

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC

Roanoke Basin
Lower Roanoke Subbasin

LOCATION.--Lat 35°54'54", long 76°43'22" referenced to North American Datum of 1983, Washington County, NC, Hydrologic Unit 03010107, elevation gage on right bank 10 ft upstream from North Carolina Highway 45 bridge. Water-quality monitor located near center of river on south bridge fender of shipping channel, 10 ft upstream from North Carolina Highway 45 bridge, approximately 1.6 mi upstream from mouth, and 2.7 mi northwest of Westover.

DRAINAGE AREA.--9,660 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1990 to September 1993. August 1996 to current year. Records from August 1996 to September 1997 are unpublished and available from the USGS Water Science Center, Raleigh, NC.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Satellite telemetry at streamgage.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6.49 ft, August 27, 2011; minimum elevation, -1.20 ft, September 1, 1993.

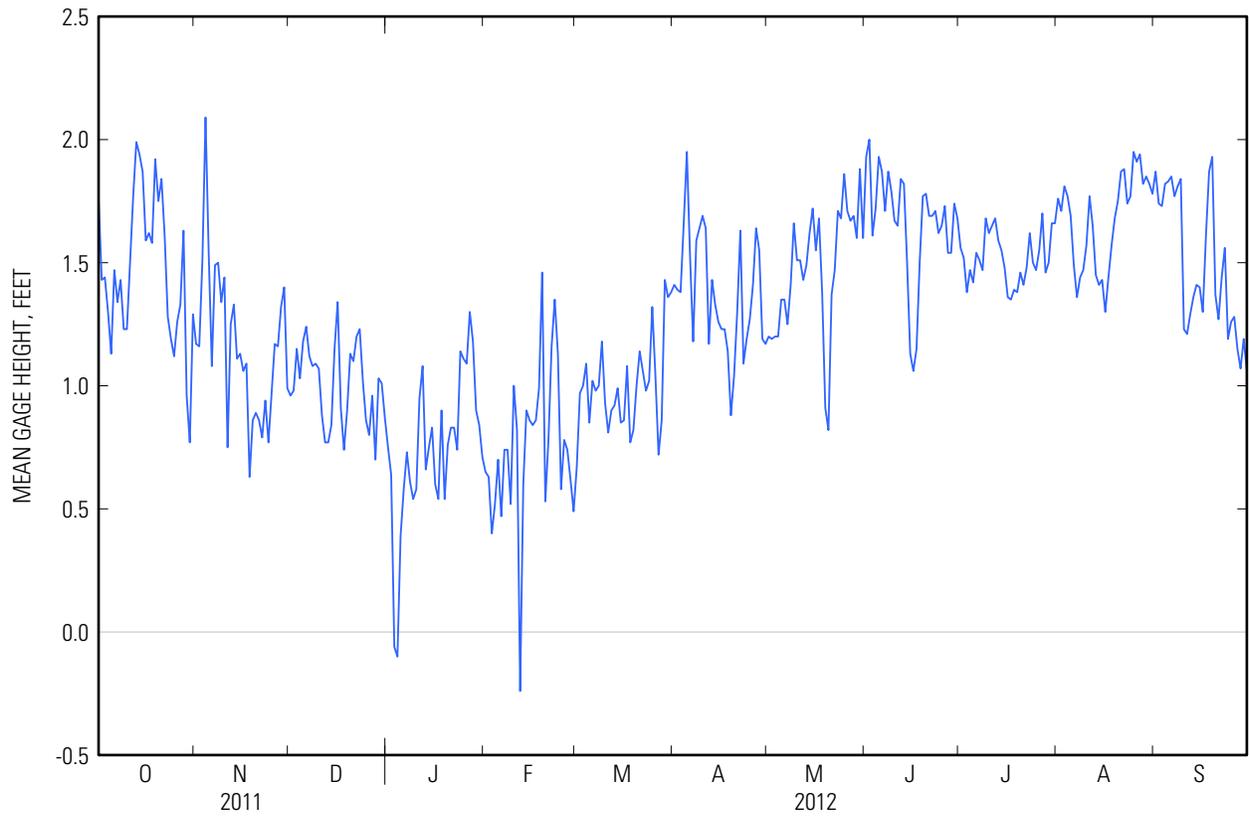
EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.50 ft, April 5; minimum elevation, -0.68 ft, February 12.

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GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.76	1.17	0.96	0.75	0.65	0.67	1.41	1.20	1.93	1.56	1.76	1.87
2	1.43	1.16	0.98	0.64	0.63	0.97	1.39	1.19	2.00	1.52	1.71	1.74
3	1.44	1.51	1.15	-0.06	0.40	1.00	1.38	1.20	1.61	1.38	1.81	1.73
4	1.30	2.09	1.03	-0.10	0.52	1.09	1.66	1.20	1.72	1.47	1.77	1.82
5	1.13	1.54	1.18	0.39	0.70	0.85	1.95	1.35	1.93	1.42	1.69	1.83
6	1.47	1.08	1.24	0.58	0.47	1.02	1.53	1.35	1.87	1.54	1.49	1.85
7	1.34	1.49	1.12	0.73	0.74	0.98	1.18	1.25	1.71	1.51	1.36	1.77
8	1.43	1.50	1.08	0.61	0.74	1.00	1.59	1.41	1.87	1.47	1.44	1.81
9	1.23	1.34	1.09	0.54	0.52	1.18	1.64	1.66	1.79	1.68	1.47	1.84
10	1.23	1.44	1.07	0.58	1.00	0.93	1.69	1.51	1.67	1.62	1.57	1.23
11	1.50	0.75	0.88	0.95	0.82	0.81	1.64	1.51	1.65	1.65	1.77	1.21
12	1.77	1.25	0.77	1.08	-0.24	0.90	1.17	1.43	1.84	1.68	1.65	1.29
13	1.99	1.33	0.77	0.66	0.60	0.92	1.43	1.49	1.82	1.59	1.45	1.36
14	1.94	1.11	0.84	0.75	0.90	0.99	1.33	1.62	1.50	1.55	1.41	1.41
15	1.87	1.13	1.15	0.83	0.86	0.85	1.26	1.72	1.13	1.48	1.43	1.40
16	1.59	1.06	1.34	0.60	0.84	0.86	1.23	1.55	1.06	1.36	1.30	1.30
17	1.62	1.09	0.91	0.54	0.86	1.08	1.23	1.68	1.15	1.35	1.44	1.61
18	1.58	0.63	0.74	0.90	0.99	0.77	1.14	1.38	1.50	1.39	1.57	1.87
19	1.92	0.86	0.90	0.54	1.46	0.82	0.88	0.91	1.77	1.38	1.68	1.93
20	1.75	0.89	1.13	0.76	0.53	1.00	1.04	0.82	1.78	1.46	1.75	1.37
21	1.84	0.86	1.10	0.83	0.78	1.14	1.30	1.37	1.69	1.41	1.87	1.27
22	1.61	0.79	1.20	0.83	1.16	1.06	1.63	1.47	1.69	1.48	1.88	1.44
23	1.28	0.94	1.23	0.74	1.35	0.98	1.09	1.71	1.71	1.62	1.74	1.56
24	1.19	0.77	1.02	1.14	1.13	1.02	1.19	1.68	1.62	1.50	1.77	1.19
25	1.12	0.97	0.86	1.11	0.58	1.32	1.27	1.86	1.65	1.47	1.95	1.26
26	1.26	1.17	0.80	1.09	0.78	1.04	1.41	1.71	1.73	1.55	1.91	1.28
27	1.33	1.16	0.96	1.30	0.74	0.72	1.64	1.67	1.54	1.70	1.94	1.15
28	1.63	1.32	0.70	1.18	0.62	0.86	1.55	1.69	1.54	1.46	1.82	1.07
29	0.96	1.40	1.03	0.90	0.49	1.43	1.19	1.60	1.74	1.50	1.85	1.19
30	0.77	0.99	1.01	0.84	---	1.36	1.17	1.88	1.68	1.66	1.82	1.06
31	1.29	---	0.87	0.71	---	1.38	---	1.60	---	1.66	1.78	---
Total	45.57	34.79	31.11	22.94	21.62	31.00	41.21	45.67	49.89	47.07	51.85	44.71
Mean	1.47	1.16	1.00	0.74	0.75	1.00	1.37	1.47	1.66	1.52	1.67	1.49
Max	1.99	2.09	1.34	1.30	1.46	1.43	1.95	1.88	2.00	1.70	1.95	1.93
Min	0.77	0.63	0.70	-0.10	-0.24	0.67	0.88	0.82	1.06	1.35	1.30	1.06

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued



0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (TOP): May 2000 to current year.

SPECIFIC CONDUCTANCE (BOTTOM): November 1997 to current year

pH (TOP): May 2000 to current year.

pH (BOTTOM): November 1997 to current year.

WATER TEMPERATURE (TOP): May 2000 to current year.

WATER TEMPERATURE (BOTTOM): November 1997 to current year.

DISSOLVED OXYGEN (TOP): May 2000 to current year.

DISSOLVED OXYGEN (BOTTOM): November 1997 to current year.

DISSOLVED OXYGEN, PERCENT SATURATION (TOP): May 2000 to current year.

DISSOLVED OXYGEN, PERCENT SATURATION (BOTTOM): November 1997 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry from March 1998 to current year.

REMARKS.--Station operated to define water-quality characteristics in the Roanoke River Basin below Roanoke Rapids Dam. Top constituents were monitored at approximately 18 ft above the streambed and bottom constituents, 2 ft above the streambed. Dissolved oxygen, percent saturation is computed using a barometric pressure of 760 mm Hg beginning October 1, 2000. Water-quality measurements and samples for water years 2006 to 2008 were collected by the U.S. Geological Survey and the North Carolina Department of Environment and Natural Resources, Division of Water Quality. Water-quality measurements and samples for water year 2012 were collected to define water quality in the Albemarle Sound as part of the National Monitoring Network for U.S. Coastal Waters and their Tributaries.

COOPERATION.--Station operated in cooperation with North Carolina Department of Environment and Natural Resources (NCDENR), Division of Water Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (TOP): Maximum recorded, 10,500 microsiemens, July 12, 2012; minimum recorded, 66 microsiemens, June 19, 2006.

SPECIFIC CONDUCTANCE (BOTTOM): Maximum recorded, 11,700 February 2, 2002; minimum recorded, 48 microsiemens, September 21, 1999.

pH (TOP): Maximum recorded, 8.5 standard units, July 8, 2010; minimum recorded, 5.8 standard units, October 3, 4, 5, 6, 7, 2010.

pH (BOTTOM): Maximum recorded, 7.9 standard units, November 11, 12, 2009; minimum recorded, 5.7 standard units, October 4, 2010.

WATER TEMPERATURE (TOP): Maximum recorded, 33.4°C, July 26, 2010; minimum recorded, 2.0°C, January 11, 12, 2010

WATER TEMPERATURE (BOTTOM): Maximum recorded, 32.0°C, July 25, 26, 2010; minimum recorded, 2.0°C, January 11, 12, 2010.

DISSOLVED OXYGEN (TOP): Maximum recorded, 13.0 mg/L, February 3, 2008; minimum recorded, <1.0 mg/L, on many days during the period.

DISSOLVED OXYGEN (BOTTOM): Maximum recorded, 14.0 mg/L, January 6, 7, 2001, January 11, 2002; minimum recorded, <1.0 mg/L, on many days during the period.

DISSOLVED OXYGEN, PERCENT SATURATION (TOP): Maximum recorded, 148%, August 24, 2011; minimum recorded, <10%, on many days during the period.

DISSOLVED OXYGEN, PERCENT SATURATION (BOTTOM): Maximum recorded, 123%, September 15, 2005; minimum recorded, <10%, on many days during the period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE (TOP): Maximum recorded, 10,500 microsiemens, July 21; minimum recorded, 99 microsiemens, August 31.

SPECIFIC CONDUCTANCE (BOTTOM): Maximum recorded, 11,100 microsiemens, July 21; minimum recorded, 101 microsiemens, August 31.

pH (TOP): Maximum recorded, 8.3 standard units, June 30; minimum recorded, 6.6 standard units, on several days during the year.

pH (BOTTOM): Maximum recorded, 7.6 standard units, May 10; minimum recorded, 6.6 standard units, on several days during the year.

WATER TEMPERATURE (TOP): Maximum recorded, 32.2°C, July 7; minimum recorded, 7.4°C, February 13.

WATER TEMPERATURE (BOTTOM): Maximum recorded, 30.5°C, July 30; minimum recorded, 7.2°C, February 13.

DISSOLVED OXYGEN (TOP): Maximum recorded, 11.2 mg/L, February 18; minimum recorded, <1 mg/L, July 9, 20, 21.

DISSOLVED OXYGEN (BOTTOM): Maximum recorded, 11.2 mg/L, February 20; minimum recorded, <1 mg/L, on many days during the year.

DISSOLVED OXYGEN, PERCENT SATURATION (TOP): Maximum recorded, 138%, June 30; minimum recorded, <10%, on many days during the year.

DISSOLVED OXYGEN, PERCENT SATURATION (BOTTOM): Maximum recorded, 98%, February 24; minimum recorded, <10%, on many days during the year.

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SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	173	139	144	234	180	195	166	138	151	156	138	143
2	142	131	136	209	174	190	157	141	147	160	147	153
3	175	135	159	210	174	193	150	134	139	152	137	143
4	192	123	150	218	178	188	142	134	139	149	131	139
5	172	147	164	253	164	200	158	139	144	155	135	143
6	176	132	159	200	156	168	161	134	143	152	128	137
7	184	132	156	226	176	196	151	137	145	141	133	136
8	184	136	161	227	178	206	168	130	141	149	133	139
9	193	140	159	200	168	184	157	138	146	152	145	149
10	188	157	175	187	160	173	143	131	135	150	143	147
11	199	137	176	208	169	190	153	133	139	151	135	141
12	199	122	174	176	166	170	154	144	149	152	140	145
13	198	144	172	201	167	179	153	144	148	150	135	140
14	194	143	166	198	162	178	153	140	149	159	129	137
15	194	145	167	194	176	185	152	134	142	159	129	143
16	190	161	169	349	176	209	147	133	138	151	133	141
17	165	144	151	1,940	198	506	144	129	132	145	128	137
18	207	162	176	247	152	207	141	131	138	162	129	138
19	935	184	334	210	158	181	145	130	138	149	129	137
20	1,080	201	377	202	183	195	141	128	134	155	123	137
21	1,210	195	451	209	175	189	141	129	133	141	130	133
22	236	166	211	211	185	195	143	129	136	150	132	138
23	179	147	166	189	159	172	152	131	137	149	141	144
24	204	159	180	167	152	158	137	129	133	149	141	145
25	202	179	195	166	151	155	148	132	138	148	141	144
26	190	181	185	157	141	147	165	145	151	148	138	142
27	201	186	192	158	139	147	171	138	144	147	139	142
28	609	191	264	180	140	152	171	136	148	152	137	141
29	258	157	210	162	136	148	177	135	149	144	129	137
30	193	157	162	178	136	149	166	139	148	136	128	132
31	192	155	183	---	---	---	157	139	145	145	125	138
Month	1,210	122	194	1,940	136	190	177	128	142	162	123	141

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	148	125	138	178	158	169	192	125	129	152	134	142
2	146	132	140	240	146	185	135	119	126	156	132	140
3	153	139	146	189	158	166	122	119	121	180	129	152
4	148	140	144	201	155	180	129	119	123	153	135	143
5	154	140	146	204	146	164	161	117	122	155	141	149
6	156	143	148	205	136	154	124	117	119	160	136	147
7	174	148	163	168	138	153	118	116	117	164	126	137
8	192	154	165	164	147	155	125	117	119	163	138	147
9	181	157	167	175	143	155	129	117	120	164	143	153
10	185	161	173	208	145	168	145	118	122	172	134	149
11	196	139	172	173	149	159	144	120	124	174	150	156
12	156	136	145	165	137	150	130	121	125	161	147	154
13	192	134	141	163	135	147	135	123	128	170	143	156
14	226	192	211	160	129	141	131	124	126	156	139	145
15	223	179	193	169	142	149	132	126	128	159	134	144
16	190	174	184	160	143	151	142	128	134	158	129	141
17	197	157	173	173	151	160	150	131	139	151	123	140
18	174	149	159	165	143	149	155	131	141	172	129	143
19	171	132	151	157	144	152	155	133	141	157	131	136
20	208	144	154	157	146	152	158	136	143	143	132	136
21	178	147	162	155	145	149	151	134	142	164	136	148
22	173	150	163	151	144	148	167	130	144	158	126	141
23	163	138	150	149	142	145	152	131	140	157	132	143
24	153	136	145	155	142	148	160	136	145	174	130	146
25	197	138	166	155	141	146	160	133	145	170	130	141
26	222	147	166	156	137	142	152	135	143	166	130	144
27	212	147	170	170	140	145	191	134	146	153	142	147
28	175	139	166	148	138	141	175	128	139	149	135	140
29	200	148	170	150	131	138	154	132	141	171	147	157
30	---	---	---	158	130	133	161	146	152	195	140	152
31	---	---	---	132	128	129	---	---	---	210	134	146
Month	226	125	161	240	128	152	192	116	133	210	123	146

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	157	141	148	202	162	186	2,550	190	672	120	105	112
2	160	133	145	205	160	179	377	198	244	129	107	115
3	149	129	139	205	169	188	4,340	189	1,420	149	124	130
4	162	140	147	1,800	166	327	4,250	189	957	155	126	139
5	168	134	148	4,140	177	1,100	3,080	189	552	177	136	151
6	174	121	134	4,830	196	1,480	5,000	213	1,240	631	142	196
7	182	125	139	3,550	191	808	3,960	223	898	213	123	142
8	154	130	140	5,600	208	2,050	1,540	223	463	157	117	125
9	149	119	137	7,420	364	3,420	4,900	212	664	291	121	149
10	142	123	131	4,210	254	837	5,060	216	1,520	147	139	143
11	159	136	150	3,010	368	657	4,690	437	1,490	158	145	152
12	165	141	153	629	171	407	1,060	306	438	157	138	148
13	181	154	165	208	159	181	516	226	339	164	135	145
14	184	133	147	183	141	164	417	177	233	159	130	143
15	247	125	157	175	143	152	502	174	265	153	132	144
16	176	138	158	3,840	153	1,310	337	167	239	152	137	143
17	168	141	151	4,150	243	1,440	1,860	161	284	174	143	152
18	176	143	166	3,940	243	836	321	138	195	187	171	177
19	182	164	175	994	394	552	223	132	155	233	176	194
20	206	170	183	10,200	472	3,850	183	132	160	201	132	145
21	206	145	170	10,500	489	2,990	811	144	220	154	137	142
22	170	150	162	2,580	374	1,050	190	151	172	162	153	157
23	170	148	160	5,150	342	1,880	179	138	159	173	148	155
24	162	142	149	3,680	505	1,070	171	146	161	197	159	180
25	184	152	173	1,380	321	753	183	123	157	189	163	173
26	235	171	189	3,790	250	828	202	138	160	196	159	182
27	234	170	189	4,600	279	1,280	150	129	140	171	158	165
28	190	158	173	4,320	188	377	145	128	135	170	157	163
29	186	162	178	1,490	225	458	139	113	125	191	157	171
30	313	141	186	1,690	167	296	118	101	107	191	164	178
31	---	---	---	283	180	212	117	99	108	---	---	---
Month	313	119	158	10,500	141	1,010	5,060	99	454	631	105	154

	Max	Min	Mean
Year	10,500	99	254

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	169	138	144	231	176	193	168	138	152	154	137	142
2	142	131	136	206	173	188	158	141	148	158	145	151
3	175	134	159	209	173	195	151	133	140	151	135	141
4	195	126	152	223	166	189	142	134	140	148	130	138
5	172	147	163	262	165	202	160	140	145	153	134	142
6	181	152	164	207	156	169	161	134	144	151	127	135
7	190	135	162	229	177	197	151	138	145	140	132	135
8	191	141	169	230	177	209	169	131	142	148	132	138
9	199	140	164	204	169	187	157	139	147	151	144	147
10	193	166	181	188	161	175	144	132	136	149	142	146
11	206	174	192	209	172	190	154	133	139	150	133	140
12	208	156	188	176	166	171	155	136	150	153	140	145
13	204	155	184	201	167	179	153	145	148	150	136	141
14	199	149	171	198	163	176	153	140	149	160	130	137
15	195	148	166	652	178	218	151	134	142	159	130	143
16	191	159	170	2,730	179	1,020	147	132	138	151	133	142
17	164	146	150	3,720	199	1,640	144	129	131	146	128	138
18	687	157	255	248	156	210	140	130	138	163	129	139
19	1,120	207	728	213	161	184	145	130	138	149	130	138
20	1,460	205	699	212	186	199	140	128	133	155	122	138
21	1,400	230	736	1,510	176	542	140	128	133	142	130	133
22	653	167	253	2,260	188	454	142	129	135	152	132	138
23	184	141	170	377	159	182	152	130	137	149	141	145
24	205	149	179	168	154	160	137	129	132	149	141	145
25	204	181	195	166	153	157	147	131	137	148	141	145
26	190	181	186	158	141	148	166	144	151	149	138	143
27	201	187	192	174	140	147	170	137	143	148	140	143
28	611	190	271	183	141	153	169	135	147	152	138	142
29	256	153	207	163	136	149	176	133	148	145	129	138
30	191	156	162	178	137	150	166	138	147	138	128	133
31	190	162	182	---	---	---	155	138	144	145	125	138
Month	1,460	126	233	3,720	136	278	176	128	142	163	122	141

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	149	126	139	180	156	171	194	125	129	152	134	141
2	146	132	140	244	167	190	137	119	126	158	133	141
3	155	139	146	191	158	166	122	118	120	184	135	153
4	148	140	145	198	155	179	128	119	123	163	137	146
5	155	141	147	205	147	164	166	117	122	159	143	153
6	155	144	148	203	137	156	125	117	120	163	137	148
7	176	149	163	167	137	152	118	117	117	166	126	138
8	191	154	165	164	146	155	125	117	120	166	139	148
9	181	157	167	176	142	154	129	118	121	165	144	154
10	186	162	174	211	146	168	147	117	122	174	134	149
11	198	139	173	173	149	159	145	120	124	176	150	157
12	157	136	145	166	137	150	132	121	126	163	148	155
13	191	135	141	164	136	148	136	124	128	169	145	157
14	227	191	212	161	131	142	131	124	127	158	140	147
15	223	182	194	174	142	150	132	126	129	160	136	145
16	193	175	185	160	142	152	143	128	135	160	130	143
17	198	157	174	173	153	161	152	131	140	153	125	142
18	176	149	160	164	143	150	155	131	141	174	130	143
19	173	133	152	157	144	152	155	134	142	157	132	137
20	208	144	155	160	149	156	174	133	144	143	132	137
21	176	147	162	155	147	152	155	134	142	167	135	149
22	174	150	164	153	144	148	172	132	145	156	127	140
23	164	139	152	149	141	144	153	131	140	162	132	144
24	153	135	146	155	142	149	159	137	145	177	129	147
25	197	139	167	155	141	146	159	133	146	175	134	143
26	225	147	165	155	136	141	156	135	144	174	132	145
27	214	147	170	167	140	145	190	133	147	157	144	149
28	177	147	168	148	138	141	176	133	139	155	137	143
29	200	149	171	151	131	137	155	130	140	176	140	160
30	---	---	---	158	129	133	161	145	152	204	141	154
31	---	---	---	132	127	129	---	---	---	211	134	146
Month	227	126	162	244	127	153	194	117	133	211	125	147

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	157	144	149	211	167	195	3,780	1,430	3,370	3,190	118	1,770
2	162	133	146	200	166	180	4,380	3,380	3,720	130	109	116
3	152	130	141	786	188	260	4,580	4,240	4,490	148	124	130
4	162	140	147	3,750	620	2,290	4,560	3,450	4,400	158	126	139
5	170	134	149	4,950	3,410	4,360	5,000	4,390	4,770	969	134	235
6	167	120	135	5,610	4,620	5,140	5,420	4,750	5,070	1,250	146	387
7	184	125	140	5,700	5,190	5,450	5,210	1,750	4,920	1,010	120	184
8	153	130	140	6,400	5,220	5,570	5,270	1,190	4,470	915	117	136
9	151	119	138	8,970	5,990	7,320	5,370	4,740	5,240	2,020	123	701
10	143	120	131	8,750	3,280	7,760	5,370	5,110	5,300	148	140	144
11	158	133	149	7,350	569	3,920	5,230	5,000	5,120	158	146	153
12	164	142	152	671	180	406	5,150	773	3,760	157	139	148
13	183	153	165	216	165	185	4,960	408	2,000	165	131	147
14	199	133	147	182	141	166	5,230	4,860	5,150	158	126	144
15	244	126	157	2,880	145	474	5,320	5,210	5,280	153	130	144
16	176	139	159	4,140	2,880	3,600	5,290	1,390	4,890	151	137	143
17	167	142	152	4,130	4,050	4,100	5,260	2,610	4,950	165	143	150
18	174	152	163	4,170	4,090	4,150	4,840	180	4,290	187	164	178
19	182	167	175	7,760	4,150	5,500	513	134	229	230	178	195
20	205	179	188	10,800	7,750	9,150	194	134	165	204	133	147
21	206	159	185	11,100	8,970	10,700	2,520	146	561	152	138	143
22	170	159	166	10,700	8,690	10,000	2,070	157	332	166	150	159
23	172	150	162	10,100	6,400	8,850	182	140	163	174	149	157
24	162	140	149	8,340	927	6,600	174	148	164	198	165	181
25	185	152	175	4,780	641	2,290	189	125	161	185	165	172
26	239	173	190	4,200	368	2,270	208	141	167	198	167	186
27	232	171	190	4,930	4,050	4,330	154	132	144	173	159	167
28	184	162	170	4,960	2,000	4,220	149	131	139	173	158	166
29	185	164	180	4,670	717	3,320	144	117	129	193	158	172
30	396	166	210	3,880	244	2,600	122	103	110	196	162	180
31	---	---	---	3,040	217	2,050	1,210	101	143	---	---	---
Month	396	119	160	11,100	141	4,110	5,420	101	2,700	3,190	109	239

	Max	Min	Mean
Year	11,100	101	725

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	6.8	6.7	6.7	7.2	7.0	7.1	7.3	7.3	7.3	7.4	7.3	7.4
2	6.7	6.6	6.6	7.2	7.1	7.1	7.3	7.2	7.2	7.5	7.4	7.4
3	6.7	6.6	6.7	7.3	7.0	7.2	7.3	7.2	7.2	7.4	7.3	7.4
4	6.8	6.6	6.7	7.3	7.2	7.3	7.3	7.3	7.3	7.4	7.4	7.4
5	6.8	6.7	6.7	7.4	7.2	7.3	7.3	7.3	7.3	7.5	7.4	7.4
6	6.8	6.7	6.8	7.3	7.2	7.2	7.3	7.2	7.2	7.6	7.5	7.5
7	6.8	6.6	6.7	7.3	7.2	7.2	7.3	7.2	7.2	7.5	7.5	7.5
8	6.8	6.7	6.8	7.2	7.2	7.2	7.5	7.2	7.3	7.5	7.5	7.5
9	6.8	6.7	6.8	7.2	7.1	7.2	7.4	7.3	7.4	7.5	7.5	7.5
10	6.8	6.8	6.8	7.2	7.1	7.1	7.4	7.3	7.3	7.5	7.4	7.4
11	6.9	6.8	6.8	7.2	7.2	7.2	7.4	7.4	7.4	7.5	7.4	7.4
12	6.9	6.7	6.8	7.2	7.2	7.2	7.4	7.4	7.4	---	---	---
13	6.9	6.8	6.9	7.2	7.2	7.2	7.4	7.4	7.4	7.4	7.3	7.4
14	7.0	6.8	6.9	7.2	7.1	7.2	7.4	7.4	7.4	7.5	7.3	7.3
15	7.1	6.9	7.0	7.2	7.2	7.2	7.5	7.4	7.4	7.4	7.3	7.4
16	7.1	7.0	7.0	7.2	7.2	7.2	7.4	7.4	7.4	7.4	7.3	7.3
17	7.1	7.1	7.1	7.3	7.1	7.2	7.4	7.3	7.4	7.4	7.3	7.3
18	7.2	7.0	7.1	7.3	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.3
19	7.2	7.0	7.1	7.3	7.2	7.2	7.3	7.2	7.3	7.4	7.3	7.3
20	7.3	7.1	7.2	7.3	7.1	7.2	7.2	7.1	7.2	7.3	7.3	7.3
21	7.3	7.1	7.2	7.2	7.1	7.2	7.1	7.1	7.1	7.3	7.3	7.3
22	7.2	7.1	7.2	7.2	7.0	7.2	7.1	7.0	7.1	7.3	7.3	7.3
23	7.2	7.1	7.1	7.2	7.1	7.2	7.1	7.1	7.1	7.3	7.3	7.3
24	7.2	7.1	7.1	7.3	7.2	7.2	7.1	7.1	7.1	7.3	7.3	7.3
25	7.1	7.0	7.1	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.3	7.3
26	7.1	7.0	7.1	7.3	7.2	7.2	7.2	7.1	7.2	7.3	7.3	7.3
27	7.2	7.1	7.1	7.3	7.2	7.3	7.2	7.1	7.1	7.3	7.3	7.3
28	7.2	7.1	7.2	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.2	7.3
29	7.2	7.0	7.1	7.2	7.2	7.2	7.1	7.0	7.1	7.3	7.2	7.3
30	7.1	6.9	7.0	7.3	7.2	7.2	7.3	7.1	7.2	7.3	7.2	7.3
31	7.1	7.0	7.1	---	---	---	7.3	7.2	7.3	7.3	7.2	7.2
Max	7.3	7.1	7.2	7.4	7.2	7.3	7.5	7.4	7.4	---	---	---
Min	6.7	6.6	6.6	7.2	7.0	7.1	7.1	7.0	7.1	---	---	---

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	7.2	7.1	7.2	7.2	7.1	7.2	7.2	7.0	7.1	7.1	7.0	7.1
2	7.3	7.1	7.1	7.3	7.1	7.2	7.2	7.0	7.1	7.2	7.0	7.1
3	7.2	7.1	7.2	7.2	7.2	7.2	7.0	6.9	7.0	7.2	7.1	7.1
4	7.2	7.2	7.2	7.2	7.1	7.2	7.0	6.9	6.9	7.2	7.1	7.1
5	7.2	7.2	7.2	7.2	7.0	7.1	7.1	6.9	6.9	7.2	7.1	7.1
6	7.2	7.1	7.2	7.2	7.0	7.0	6.9	6.8	6.9	7.2	7.1	7.2
7	7.2	7.2	7.2	7.1	6.9	7.0	6.8	6.8	6.8	7.5	7.1	7.1
8	7.2	7.1	7.2	7.1	7.0	7.0	6.8	6.8	6.8	7.4	7.2	7.2
9	7.2	7.1	7.2	7.1	7.0	7.1	6.8	6.8	6.8	7.4	7.2	7.3
10	7.2	7.2	7.2	7.1	7.0	7.0	6.9	6.8	6.8	7.4	7.3	7.3
11	7.2	7.1	7.2	7.1	6.9	7.0	6.9	6.8	6.8	7.3	7.2	7.3
12	7.2	7.1	7.2	7.0	6.9	7.0	6.9	6.8	6.9	7.2	7.2	7.2
13	7.3	7.1	7.2	7.0	7.0	7.0	6.9	6.9	6.9	7.3	7.2	7.2
14	7.3	7.2	7.3	7.0	6.9	7.0	7.0	6.9	6.9	7.2	7.2	7.2
15	7.4	7.2	7.2	7.1	7.0	7.0	7.0	6.9	7.0	7.2	7.1	7.1
16	7.3	7.2	7.2	7.1	7.0	7.0	7.0	7.0	7.0	7.1	7.1	7.1
17	7.3	7.2	7.2	7.2	7.0	7.1	7.0	7.0	7.0	7.2	7.0	7.1
18	7.2	7.2	7.2	7.1	7.0	7.1	7.2	7.0	7.0	7.2	7.1	7.2
19	7.3	7.2	7.2	7.3	7.0	7.1	7.1	7.0	7.0	7.3	7.1	7.2
20	7.3	7.2	7.2	7.5	7.0	7.1	7.1	7.0	7.0	7.2	7.1	7.2
21	7.3	7.2	7.2	7.2	7.0	7.1	7.1	7.0	7.0	7.2	7.1	7.2
22	7.3	7.2	7.2	7.1	7.0	7.0	7.2	7.0	7.1	7.2	7.1	7.2
23	7.2	7.1	7.2	7.1	7.0	7.0	7.1	7.0	7.1	7.2	7.0	7.2
24	7.3	7.1	7.2	7.0	7.0	7.0	7.2	7.0	7.1	7.2	7.1	7.2
25	7.3	7.2	7.2	7.1	6.9	7.0	7.2	7.1	7.1	7.2	7.1	7.1
26	7.5	7.2	7.3	7.1	7.0	7.0	7.2	7.1	7.1	7.3	7.1	7.2
27	7.3	7.1	7.2	7.1	7.0	7.0	7.2	7.0	7.1	7.2	7.1	7.1
28	7.2	7.1	7.1	7.1	7.0	7.0	7.2	7.0	7.0	7.2	7.1	7.1
29	7.2	7.1	7.2	7.1	7.0	7.0	7.2	7.0	7.0	7.1	7.1	7.1
30	---	---	---	7.1	7.0	7.0	7.2	7.0	7.1	7.2	7.0	7.1
31	---	---	---	7.1	7.1	7.1	---	---	---	7.2	6.8	6.9
Max	7.5	7.2	7.3	7.5	7.2	7.2	7.2	7.1	7.1	7.5	7.3	7.3
Min	7.2	7.1	7.1	7.0	6.9	7.0	6.8	6.8	6.8	7.1	6.8	6.9

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	7.0	6.8	6.9	7.6	7.3	7.3	7.1	6.7	6.9	6.9	6.8	6.8
2	7.0	6.9	6.9	7.5	7.3	7.4	7.4	7.0	7.3	7.1	6.9	6.9
3	7.0	7.0	7.0	7.6	7.3	7.4	7.4	6.8	7.2	7.2	6.9	7.0
4	7.0	6.9	7.0	7.6	6.9	7.4	7.3	6.9	7.2	7.2	7.0	7.1
5	7.1	6.9	7.0	7.7	6.8	7.4	7.4	6.9	7.2	7.3	7.0	7.2
6	7.1	7.0	7.0	7.7	6.9	7.4	7.5	6.9	7.2	7.3	7.0	7.1
7	7.1	6.8	6.9	7.9	7.0	7.5	7.4	6.9	7.2	7.1	6.9	6.9
8	7.1	6.8	6.9	7.8	6.9	7.2	7.3	7.1	7.2	7.0	6.9	6.9
9	7.0	6.8	6.9	7.7	6.9	7.2	7.4	7.0	7.3	7.1	6.9	7.0
10	7.0	6.9	7.0	7.5	7.0	7.4	7.3	7.0	7.2	7.1	7.0	7.0
11	7.1	7.0	7.0	7.4	7.1	7.3	7.3	7.0	7.2	7.2	7.0	7.0
12	7.1	7.0	7.0	7.3	7.1	7.2	7.3	7.1	7.2	7.2	7.0	7.1
13	7.2	6.9	7.1	7.3	7.1	7.2	7.2	7.1	7.2	7.2	7.0	7.1
14	7.2	6.9	7.1	7.3	7.1	7.2	7.3	7.1	7.1	7.2	7.0	7.1
15	7.2	7.0	7.1	7.3	7.0	7.1	7.3	6.8	7.1	7.2	7.0	7.1
16	7.2	7.1	7.1	7.2	6.6	7.0	7.2	7.0	7.1	7.2	7.1	7.1
17	7.3	7.0	7.1	7.4	6.7	7.1	7.4	6.8	7.1	7.2	7.0	7.1
18	7.1	7.0	7.1	7.4	6.7	7.2	7.3	7.0	7.2	7.2	7.1	7.2
19	7.5	6.9	7.1	7.3	7.0	7.2	7.2	6.9	7.1	7.3	7.2	7.2
20	7.4	7.1	7.2	7.3	6.7	7.0	7.3	6.9	7.1	7.3	7.1	7.1
21	7.6	7.2	7.2	7.3	6.7	7.1	7.3	7.0	7.2	7.4	7.1	7.1
22	7.5	7.2	7.2	7.3	6.9	7.1	7.3	7.1	7.2	7.2	7.1	7.2
23	7.3	7.2	7.2	7.2	6.8	7.0	7.3	7.1	7.2	7.4	7.2	7.2
24	7.4	7.1	7.2	7.2	6.8	7.0	7.3	7.0	7.2	7.6	7.3	7.3
25	7.3	7.1	7.2	7.1	6.9	7.0	7.2	7.0	7.2	7.5	7.3	7.4
26	7.4	7.0	7.3	7.2	6.8	7.0	7.3	7.1	7.2	7.5	7.2	7.3
27	7.3	7.2	7.2	7.2	6.7	7.0	7.2	7.1	7.1	7.3	7.2	7.3
28	7.5	7.2	7.3	7.2	6.7	7.1	7.3	7.0	7.2	7.5	7.3	7.3
29	8.0	7.2	7.3	7.1	6.7	6.9	7.2	7.0	7.0	7.4	7.3	7.3
30	8.3	7.0	7.3	7.0	6.6	6.9	7.0	6.8	6.9	7.3	7.2	7.3
31	---	---	---	7.0	6.8	6.9	6.9	6.8	6.8	---	---	---
Max	8.3	7.2	7.3	7.9	7.3	7.5	7.5	7.1	7.3	7.6	7.3	7.4
Min	7.0	6.8	6.9	7.0	6.6	6.9	6.9	6.7	6.8	6.9	6.8	6.8

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	6.8	6.7	6.7	7.1	7.0	7.1	7.2	7.1	7.1	7.3	7.2	7.2
2	6.7	6.6	6.6	7.1	7.0	7.0	7.1	7.0	7.1	7.3	7.2	7.3
3	6.7	6.6	6.7	7.2	7.0	7.2	7.1	7.0	7.1	7.3	7.2	7.2
4	6.7	6.6	6.7	7.4	7.2	7.3	7.2	7.1	7.1	7.3	7.2	7.2
5	6.7	6.6	6.7	7.4	7.2	7.4	7.1	7.1	7.1	7.3	7.2	7.3
6	6.8	6.7	6.7	7.4	7.2	7.2	7.1	7.0	7.1	7.4	7.3	7.3
7	6.8	6.6	6.7	7.3	7.2	7.2	7.1	7.0	7.1	7.4	7.3	7.4
8	6.8	6.6	6.7	7.2	7.1	7.2	7.3	7.1	7.2	7.4	7.3	7.4
9	6.8	6.6	6.7	7.1	7.0	7.1	7.3	7.2	7.2	7.4	7.3	7.4
10	6.8	6.7	6.8	7.1	7.0	7.1	7.3	7.2	7.2	7.3	7.3	7.3
11	6.8	6.8	6.8	7.2	7.1	7.1	7.3	7.2	7.3	7.3	7.2	7.3
12	6.8	6.7	6.8	7.2	7.1	7.1	7.3	7.2	7.3	7.5	7.2	7.4
13	6.9	6.8	6.8	7.2	7.1	7.1	7.3	7.2	7.3	7.4	7.4	7.4
14	6.9	6.8	6.8	7.2	7.1	7.1	7.3	7.2	7.2	7.4	7.4	7.4
15	6.9	6.7	6.8	7.2	7.1	7.2	7.3	7.2	7.3	7.5	7.4	7.4
16	6.9	6.8	6.9	7.2	7.0	7.1	7.3	7.2	7.3	7.4	7.4	7.4
17	6.9	6.9	6.9	7.3	7.0	7.1	7.2	7.2	7.2	7.4	7.3	7.4
18	7.0	6.8	6.9	7.3	7.1	7.2	7.2	7.2	7.2	7.4	7.3	7.4
19	7.0	6.8	6.9	7.2	7.0	7.1	7.2	7.1	7.2	7.4	7.4	7.4
20	7.2	7.0	7.0	7.1	7.0	7.1	7.1	7.0	7.0	7.4	7.3	7.4
21	7.2	7.0	7.1	7.1	7.0	7.1	7.0	6.9	6.9	7.4	7.3	7.3
22	7.0	6.9	7.0	7.1	6.9	7.1	6.9	6.9	6.9	7.4	7.3	7.3
23	7.0	6.9	6.9	7.1	7.0	7.1	7.0	6.9	6.9	7.4	7.3	7.3
24	6.9	6.9	6.9	7.2	7.1	7.1	7.0	6.9	6.9	7.4	7.3	7.4
25	7.0	6.9	6.9	7.2	7.1	7.2	7.0	6.9	7.0	7.4	7.3	7.4
26	7.0	6.9	6.9	7.2	7.1	7.2	7.1	7.0	7.0	7.4	7.3	7.3
27	7.0	6.9	7.0	7.2	7.1	7.2	7.0	6.9	7.0	7.4	7.3	7.4
28	7.2	7.0	7.1	7.2	7.1	7.1	7.0	6.9	7.0	7.4	7.3	7.3
29	7.1	7.0	7.0	7.2	7.0	7.1	7.0	6.9	6.9	7.3	7.3	7.3
30	7.0	6.9	7.0	7.1	7.0	7.0	7.1	6.9	7.0	7.3	7.3	7.3
31	7.0	6.9	7.0	---	---	---	7.2	7.1	7.2	7.3	7.2	7.3
Max	7.2	7.0	7.1	7.4	7.2	7.4	7.3	7.2	7.3	7.5	7.4	7.4
Min	6.7	6.6	6.6	7.1	6.9	7.0	6.9	6.9	6.9	7.3	7.2	7.2

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	7.2	7.2	7.2	7.2	7.1	7.2	7.3	7.1	7.2	7.2	7.1	7.2
2	7.2	7.2	7.2	7.3	7.2	7.2	7.2	7.1	7.1	7.2	7.2	7.2
3	7.3	7.2	7.2	7.2	7.1	7.2	7.1	7.0	7.0	7.3	7.1	7.2
4	7.3	7.2	7.2	7.2	7.1	7.2	7.0	6.9	7.0	7.2	7.2	7.2
5	7.3	7.2	7.3	7.2	7.0	7.1	7.1	6.9	6.9	7.3	7.2	7.2
6	7.3	7.2	7.2	7.2	7.0	7.1	6.9	6.8	6.8	7.3	7.2	7.3
7	7.3	7.2	7.2	7.1	6.9	7.0	6.8	6.8	6.8	7.4	7.2	7.2
8	7.3	7.2	7.2	7.1	7.0	7.0	6.8	6.8	6.8	7.4	7.2	7.3
9	7.2	7.1	7.2	7.1	7.0	7.1	6.8	6.8	6.8	7.5	7.1	7.4
10	7.2	7.2	7.2	7.2	7.0	7.1	6.8	6.8	6.8	7.6	7.3	7.4
11	7.2	7.1	7.2	7.1	7.0	7.0	6.9	6.8	6.8	7.5	7.2	7.4
12	7.2	7.1	7.2	7.0	7.0	7.0	6.9	6.8	6.8	7.4	7.2	7.4
13	7.3	7.0	7.2	7.0	7.0	7.0	6.9	6.8	6.9	7.4	7.2	7.4
14	7.3	7.3	7.3	7.1	7.0	7.0	6.9	6.9	6.9	7.5	7.2	7.4
15	7.3	7.2	7.2	7.1	7.0	7.1	7.0	6.9	6.9	7.4	7.1	7.3
16	7.3	7.2	7.2	7.1	7.0	7.1	7.0	7.0	7.0	7.4	7.1	7.3
17	7.3	7.2	7.2	7.2	7.1	7.1	7.0	7.0	7.0	7.4	7.1	7.3
18	7.3	7.2	7.2	7.2	7.1	7.1	7.1	7.0	7.0	7.5	7.1	7.3
19	7.3	7.2	7.2	7.1	7.1	7.1	7.1	7.0	7.1	7.4	7.2	7.3
20	7.3	7.2	7.2	7.1	7.1	7.1	7.1	7.0	7.0	7.4	7.2	7.3
21	7.3	7.2	7.2	7.1	7.0	7.1	7.1	7.0	7.1	7.4	7.2	7.3
22	7.3	7.2	7.3	7.1	7.0	7.1	7.2	7.0	7.1	7.4	7.1	7.3
23	7.2	7.2	7.2	7.1	7.0	7.0	7.2	7.1	7.2	7.4	7.2	7.3
24	7.3	7.2	7.2	7.1	7.0	7.0	7.2	7.1	7.2	7.5	7.2	7.4
25	7.3	7.2	7.3	7.1	7.0	7.0	7.2	7.2	7.2	7.5	7.2	7.4
26	7.4	7.2	7.3	7.1	7.0	7.1	7.3	7.2	7.2	7.5	7.2	7.4
27	7.4	7.1	7.2	7.2	7.0	7.1	7.3	7.2	7.2	7.5	7.2	7.4
28	7.2	7.2	7.2	7.1	7.0	7.0	7.3	7.1	7.2	7.4	7.1	7.3
29	7.2	7.1	7.2	7.1	7.0	7.0	7.2	7.1	7.2	7.4	7.2	7.3
30	---	---	---	7.2	7.0	7.1	7.2	7.2	7.2	7.4	7.2	7.3
31	---	---	---	7.2	7.1	7.2	---	---	---	7.4	6.9	7.1
Max	7.4	7.3	7.3	7.3	7.2	7.2	7.3	7.2	7.2	7.6	7.3	7.4
Min	7.2	7.0	7.2	7.0	6.9	7.0	6.8	6.8	6.8	7.2	6.9	7.1

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

pH, WATER, UNFILTERED, FIELD, STANDARD UNITS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	7.2	6.9	7.1	7.3	7.1	7.2	7.0	6.7	6.8	6.9	6.7	6.7
2	7.3	7.0	7.1	7.3	7.1	7.2	6.8	6.8	6.8	6.9	6.7	6.8
3	7.3	7.1	7.2	7.2	6.9	7.2	6.9	6.8	6.9	7.0	6.8	6.9
4	7.3	7.0	7.2	6.9	6.7	6.7	7.0	6.9	6.9	7.0	6.8	6.9
5	7.3	7.1	7.2	6.8	6.7	6.8	7.0	6.9	6.9	7.1	6.7	7.0
6	7.3	7.0	7.2	6.8	6.8	6.8	7.0	6.9	6.9	7.1	6.8	6.9
7	7.3	6.8	6.9	6.8	6.8	6.8	7.2	6.9	6.9	6.9	6.7	6.7
8	6.9	6.8	6.8	6.9	6.8	6.8	7.2	6.9	6.9	6.8	6.7	6.7
9	6.9	6.8	6.9	6.9	6.8	6.9	7.0	6.9	7.0	6.9	6.7	6.8
10	7.0	6.8	6.9	7.0	6.9	6.9	7.0	7.0	7.0	6.9	6.7	6.8
11	7.1	6.9	7.0	7.2	6.9	7.0	7.1	6.9	7.0	6.9	6.8	6.8
12	7.1	7.0	7.0	7.2	7.1	7.2	7.2	6.9	7.0	6.9	6.8	6.9
13	7.1	7.0	7.0	7.3	7.1	7.2	7.1	6.9	7.1	7.0	6.8	6.9
14	7.2	6.9	7.0	7.3	7.1	7.2	7.0	7.0	7.0	7.0	6.8	6.9
15	7.2	7.0	7.1	7.2	6.7	7.1	7.0	6.8	6.9	7.0	6.8	6.9
16	7.2	7.1	7.2	6.7	6.7	6.7	7.1	6.8	6.8	7.0	6.8	6.9
17	7.2	7.0	7.1	6.8	6.7	6.7	7.0	6.8	6.8	7.0	6.8	6.9
18	7.2	7.0	7.1	6.8	6.7	6.7	7.2	6.8	6.8	7.1	6.9	7.0
19	7.2	7.0	7.1	6.9	6.7	6.8	7.2	7.1	7.1	7.2	7.0	7.1
20	7.2	7.1	7.1	7.0	6.9	7.0	7.2	7.0	7.1	7.1	6.9	6.9
21	7.2	7.1	7.2	7.1	7.0	7.0	7.2	6.9	7.1	6.9	6.8	6.9
22	7.2	7.1	7.2	7.1	7.0	7.0	7.2	6.9	7.1	7.0	6.9	7.0
23	7.3	7.1	7.2	7.0	7.0	7.0	7.2	7.1	7.1	7.1	7.0	7.1
24	7.3	7.1	7.2	7.3	6.9	7.0	7.2	7.1	7.2	7.2	7.0	7.0
25	7.2	7.1	7.2	7.2	6.9	7.1	7.2	7.0	7.2	7.1	7.0	7.0
26	7.4	7.1	7.2	7.2	6.9	7.0	7.2	7.1	7.2	7.1	6.9	7.0
27	7.3	7.1	7.2	7.0	6.9	6.9	7.2	7.0	7.1	7.0	6.9	7.0
28	7.3	7.1	7.1	7.0	6.8	6.8	7.2	7.1	7.2	7.1	6.8	7.0
29	7.3	7.1	7.2	7.1	6.8	6.9	7.1	7.0	7.0	7.2	7.0	7.1
30	7.2	6.9	7.1	7.1	6.8	6.8	7.0	6.8	6.9	7.2	7.0	7.1
31	---	---	---	7.1	6.7	6.8	6.9	6.7	6.8	---	---	---
Max	7.4	7.1	7.2	7.3	7.1	7.2	7.2	7.1	7.2	7.2	7.0	7.1
Min	6.9	6.8	6.8	6.7	6.7	6.7	6.8	6.7	6.8	6.8	6.7	6.7

	Max	Min	Median
Year	7.6	7.4	7.4
Year	6.7	6.6	6.6
Year			
Minimum			

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	24.5	23.5	23.9	16.0	15.3	15.8	13.5	12.8	13.2	10.7	10.3	10.4
2	23.5	22.3	22.7	16.1	15.3	15.6	13.4	12.9	13.2	10.4	9.8	10.1
3	22.3	21.5	21.9	16.3	15.1	15.5	13.1	12.5	12.8	9.8	8.3	9.2
4	21.9	21.2	21.5	15.8	14.7	15.3	12.6	12.2	12.4	8.7	8.3	8.5
5	21.7	20.8	21.1	14.8	13.8	14.4	12.8	12.3	12.5	8.5	8.3	8.4
6	21.8	21.0	21.3	14.1	13.3	13.7	13.3	12.6	12.9	8.7	8.3	8.4
7	21.3	20.6	20.8	14.6	13.4	13.8	13.7	12.8	13.2	8.7	8.4	8.5
8	21.1	20.1	20.5	14.7	13.8	14.2	13.5	12.8	13.1	8.6	8.4	8.5
9	20.8	20.0	20.3	15.3	14.3	14.6	13.1	12.7	12.9	8.7	8.6	8.6
10	20.6	20.1	20.4	15.3	14.9	15.1	13.1	12.7	12.9	8.9	8.6	8.7
11	20.5	20.2	20.3	15.2	14.6	14.8	12.7	12.1	12.3	9.1	8.7	8.9
12	20.6	20.2	20.3	14.6	13.7	14.0	12.2	11.6	11.8	9.9	9.1	9.5
13	21.1	20.3	20.6	14.4	13.5	14.0	11.8	11.5	11.6	9.7	9.0	9.3
14	21.2	20.6	20.9	14.8	13.9	14.3	11.5	11.2	11.4	9.1	8.8	8.9
15	21.0	20.3	20.7	15.4	14.6	14.9	11.4	11.1	11.3	8.9	8.6	8.8
16	21.4	20.1	20.5	16.2	15.2	15.6	11.7	11.3	11.4	8.6	8.2	8.4
17	20.7	19.9	20.3	16.2	14.9	15.6	11.4	11.3	11.4	8.5	8.1	8.3
18	21.6	20.3	20.7	14.9	14.3	14.6	11.4	11.1	11.2	8.7	8.1	8.5
19	21.6	20.0	21.1	14.9	13.6	14.0	11.1	10.7	10.9	8.2	8.0	8.1
20	21.2	19.4	20.3	14.8	14.0	14.4	10.7	10.4	10.5	8.5	7.9	8.1
21	20.0	19.0	19.4	15.1	14.5	14.7	10.7	10.3	10.5	9.0	8.1	8.5
22	20.1	19.6	19.8	15.8	14.8	15.2	11.3	10.6	10.9	8.8	8.2	8.5
23	19.8	19.3	19.5	16.1	15.3	15.6	11.8	11.3	11.6	8.3	8.2	8.2
24	19.8	19.0	19.4	15.3	13.9	14.3	11.8	11.6	11.8	9.2	8.3	8.8
25	19.7	19.1	19.3	15.1	14.1	14.6	11.8	11.5	11.6	9.1	8.8	8.9
26	19.4	18.8	19.1	14.9	14.2	14.5	11.5	11.0	11.3	8.9	8.6	8.7
27	19.3	18.8	19.1	14.6	14.0	14.3	11.1	10.7	11.0	9.9	8.8	9.3
28	19.2	17.9	18.4	14.9	14.4	14.6	11.0	10.5	10.8	9.7	9.3	9.5
29	18.3	17.0	17.7	14.7	14.1	14.5	10.5	10.0	10.3	9.5	9.1	9.3
30	17.0	15.8	16.2	14.1	13.2	13.5	10.2	9.7	9.9	9.3	8.9	9.1
31	16.1	15.6	15.8	---	---	---	10.4	9.8	10.1	9.8	9.0	9.3
Month	24.5	15.6	20.1	16.3	13.2	14.7	13.7	9.7	11.7	10.7	7.9	8.8

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

**TEMPERATURE, WATER, DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10.1	9.2	9.6	13.9	12.0	12.9	17.7	16.9	17.2	19.8	18.1	18.8
2	10.4	9.7	10.1	13.8	12.8	13.4	17.6	16.9	17.2	20.8	19.0	19.5
3	10.4	9.9	10.1	13.8	13.3	13.6	17.5	16.6	17.1	21.3	19.9	20.3
4	10.4	9.9	10.1	13.7	12.5	13.1	17.7	16.7	17.1	22.0	20.8	21.2
5	10.3	9.9	10.2	12.6	11.8	12.1	17.7	17.0	17.3	23.2	21.7	22.2
6	10.2	9.6	9.9	12.0	11.3	11.7	17.0	15.8	16.2	22.7	22.2	22.4
7	10.5	9.9	10.1	12.3	11.7	12.0	15.9	15.2	15.5	23.3	21.8	22.3
8	10.2	9.7	10	12.8	11.9	12.3	16.2	15.4	15.7	23.8	22.6	23.1
9	10.1	9.4	9.8	12.6	12.0	12.4	16.4	15.5	15.9	23.4	22.7	23.1
10	9.6	9.1	9.4	12.1	11.6	11.9	16.5	15.8	16.2	23.1	22.3	22.7
11	9.6	8.9	9.4	13.4	11.5	11.8	16.3	15.7	16.1	23.0	22.4	22.7
12	8.9	7.9	8.3	12.8	11.6	12.2	15.9	15.2	15.5	22.6	21.8	22.1
13	8.2	7.4	7.8	13.7	12.6	13.0	15.8	15.0	15.4	22.5	22.1	22.2
14	8.2	7.7	8.0	13.9	13.3	13.5	16.2	15.2	15.7	22.1	21.7	21.9
15	8.9	8.1	8.4	15.3	13.9	14.6	17.0	15.8	16.3	22.5	21.7	22.0
16	9.0	8.5	8.7	16.3	14.9	15.5	18.0	16.8	17.3	23.1	22.0	22.3
17	9.2	8.5	8.8	17.6	16.0	16.3	18.7	17.8	18.1	22.6	22.1	22.3
18	10.0	8.5	8.8	16.8	16.4	16.5	19.3	18.5	18.7	22.2	21.4	21.8
19	9.2	8.7	8.8	19.7	16.7	17.0	18.8	18.5	18.7	22.6	21.2	21.8
20	9.0	8.5	8.8	20.3	17.2	18.1	20.6	18.4	18.7	22.4	21.7	22.1
21	9.3	8.5	8.9	19.1	18.1	18.5	20.0	19.0	19.4	22.8	22.1	22.3
22	10.8	9.1	9.8	19.9	18.6	19.1	19.8	19.1	19.5	23.3	22.6	22.7
23	11.3	10.0	10.6	20.4	18.6	19.3	19.1	17.6	18.2	23.8	22.6	22.8
24	12.0	10.8	11.4	19.6	19.1	19.3	18.3	17.1	17.7	23.5	22.7	23.0
25	12.1	11.2	11.5	19.5	18.8	19.0	18.4	17.3	17.9	24.4	23.2	23.5
26	11.6	10.4	10.8	19.5	18.6	19.0	18.5	17.6	18.0	24.5	23.6	23.9
27	10.9	10.3	10.6	19.0	18.1	18.5	18.5	17.7	18.0	24.4	24.0	24.2
28	11.7	10.5	10.9	18.6	17.7	18.2	18.4	17.7	17.9	25.3	24.3	24.6
29	12.2	11.1	11.5	18.3	17.6	17.9	18.1	17.2	17.5	25.7	24.8	25.2
30	---	---	---	18.2	17.2	17.6	19.0	17.4	17.9	25.5	24.8	25.2
31	---	---	---	18.1	17.5	17.7	---	---	---	24.9	24.2	24.6
Month	12.2	7.4	9.7	20.4	11.3	15.4	20.6	15.0	17.3	25.7	18.1	22.5

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	26.1	24.8	25.3	30.0	28.2	28.7	30.6	29.9	30.1	27.0	26.4	26.6
2	25.7	24.9	25.2	29.1	28.1	28.5	31.0	29.9	30.3	27.7	26.7	27.3
3	25.6	24.8	25.2	30.2	28.9	29.3	30.9	29.3	29.8	27.8	27.3	27.5
4	25.3	24.7	24.9	30.0	27.7	29.2	30.6	29.1	30.0	28.6	27.3	27.7
5	25.2	24.5	24.8	30.9	26.5	29.0	30.7	29.2	30.0	28.7	27.7	28.1
6	24.8	24.1	24.4	30.9	26.5	29.3	30.7	28.5	29.8	28.8	28.0	28.3
7	24.1	22.9	23.4	32.2	28.3	30.5	30.5	28.9	29.9	28.5	28.0	28.2
8	25.7	23.4	23.7	31.8	27.3	29.8	30.0	29.2	29.6	28.7	28.0	28.3
9	25.3	23.7	24.4	31.6	27.2	29.4	30.5	28.8	29.6	28.3	27.5	27.9
10	25.6	24.4	24.8	31.2	28.9	30.7	30.0	28.7	29.4	27.6	26.9	27.1
11	25.6	24.9	25.2	30.7	29.3	30.1	29.5	28.7	29.2	27.2	26.4	26.7
12	25.8	24.9	25.3	29.9	29.4	29.7	29.3	28.9	29.1	26.7	26.0	26.3
13	26.0	25.2	25.5	30.2	29.2	29.5	29.1	28.6	28.7	26.6	25.7	26.1
14	25.8	25.3	25.5	30.6	29.5	29.7	29.7	28.5	29.0	26.6	25.8	26.1
15	25.8	24.8	25.1	30.8	29.2	29.7	29.7	28.5	29.1	26.5	25.6	25.9
16	25.4	24.4	24.8	29.8	28.0	29.0	29.6	28.7	29.0	25.8	25.4	25.6
17	25.8	24.6	25.0	31.0	27.9	29.2	29.8	28.8	29.2	25.8	25.0	25.3
18	25.2	24.6	24.9	31.0	28.1	30.0	29.6	28.9	29.1	25.4	25.1	25.3
19	27.2	24.9	25.3	30.8	29.3	30.1	29.4	28.7	29.0	25.2	24.6	24.9
20	26.6	25.1	25.5	30.6	27.8	29.4	28.8	28.5	28.6	24.7	24.0	24.4
21	28.5	25.7	26.6	30.5	27.8	29.5	28.6	28.0	28.3	24.6	24.1	24.3
22	28.5	26.5	27.2	30.4	29.5	29.7	28.4	27.8	28.1	24.8	24.1	24.4
23	28.4	27.2	27.5	30.6	28.7	29.6	28.5	27.8	28.0	24.7	24.2	24.4
24	29.1	27.5	27.9	30.9	29.0	29.7	27.8	27.2	27.6	24.7	23.9	24.2
25	29.5	27.6	28.2	30.5	29.4	29.8	27.8	26.7	27.3	24.6	23.6	24.1
26	28.6	27.7	28.1	31.1	28.7	30.1	27.7	26.8	27.1	24.7	23.6	24.0
27	28.2	27.4	27.8	31.6	28.6	30.2	28.0	26.6	27.2	24.2	23.7	23.9
28	28.7	27.6	27.9	31.3	28.9	30.6	27.7	26.9	27.3	25.1	24.0	24.4
29	29.8	27.4	27.9	30.6	29.8	30.1	26.9	25.7	26.3	24.5	23.8	24.2
30	30.6	27.2	28.2	30.9	29.8	30.5	27.3	25.6	25.9	23.8	23.4	23.5
31	---	---	---	30.8	29.9	30.3	27.1	25.8	26.2	---	---	---
Month	30.6	22.9	25.9	32.2	26.5	29.7	31.0	25.6	28.6	28.8	23.4	25.8

	Max	Min	Mean
Year	32.2	7.4	19.2

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	24.4	23.4	23.8	16.0	15.2	15.7	13.6	12.7	13.2	10.7	10.3	10.5
2	23.4	22.0	22.5	15.8	15.2	15.5	13.4	12.8	13.2	10.5	9.9	10.2
3	22.3	21.4	21.8	15.7	15.1	15.3	13.2	12.5	12.8	9.9	8.4	9.3
4	21.8	20.8	21.4	15.6	14.7	15.3	12.6	12.2	12.4	8.8	8.3	8.6
5	21.4	20.7	21.1	14.8	13.8	14.4	12.8	12.3	12.6	8.6	8.3	8.5
6	21.5	21.0	21.2	13.9	13.3	13.6	13.3	12.6	12.9	8.7	8.4	8.5
7	21.2	20.4	20.7	14.2	13.4	13.7	13.7	12.8	13.2	8.7	8.5	8.6
8	20.8	20.1	20.4	14.5	13.8	14.1	13.6	12.9	13.2	8.8	8.6	8.6
9	20.6	20.0	20.2	15.0	14.3	14.6	13.2	12.7	13.0	8.8	8.7	8.7
10	20.5	20.1	20.3	15.2	14.9	15.0	13.2	12.8	13.1	9.0	8.7	8.8
11	20.5	20.2	20.3	15.2	14.6	14.8	12.8	12.0	12.4	9.2	8.8	9.0
12	20.5	20.2	20.3	14.6	13.6	14.0	12.4	11.7	11.9	9.8	9.2	9.5
13	20.9	20.3	20.5	14.3	13.5	14.0	11.9	11.6	11.7	9.8	9.1	9.4
14	21.2	20.6	20.9	14.8	13.9	14.3	11.6	11.3	11.5	9.2	8.8	9.0
15	21.0	20.2	20.6	15.1	14.6	14.8	11.5	11.2	11.4	9.0	8.6	8.9
16	20.7	20.1	20.3	15.8	14.4	14.9	11.8	11.4	11.5	8.7	8.3	8.5
17	20.5	19.7	20.0	15.7	14.4	15.0	11.5	11.4	11.5	8.5	8.2	8.3
18	20.9	19.8	20.3	15.0	14.3	14.6	11.5	11.2	11.4	8.8	8.2	8.6
19	21.3	19.7	20.0	14.3	13.5	13.8	11.3	10.8	11.0	8.3	8.0	8.2
20	21.0	19.3	20.0	14.6	13.9	14.3	10.8	10.5	10.6	8.4	8.0	8.2
21	19.8	19.0	19.3	14.9	13.7	14.4	10.8	10.5	10.6	9.0	8.2	8.6
22	19.9	19.2	19.6	15.5	13.7	14.9	11.4	10.8	11.0	8.8	8.3	8.6
23	19.7	19.1	19.4	16.1	15.3	15.6	11.9	11.4	11.7	8.4	8.3	8.3
24	19.7	18.9	19.3	15.3	14.0	14.3	11.9	11.8	11.9	9.2	8.4	8.8
25	19.7	18.9	19.2	15.1	13.9	14.5	11.9	11.6	11.7	9.2	8.9	9.0
26	19.4	18.8	19.0	14.9	14.2	14.5	11.6	11.2	11.4	9.0	8.7	8.8
27	19.3	18.8	19.0	14.5	14.0	14.3	11.2	10.8	11.1	9.8	8.8	9.3
28	19.1	17.8	18.4	14.9	14.4	14.6	11.2	10.6	10.9	9.8	9.4	9.6
29	18.3	16.8	17.7	14.7	14.1	14.5	10.6	10.0	10.4	9.6	9.2	9.4
30	17.0	15.5	16.1	14.1	13.2	13.6	10.3	9.8	10.0	9.4	8.8	9.2
31	16.1	15.4	15.7	---	---	---	10.5	9.9	10.2	9.8	9.0	9.4
Month	24.4	15.4	20.0	16.1	13.2	14.6	13.7	9.8	11.8	10.7	8.0	8.9

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10.1	9.3	9.6	13.4	11.9	12.4	17.8	16.9	17.2	19.2	18.1	18.6
2	10.4	9.8	10.1	13.6	12.8	13.3	17.6	17.0	17.2	19.7	19.0	19.2
3	10.4	9.9	10.1	13.7	13.3	13.5	17.5	16.6	17.1	20.6	19.5	20.0
4	10.4	9.9	10.1	13.6	12.5	13.1	17.5	16.7	17.1	21.4	20.5	20.9
5	10.4	9.9	10.3	12.5	11.7	12.1	17.7	17.0	17.3	22.4	21.1	21.9
6	10.2	9.6	9.8	12.0	11.2	11.7	17.0	15.7	16.2	22.6	22.2	22.4
7	10.4	9.9	10.1	12.3	11.6	11.9	15.8	15.2	15.5	22.8	21.8	22.2
8	10.3	9.7	10.0	12.8	11.9	12.3	16.1	15.4	15.7	23.6	22.5	22.9
9	10.0	9.4	9.7	12.6	12.1	12.5	16.3	15.5	15.9	23.4	22.6	23.0
10	9.6	9.0	9.3	12.1	11.6	11.9	16.5	15.7	16.1	23.1	22.3	22.6
11	9.6	8.9	9.4	11.9	11.4	11.6	16.3	15.7	16.1	22.9	22.4	22.7
12	8.9	7.5	8.2	12.8	11.7	12.2	15.9	15.2	15.5	22.6	21.7	22.1
13	8.1	7.2	7.7	13.6	12.6	13.0	15.7	15.0	15.4	22.5	22.0	22.2
14	8.2	7.7	7.9	13.9	13.4	13.5	16.1	15.2	15.6	22.2	21.8	22.0
15	8.8	8.0	8.3	15.2	13.9	14.5	16.9	15.8	16.3	22.3	21.7	22.0
16	8.9	8.5	8.7	16.1	14.9	15.4	17.9	16.8	17.2	22.8	22.0	22.3
17	9.1	8.5	8.8	16.4	15.9	16.1	18.7	17.8	18.0	22.5	22.1	22.3
18	9.3	8.4	8.7	16.6	16.4	16.5	18.8	18.4	18.7	22.2	21.4	21.8
19	9.1	8.7	8.8	17.1	16.6	16.9	18.8	18.4	18.6	22.4	21.2	21.7
20	9.0	8.5	8.7	18.0	17.0	17.5	19.2	18.3	18.6	22.4	21.7	22.1
21	9.3	8.5	8.8	18.8	17.9	18.3	19.9	19.0	19.4	22.8	22.1	22.3
22	10.4	9.1	9.6	19.6	18.6	19.0	19.8	19.1	19.5	22.8	22.5	22.7
23	11.1	10.0	10.5	19.5	18.6	18.9	19.1	17.6	18.2	23.0	22.6	22.8
24	12.0	10.8	11.3	19.5	19.1	19.3	18.2	16.9	17.6	23.5	22.7	23.0
25	12.1	11.2	11.5	19.2	18.8	19.0	18.3	16.7	17.8	23.6	23.3	23.4
26	11.2	10.3	10.7	19.4	18.6	18.9	18.1	17.6	17.9	24.3	23.5	23.8
27	10.8	10.3	10.5	19.1	18.1	18.5	18.5	17.7	18.0	24.4	24.0	24.2
28	11.3	10.5	10.8	18.5	17.7	18.1	18.4	17.7	17.9	25.0	24.3	24.5
29	12.0	11.1	11.5	18.3	17.6	17.9	17.9	17.2	17.5	25.7	24.5	25.2
30	---	---	---	18.1	17.2	17.7	18.4	17.4	17.8	25.6	24.9	25.2
31	---	---	---	18.1	17.6	17.8	---	---	---	24.9	24.1	24.6
Month	12.1	7.2	9.6	19.6	11.2	15.3	19.9	15.0	17.2	25.7	18.1	22.5

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	25.9	24.7	25.2	28.9	28.1	28.5	30.0	29.5	29.9	26.6	26.1	26.3
2	25.6	24.9	25.2	29.1	28.1	28.4	29.9	29.4	29.7	27.6	26.6	27.1
3	25.6	24.8	25.2	29.1	28.3	28.9	29.4	29.1	29.2	27.6	27.1	27.4
4	25.1	24.4	24.8	28.4	26.4	27.4	29.2	28.8	29.0	27.6	27.1	27.4
5	25.1	24.5	24.8	26.6	26.0	26.1	29.0	28.4	28.6	28.1	27.4	27.8
6	24.7	24.0	24.3	26.2	26.0	26.1	28.5	28.2	28.4	28.5	27.8	28.1
7	24.1	22.9	23.4	26.5	26.1	26.2	29.5	28.3	28.4	28.3	27.9	28.1
8	23.7	23.4	23.5	26.9	26.4	26.6	29.6	28.4	28.6	28.6	28.0	28.2
9	25.0	23.6	24.3	27.2	26.8	27.0	28.8	28.5	28.6	28.2	27.4	27.8
10	25.2	24.4	24.7	29.1	27.0	27.3	28.6	28.2	28.5	27.6	26.4	27.1
11	25.5	24.8	25.2	30.0	27.6	28.9	28.6	28.2	28.4	27.0	26.2	26.6
12	25.5	24.9	25.2	29.9	29.2	29.5	29.0	28.4	28.6	26.6	25.8	26.2
13	25.9	25.2	25.5	29.7	29.0	29.3	28.9	27.9	28.5	26.3	25.5	25.9
14	25.8	25.3	25.5	29.7	29.3	29.5	27.9	27.7	27.8	26.1	25.8	25.9
15	25.5	24.8	25.0	29.6	28.1	29.1	27.8	27.7	27.7	26.0	25.6	25.8
16	25.2	24.3	24.7	28.1	27.8	27.9	28.6	27.7	27.8	25.7	25.2	25.4
17	25.3	24.6	24.9	27.9	27.7	27.8	28.4	27.7	27.8	25.5	24.9	25.1
18	25.2	24.5	24.8	28.0	27.8	27.9	29.1	27.8	28.0	25.3	25.1	25.2
19	25.4	24.8	24.9	28.3	27.9	28.1	29.1	28.3	28.8	25.2	24.6	24.9
20	25.7	25.1	25.2	28.0	27.6	27.8	28.6	28.1	28.4	24.6	24.0	24.3
21	26.5	25.7	26.0	28.1	27.6	27.6	28.5	27.6	28.1	24.4	24.0	24.2
22	27.1	26.5	26.7	28.1	27.6	27.8	28.1	27.7	27.9	24.7	24.1	24.3
23	27.8	26.8	27.4	28.5	27.7	28.0	28.2	27.6	27.8	24.6	24.1	24.3
24	28.0	27.4	27.7	30.1	28.0	28.4	27.7	27.1	27.5	24.4	23.7	24.0
25	28.3	27.6	27.9	29.7	28.9	29.4	27.5	26.6	27.1	24.3	23.3	23.7
26	28.4	27.6	28.1	30.0	28.3	29.1	27.5	26.6	26.9	24.1	23.5	23.7
27	28.2	27.3	27.7	28.6	28.3	28.4	27.8	26.5	27.1	24.1	23.6	23.8
28	28.1	27.5	27.7	29.7	28.6	28.8	27.5	26.8	27.2	24.5	23.9	24.1
29	28.1	27.4	27.6	30.2	28.6	29.1	26.8	25.6	26.2	24.5	23.7	24.2
30	28.3	27.0	27.7	30.5	29.1	29.5	26.0	25.5	25.7	23.7	23.3	23.5
31	---	---	---	30.0	29.4	29.7	26.2	25.7	25.9	---	---	---
Month	28.4	22.9	25.7	30.5	26.0	28.2	30.0	25.5	28.0	28.6	23.3	25.7

	Max	Min	Mean
Year	30.5	7.2	19.0

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	4.8	3.8	4.1	7.8	7.0	7.5	8.9	8.7	8.8	10.1	9.8	9.9
2	4.1	3.0	3.4	8.2	7.4	7.7	8.8	8.4	8.6	10.3	10.0	10.1
3	3.7	2.9	3.3	8.1	7.3	7.7	9.1	8.7	8.9	10.3	10.1	10.2
4	4.2	3.2	3.6	8.2	7.3	7.7	9.3	9.1	9.2	10.4	10.2	10.3
5	4.8	3.0	3.8	8.7	7.6	8.3	9.2	8.9	9.1	10.6	10.2	10.4
6	4.8	3.8	4.2	8.6	8.3	8.5	9.1	8.8	8.9	10.8	10.5	10.6
7	5.0	3.9	4.2	8.4	7.9	8.1	9.3	8.8	9.0	10.8	10.6	10.7
8	5.1	4.2	4.5	8.0	7.5	7.8	9.6	8.8	9.4	11.0	10.8	10.9
9	5.3	4.5	4.8	7.9	7.5	7.7	9.4	9.0	9.2	10.9	10.6	10.7
10	5.3	4.8	5.0	8.0	7.4	7.6	9.3	9.0	9.1	10.6	10.5	10.6
11	5.2	4.7	5.0	8.1	7.8	8.0	9.5	9.2	9.4	10.6	10.5	10.5
12	5.2	4.2	4.7	8.2	7.9	8.0	9.5	9.3	9.4	10.6	10.3	10.5
13	5.4	4.7	5.0	8.2	7.8	8.0	9.6	9.4	9.5	10.7	10.3	10.5
14	5.4	4.7	5.2	8.2	7.9	8.0	9.6	9.4	9.5	10.5	10.3	10.4
15	5.4	4.6	5.0	8.3	8.0	8.2	9.9	9.6	9.8	10.6	10.3	10.4
16	5.9	5.1	5.4	8.1	7.8	7.9	9.8	9.5	9.7	10.6	10.4	10.4
17	6.1	5.5	5.9	8.2	7.2	7.9	9.5	9.3	9.4	10.7	10.5	10.6
18	6.0	5.0	5.5	8.0	7.1	7.7	9.3	9.1	9.2	10.8	10.6	10.7
19	5.6	4.7	5.3	8.2	7.6	7.8	9.2	9.1	9.2	10.9	10.7	10.8
20	6.9	4.9	5.7	8.0	7.4	7.7	9.1	8.8	9.0	10.9	10.6	10.7
21	6.8	4.6	5.6	7.8	7.3	7.7	8.8	8.7	8.8	10.9	10.6	10.8
22	6.2	4.5	5.3	7.6	6.8	7.4	8.8	8.6	8.6	10.8	10.6	10.7
23	6.6	5.4	6.0	8.2	7.5	7.8	8.7	8.6	8.6	10.8	10.6	10.7
24	6.3	5.3	6.0	8.9	8.2	8.6	8.7	8.5	8.6	10.9	10.6	10.7
25	6.2	4.7	5.8	8.8	8.4	8.6	8.7	8.6	8.6	10.8	10.6	10.7
26	6.5	5.0	6.0	8.6	8.0	8.4	8.9	8.7	8.8	10.7	10.6	10.7
27	7.2	6.0	6.6	8.6	8.2	8.4	8.8	8.4	8.6	10.8	10.6	10.7
28	7.9	6.4	7.1	8.4	8.1	8.3	8.8	8.5	8.6	10.8	10.4	10.6
29	7.1	6.4	6.7	8.6	7.4	8.3	8.8	8.5	8.6	10.6	10.5	10.5
30	7.3	6.4	7.0	8.8	8.2	8.7	9.6	8.8	9.2	10.7	10.5	10.6
31	7.3	6.8	7.1	---	---	---	9.8	9.6	9.7	10.5	10.2	10.4
Month	7.9	2.9	5.3	8.9	6.8	8.0	9.9	8.4	9.1	11.0	9.8	10.5

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10.3	10.0	10.1	9.7	9.3	9.5	8.5	8.1	8.4	8.5	8.0	8.2
2	10.3	10.0	10.1	9.5	9.0	9.2	8.6	8.0	8.3	8.8	8.0	8.3
3	10.4	10.1	10.2	9.4	9.1	9.3	8.7	7.8	8.0	8.5	7.4	8.2
4	10.4	10.1	10.3	9.3	8.9	9.1	8.1	7.7	7.9	9.0	8.0	8.2
5	10.3	10.1	10.2	9.4	9.0	9.2	7.8	7.1	7.5	8.4	7.7	7.9
6	10.2	10.0	10.1	9.3	8.8	9.0	7.1	6.4	6.7	7.9	7.5	7.7
7	10.1	9.8	10	9.0	8.7	8.9	6.6	6.2	6.4	8.8	7.3	7.8
8	10.1	9.7	9.9	9.2	8.8	9.0	6.8	6.5	6.6	8.5	7.5	7.9
9	10.2	9.8	9.9	9.2	9.0	9.2	6.7	6.5	6.6	8.1	7.0	7.4
10	10.2	9.8	10.0	9.3	8.9	9.1	6.7	6.3	6.5	7.3	6.8	7.2
11	10.2	9.8	10	9.4	8.7	8.9	7.0	6.4	6.7	7.2	6.7	7.0
12	10.8	10.2	10.5	9.2	8.8	9.0	7.2	6.5	6.8	7.2	6.6	6.9
13	10.8	10.3	10.6	9.3	9.0	9.1	7.4	6.9	7.1	7.2	6.7	7.0
14	10.5	10.0	10.2	9.2	8.9	9.1	7.8	7.2	7.5	7.1	6.7	6.9
15	10.3	10.1	10.2	9.3	9.0	9.1	8.1	7.5	7.8	6.9	6.4	6.5
16	10.5	10.1	10.3	9.3	9.0	9.2	8.0	7.3	7.8	6.8	6.2	6.4
17	10.8	10.4	10.6	9.9	8.9	9.2	7.9	7.6	7.8	6.8	6.2	6.5
18	11.2	10.6	10.7	9.4	8.9	9.1	8.4	7.6	7.8	7.1	6.5	6.8
19	10.9	10.7	10.8	10.3	8.6	8.8	7.9	7.6	7.7	7.7	6.7	7.1
20	11.0	10.6	10.8	10.7	8.3	8.8	7.9	7.2	7.4	7.2	6.7	6.9
21	10.8	10.5	10.7	9.2	8.1	8.4	7.7	7.2	7.5	7.1	6.5	6.7
22	10.7	10.3	10.5	8.6	7.6	8.1	7.7	7.2	7.4	7.0	6.5	6.7
23	10.5	10.2	10.3	8.7	7.7	8.1	7.9	7.4	7.7	7.1	6.2	6.7
24	10.5	10.2	10.3	8.4	7.6	7.8	8.1	7.6	7.8	7.2	6.1	6.8
25	10.3	10.1	10.2	8.2	7.5	7.9	8.2	7.6	7.9	7.5	6.6	6.9
26	10.5	9.9	10.2	8.2	7.8	8.0	8.3	7.9	8.1	7.7	6.8	7.1
27	10.0	9.9	10	8.2	7.8	8.0	8.3	7.7	8.1	7.2	6.7	6.9
28	10.0	9.6	9.8	8.4	7.6	8.0	8.2	7.9	8.1	7.4	6.6	6.9
29	9.8	9.4	9.6	8.8	7.8	8.1	8.4	7.8	8.1	7.0	6.2	6.6
30	---	---	---	8.6	8.0	8.2	8.5	8.0	8.2	6.8	5.8	6.4
31	---	---	---	9.4	7.2	8.3	---	---	---	6.6	5.0	5.5
Month	11.2	9.4	10.2	10.7	7.2	8.7	8.7	6.2	7.5	9.0	5.0	7.1

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	6.0	4.9	5.3	7.9	5.5	6.4	6.0	2.4	4.5	---	---	---
2	6.1	5.1	5.5	6.8	5.1	6.3	6.1	4.6	5.3	---	---	---
3	6.2	5.8	6.0	8.2	6.2	6.9	6.2	2.0	4.4	---	---	---
4	6.2	5.4	5.7	8.1	3.3	6.4	6.7	2.3	5.2	---	---	---
5	6.3	5.4	5.8	7.9	0.8	5.4	7.0	3.0	5.8	---	---	---
6	6.4	5.7	6.0	8.4	0.3	5.0	7.2	2.6	5.2	---	---	---
7	6.2	4.9	5.2	8.6	1.9	5.8	6.9	3.1	5.4	5.7	4.7	5.1
8	5.8	4.9	5.1	8.4	0.3	4.1	6.5	5.0	5.6	5.6	4.7	5.1
9	6.1	5.0	5.4	7.3	0.1	3.3	6.8	2.6	5.5	5.7	4.8	5.4
10	6.5	5.5	5.9	6.7	1.5	5.1	6.2	3.1	4.9	6.1	5.2	5.5
11	6.6	5.9	6.2	6.3	2.6	5.3	6.2	3.8	5.3	7.2	5.1	5.7
12	6.6	5.9	6.2	6.2	4.4	5.4	6.4	5.3	5.8	6.9	5.6	5.9
13	6.6	5.8	6.1	7.2	5.4	5.7	5.8	4.5	5.2	6.7	5.7	5.9
14	6.9	5.7	6.3	7.5	5.7	6.1	6.7	4.4	5.5	7.9	5.7	6.1
15	7.2	6.1	6.5	7.6	5.4	6.1	6.3	4.6	5.6	7.1	5.3	6.0
16	7.3	6.2	6.6	6.4	1.8	4.7	6.0	4.9	5.4	6.9	5.9	6.2
17	7.5	6.0	6.4	7.8	3.0	5.3	6.9	2.3	5.4	6.6	5.2	5.9
18	6.6	5.6	6.1	7.8	2.7	6.2	7.4	4.4	5.5	6.1	5.2	5.8
19	8.4	5.2	6.3	7.2	5.2	6.6	6.7	2.8	5.3	5.9	5.2	5.7
20	7.7	5.8	6.3	6.7	0.1	3.7	5.7	2.5	4.9	6.3	5.7	6.0
21	9.2	5.7	7.1	7.2	0.1	4.5	5.6	0.2	4.1	8.1	5.6	6.0
22	8.5	6.6	7.3	7.1	3.8	5.5	5.7	4.3	4.7	6.9	5.9	6.5
23	7.8	6.6	7.0	6.9	2.9	5.1	6.0	4.4	5.0	7.5	6.3	6.8
24	8.1	6.6	7.1	7.3	3.8	5.5	5.5	1.0	4.6	8.3	5.5	6.7
25	7.5	6.2	6.7	7.7	4.7	5.6	5.6	2.7	5.1	8.0	6.2	7.1
26	7.2	6.2	6.7	8.0	4.3	6.4	5.7	2.7	5.1	8.1	4.9	6.7
27	7.0	5.7	6.4	7.6	3.5	6.0	6.3	4.8	5.5	7.4	6.1	6.7
28	7.8	5.6	6.8	8.1	3.6	6.5	6.3	4.8	6.0	8.5	6.5	7.3
29	9.3	5.4	6.8	6.6	3.6	5.4	5.7	3.9	5.2	7.4	5.9	6.9
30	10.4	4.9	6.4	7.0	3.1	5.4	5.4	4.3	4.7	7.0	6.2	6.8
31	---	---	---	5.8	3.3	5.0	---	---	---	---	---	---
Month	10.4	4.9	6.2	8.6	0.1	5.5	---	---	---	---	---	---

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	5.4	4.1	4.5	7.9	6.8	7.6	8.8	8.6	8.8	10.0	9.7	9.8
2	4.4	3.1	3.6	8.3	7.2	7.6	8.7	8.4	8.6	10.2	9.9	10.1
3	3.8	3.1	3.6	8.3	7.2	7.6	9.1	8.6	8.8	10.3	10.0	10.1
4	4.6	3.5	3.9	8.2	7.1	7.6	9.3	9.0	9.1	10.3	10.1	10.2
5	4.6	3.3	4.0	8.7	7.6	8.3	9.2	8.9	9.0	10.5	10.1	10.3
6	4.5	3.8	4.0	8.6	8.1	8.3	9.0	8.8	8.9	10.7	10.4	10.5
7	4.2	3.8	4.1	8.2	7.5	7.9	9.3	8.7	9.0	10.7	10.5	10.6
8	5.0	4.0	4.4	7.9	7.3	7.6	9.6	9.0	9.3	10.8	10.7	10.8
9	4.9	4.4	4.7	7.7	7.2	7.5	9.4	9.0	9.2	10.8	10.5	10.7
10	5.2	4.8	5.0	7.7	7.2	7.5	9.3	9.0	9.1	10.5	10.4	10.5
11	5.3	5.0	5.2	8.0	7.6	7.8	9.5	9.2	9.3	10.5	10.4	10.4
12	5.3	4.7	5.0	8.2	7.6	7.9	9.5	9.3	9.4	10.4	10.1	10.3
13	5.6	4.9	5.2	8.0	7.7	7.9	9.5	9.3	9.4	10.4	10.1	10.2
14	5.6	5.0	5.5	8.1	7.7	7.9	9.6	9.4	9.5	10.2	10.1	10.2
15	5.7	4.8	5.3	8.1	7.4	7.9	9.9	9.6	9.8	10.4	10.1	10.3
16	5.9	4.9	5.5	7.9	7.0	7.4	9.8	9.5	9.6	10.5	10.3	10.3
17	6.4	5.5	6.2	8.2	6.8	7.4	9.5	9.3	9.4	10.6	10.4	10.5
18	6.3	5.0	5.8	7.9	7.1	7.6	9.3	9.1	9.1	10.7	10.6	10.6
19	6.3	4.7	5.5	7.9	7.2	7.6	9.2	9.0	9.1	10.8	10.6	10.7
20	8.1	5.6	6.8	7.8	7.1	7.5	9.1	8.8	8.9	10.8	10.5	10.6
21	8.1	5.8	6.8	7.9	7.3	7.6	8.8	8.6	8.7	10.9	10.6	10.7
22	6.5	5.3	5.8	7.5	6.5	7.2	8.7	8.5	8.6	10.8	10.6	10.7
23	6.7	5.9	6.2	8.2	7.3	7.7	8.7	8.5	8.6	10.8	10.6	10.7
24	6.6	5.7	6.0	8.8	8.1	8.6	8.7	8.4	8.6	10.8	10.6	10.7
25	6.2	5.2	5.8	8.7	8.3	8.5	8.7	8.5	8.6	10.7	10.6	10.7
26	6.6	5.8	6.2	8.5	8.1	8.3	8.8	8.6	8.7	10.8	10.6	10.7
27	7.3	6.3	6.7	8.5	8.2	8.3	8.7	8.3	8.5	10.9	10.8	10.8
28	8.4	6.7	7.4	8.4	8.1	8.2	8.8	8.4	8.6	10.8	10.6	10.7
29	7.1	6.4	6.8	8.6	7.7	8.2	8.7	8.4	8.5	10.7	10.6	10.6
30	7.4	6.6	7.0	8.8	8.2	8.6	9.5	8.7	9.1	10.8	10.6	10.6
31	7.4	6.7	7.0	---	---	---	9.8	9.5	9.6	10.6	10.3	10.5
Month	8.4	3.1	5.5	8.8	6.5	7.9	9.9	8.3	9.0	10.9	9.7	10.5

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10.4	10.1	10.2	9.6	9.1	9.4	8.4	8.0	8.3	8.2	7.8	8.1
2	10.5	10.1	10.2	9.4	8.9	9.2	8.4	7.8	8.1	8.3	7.7	8.1
3	10.5	10.3	10.4	9.5	9.1	9.3	8.1	7.8	7.9	8.2	7.9	8.1
4	10.6	10.3	10.4	9.4	9.0	9.2	7.9	7.6	7.8	8.2	7.6	8.0
5	10.5	10.3	10.4	9.5	8.9	9.3	7.7	7.0	7.5	7.9	7.3	7.7
6	10.4	10.1	10.3	9.3	8.9	9.1	7.1	6.4	6.7	7.9	7.4	7.7
7	10.3	9.9	10.1	9.0	8.8	8.9	6.6	6.2	6.4	8.2	7.2	7.6
8	10.3	9.9	10.1	9.2	8.7	9.0	6.8	6.5	6.6	8.2	7.3	7.7
9	10.4	9.8	10.1	9.2	9.0	9.1	6.8	6.4	6.6	8.1	7.0	7.3
10	10.3	10.0	10.1	9.3	8.8	9.1	6.7	6.3	6.5	7.3	6.8	7.1
11	10.5	9.9	10.2	9.1	8.6	8.8	7.0	6.5	6.7	7.2	6.5	6.9
12	11.0	10.4	10.6	9.1	8.7	8.9	7.1	6.5	6.8	7.1	6.6	6.9
13	11.0	10.3	10.7	9.2	8.9	9.0	7.4	6.9	7.1	7.1	6.6	6.9
14	10.6	10.1	10.3	9.2	8.9	9.0	7.8	7.2	7.4	7.0	6.6	6.8
15	10.5	10.2	10.3	9.1	8.9	9.0	8.0	7.5	7.8	6.7	6.2	6.4
16	10.6	10.2	10.4	9.2	8.4	9.0	8.0	7.6	7.8	6.7	6.1	6.3
17	10.9	10.5	10.7	9.1	8.8	8.9	7.9	7.5	7.7	6.7	6.1	6.3
18	11.1	10.7	10.8	9.1	8.7	8.9	8.0	7.5	7.8	7.0	6.3	6.6
19	11.1	10.8	10.9	8.8	8.3	8.5	7.9	7.5	7.7	7.3	6.6	6.8
20	11.2	10.8	11.0	8.6	7.8	8.2	7.6	7.2	7.4	7.0	6.5	6.7
21	10.9	10.6	10.8	8.6	7.8	8.1	7.7	7.3	7.4	6.9	6.4	6.5
22	10.7	10.3	10.5	8.3	7.7	8.0	7.7	7.2	7.4	6.8	6.4	6.6
23	10.5	10.2	10.4	8.2	7.6	7.9	7.9	7.4	7.7	7.0	6.1	6.6
24	10.6	10.3	10.4	8.0	7.6	7.8	8.1	7.6	7.8	7.0	6.4	6.7
25	10.4	10.2	10.3	8.1	7.5	7.8	8.1	7.6	7.8	6.9	6.3	6.6
26	10.4	10.0	10.3	8.2	7.8	7.9	8.2	7.9	8.0	7.0	6.4	6.7
27	10.1	9.9	10.1	8.1	7.6	7.8	8.2	7.7	8.0	7.0	6.4	6.6
28	10.0	9.6	9.8	8.2	7.6	7.9	8.2	7.9	8.1	6.8	6.2	6.5
29	9.8	9.5	9.6	8.2	7.8	8.0	8.2	7.7	8.0	6.5	6.1	6.3
30	---	---	---	8.4	7.9	8.1	8.3	7.9	8.1	6.6	5.8	6.2
31	---	---	---	8.3	8.0	8.2	---	---	---	6.4	4.8	5.2
Month	11.2	9.5	10.4	9.6	7.5	8.6	8.4	6.2	7.5	8.3	4.8	6.9

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	5.8	4.6	5.1	6.8	4.6	5.5	2.9	0.6	1.7	---	---	---
2	6.0	5.2	5.4	6.7	5.3	6.0	1.8	0.3	1.2	---	---	---
3	5.9	5.6	5.7	6.3	3.6	5.6	2.3	1.4	1.9	---	---	---
4	5.9	4.8	5.5	3.8	0.5	2.3	2.9	1.2	2.1	---	---	---
5	6.1	5.2	5.7	0.6	0.0	0.2	3.0	1.0	2.4	---	---	---
6	6.2	5.3	5.7	0.1	0.0	0.0	2.9	1.8	2.4	---	---	---
7	5.9	4.8	5.1	0.0	0.0	0.0	4.9	1.4	2.2	5.4	4.4	4.9
8	5.2	4.6	4.9	0.1	0.0	0.0	5.0	1.2	2.2	5.6	4.1	5.0
9	5.8	4.8	5.3	0.1	0.0	0.0	3.6	1.8	3.1	5.7	3.0	4.6
10	6.2	5.2	5.7	2.0	0.0	0.1	3.5	2.7	3.0	6.0	4.8	5.2
11	6.5	5.2	6.1	5.3	0.0	1.8	4.6	2.2	3.0	6.2	4.8	5.4
12	6.5	5.7	6.2	5.7	4.7	5.1	5.8	2.6	3.9	6.3	5.3	5.6
13	6.5	5.6	6.0	6.2	4.8	5.5	5.1	1.7	4.0	6.6	5.1	5.7
14	6.6	5.1	6.1	6.1	5.2	5.8	4.6	3.2	3.9	6.5	5.4	5.9
15	6.8	5.9	6.3	5.8	2.4	4.9	3.4	2.4	2.8	6.8	4.3	5.8
16	7.0	5.8	6.4	2.9	1.5	2.2	4.0	1.0	2.0	6.5	5.3	5.9
17	6.6	5.8	6.1	3.1	2.5	2.8	2.6	0.5	1.1	6.5	1.9	5.5
18	6.5	5.3	6.0	2.9	1.9	2.4	6.5	0.3	1.0	6.4	2.6	5.8
19	6.4	5.0	5.8	2.6	0.5	1.7	6.6	5.1	6.0	6.4	3.0	5.9
20	6.3	5.2	5.8	0.5	0.1	0.2	6.2	4.2	5.3	6.5	5.8	6.0
21	6.6	5.4	6.0	0.4	0.1	0.1	6.4	1.4	4.8	6.1	5.2	5.9
22	6.9	5.8	6.4	0.3	0.1	0.1	5.8	0.8	4.9	6.7	1.2	5.2
23	7.2	6.1	6.6	2.2	0.1	0.3	6.2	5.0	5.4	7.4	3.0	6.6
24	7.4	6.2	6.7	6.5	0.1	1.5	6.3	2.8	5.5	7.6	4.9	6.7
25	6.8	5.5	6.1	5.5	3.0	4.4	6.3	1.6	5.6	7.6	0.2	6.5
26	6.9	5.6	6.4	6.4	2.9	4.4	6.3	0.7	5.4	7.2	0.1	5.8
27	6.4	5.5	6.0	4.3	3.2	3.8	6.8	5.2	5.9	7.1	4.1	6.4
28	6.9	5.1	6.1	5.1	1.9	3.0	7.0	5.5	6.5	7.4	0.1	5.8
29	6.9	5.0	6.1	5.7	1.3	2.6	6.4	5.6	6.0	7.5	3.2	6.3
30	6.1	4.5	5.3	5.6	1.0	2.3	5.9	4.8	5.4	6.8	4.4	6.3
31	---	---	---	4.7	0.6	1.9	---	---	---	---	---	---
Month	7.4	4.5	5.9	6.8	0.0	2.5	---	---	---	---	---	---

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	57	45	49	79	71	76	85	83	84	91	87	88
2	48	35	39	83	74	78	84	80	82	92	89	90
3	42	33	37	82	73	77	86	82	84	90	87	88
4	48	36	41	81	73	77	88	85	86	89	87	88
5	54	34	43	85	74	81	87	84	86	91	87	89
6	54	43	48	84	80	82	87	84	85	93	89	91
7	56	43	47	83	76	78	90	83	86	93	90	92
8	57	47	51	78	73	76	91	84	89	94	92	93
9	59	50	53	79	74	76	89	85	87	93	91	92
10	59	53	55	80	73	76	89	85	86	92	90	91
11	58	52	55	80	77	79	89	86	88	92	90	91
12	58	46	52	79	76	78	88	86	87	94	90	92
13	60	52	56	80	75	78	89	86	87	93	89	91
14	61	53	58	81	77	79	88	86	87	91	89	90
15	60	51	56	83	80	81	91	88	89	91	89	90
16	67	56	60	82	78	80	90	87	89	90	88	89
17	67	60	65	83	72	80	87	85	86	92	89	90
18	67	56	61	79	70	76	85	83	84	93	90	92
19	63	52	59	81	74	76	84	82	83	93	90	91
20	75	54	63	78	73	76	82	79	81	92	90	91
21	74	50	61	77	72	76	79	78	79	94	90	92
22	68	49	58	77	67	74	79	77	78	93	90	92
23	72	59	65	82	75	79	80	79	79	92	90	91
24	69	57	65	87	82	85	80	79	79	94	90	92
25	68	51	63	86	83	85	80	79	79	93	91	92
26	71	54	65	84	79	82	82	79	80	92	91	92
27	78	65	71	84	80	82	80	76	78	95	91	93
28	84	69	76	82	80	81	80	76	78	94	91	93
29	74	67	70	84	73	81	79	76	77	93	91	92
30	75	65	71	85	79	83	85	78	81	93	91	92
31	74	69	72	---	---	---	88	85	86	93	89	91
Month	84	33	58	87	67	79	91	76	84	95	87	91

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	92	87	89	93	87	90	88	85	87	93	85	88
2	92	88	90	91	86	88	90	83	86	97	86	90
3	93	90	91	91	87	90	90	80	83	94	82	90
4	93	89	91	88	85	87	85	80	82	102	90	93
5	92	90	91	88	84	86	81	73	78	98	88	91
6	91	88	89	86	81	83	73	65	68	91	86	89
7	90	87	89	84	80	82	67	62	64	103	83	89
8	90	86	88	87	82	85	69	65	67	101	87	92
9	91	86	87	87	84	86	68	65	67	95	81	87
10	90	85	87	87	82	84	69	64	66	85	78	83
11	89	85	87	90	80	82	71	65	68	84	77	81
12	92	87	89	87	81	84	73	65	69	83	75	79
13	91	86	89	90	85	87	75	69	71	83	77	80
14	89	85	86	89	86	87	79	72	75	81	76	79
15	89	86	87	93	87	90	84	76	79	79	73	75
16	91	87	89	95	89	92	85	77	81	79	71	74
17	93	89	91	104	90	94	85	80	82	78	71	74
18	99	91	93	96	91	93	91	81	84	82	74	77
19	94	92	93	112	89	91	85	81	82	89	75	81
20	95	91	93	118	87	94	88	77	79	83	76	79
21	94	90	92	99	86	90	85	78	81	82	75	77
22	97	89	92	94	81	88	84	78	81	82	76	78
23	96	90	93	96	83	88	84	78	81	84	72	78
24	97	92	94	92	82	85	86	79	82	84	71	80
25	95	92	94	89	81	85	87	79	83	90	77	81
26	97	90	92	89	83	87	89	83	85	92	80	84
27	91	88	90	88	83	85	88	81	85	86	80	83
28	92	87	88	90	80	85	87	83	85	90	79	82
29	91	86	88	92	82	85	89	81	84	85	76	80
30	---	---	---	91	83	86	92	84	86	82	70	77
31	---	---	---	99	75	87	---	---	---	80	60	66
Month	99	85	90	118	75	87	92	62	78	103	60	82

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, TOP
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	74	59	65	105	71	82	80	32	60	---	---	---
2	75	62	67	89	66	81	82	61	71	---	---	---
3	76	70	73	109	81	91	83	27	58	---	---	---
4	75	65	69	107	42	84	89	30	69	---	---	---
5	77	65	71	106	10	71	94	40	76	---	---	---
6	77	68	72	113	4	66	96	34	69	---	---	---
7	74	57	61	118	25	78	92	41	72	74	60	66
8	70	58	60	115	4	55	86	66	74	72	60	66
9	74	59	65	99	1	44	91	34	73	73	62	69
10	80	66	71	90	20	69	82	41	65	77	65	69
11	81	71	75	84	34	71	81	50	70	91	63	71
12	81	72	76	82	58	71	84	69	75	86	70	73
13	81	70	75	96	70	75	75	58	67	83	70	73
14	84	70	77	100	75	80	88	57	71	98	70	75
15	88	74	79	102	70	80	83	60	73	88	65	74
16	89	74	79	84	23	62	78	64	70	85	72	76
17	92	72	78	105	39	70	91	30	70	81	63	72
18	80	68	73	105	35	82	97	57	72	74	63	70
19	106	63	77	97	68	87	88	36	69	72	63	69
20	95	70	77	90	1	50	74	32	63	76	69	72
21	117	71	89	95	1	60	72	3	53	78	67	71
22	109	82	92	94	50	72	73	55	61	83	70	78
23	100	83	88	92	38	68	77	56	63	90	75	82
24	105	84	90	98	50	73	70	13	58	100	65	80
25	98	80	85	103	62	74	71	34	64	96	73	85
26	92	79	85	107	56	85	72	34	65	97	58	79
27	89	72	81	103	46	80	81	60	70	88	72	80
28	101	71	87	110	47	87	80	60	76	103	77	88
29	122	69	87	88	48	71	71	49	64	89	71	82
30	138	62	82	94	41	72	68	53	58	83	73	80
31	---	---	---	78	44	67	---	---	---	---	---	---
Month	138	57	77	118	1	73	---	---	---	---	---	---

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	64	48	53	80	68	77	85	82	84	90	87	88
2	52	36	42	84	72	76	83	80	82	91	88	90
3	44	35	41	84	72	76	86	81	83	90	86	88
4	52	39	44	81	71	76	88	84	85	89	86	87
5	52	37	45	85	74	81	86	84	85	90	86	88
6	51	43	46	83	78	80	86	83	84	92	89	90
7	47	42	46	79	73	76	90	83	86	92	90	91
8	56	45	49	77	71	74	92	86	89	93	92	93
9	55	49	52	76	71	74	89	86	87	93	90	92
10	58	53	55	77	71	74	89	85	87	91	89	90
11	59	55	57	79	75	77	89	86	87	91	90	90
12	59	52	55	79	74	77	88	86	87	92	89	91
13	63	54	58	78	74	76	88	86	87	91	88	90
14	63	56	61	80	75	77	88	86	87	89	87	88
15	64	53	59	80	73	78	91	88	90	90	87	89
16	66	54	61	79	69	74	90	87	88	89	88	88
17	71	60	68	83	67	74	87	85	86	91	88	89
18	70	55	64	78	70	75	85	83	83	92	90	91
19	70	52	61	77	70	74	84	82	83	92	90	91
20	88	62	74	76	70	74	82	79	80	92	89	90
21	88	63	74	77	72	75	79	77	78	94	90	92
22	71	58	64	75	64	72	79	77	78	93	90	92
23	73	64	68	82	73	78	80	78	79	92	90	91
24	72	61	65	86	81	84	81	78	79	94	90	92
25	68	56	63	85	82	84	81	78	79	93	92	93
26	71	63	67	83	79	81	81	78	80	93	91	92
27	79	68	72	83	80	81	79	75	77	95	93	94
28	90	71	79	82	79	81	80	76	77	95	93	94
29	74	67	71	84	76	81	78	75	76	94	92	93
30	76	67	71	85	78	83	84	77	81	94	91	93
31	75	67	71	---	---	---	88	84	86	94	90	92
Month	90	35	60	86	64	77	92	75	83	95	86	91

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	92	88	90	92	85	88	88	84	86	89	84	86
2	94	89	91	90	86	88	88	81	85	90	83	87
3	94	91	93	92	88	90	85	80	81	91	86	89
4	95	91	93	89	85	87	83	78	80	92	86	89
5	94	92	93	88	83	86	81	72	78	91	83	88
6	93	89	91	86	82	84	73	64	68	91	85	89
7	92	88	90	84	81	82	67	62	64	95	82	87
8	92	87	90	87	81	84	69	65	67	97	84	90
9	92	86	88	87	84	86	69	65	67	95	81	86
10	90	87	88	86	81	84	69	63	66	85	78	83
11	91	86	89	84	79	81	71	66	68	84	75	80
12	93	88	90	86	80	83	72	65	68	82	75	79
13	93	85	89	88	84	86	75	68	72	82	76	79
14	90	86	87	89	85	86	79	72	75	80	75	78
15	90	86	88	91	86	88	83	76	79	77	71	73
16	92	87	90	92	85	90	84	79	81	78	70	73
17	95	90	92	93	89	90	85	79	82	77	70	73
18	97	91	93	93	89	91	86	80	83	80	71	76
19	96	93	94	91	86	88	85	80	82	84	75	78
20	97	93	94	91	82	85	81	77	79	81	74	77
21	94	91	93	92	82	86	85	79	81	80	73	75
22	96	90	92	91	82	86	84	78	81	79	74	77
23	95	90	93	89	82	85	84	78	81	82	71	76
24	98	93	95	87	82	84	86	79	82	82	74	78
25	96	93	95	87	81	84	86	78	82	81	74	78
26	95	90	93	89	83	85	87	83	85	84	75	79
27	91	89	90	88	81	84	87	81	85	84	76	79
28	91	87	89	88	80	83	87	83	85	82	74	78
29	91	86	88	86	82	84	86	80	84	80	74	77
30	---	---	---	89	83	85	88	82	85	80	70	75
31	---	---	---	88	85	86	---	---	---	77	58	63
Month	98	85	91	93	79	86	88	62	78	97	58	80

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION, BOTTOM
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	71	55	62	88	59	70	39	8	22	---	---	---
2	73	63	65	87	68	77	24	4	16	---	---	---
3	72	68	70	82	46	73	30	19	26	---	---	---
4	72	58	66	49	6	29	38	16	27	---	---	---
5	73	62	68	8	0	2	39	13	31	---	---	---
6	74	63	68	1	0	0	38	24	31	---	---	---
7	70	56	60	0	0	0	65	18	28	69	56	63
8	61	54	58	1	0	0	66	16	29	72	53	64
9	70	57	63	1	0	0	47	24	40	72	38	58
10	75	62	69	26	0	1	46	35	39	75	60	65
11	79	63	74	70	0	24	60	29	40	77	60	67
12	79	69	75	75	61	67	76	34	51	79	65	70
13	80	68	73	82	62	72	66	22	52	82	62	71
14	81	62	75	80	68	76	60	41	51	80	67	73
15	83	71	77	76	31	64	44	31	36	84	53	71
16	85	69	78	38	19	28	52	13	26	79	64	72
17	80	70	74	40	32	36	34	6	15	79	23	66
18	79	64	72	37	25	31	85	4	13	78	32	70
19	78	60	70	34	7	22	85	66	78	77	36	72
20	77	63	71	7	1	3	80	54	69	78	69	72
21	82	67	75	5	1	1	82	18	62	73	62	70
22	87	72	79	4	1	1	74	10	63	80	14	62
23	91	77	84	29	1	4	80	64	69	89	36	79
24	95	78	85	86	1	20	80	35	69	91	58	79
25	87	70	78	73	40	58	80	20	70	90	2	77
26	88	72	81	84	38	58	79	9	68	86	1	69
27	82	69	76	56	42	50	87	65	74	84	48	76
28	88	65	78	68	25	39	89	69	82	89	1	69
29	88	63	77	76	17	35	80	70	74	90	38	75
30	78	57	68	75	13	30	72	59	66	80	52	74
31	---	---	---	62	8	25	---	---	---	---	---	---
Month	95	54	72	88	0	32	---	---	---	---	---	---

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 1 of 5

[CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Depth to bottom from water surface, at sampling location, meters (82903)	Dissolved oxygen, unfiltered, water, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)
07-12-2012	1030	Surface water	Regular	762	27.7	5.90	5.4	7.3	465
07-12-2012	1031	<i>QC sample - Artificial</i>	<i>Blank</i>	--	--	--	--	--	--
08-30-2012	1030	Surface water	Regular	764	30.5	5.90	5.3	6.9	104

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 2 of 5

[CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than]

Date	Sample start time	Temperature, water, °C (00010)	Transparency, water, in situ, Secchi disc, m (00078)	Photosynthetically active radiation (average flux density on a horizontal surface during measurement interval), micromoles of photons per square meter per second (99988)	Sampling depth, m (00098)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)
07-12-2012	1030	29.7	0.60	572	1.2	256	< 15	11.6	8.95	4.11
07-12-2012	1031	--	--	--	--	< 20	< 15	< .022	< .011	< .03
08-30-2012	1030	26.2	.40	1,680	.80	86	< 15	7.19	2.93	2.31

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 3 of 5

[CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than]

Date	Sample start time	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)
07-12-2012	1030	60.5	42.1	--	0.12	9.10	--	0.47	0.087	0.141
07-12-2012	1031	< .06	--	< .06	< .04	< .018	< .09	< .07	< .010	< .040
08-30-2012	1030	8.56	23.9	8.35	.08	8.30	8.93	.43	.034	.169

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 4 of 5

[CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than]

Date	Sample start time	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)	Chlorophyll a, phytoplankton, chromatographic, fluorometric method, µg/L (70953)	Aluminum, water, filtered, µg/L (01106)	Cobalt, water, filtered, µg/L (01035)	Copper, water, filtered, µg/L (01040)	Iron, water, filtered, µg/L (01046)
07-12-2012	1030	0.007	0.017	0.056	6.8	41.1	1.34	0.91	68.0
07-12-2012	1031	< .001	< .004	< .004	--	< 2.2	.172	< .80	< 3.2
08-30-2012	1030	.010	.033	.076	6.9	94.5	.978	2.0	253

0208114150 ROANOKE RIVER AT NORTH CAROLINA HIGHWAY 45 NEAR WESTOVER, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 5 of 5

[CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; <, less than]

Date	Sample start time	Lead, water, filtered, µg/L (01049)	Manganese, water, filtered, µg/L (01056)	Molybdenum, water, filtered, µg/L (01060)	Nickel, water, filtered, µg/L (01065)	Zinc, water, filtered, µg/L (01090)
07-12-2012	1030	0.045	222	0.767	0.47	< 1.4
07-12-2012	1031	< .025	.30	< .014	< .09	< 1.4
08-30-2012	1030	.157	20.6	.315	.54	1.4