5.80	7.5	1.6
	81-05-07	2.3	<1.0	6.8	.1	26	.03	4.70	6.1	3.2
GREAT HEATH 64-3	80-10-23	.8	.0	11	.0	6.3	.04	3.90	5.0	1.1
	81-05-07	.9	<1.0	9.7	<.1	6.7	.03	2.20	2.8	2.9
GREAT HEATH 64-4	80-10-23	.3	6.3	3.4	.0	.5	.00	.190	.24	.28
	81-05-07	.4	1.0	3.6	<.1	.6	<.01	.170	.22	.42
GREAT HEATH 67-2	80-10-29	3.1	.0	2.6	.0	27	.12	8.70	11	9.3
	81-05-05	3.0	<1.0	23	<.1	27	.16	6.70	8.6	10
GREAT HEATH 67-3	80-10-29	.6	--	--	--	2.4	--	--	--	--
	81-05-05	.3	1.0	3.9	<.1	1.2	.01	.550	.71	.55
GREAT HEATH 67-4	80-10-29	1.3	6.3	5.9	.0	.7	.11	.550	.71	.65
	81-05-05	.3	<1.0	3.8	<.1	.6	<.01	.340	.44	.49
GREAT HEATH 70-2	80-10-29	.4	6.5	4.7	.0	9.2	.03	3.50	4.5	.70
	81-05-05	.4	<1.0	5.4	<.1	6.6	.02	3.10	4.0	1.8
GREAT HEATH 70-3	80-10-29	.2	4.4	4.2	.0	2.0	.01	2.40	3.1	.50
	81-05-05	.2	<1.0	4.1	<.1	2.0	.02	2.40	3.1	.80
GREAT HEATH 70-4	80-10-29	.4	6.8	3.9	.0	.8	.00	.160	.21	.29
	81-05-05	.6	1.0	3.4	<.1	.4	.01	.150	.19	.38

Table 10.--Chemical analyses of samples from ground-water sites at the Great Heath-continued

LOCAL IDENTIFIER	DATE OF SAMPLE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)
GREAT HEATH 6-2	80-10-21	8.4	8.5	.250	200	3	10	<1	3	1
	81-05-06	12	12	.350	100	1	10	<1	5	1
GREAT HEATH 6-3	80-10-21	3.9	3.9	.070	100	1	7	1	<1	1
	81-05-06	4.6	4.6	.050	0	0	8	<1	3	7
GREAT HEATH 6-4	80-10-21	.42	.42	.010	100	0	7	<1	<1	1
	81-05-06	.60	.60	<.010	100	0	8	1	3	0
GREAT HEATH 12-3	80-10-30	--	--	--	--	--	--	--	--	--
	81-05-07	9.4	9.4	.490	300	2	10	<1	3	0
GREAT HEATH 12-4	80-10-30	.67	.69	.080	100	1	9	0	15	2
	81-05-07	.76	.77	.020	0	0	8	1	2	0
GREAT HEATH 31-3	80-10-28	--	--	--	100	1	9	0	2	1
	81-05-06	.48	.49	<.010	0	0	7	<1	3	0
GREAT HEATH 38-3	80-10-28	--	--	--	200	1	10	0	9	1
	81-05-04	4.2	4.3	.090	100	0	20	<1	<1	0
GREAT HEATH 38-4	80-10-28	.22	.23	.050	100	0	7	0	7	2
	81-05-04	.39	.40	<.010	200	0	9	<1	2	0
GREAT HEATH 63-2	80-10-30	3.3	3.4	.350	600	29	10	0	6	1
	81-05-07	4.2	4.3	.330	500	24	10	<1	<1	0
GREAT HEATH 63-3	80-10-30	2.5	2.5	.130	100	1	10	0	6	0
	81-05-07	--	--	--	--	--	--	--	--	--
GREAT HEATH 63-4	80-10-30	.38	.39	.000	100	0	9	0	8	2
	81-05-07	.53	.54	<.010	100	0	8	<1	<1	1
GREAT HEATH 64-2	80-10-23	7.4	7.4	.320	100	5	10	<1	2	1
	81-05-07	7.9	7.9	.450	200	4	10	<1	3	0
GREAT HEATH 64-3	80-10-23	5.0	5.0	.030	200	2	9	<1	<1	0
	81-05-07	5.1	5.1	.260	100	0	9	<1	3	0
GREAT HEATH 64-4	80-10-23	.47	.47	.010	100	0	6	<1	<1	1
	81-05-07	.59	.59	.010	0	0	8	<1	2	0
GREAT HEATH 67-2	80-10-29	18	18	.630	600	1	20	0	9	0
	81-05-05	17	17	.560	700	0	10	<1	4	0
GREAT HEATH 67-3	80-10-29	--	--	--	200	0	6	0	4	0
	81-05-05	1.1	1.1	.030	0	0	8	<1	<1	0
GREAT HEATH 67-4	80-10-29	1.2	1.3	.030	100	0	20	0	9	5
	81-05-05	.83	.83	<.010	100	0	6	<1	<1	0
GREAT HEATH 70-2	80-10-29	4.2	4.2	.070	500	1	10	0	9	2
	81-05-05	4.9	4.9	.070	400	0	10	<1	<1	0
GREAT HEATH 70-3	80-10-29	2.9	2.9	.020	100	0	80	0	10	0
	81-05-05	3.2	3.2	<.010	100	0	7	<1	<1	0
GREAT HEATH 70-4	80-10-29	.45	.45	.020	100	1	10	0	9	1
	81-05-05	.53	.54	<.010	300	0	6	<1	<1	0

Table 10.--Chemical analyses of samples from ground-water sites at the Great Heath-continued

LOCAL IDENTIFIER	DATE OF SAMPLE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)
GREAT HEATH 6-2	80-10-21	20	25	9400	13	7	750	21
	81-05-06	41	10	12000	<10	9	810	<10
GREAT HEATH 6-3	80-10-21	<3	<10	64	<10	<4	4	23
	81-05-06	<3	<10	150	<10	<4	10	<10
GREAT HEATH 6-4	80-10-21	<3	<10	51	<10	<4	3	<10
	81-05-06	3	10	37	10	4	2	10
GREAT HEATH 12-3	80-10-30	--	--	--	--	--	--	--
	81-05-07	4	<10	1200	<10	7	100	<10
GREAT HEATH 12-4	80-10-30	0	14	70	0	0	15	0
	81-05-07	3	10	110	10	4	5	10
GREAT HEATH 31-3	80-10-28	0	17	430	0	0	15	0
	81-05-06	<3	<10	260	10	<4	7	<10
GREAT HEATH 38-3	80-10-28	0	22	670	0	0	19	0
	81-05-04	6	<10	560	<10	<4	7	10
GREAT HEATH 38-4	80-10-28	0	0	100	0	0	2	0
	81-05-04	<3	30	210	<10	<4	9	<10
GREAT HEATH 63-2	80-10-30	0	0	8900	0	4	140	0
	81-05-07	21	<10	8500	<10	<4	130	<10
GREAT HEATH 63-3	80-10-30	1	0	390	0	1	11	10
	81-05-07	--	--	--	--	--	--	--
GREAT HEATH 63-4	80-10-30	2	0	100	0	0	2	10
	81-05-07	<3	<10	86	<10	<4	2	<10
GREAT HEATH 64-2	80-10-23	<3	<10	10000	<10	10	160	28
	81-05-07	45	<10	12000	<10	11	170	<10
GREAT HEATH 64-3	80-10-23	<3	<10	430	17	<4	12	<10
	81-05-07	<3	<10	450	<10	<4	11	<10
GREAT HEATH 64-4	80-10-23	<3	<10	41	<10	<4	1	<10
	81-05-07	<3	<10	69	<10	<4	2	<10
GREAT HEATH 67-2	80-10-29	0	0	7500	0	8	300	0
	81-05-05	17	<10	7000	<10	9	260	<10
GREAT HEATH 67-3	80-10-29	2	18	230	0	3	10	10
	81-05-05	<3	<10	96	<10	<4	3	<10
GREAT HEATH 67-4	80-10-29	1	10	100	0	0	11	0
	81-05-05	<3	<10	40	<10	<4	2	<10
GREAT HEATH 70-2	80-10-29	0	10	2200	0	0	170	10
	81-05-05	7	<10	2300	<10	<4	160	<10
GREAT HEATH 70-3	80-10-29	1	0	140	0	2	8	10
	81-05-05	<3	<10	78	<10	<4	5	<10
GREAT HEATH 70-4	80-10-29	1	0	120	0	0	4	0
	81-05-05	<3	<10	21	<10	<4	1	11

Table 10.--Chemical analyses of samples from ground-water sites at the Great Heath-continued

LOCAL IDENTIFIER	DATE OF SAMPLE	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
GREAT HEATH 6-2	80-10-21	47	<6.0	54	43
	81-05-06	51	<6.0	160	82
GREAT HEATH 6-3	80-10-21	2	<6.0	7	57
	81-05-06	3	<6.0	53	4.2
GREAT HEATH 6-4	80-10-21	3	7.0	5	28
	81-05-06	1	6.0	4	12
GREAT HEATH 12-3	80-10-30	--	--	--	34
	81-05-07	19	<6.0	10	103
GREAT HEATH 12-4	80-10-30	5	.0	74	35
	81-05-07	2	6.0	45	4.6
GREAT HEATH 31-3	80-10-28	5	.0	80	23
	81-05-06	2	<6.0	<4	6.6
GREAT HEATH 38-3	80-10-28	7	2.0	68	45
	81-05-04	11	<6.0	48	84
GREAT HEATH 38-4	80-10-28	2	.0	30	26
	81-05-04	2	<6.0	23	22
GREAT HEATH 63-2	80-10-30	32	2.0	66	79
	81-05-07	28	<6.0	100	144
GREAT HEATH 63-3	80-10-30	5	1.0	50	57
	81-05-07	--	--	--	27
GREAT HEATH 63-4	80-10-30	3	.0	60	29
	81-05-07	1	<6.0	53	5.4
GREAT HEATH 64-2	80-10-23	49	<6.0	10	54
	81-05-07	53	<6.0	6	25
GREAT HEATH 64-3	80-10-23	6	<6.0	11	110
	81-05-07	6	<6.0	13	30
GREAT HEATH 64-4	80-10-23	2	<6.0	<4	27
	81-05-07	<1	<6.0	5	12
GREAT HEATH 67-2	80-10-29	68	.0	70	142
	81-05-05	59	<6.0	37	156
GREAT HEATH 67-3	80-10-29	5	.0	84	71
	81-05-05	2	<6.0	6	6.0
GREAT HEATH 67-4	80-10-29	2	.0	42	28
	81-05-05	1	<6.0	5	17
GREAT HEATH 70-2	80-10-29	9	.0	36	26
	81-05-05	8	<6.0	120	14
GREAT HEATH 70-3	80-10-29	3	.0	40	27
	81-05-05	1	<6.0	71	9.6
GREAT HEATH 70-4	80-10-29	2	1.0	46	25
	81-05-05	<1	<6.0	28	4.4

Table 11.--Chemical analyses of samples from surface-water sites at the Great Heath

LOCAL NUMBER	STATION NUMBER	STATION NAME	DATE OF SAMPLE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)
1	444238067512100	PLEASANT RIVER ABOVE TAYLOR BROOK (SW SITE 1)	80-10-22	1300	53	31	5.4
		PLEASANT RIVER ABOVE TAYLOR BROOK (SW SITE 1)	81-05-12	1500	63	26	5.5
2	444424067511100	TAYLOR BROOK AT NORTH LOBE (SW SITE 2)	80-10-23	1230	4.8	31	3.9
		TAYLOR BROOK AT NORTH LOBE (SW SITE 2)	81-05-11	1700	7.0	17	4.2
3	01022250	TAYLOR BROOK AT THE GREAT HEATH (SW SITE 3)	80-10-22	1500	--	37	3.8
		TAYLOR BROOK AT THE GREAT HEATH (SW SITE 3)	81-05-12	1330	11	23	4.2
7	444150067493900	PINE ISLAND BROOK AT PLEASANT RIVER (SW SITE 7)	80-10-24	1130	.72	67	3.2
		PINE ISLAND BROOK AT PLEASANT RIVER (SW SITE 7)	81-05-13	1130	3.7	40	3.2
13	01022260	PLEASANT RIVER NEAR EPPING, ME (SW SITE 13)	80-10-24	1430	71	32	5.1
		PLEASANT RIVER NEAR EPPING, ME (SW SITE 13)	81-05-13	1730	130	23	5.1
17	444347067484000	DOGPIT BROOK (SW SITE 17)	80-10-28	1300	6.9	61	3.1
		DOGPIT BROOK (SW SITE 17)	81-05-08	1025	3.5	33	3.4

	STATION NUMBER	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	ALKA-LINITY LAB (MG/L AS CACO3)	ACIDITY (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
1	444238067512100	80-10-22	7.0	11.2	8.0	--	1.8	.6	2.7	.5	3.8	3.2
		81-05-12	13.5	9.8	24	10	1.7	.6	2.9	.3	2.4	3.0
2	444424067511100	80-10-23	5.0	12.3	2.0	15	1.5	.6	2.7	.2	5.6	3.4
		81-05-11	15.0	10.6	6.0	10	1.0	.4	2.5	.2	3.2	2.6
3	01022250	80-10-22	7.5	10.6	.00	20	1.5	.7	2.7	.2	6.2	3.7
		81-05-12	13.0	9.0	11	10	1.1	.3	2.9	.2	3.7	2.8
7	444150067493900	80-10-24	5.5	9.0	.00	30	.9	.7	2.4	.2	9.4	4.2
		81-05-13	7.5	9.6	.00	20	.8	.4	2.8	.2	6.6	4.0
13	01022260	80-10-24	6.5	11.4	4.0	--	1.8	.7	2.9	.4	4.8	3.4
		81-05-13	13.0	9.4	2.0	5.0	1.5	.5	2.7	.3	4.0	3.2
17	444347067484000	80-10-28	6.0	10.0	.00	25	.9	.5	2.0	.1	7.8	4.3
		81-05-08	7.0	9.8	.00	20	.1	.1	1.6	.2	1.0	3.6

	STATION NUMBER	DATE OF SAMPLE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
1	444238067512100	80-10-22	.1	7.7	.01	.000	.00	.24	.24	.25	.010	200
		81-05-12	.1	5.7	.01	.050	.06	.08	.13	.14	.020	100
2	444424067511100	80-10-23	.1	7.1	.00	.010	.01	.29	.30	.30	.010	300
		81-05-11	.1	3.2	.01	.040	.05	--	<.10	--	<.010	0
3	01022250	80-10-22	.0	6.5	.01	.040	.05	.44	.48	.49	.020	400
		81-05-12	.1	2.9	.01	.060	.08	.11	.17	.18	<.010	300
7	444150067493900	80-10-24	.0	2.1	.00	.020	.03	.39	.41	.41	.010	200
		81-05-13	<.1	4.9	.02	.060	.08	.10	.16	.18	.010	100
13	01022260	80-10-24	.1	7.4	.01	.000	.00	.26	.26	.27	.070	300
		81-05-13	.1	5.5	.01	.040	.05	--	<.10	--	<.010	100
17	444347067484000	80-10-28	.0	1.7	.01	.000	.00	.25	.25	.26	.010	300
		81-05-08	<.1	.4	.01	.080	.10	.48	.56	.57	.020	0

Table 11.--Chemical analyses of samples from surface-water sites at the Great Heath-continued

LOCAL NUMBER	STATION NUMBER	DATE OF SAMPLE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)
1	444238067512100	80-10-22	1	9	<1	4	2	<3	<10	240	<10	<4
		81-05-12	0	20	<1	<1	0	<3	<10	140	<10	5
2	444424067511100	80-10-23	1	10	<1	3	3	<3	<10	290	<10	<4
		81-05-11	0	20	<1	<1	0	<3	<10	130	<10	<4
3	01022250	80-10-22	1	9	<1	<1	1	<3	<10	370	<10	<4
		81-05-12	0	20	<1	<1	0	<3	<10	220	<10	<4
7	444150067493900	80-10-24	1	8	<1	2	3	<3	<10	190	<10	<4
		81-05-13	0	20	<1	1	0	<3	<10	170	<10	<4
13	01022260	80-10-24	1	10	<1	1	1	<3	<10	300	<10	<4
		81-05-13	0	10	<1	<1	0	<3	<10	170	<10	<4
17	444347067484000	80-10-28	1	10	2	6	2	1	0	370	0	2
		81-05-08	0	10	<1	2	2	<3	<10	38	<10	<4

	STATION NUMBER	DATE OF SAMPLE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
1	444238067512100	80-10-22	16	<10	11	<6.0	<4	9.3	.2
		81-05-12	10	<10	10	<6.0	<4	4.6	.2
2	444424067511100	80-10-23	24	<10	9	<6.0	<4	17	.1
		81-05-11	7	<10	5	<6.0	5	8.1	.1
3	01022250	80-10-22	26	<10	9	7.0	<4	23	.2
		81-05-12	9	<10	5	<6.0	11	9.9	.2
7	444150067493900	80-10-24	9	<10	7	<6.0	<4	27	.2
		81-05-13	5	16	5	<6.0	33	19	.2
13	01022260	80-10-24	16	<10	10	8.0	<4	14	.2
		81-05-13	9	<10	8	<6.0	<4	7.0	.1
17	444347067484000	80-10-28	2	0	5	12	71	27	.3
		81-05-08	<1	<10	1	<6.0	<4	5.6	--

Table 12.--Chemical analyses of samples from ground-water sites at the Denbow Heath

LOCAL IDENTIFIER	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	ALKALINITY LAB (MG/L AS CACO3)	ACIDITY (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
DENBOW HEATH 1-2 (MINED)	81-06-03	0830	89	5.1	6.0	28	20	2.3	1.4	2.3
DENBOW HEATH 1-3 (MINED)	81-06-03	0830	41	4.2	4.0	1.0	94	.1	.3	1.1
DENBOW HEATH 1-4 (MINED)	81-06-03	0830	35	3.8	4.0	2.0	70	.2	.2	1.0
DENBOW HEATH 2-2	81-06-03	1130	100	4.7	6.5	35	104	2.6	2.1	3.3
DENBOW HEATH 2-3	81-06-03	1130	48	4.4	5.5	1.0	104	.2	.3	1.6
DENBOW HEATH 2-4	81-06-03	1130	38	3.7	5.5	1.0	40	.2	.2	1.1
DENBOW HEATH 6-3	81-06-03	1430	59	5.1	6.0	21	55	3.9	1.3	1.3
DENBOW HEATH 6-4	81-06-03	1430	43	3.4	6.5	--	50	.4	.4	1.3
DENBOW HEATH 10-3	81-06-03	1600	66	4.6	6.0	23	74	1.7	1.0	2.6
DENBOW HEATH 10-4	81-06-03	1600	53	3.2	6.5	--	--	.4	.3	1.2
DENBOW HEATH 12-1	81-06-04	0720	460	6.1	7.0	190	25	21	12	50

LOCAL IDENTIFIER	DATE OF SAMPLE	POTASSIUM, DISSOLVED (MG/L AS K)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)
DENBOW HEATH 1-2 (MINED)	81-06-03	1.1	<1.0	2.9	<.1	14	--	--	--	--
DENBOW HEATH 1-3 (MINED)	81-06-03	.3	<1.0	2.7	<.1	2.6	.13	1.60	2.1	1.6
DENBOW HEATH 1-4 (MINED)	81-06-03	.2	<1.0	2.3	<.1	1.6	.11	1.30	1.7	.70
DENBOW HEATH 2-2	81-06-03	.8	<1.0	2.5	<.1	13	.18	3.50	4.5	7.5
DENBOW HEATH 2-3	81-06-03	.3	<1.0	2.5	<.1	3.8	.07	2.80	3.6	2.7
DENBOW HEATH 2-4	81-06-03	.2	<1.0	2.5	<.1	.9	.05	.910	1.2	.49
DENBOW HEATH 6-3	81-06-03	.4	<1.0	2.4	<.1	3.7	.10	1.30	1.7	1.5
DENBOW HEATH 6-4	81-06-03	.2	<1.0	2.9	<.1	.9	.28	.850	1.1	.75
DENBOW HEATH 10-3	81-06-03	.6	<1.0	2.3	<.1	22	.14	2.80	3.6	2.1
DENBOW HEATH 10-4	81-06-03	.4	--	--	--	1.5	--	--	--	--
DENBOW HEATH 12-1	81-06-04	5.5	33	4.8	.3	20	.14	1.30	1.7	.30

LOCAL IDENTIFIER	DATE OF SAMPLE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)
DENBOW HEATH 1-2 (MINED)	81-06-03	--	--	--	200	3	20	<1	2
DENBOW HEATH 1-3 (MINED)	81-06-03	3.2	3.3	.020	0	1	8	<1	1
DENBOW HEATH 1-4 (MINED)	81-06-03	2.0	2.1	.020	0	1	9	1	2
DENBOW HEATH 2-2	81-06-03	11	11	.210	0	5	10	<1	2
DENBOW HEATH 2-3	81-06-03	5.5	5.6	.260	0	1	10	<1	2
DENBOW HEATH 2-4	81-06-03	1.4	1.5	.020	0	1	8	1	2
DENBOW HEATH 6-3	81-06-03	2.8	2.9	.100	0	8	9	<1	2
DENBOW HEATH 6-4	81-06-03	1.6	1.9	.010	100	0	10	<1	<1
DENBOW HEATH 10-3	81-06-03	4.9	5.0	.080	600	7	10	<1	2
DENBOW HEATH 10-4	81-06-03	--	--	--	0	1	7	<1	2
DENBOW HEATH 12-1	81-06-04	1.6	1.7	.010	0	6	10	1	3

Table 12.--Chemical analyses of samples from ground-water sites at the Denbow Heath-continued

LOCAL IDENTIFIER	DATE OF SAMPLE	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	STRONTIUM, DISSOLVED (UG/L AS SR)
DENBOW HEATH 1-2 (MINED)	81-06-03	0	22	<10	4200	32	4	120	<10	17
DENBOW HEATH 1-3 (MINED)	81-06-03	0	<3	<10	50	29	<4	2	<10	<1
DENBOW HEATH 1-4 (MINED)	81-06-03	0	4	15	83	13	4	2	10	1
DENBOW HEATH 2-2	81-06-03	3	22	<10	5200	13	4	230	<10	19
DENBOW HEATH 2-3	81-06-03	0	<3	<10	82	<10	<4	4	<10	2
DENBOW HEATH 2-4	81-06-03	1	3	10	77	11	4	2	10	1
DENBOW HEATH 6-3	81-06-03	2	18	<10	5000	13	<4	68	<10	21
DENBOW HEATH 6-4	81-06-03	1	<3	<10	180	<10	5	6	<10	2
DENBOW HEATH 10-3	81-06-03	3	20	<10	6000	12	<4	89	<10	13
DENBOW HEATH 10-4	81-06-03	1	<3	<10	240	24	<4	7	<10	2
DENBOW HEATH 12-1	81-06-04	0	9	10	1200	20	25	1300	10	140

LOCAL IDENTIFIER	DATE OF SAMPLE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
DENBOW HEATH 1-2 (MINED)	81-06-03	<6.0	22	59
DENBOW HEATH 1-3 (MINED)	81-06-03	<6.0	13	49
DENBOW HEATH 1-4 (MINED)	81-06-03	6.0	15	42
DENBOW HEATH 2-2	81-06-03	<6.0	15	30
DENBOW HEATH 2-3	81-06-03	<6.0	13	100
DENBOW HEATH 2-4	81-06-03	6.0	7	49
DENBOW HEATH 6-3	81-06-03	<6.0	9	--
DENBOW HEATH 6-4	81-06-03	<6.0	13	50
DENBOW HEATH 10-3	81-06-03	<6.0	20	59
DENBOW HEATH 10-4	81-06-03	<6.0	13	53
DENBOW HEATH 12-1	81-06-04	6.0	7	7.0

Table 13.--Chemical analyses of samples from surface-water sites at the Denbow Heath

MAP IDENTIFIER	STATION NUMBER	STATION NAME	DATE OF SAMPLE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)
CDD	444402068030200	CENTRAL DRAINAGE DITCH, DENBOW HEATH	81-06-02	1600	.09	44	3.5
PDD	444426068023500	PERIMETER DRAINAGE DITCH, DENBOW HEATH	81-06-02	1800	.01	52	3.2

MAP IDENTIFIER	STATION NUMBER	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	ALKA-LINITY LAB (MG/L AS CACO3)	ACIDITY (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
CDD	444402068030200	81-06-02	19.0	8.2	1.0	20	.6	.3	1.1	.2	1.0	1.8
PDD	444426068023500	81-06-02	16.0	6.1	1.0	30	.4	.4	2.0	1.1	1.7	3.5

MAP IDENTIFIER	STATION NUMBER	DATE OF SAMPLE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
CDD	444402068030200	81-06-02	<.1	1.0	.11	.080	.10	.45	.53	.64	<.010	200
PDD	444426068023500	81-06-02	<.1	1.7	.11	.960	1.2	1.2	2.2	2.3	.030	100

MAP IDENTIFIER	STATION NUMBER	DATE OF SAMPLE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)
CDD	444402068030200	81-06-02	1	8	<1	<1	1	3	<10	600	<10	<4
PDD	444426068023500	81-06-02	1	9	1	3	0	3	18	140	10	4

MAP IDENTIFIER	STATION NUMBER	DATE OF SAMPLE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)
CDD	444402068030200	81-06-02	230	<10	3	<6.0	22	45
PDD	444426068023500	81-06-02	11	10	3	6.0	64	--

Dissolved oxygen in the surface waters was measured with a YSI Model 51B dissolved oxygen meter which was calibrated to atmospheric oxygen saturation (Skougstad and others, 1979).

Water samples for analysis of dissolved constituents were collected and preserved after field analysis was complete. At piezometer installations, samples were brought to land surface by use of a peristaltic pump. Samples from surface-water sites were collected at a control constriction in the channel or as a composite from several stations along a cross-section of the stream. All samples were filtered through an 0.45 micron filter and preserved in accordance with Survey standards. The remaining chemical analyses were performed at the Survey's Central Laboratory in Atlanta, Georgia. All methods and procedures used comply with established guidelines in Chapter 5, National Handbook of Recommended Methods for Water-Data Acquisition (Federal Interagency Work Group, 1977).

Preliminary water-quality data were collected prior to October 1980 to establish sampling schedules and data-collection points. This data can be obtained from the U.S. Geological Survey office in Augusta, Maine.

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DEFINITIONS OF TERMS

Definition of terms related to streamflow, water quality, ground water, and other hydrologic data, as used in this report, are defined as follows:

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, about 646,000 gallons, or 2,447 cubic meters.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross-section over a long reach of the channel.

Cubic foot per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.2832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily-mean discharges during a specific period.

Instantaneous streamflow is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Drainage area of a stream at a specific location is that area, measured on a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of surface streams and bodies of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height is the water-surface elevation referred to mean sea level datum. Gage height is often used interchangeably with the general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$)

Land-surface datum is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point is a permanent reference point from which the distance to the water surface in a piezometer is measured to obtain the water level.

Micrograms per liter (UG/L,ug/L) is a unit expressing the concentration of chemical constituents in a sample as the mass (micrograms) of constituent per unit volume (liter) of sample. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L,mg/L) is a unit for expressing the concentration of chemical constituents in a sample. Milligrams per liter represents the mass of constituent per unit volume of sample. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of sediment per liter of water-sediment mixture.

Miscellaneous site - partial record station is a particular site where limited streamflow and (or) water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Observation well is a well constructed to reflect all pertinent details on lithology, water levels, and water quality.

Piezometer is a well specially designed to measure the hydraulic head within a zone small enough to be considered a point.

pH is a symbol denoting the negative logarithm (base 10) of the hydrogen ion concentration of a solution; pH values range from 0 to 14 -- the lower the value, the more acid is the solution; i.e., the more hydrogen ions it contains.

Runoff in inches (in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for estimating the dissolved-solids content of the water. Commonly, concentration of dissolved solids (in milligrams per liter) is about 65 percent of specific conductance (in micromhos per cm at 25°C). This relation is not constant from stream to stream or from well to well and it may even vary in the same source with changes in composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water per unit of time flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to flow of a canal, the word "streamflow" uniquely describes discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Surface area is that area of a given feature outlined on the latest U.S. Geological Survey topographic map and measured by a planimeter in acres. In localities not covered by topographic maps, the area is computed from the best maps available at the time planimetered.