01466500 MCDONALDS BRANCH IN BYRNE STATE FOREST, NJ

LOCATION.--Lat 39°53'06", long 74°30'19", Burlington County, Hydrologic Unit 02040202, 25 ft upstream from culvert on Butterworth Road in Byrne State Forest, 3.4 mi upstream from confluence with Cooper Branch, and 7.0 mi southeast of Browns Mills.

DRAINAGE AREA.--2.35 mi^2.

PERIOD OF RECORD.--Water years 1963-96, 1998 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1992.
pH: October 1984 to September 1992.
WATER TEMPERATURE: October 1960 to September 1992.
DISSOLVED OXYGEN: October 1984 to September 1992.

REMARKS.--The samples collected Nov. 18, Feb. 1, June 1, July 6, 13, 20, 27, Aug. 2, and 15 were collected as part of the Ambient Stream Monitoring Network; all other samples were collected as part of the U.S. Geological Survey Hydrologic Benchmark Network. Chemical analyses are from samples collected as water flows over the weir at the gaging station. All discharge record represents flow at a point 785 ft downstream of the gaging station. Discharges at the weir may be about 1 ft^3/s less than published in Water-Data Report NJ-05-1. For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses on Nov. 18, Feb. 1, June 1, July 6, 13, 20, 27, Aug. 2, and 15 were provided by the New Jersey Department of Environmental Protection. Concentrations of filtered ammonia in samples collected during November to December and August to September; orthophosphate in every sampling period except February to March; and nitrite, biochemical oxygen demand, total suspended residue, fecal coliform, E. coli, and enterococcus bacteria were determined by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. The samples collected for part of the Benchmark Network were analyzed by the USGS New York Water Science Center in Troy, New York.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
NOV													
18...	1000	1.9	.3	.283	.214	763	4.6	38	4.3	47	7.5	7.3	3
FEB													
01...	1000	2.6	.4	.330	.251	771	7.6	55	4.3	52	3.0	2.8	3
JUN													
01...	1045	2.0	.3	.378	.288	766	2.8	26	4.1	43	10.0	12.5	2
AUG													
15...	1045	1.4	.5	.278	.219	758	2.6	27	4.4	30	21.0	16.9	2

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV													
18...	.52	.524	.26	1.91	--	3.70	<.1	4.4	4.9	33	1	E.10	E.005
FEB													
01...	.52	.423	.25	1.96	--	3.37	<.1	3.7	5.2	29	--	.19	<.040
JUN													
01...	.38	.338	.19	1.87	--	3.26	<.1	2.7	4.6	33	--	.20	<.040
AUG													
15...	.35	.337	.28	1.80	<5	3.38	<.1	4.6	4.4	22	<1	.18	.036

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Aluminum, water, fltrd, ug/L (01106)	Boron, water, fltrd, ug/L (01020)
NOV													
18...	<.06	.002	<.02	<.010	<.004	E.003	<.1	<.1	<.1	6.1	<1.0	--	7.2
FEB													
01...	<.06	--	<.02	<.006	<.004	<.004	<.1	<.1	<.1	7.5	--	--	11
JUN													
01...	<.06	--	<.02	E.005	E.002	<.004	.4	<.1	.4	8.0	<1.0	160	9.1
AUG													
15...	<.06	--	<.02	E.005	<.004	E.003	<.1	<.1	<.1	4.8	<1.0	110	7.7

01466500 MCDONALDS BRANCH IN BYRNE STATE FOREST, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005—CONTINUED

Date	Iron, water, fltrd, ug/L (01046)	Suspended sediment concentration mg/L (80154)
NOV		
18...	--	--
FEB		
01...	--	<.1
JUN		
01...	225	<1
AUG		
15...	285	--

Remark codes used in this table:
< -- Less than.
E -- Estimated.

WATER-COLUMN TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Sample type	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recoverable, ug/L (01007)	Beryllium, water, unfltrd recoverable, ug/L (01012)	Boron, water, unfltrd recoverable, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recoverable, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recoverable, ug/L (01042)
FEB											
01...	*0958*	*Churn-Splitter Blank*	*<.2*	--	--	--	--	--	--	*E.3*	--
01...	*0959*	*Field Blank*	*<.2*	--	--	--	--	--	--	*E.3*	--
01...	1000	Environmental	.4	<2	10.7	E.04	9	.04	E.5	--	.6
AUG											
15...	*1044*	*Field Blank*	*<.2*	--	--	--	--	--	--	*<.4*	--
15...	1045	Environmental	.2	<2	9.6	<.06	8	E.03	<.8	--	<.6

Date	Iron, water, unfltrd recoverable, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recoverable, ug/L (01051)	Manganese, water, unfltrd recoverable, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recoverable, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recoverable, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)
FEB												
01...	--	*E.07*	--	--	*<.01*	--	*<.06*	--	--	--	*.8*	--
01...	--	*E.07*	--	--	*<.01*	--	*<.06*	--	--	--	*.9*	--
01...	190	--	1.02	11.5	--	<.01	--	.48	E.3	<.16	--	8
AUG												
15...	--	*<.08*	--	--	*<.01*	--	*<.06*	--	--	--	*<.6*	--
15...	300	--	.76	6.5	--	<.01	--	.43	.7	<.16	--	4

Remark codes used in this table:
< -- Less than.
E -- Estimated.

01466500 MCDONALDS BRANCH IN BYRNE STATE FOREST, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)
JUN													
01...	1045	<.006	<.006	<.005	<.007	<.050	<.010	<.041	<.020	<.005	<.003	<.012	<.005

Date	Diel-drin, water, fltrd, ug/L (39381)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Linuron water fltrd 0.7u GF ug/L (82666)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Sima-zine, water, fltrd, ug/L (04035)
JUN													
01...	<.009	<.029	<.013	<.024	<.016	<.035	<.006	<.006	<.007	<.022	<.01	<.004	<.005

Date	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
JUN			
01...	<.02	<.034	<.009

Remark codes used in this table:
< -- Less than.

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Time	Instan-taneous dis-charge, cfs (00061)	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL					
06...	1005	1.7	<10	<100	<20
13...	0940	1.6	20	<100	<20
20...	--	2.4	10	<100	<20
27...	0940	1.5	<10	<100	<20
AUG					
02...	0915	1.4	<10	<100	<20

Remark codes used in this table:
< -- Less than.

01466500 MCDONALDS BRANCH IN BYRNE STATE FOREST, NJ—Continued

HYDROLOGIC BENCHMARK NETWORK ANALYSES

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2005

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, water, unfltrd Gran titr., ueq/L (00409)	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, unfltrd mg/L as N (00610)
APR 2004													
02...	2035	3.3	7.0	3	.57	.39	.16	1.88	-65	3.4	1.21	5.5	.309
05...	0330	4.3	5.7	3	.62	.40	.16	1.90	-73	3.2	.951	6.0	.191
15...	1335	6.2	9.2	3	.70	.34	.14	1.68	-53	2.7	.788	4.9	.267
22...	1325	3.0	--	3	.54	.31	.14	1.75	-96	3.1	1.03	4.4	<.028
26...	1930	3.4	11.6	3	.55	.32	.10	1.72	-72	3.0	1.06	4.2	.057
26...	2330	4.3	11.7	3	.59	.33	.09	1.72	-93	2.9	1.03	4.3	.087
29...	0025	3.5	10.6	3	.58	.32	.06	1.72	-91	2.9	1.03	4.4	.140
JUL													
12...	1125	1.6	15.4	2	.48	.31	.25	1.75	-39	3.2	1.79	2.5	.049
12...	1815	3.2	16.1	3	.63	.46	.27	1.94	-71	3.1	1.67	3.5	.052
12...	2015	6.0	17.4	3	.58	.37	.33	1.68	-96	2.6	1.14	3.6	.057
12...	2140	12	18.7	3	.72	.29	.39	1.38	-113	2.2	.832	3.7	.058
12...	2200	18	19.3	4	1.16	.31	.44	1.24	-93	2.1	.701	3.8	.034
12...	2230	31	20.1	3	1.01	.23	.39	1.12	-102	2.0	.621	3.4	.067
13...	0010	37	20.1	5	1.43	.25	.36	1.12	-61	1.9	.788	3.6	.058
13...	0130	27	20.0	3	.87	.24	.32	1.14	-95	2.0	.759	3.7	.062
19...	1430	3.0	18.3	3	.71	.35	.25	1.66	-57	.9	1.49	6.6	<.028
28...	0115	6.2	19.3	2	.53	.26	.13	1.47	-101	2.7	1.32	2.0	.067
AUG													
12...	0630	2.0	16.4	3	.70	.29	.18	1.66	-39	3.6	1.93	1.8	.031
SEP													
21...	0900	1.4	13.5	2	.34	.31	.20	1.71	-9	3.5	2.12	2.2	.035
NOV													
17...	1345	2.0	7.2	3	.55	.50	.18	1.90	-35	4.2	2.01	4.4	<.028
28...	1935	2.5	14.7	2	.37	.33	.24	1.76	-31	3.7	.538	2.6	.103
29...	0235	2.4	15.7	3	.50	.38	.19	1.82	-69	4.1	1.21	2.8	.125
DEC													
14...	1000	2.3	6.8	3	.57	.43	.12	1.84	-35	4.2	1.59	4.6	<.028
FEB													
04...	1130	2.6	3.6	3	.60	.46	.25	1.91	-34	.5	1.73	4.3	<.028
MAR													
23...	1225	2.7	4.6	3	.60	.38	.21	1.88	-41	3.0	1.24	4.9	.186
29...	2110	5.4	6.6	3	.62	.34	.17	1.95	-71	2.6	.660	5.6	.289
31...	0305	3.7	6.4	3	.58	.35	.16	1.86	-46	2.7	.710	5.2	.162
APR													
03...	2105	6.0	7.4	3	.64	.35	.17	1.91	-85	2.9	.566	5.3	.175
04...	0830	4.9	6.8	3	.64	.35	.21	1.94	-79	2.9	.569	5.2	.203
06...	1225	3.3	8.3	3	.56	.34	.16	1.80	-60	2.7	.773	4.5	.233
09...	0705	6.4	9.3	3	.61	.31	.14	1.86	-92	2.7	.468	4.6	.148
09...	1725	5.3	9.8	3	.63	.32	.13	1.84	-94	2.9	.527	4.6	.112
20...	1020	2.9	10.2	3	.52	.32	.14	1.84	-55	3.1	.946	4.2	<.028
MAY													
01...	0142	3.1	--	3	.51	.32	.12	1.86	-25	3.7	.991	4.6	.366
20...	1132	2.5	--	4	1.03	.34	.19	1.82	-35	3.9	1.24	3.6	.206
20...	1532	2.9	--	3	.66	.34	.16	1.89	-40	3.4	1.22	3.1	.224
22...	2327	2.6	--	3	.51	.32	.12	1.83	-40	3.3	1.06	3.2	.234
JUN													
04...	0027	2.3	--	2	.45	.31	.16	1.81	-61	3.2	1.17	2.8	.050
06...	1000	2.0	14.1	3	.56	.36	.18	1.81	-23	3.9	1.26	3.4	<.028
JUL													
02...	0358	2.6	17.1	3	.57	.38	.20	1.79	-43	3.5	1.30	2.6	.121
08...	0713	1.8	16.0	2	.42	.32	.22	1.63	-25	3.3	1.56	2.2	.128
13...	1328	1.6	16.5	3	.48	.33	.28	1.54	-28	3.1	1.48	2.6	.124
19...	1238	2.3	19.1	2	.40	.31	.17	1.71	-53	3.5	1.33	1.7	.115
AUG													
11...	0800	1.4	16.1	3	.47	.38	.22	1.72	4	3.4	1.98	2.7	.068

01466500 MCDONALDS BRANCH IN BYRNE STATE FOREST, NJ—Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2005--CONTINUED

Date	Organic carbon, water, fltrd, mg/L (00681)	Alum-inum, water, fltrd, ug/L (01106)	Organic mono-meric alum-inum, wat unf ug/L (49288)
APR 2004			
02...	14.1	354	<40
05...	14.7	421	115
15...	19.2	478	156
22...	14.5	375	<40
26...	18.5	348	127
26...	21.2	376	138
29...	20.3	429	135
JUL			
12...	6.1	101	<40
12...	15.8	267	97
12...	21.5	267	134
12...	23.9	278	134
12...	23.2	369	160
12...	23.4	295	141
13...	22.5	428	171
13...	22.0	423	172
19...	19.1	422	175
28...	23.2	399	195
AUG			
12...	13.2	420	133
SEP			
21...	4.9	122	46
NOV			
17...	6.8	156	58
28...	6.6	80	<40
29...	16.1	215	102
DEC			
14...	9.9	261	89
FEB			
04...	6.0	152	45
MAR			
23...	9.4	205	70
29...	18.4	282	119
31...	12.9	260	108
APR			
03...	16.3	316	128
04...	14.1	301	130
06...	15.8	270	111
09...	16.5	328	154
09...	17.0	324	138
20...	9.5	239	101
MAY			
01...	23.1	236	108
20...	15.4	351	87
20...	17.5	290	109
22...	16.0	237	98
JUN			
04...	10.9	207	98
06...	8.5	177	80
JUL			
02...	19.7	270	120
08...	12.7	151	60
13...	9.9	122	46
19...	19.2	271	114
AUG			
11...	4.2	97	<40

Remark codes used in this table:
< -- Less than.