APPENDIX III
Summary of Water Quality Data Located for Feasibility Study for the Development of Hudson River Public Swimming Facilities

This appendix contains available water quality data that were obtained and compiled for analysis. Particular attention was paid to locate data for parameters pertinent to beach use (i.e. total / fecal coliform, and turbidity data). Available water quality data located for this study are summarized in Table A-III-1. Water quality data was collected from various sources and is summarized herein. Maps showing the general area and the approximate location of each sampling point for each data source are also included. The NYSDEC water classification, and the location of permitted sewage treatment plant (STP) and combined sewer overflows (CSO) outfalls according to information in EPA's Permit Compliance System (PCS) and State Pollutant Discharge Elimination System (SPDES) permits are also shown on the maps. For the purposes of these maps the terms STP and WTP are equivalent and refer to Waste Water Treatment Plants (WWTP).

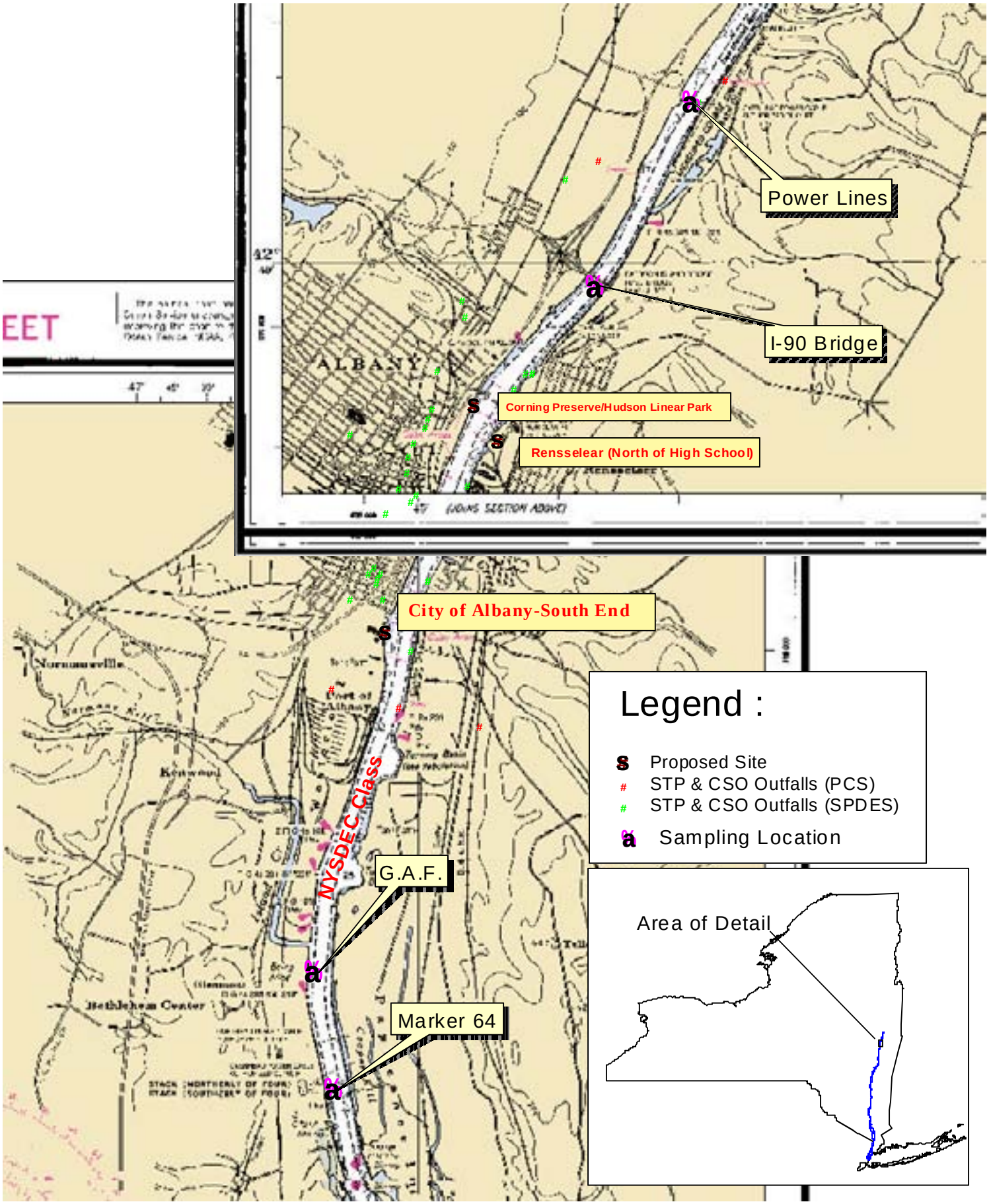
Table A-III-1

Summary of Water Quality Data

				Water Quality Parameters												
Data Source	**Appendix III**	**# of Locations**	**Time Period**	**Temperature**	**Conductivity**	**Salinity**	**pH**	**Ammonia**	**Dissolved Oxygen**	**BOD**	**Suspended Solids**	**Turbidity**	**Secchi Depth**	**Total Coliform**	**Fecal Coliform**	**Ecoli**
Albany County Sewer District	A	4	June 1987 - July 1996	X					X	X	X			X		
Glenmont & Poughkeepsie	B	2	March 1984 - October 199	X	X				X		X	X				
Ulster County	C	2	July 1991 - August 1999												X	
Port Ewen Sewer District	D	1	April 1999 - February 2000	X			X	X				X		X		X
USGS	E	5	April !992 - Sept 1999	X	X											
Rockland County Dept. of Health	F	4	June 1990 - August 2000											X	X	
Bear Mountain Laboratory	G	5	June 1983 - August 1985	X	X	X								X		
Westchester County	H	3	June 1999 - July 1999											X	X	
NYCDEP Harbor Survey	I	7	June 1990 - Sept 1999										X	X	X	

APPENDIX III-A
Albany County Sewer District
Hudson River Water Quality

Albany County Sewer District
Hudson River Water Quality Sampling Locations



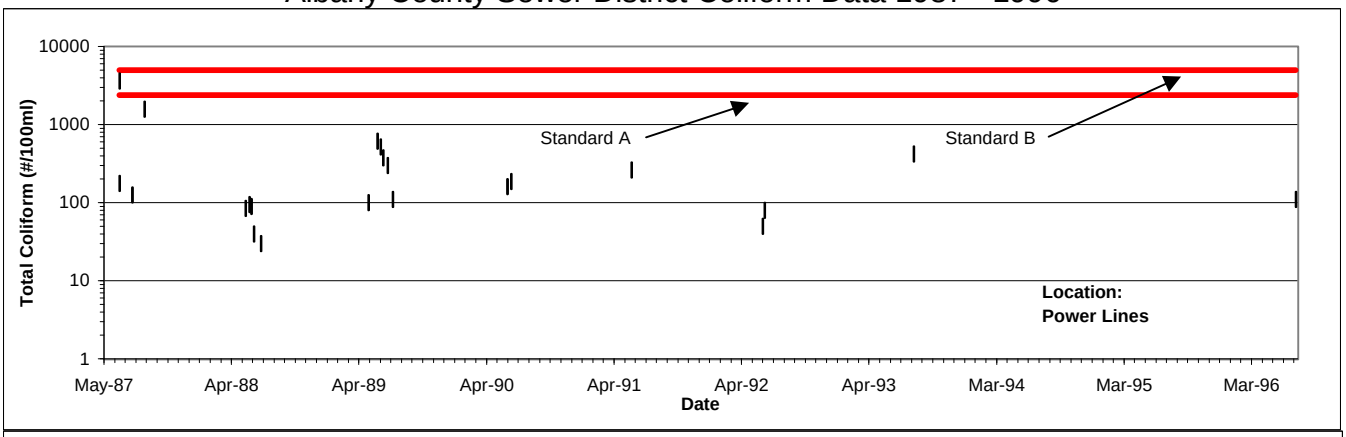
Albany County Sewer District
Hudson River Water Quality Data

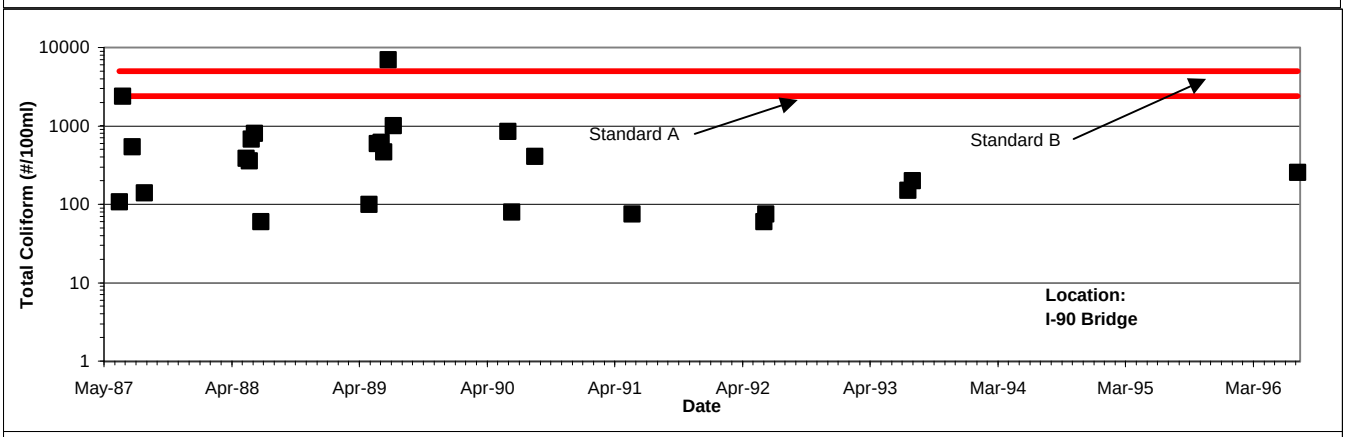
Date Time	MARKER	D.O. mg/l	Susp. Solids mg/l	5-Day BOD mg/l	Total Coliform #/100ml	TEMP Deg. C
6/15/87 1:15	Power Lines	8.8	10	1	177	23
6/15/87 1:45	Power Lines	9.2	17	1	3600	28
7/21/87 1:50	Power Lines	6.8	1	1	125	26
8/25/87 1:34	Power Lines	8.6	3	1	1560	24
6/6/88 1:35	Power Lines	7.8	11	1	85	18
6/15/88 9:30	Power Lines	7.8	10	2	95	22
6/21/88 2:00	Power Lines	7.1	11	2	90	25
6/29/88 1:43	Power Lines	6.6	5	1	40	22
7/18/88 1:30	Power Lines	7.4		1	30	27
5/18/89 1:45	Power Lines	10.4	3	<1.0	< 100	12
6/12/89 1:00	Power Lines	10.4	15	1.0	610	15
6/22/89 1:00	Power Lines	9.2	15	1.0	520	18
6/29/89 10:45	Power Lines	8.2	7	1.0	375	20
7/11/89 12:45	Power Lines	8.2	35	1.0	300	21
7/26/89 11:05	Power Lines	8.4	17	1.0	110	22
6/14/90 9:58	Power Lines	10.5	4	2	160	16
6/26/90 1:05	Power Lines	8.6	8	2	185	20
8/29/90 1:15	Power Lines	6.7	5	1		24
5/30/91 9:25	Power Lines	7.2	7	2	260	24
6/4/92 10:43	Power Lines	10.0	17	<2	50	17
6/10/92 10:15	Power Lines	9.2	7	<2	80	20
7/28/93 10:25	Power Lines	7.8	1	1		23
8/4/93 10:00	Power Lines	7.6	5	1	420	26
7/19/95 10:35	Power Lines	6.6	9	1		27
7/18/96 2:05	Power Lines	8.5	29	1	110	23
6/15/87 1:23	I-90 Bridge	8.0	4	1	107	23
6/25/87 1:55	I-90 Bridge	7.8	17	1	2375	28
7/21/87 2:12	I-90 Bridge	6.4	2	1	540	26
8/25/87 1:41	I-90 Bridge	7.4	1	1	140	24
6/6/88 1:40	I-90 Bridge	7.7	11	1	385	19
6/15/88 9:55	I-90 Bridge	6.8	13	2	360	22
6/21/88 2:10	I-90 Bridge	7.3	7	2	680	25
6/29/88 1:50	I-90 Bridge	6.4	3	1	800	22
7/18/88 1:40	I-90 Bridge	6.8		1	60	26
5/18/89 1:54	I-90 Bridge	10.4	3	<1.0	< 100	12
6/12/89 1:10	I-90 Bridge	9.2	12	1.0	600	15
6/22/89 1:10	I-90 Bridge	8.2	12	1.0	620	18
6/29/89 11:05	I-90 Bridge	7.4	10	1.0	465	21
7/11/89 12:50	I-90 Bridge	8.0	24	2.0	7000	20
7/26/89 11:10	I-90 Bridge	8.2	15	1.0	1010	22
6/14/90 10:23	I-90 Bridge	8.0	4	1	860	17
6/26/90 1:15	I-90 Bridge	7.2	7	1	80	20
8/29/90 1:23	I-90 Bridge	7.7	5	1	410	24
5/30/91 9:30	I-90 Bridge	6.5	7	1	75	24
6/4/92 10:50	I-90 Bridge	11.0	20	<2	60	17
6/10/92 10:25	I-90 Bridge	8.6	6	<2	75	20
7/15/93 1:40	I-90 Bridge	7.4	6	1	150	27
7/28/93 10:34	I-90 Bridge	7.6	2	1	200	23
7/19/95 10:45	I-90 Bridge	5.9	13	1		27
7/18/96 2:14	I-90 Bridge	8.7	30	1	255	22

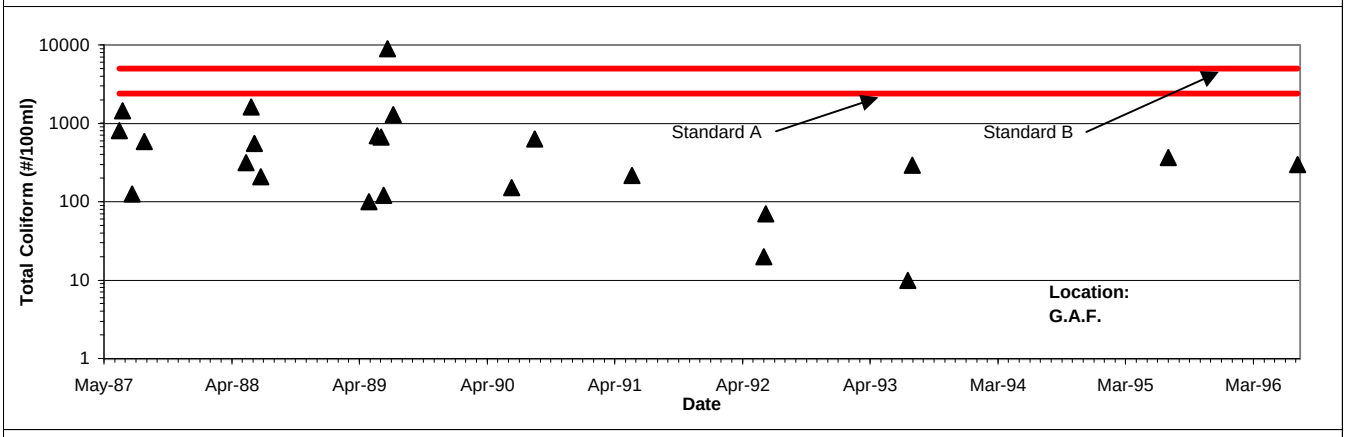
Albany County Sewer District
Hudson River Water Quality Data

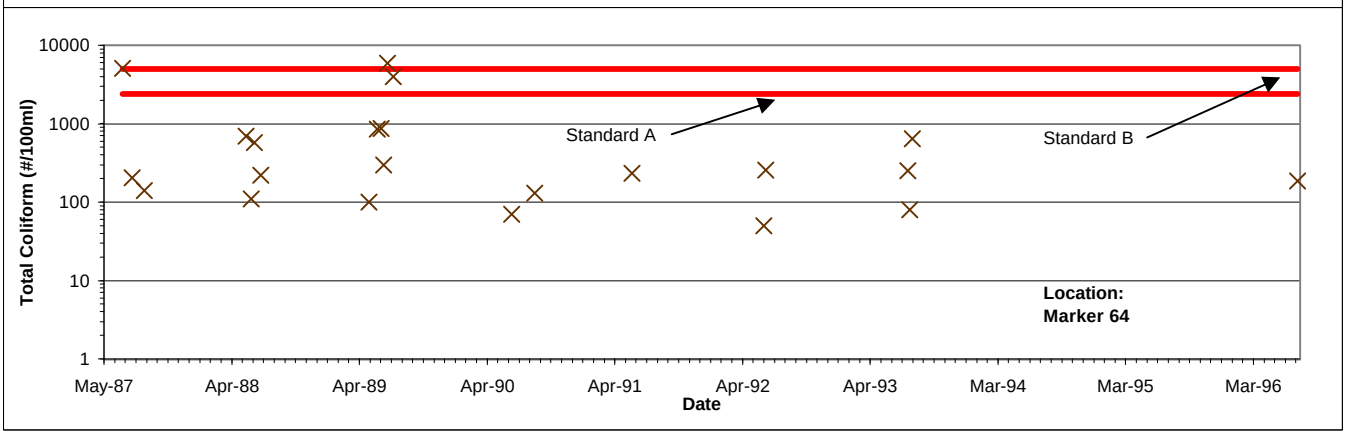
Date Time	MARKER	D.O. mg/l	Susp. Solids mg/l	5-Day BOD mg/l	Total Coliform #/100ml	TEMP Deg. C
6/15/87 1:31	G.A.F.	7.6	7	1	800	23
6/25/87 2:05	G.A.F.	7.0	19	1	1450	29
7/21/87 2:21	G.A.F.	6.2	2	1	125	27
8/25/87 1:51	G.A.F.	7.1	1	1	580	23
6/6/88 1:45	G.A.F.	7.2	9	1	315	19
6/21/88 2:15	G.A.F.	6.8	8	1	1600	25
6/29/88 1:59	G.A.F.	5.8	19	1	550	22
7/18/88 1:50	G.A.F.	6.0		1	210	27
5/18/89 2:02	G.A.F.	10.4	2	<1.0	< 100	12
6/12/89 1:15	G.A.F.	10.2	17	2.0	695	15
6/22/89 1:20	G.A.F.	8.8	11	1.0	670	18
6/29/89 11:24	G.A.F.	7.2	8	1.0	120	22
7/11/89 1:00	G.A.F.	7.2	17	1.0	9000	20
7/26/89 11:30	G.A.F.	8.0	18	1.0	1300	23
6/26/90 1:25	G.A.F.	7.0	7	2	150	19
8/29/90 1:34	G.A.F.	7.1	7	1	635	24
5/30/91 9:43	G.A.F.	6.4	11	1	215	24
6/4/92 11:10	G.A.F.	10.4	17	<2	20	18
6/10/92 10:35	G.A.F.	8.2	4	<2	70	20
7/15/93 2:00	G.A.F.	7.6	5	1	10	27
7/28/93 10:45	G.A.F.	8.0	6	1	290	24
7/19/95 10:50	G.A.F.	5.4	11	2	365	28
7/18/96 2:23	G.A.F.	8.2	36	1	300	23
6/25/87 2:15	Marker 64	6.8	11	1	5100	30
7/21/87 2:32	Marker 64	6.4	5	1	205	27
8/25/87 2:01	Marker 64	6.6	2	1	140	24
6/6/88 1:55	Marker 64	7.0	14	1	690	19
6/21/88 2:30	Marker 64	6.6	15	1	110	23
6/29/88 2:12	Marker 64	503.0	12	1	570	23
7/18/88 2:00	Marker 64	5.9		1	220	27
5/18/89 2:10	Marker 64	10.4	1	<1.0	< 100	12
6/12/89 1:20	Marker 64	10.0	8	2.0	860	15
6/22/89 1:30	Marker 64	9.0	11	1.0	870	18
6/29/89 11:46	Marker 64	7.0	12	1.0	300	22
7/11/89 1:10	Marker 64	7.2	35	1.0	5900	21
7/26/89 11:35	Marker 64	7.2	15	1.0	4000	23
6/26/90 1:35	Marker 64	6.6	4	2	70	19
8/29/90 1:46	Marker 64	6.3	9	1	130	25
5/30/91 9:55	Marker 64	5.7	10	1	235	24
6/4/92 11:20	Marker 64	11.0	17	<2	50	18
6/10/92 10:50	Marker 64	10.0	3	<2	255	20
7/15/93 2:20	Marker 64	7.2	8	1	250	28
7/21/93 10:05	Marker 64	5.8	8	1	80	25
7/28/93 10:57	Marker 64	8.0	10	1	640	24
7/19/95 11:00	Marker 64	5.5	14	1		28
7/18/96 2:33	Marker 64	8.0	20	1	185	23

Albany County Sewer District Coliform Data 1987 - 1996









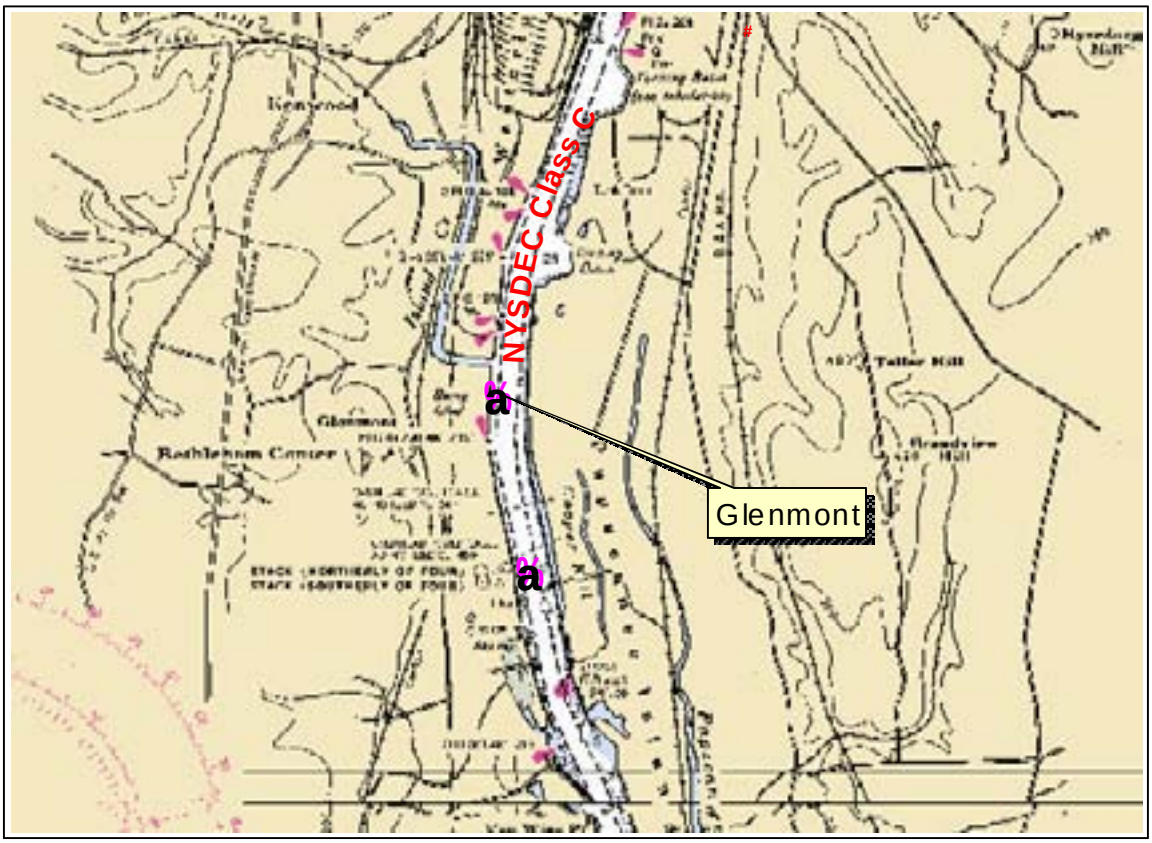
Standard A: (NYSDOH) The total number of organisms of the coliform group shall not exceed a logarithmic mean of 2400/100 ml for a series of five or more samples in any 30 day period.
(NYSDEC) The total coliform monthly median value shall not exceed 2400/100 ml from a minimum of five samples

Standard B (NYSDOH) 20% of total samples during the period shall not exceed 5000/100 ml.
(NYSDEC) 20% of total samples during the period shall not exceed 5000/100 ml.

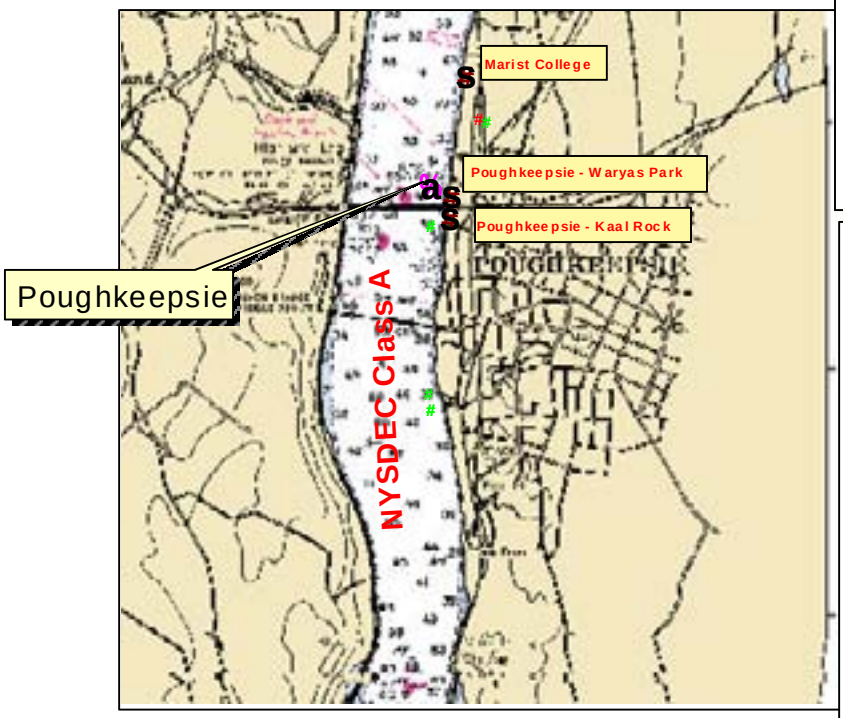
APPENDIX III-B
Glenmont &Poughkeepsie
Hudson River Water Quality

Glenmont and Poughkeepsie
Hudson River Water Quality Sampling Locations

Glenmont

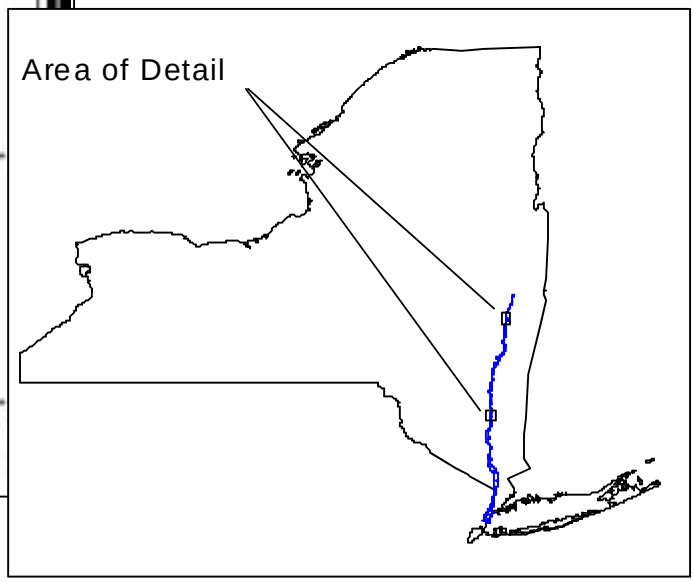


Poughkeepsie



Legend :

- s Proposed Site
- # STP & CSO Outfalls (PCS)
- # STP & CSO Outfalls (SPDES)
- a Sampling Location



Glenmont at NIMO Raw Water Intake
Hudson River Water Quality Data
Bureau of Watershed Assessment and Research

Date	Water Temp. Deg C	Diss. Oxygen mg/l	Specific Cond. Lab umohs/cm	Solids Suspended mg/l	Turbidity NTU
03/06/84	0.0	13.0	198.0	9.0	
03/27/84	4.0	12.8	191.0	6.0	
04/25/84	8.0	11.0	165.0	19.0	
05/22/84	18.0	9.1	168.0	8.0	
06/21/84	23.0	7.8	216.0	14.0	
07/16/84	25.0	7.2	201.0	14.0	
08/16/84	27.0	6.4	221.0	8.0	
09/12/84	20.0	7.4	217.0	13.0	
10/09/84	21.0	9.2	224.0	7.0	
11/07/84	9.0	10.0	228.0	5.0	
12/05/84	3.0	12.0	325.0	18.0	
02/19/85	0.5	12.0	262.0	4.0	
03/14/85	2.0	14.2	190.0	130.0	
04/08/85	8.0	11.8	219.0	18.0	
05/09/85	14.0	9.6	188.0	12.0	
06/05/85	19.0	6.4	236.0	11.0	
07/01/85	21.0	7.0	235.0	11.0	
07/31/85	23.0	5.6	211.0	4.0	
08/21/85	25.0	4.6	216.0	5.0	
09/25/85	20.0	6.4	186.0	4.0	
10/24/85	13.0	9.8	207.0	4.0	
11/20/85	9.0	12.0	182.0	9.0	
12/18/85	0.0	13.6	224.0	3.0	
01/22/86	1.0	13.6	268.0	17.0	
02/21/86	0.0	13.2	209.0	6.0	
03/18/86	3.0	14.0	211.0	73.0	
04/17/86	10.0	11.6	178.0	5.0	
05/15/86	17.0	7.6	212.0	4.0	
06/11/86	20.0	8.0	225.0	9.0	
07/07/86	23.0	7.9	222.0	8.0	
08/04/86	23.0	7.4	195.0	11.0	
09/02/86	21.0	7.8	211.0	9.0	
09/25/86	18.0		228.0	18.0	
10/27/86	11.0	10.2	195.0	6.0	
11/24/86	3.0	12.6	243.0	11.0	
12/23/86	0.0	14.0		6.0	
05/04/87	12.6	10.1	237.0		4.0
06/01/87	24.0	6.5	238.0		5.0
08/06/87	24.5	7.0	227.0		4.0
10/06/87	12.8	11.7	210.0		18.0
11/24/87	4.0	18.9	162.0		4.0
05/02/88	10.5	11.6	179.0		4.0

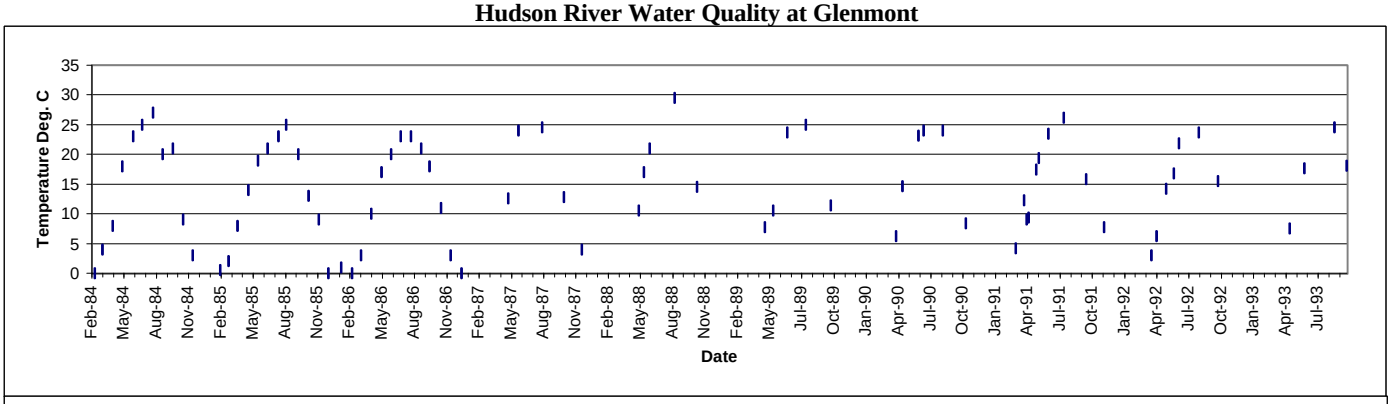
Glenmont at NIMO Raw Water Intake
Hudson River Water Quality Data
Bureau of Watershed Assessment and Research

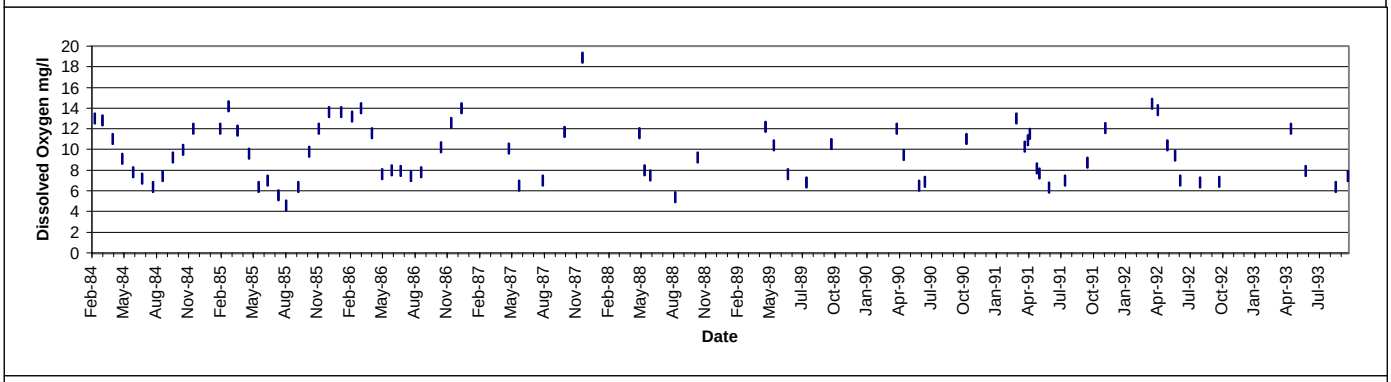
Date	Water Temp. Deg C	Diss. Oxygen mg/l	Specific Cond. Lab umohs/cm	Solids Suspended mg/l	Turbidity NTU
05/16/88	17.0	8.0	227.0	10.0	5.0
05/31/88	21.0	7.5	230.0	8.0	8.0
08/09/88	29.5	5.4	245.0	4.0	1.0
10/11/88	14.5	9.2	230.0	6.0	5.0
04/18/89	7.8	12.2	247.0	14.0	9.0
05/11/89	10.5	10.4	165.0	43.0	33.0
06/19/89	23.7	7.6	236.0	25.0	14.0
08/10/89	25.0	6.8	214.0	79.0	7.0
10/19/89	11.4	10.5	210.0	16.0	8.0
04/18/90	6.3	12.0	194.0	16.0	10.0
05/07/90	14.6	9.5	208.0	12.0	6.0
06/20/90	23.1	6.5	225.0	10.0	7.0
07/05/90	24.0	6.9	277.0		5.0
08/27/90	24.0		214.0		5.0
10/30/90	8.4	11.0	184.0		17.0
03/18/91	4.2	13.0	207.0	8.0	3.0
04/10/91	12.3	10.3	168.0	14.0	10.0
04/18/91	9.1	10.9	192.0	4.0	5.0
04/24/91	9.4	11.5	180.0	43.0	33.0
05/14/91	17.4	8.2	220.0	13.0	6.0
05/21/91	19.4	7.7	217.0	8.0	4.0
06/17/91	23.5	6.3	241.0	12.0	8.0
07/31/91	26.2	7.0	227.0	8.0	4.0
10/01/91	15.8	8.7	236.0	17.0	6.0
11/20/91	7.7	12.1	255.0	7.0	6.0
03/30/92	3.0	14.4	184.0	37.0	28.0
04/15/92	6.2	13.8	176.0	10.0	12.0
05/11/92	14.2	10.4	166.0	8.0	6.0
06/02/92	16.8	9.4	257.0	38.0	21.0
06/16/92	21.9	7.0	171.0	15.0	7.0
08/10/92	23.7	6.8	199.0	10.0	4.0
10/02/92	15.5	6.9	225.0	7.0	4.0
04/20/93	7.5	12.0	157.0	40.0	20.0
06/01/93	17.7	7.9	228.0	8.0	2.0
08/24/93	24.5	6.4	232.0	19.0	5.0
09/27/93	18.1	7.4	267.0	26.0	2.0

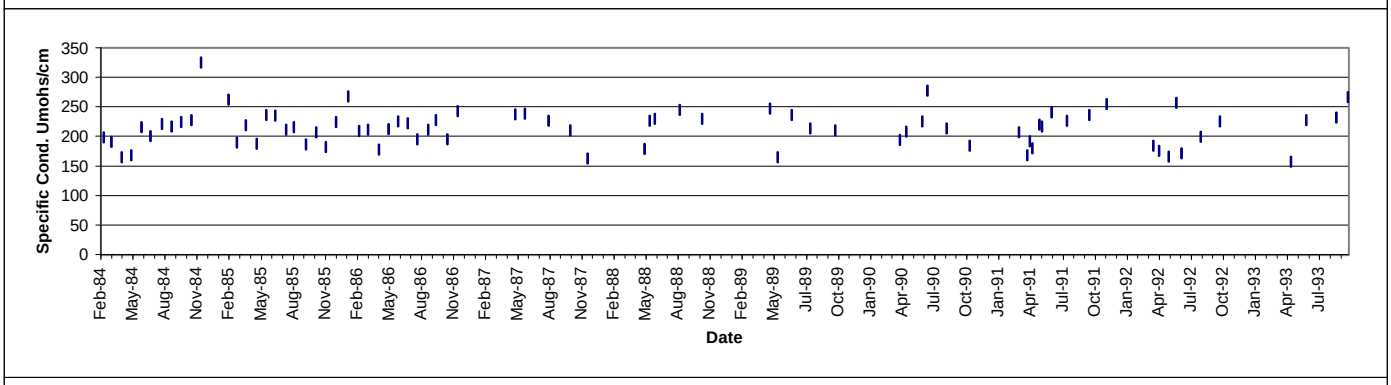
Poughkeepsie STP
Hudson River Water Quality Data
Bureau of Watershed Assessment and Research

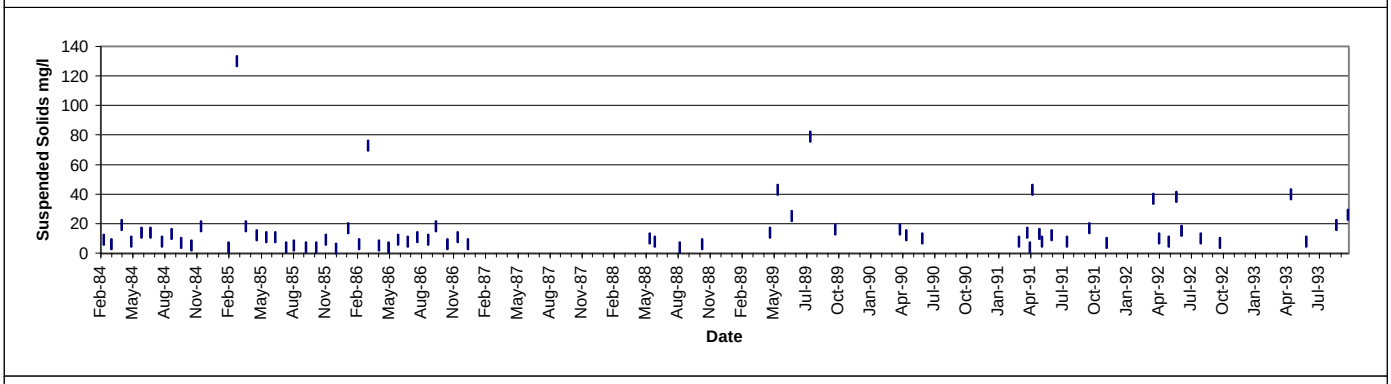
Date	Water Temp. Deg C	Diss. Oxygen mg/l mg/l	Specific Cond. Lab umohs/cm	Solids Suspended mg/l	Turbidity NTU
06/09/86	20.0				
07/29/86	26.0				
09/29/86					
10/27/86					
05/04/87	14.0	9.0	180		28
06/01/87	21.0	7.8	220		25
08/04/87			230		8
10/06/87	18.0	8.0			22
11/23/87	6.0	10.8	180		25
03/28/88	8.0	12.2	236		15
06/13/88	30.0	8.0	200		28
04/13/89	7.6	11.0	198	34	13
05/09/89	13.6	9.5	182	173	114
06/20/89	20.1	8.3	204	36	15
08/22/89	28.0	5.2	250	45	15
08/28/89	24.7	7.6	246	48	21
10/16/89	17.1	8.1	237	29	13
10/18/89	12.0	8.0	230	41	17
04/19/90	9.1	11.2	181	42	21
05/09/90	15.9	9.6	168	50	21
06/18/90	21.2	8.3	165	83	24
08/28/90	24.3	6.9	209	44	15
10/30/90	12.5	9.2	172		18
03/21/91	5.2	12.4	170	25	15
04/09/91	10.5	9.5	211	12	11
04/17/91	11.9	10.2	186	50	23
04/25/91	11.4	10.1	169	13	6
05/15/91	17.1	8.7	200	120	59
05/22/91	19.7	8.5	198	93	47
06/19/91	23.5	6.2	214	86	30
07/29/91	25.5	6.9	232	35	27
10/02/91	19.9	7.3	253	22	8
11/19/91	9.7	11.1	238	20	11
03/31/92	4.6	12.9	204	20	18
04/14/92	7.9	12.3	210	26	17
05/14/92	15.3	9.5	179	58	24
06/02/92	18.0	7.5	178	156	49
06/17/92	21.6	6.6	196	116	15
08/11/92	24.7	7.6	243	65	19
09/30/92	19.2	8.0	227	19	10
04/14/93	7.1	11.6	173	54	20
06/01/93	18.5	8.0	189	77	23
08/24/93	24.9	6.9	258	39	16
09/27/93	20.4	7.9	243	41	14

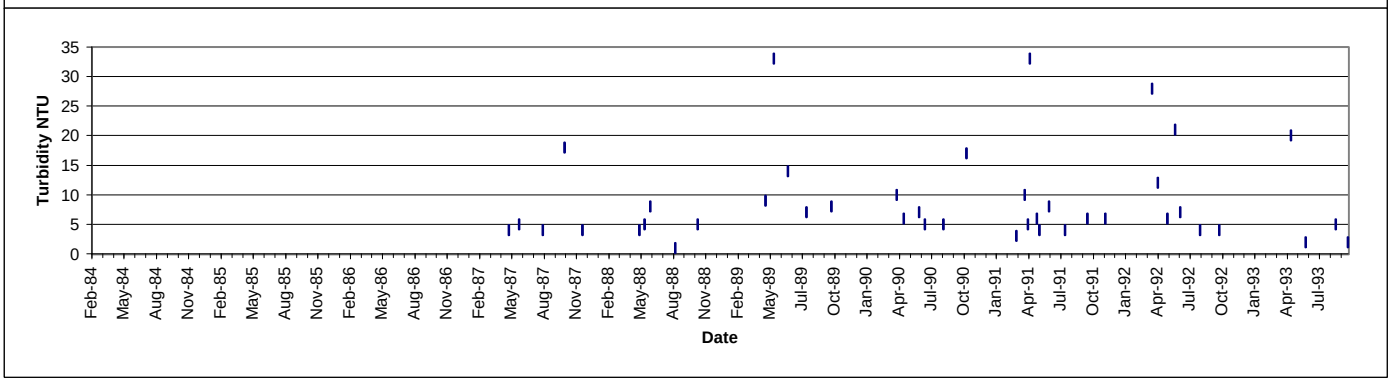
Hudson River Water Quality at Glenmont



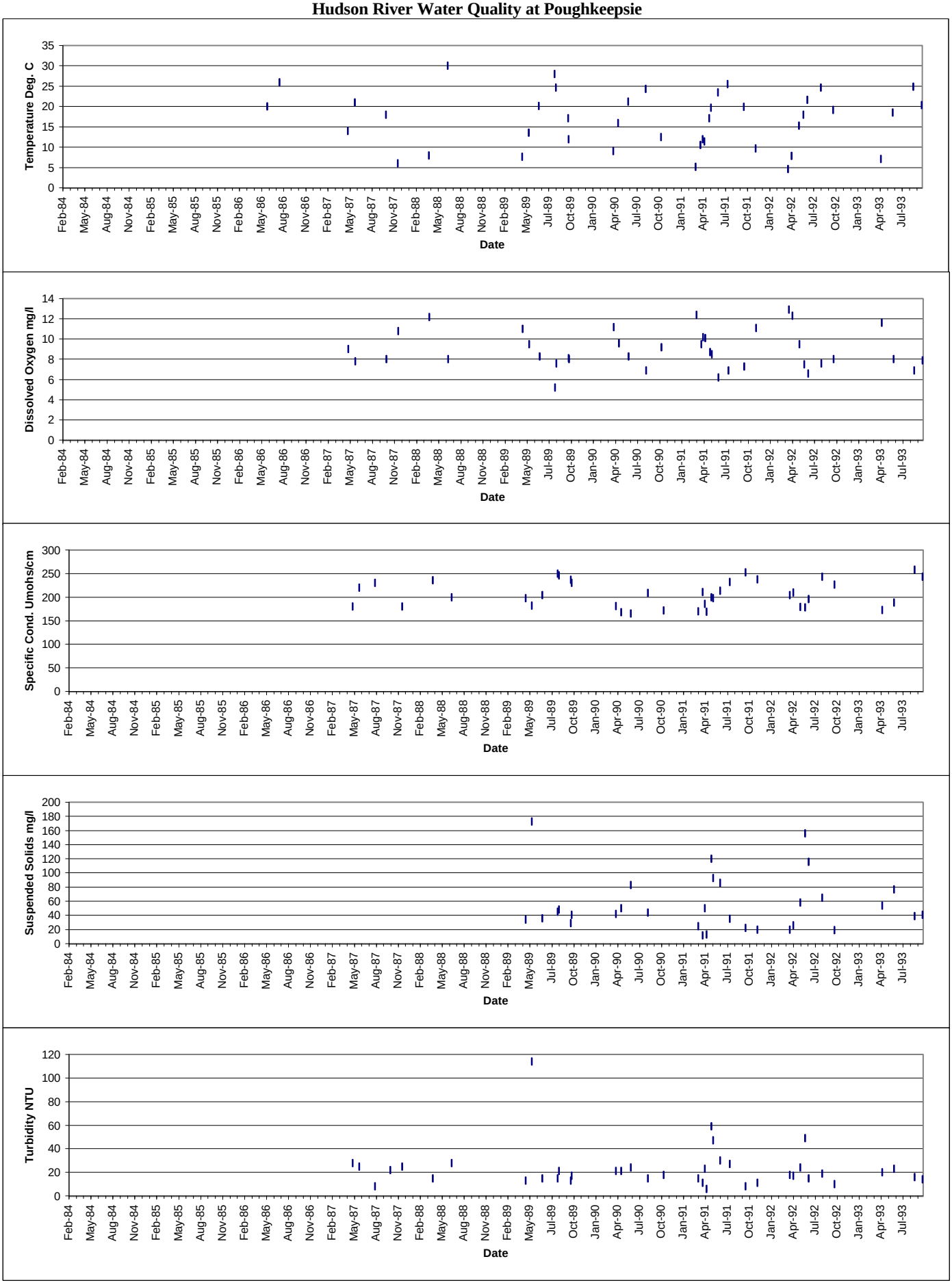








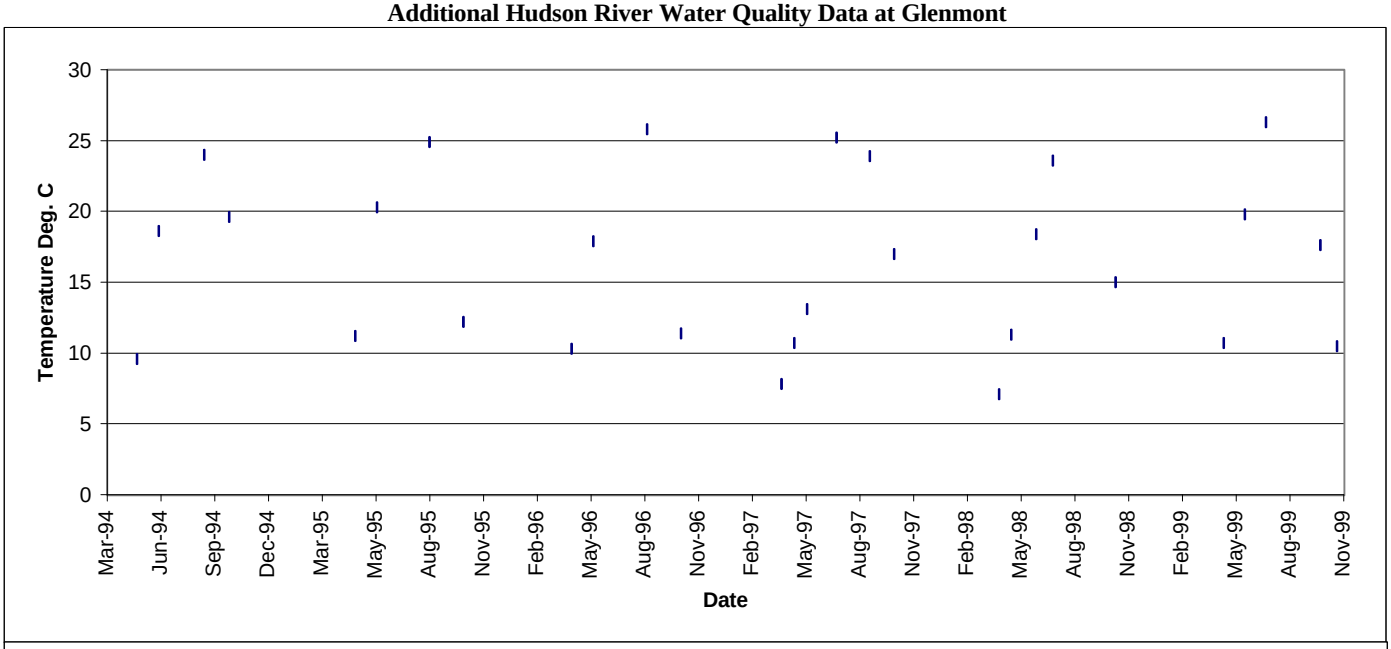
Hudson River Water Quality at Poughkeepsie

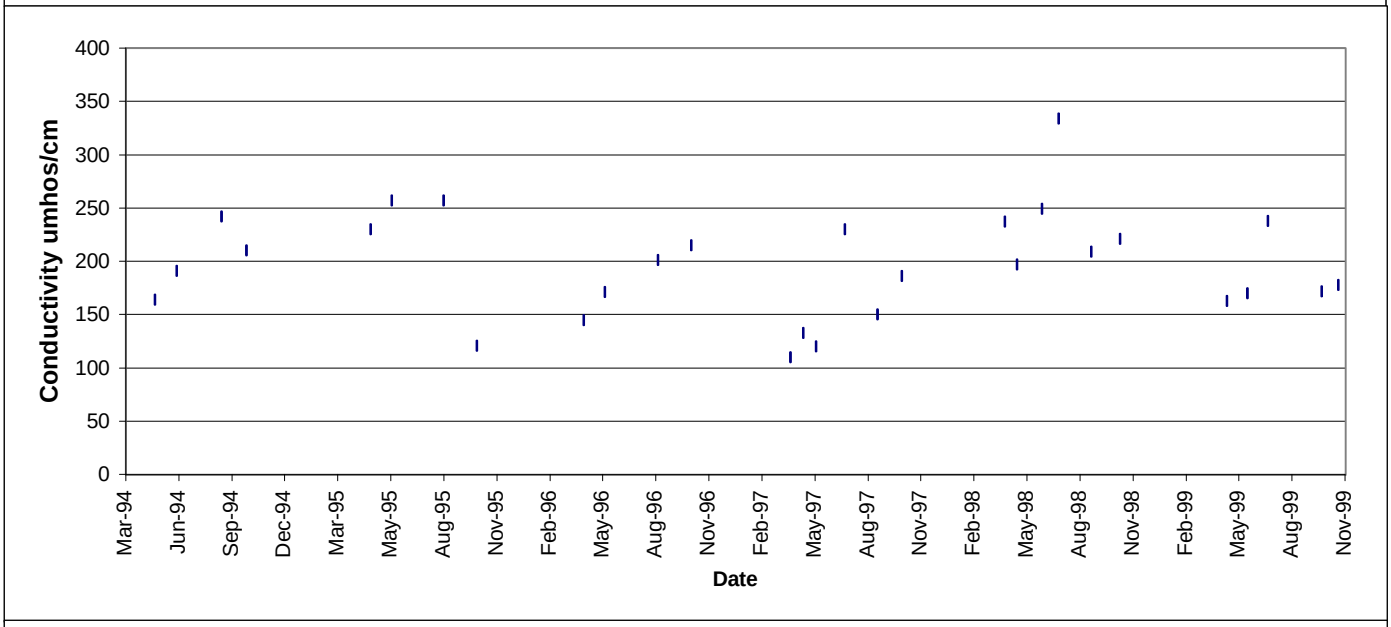


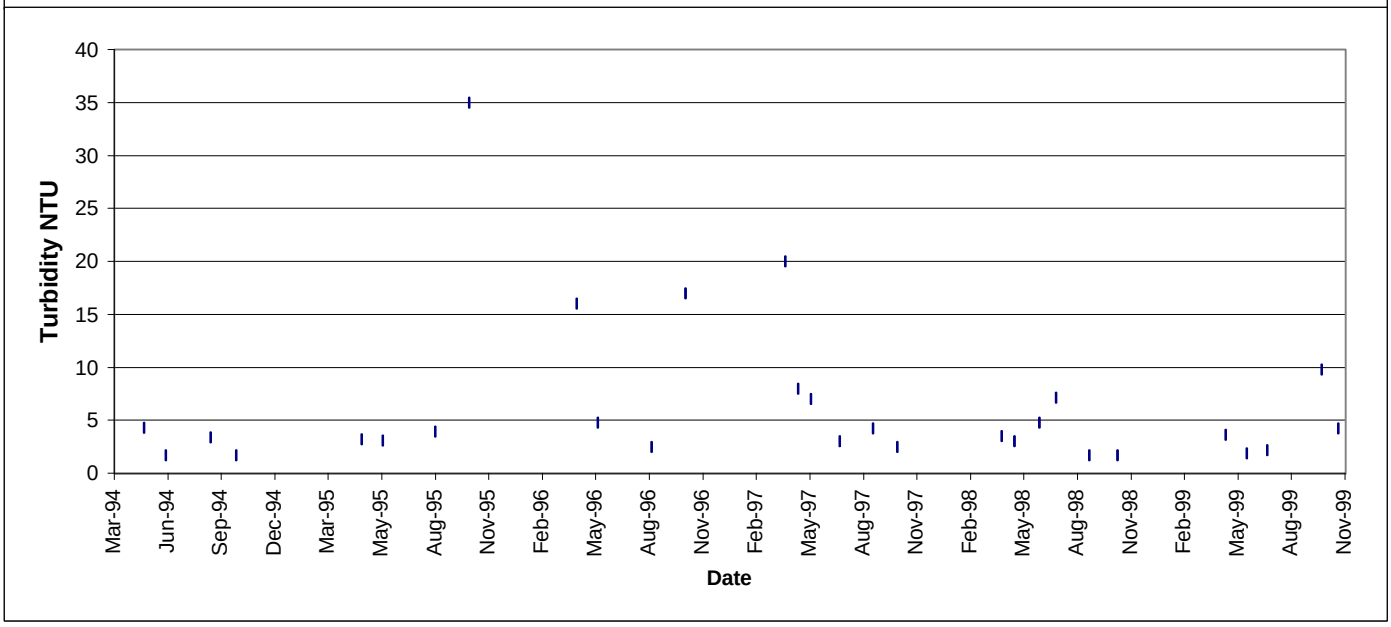
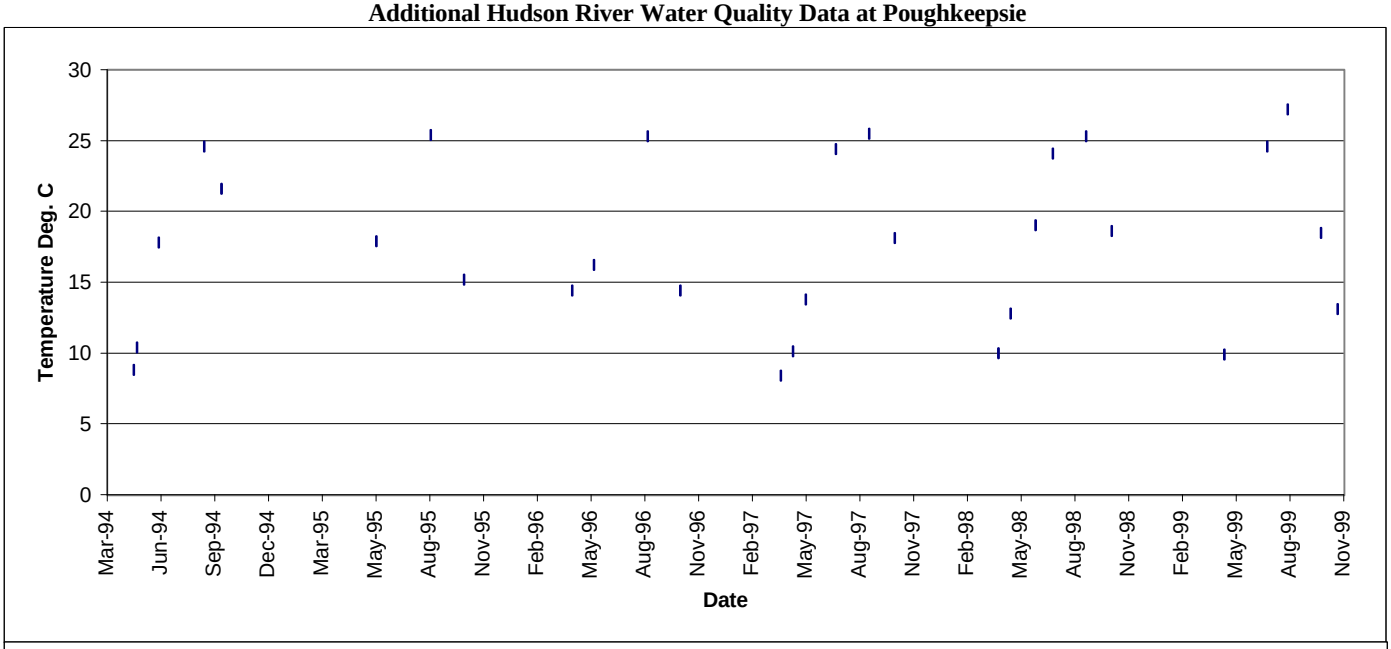
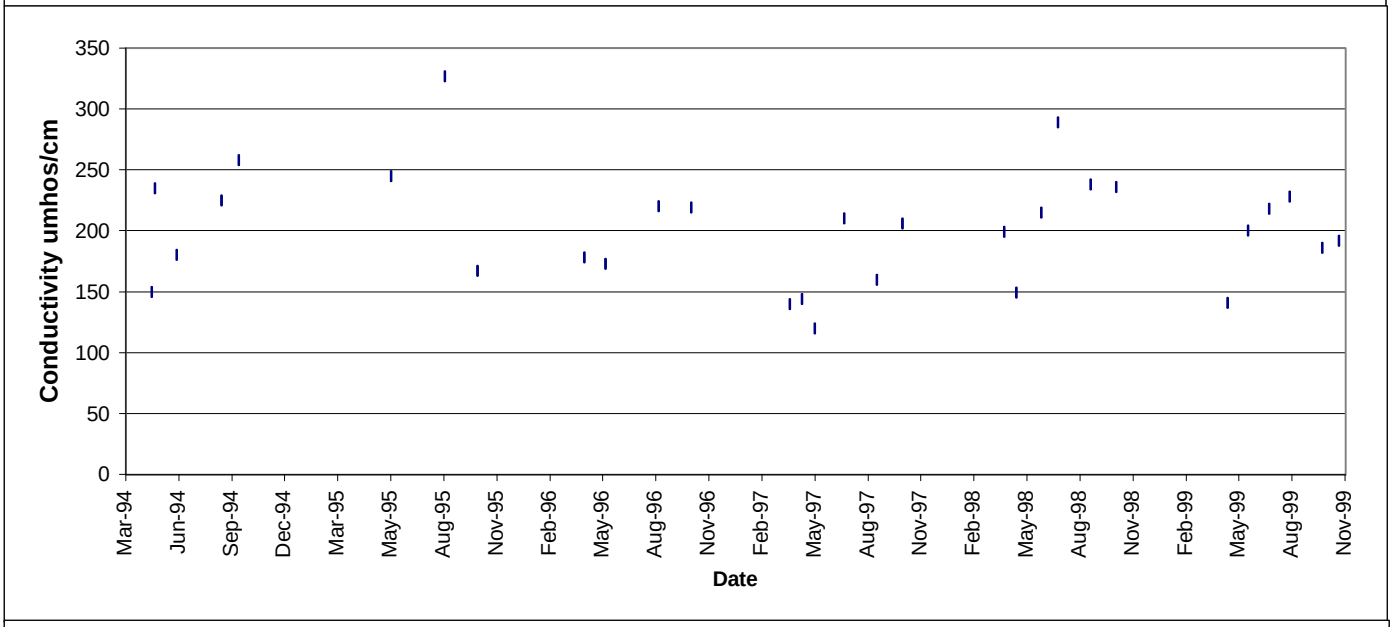
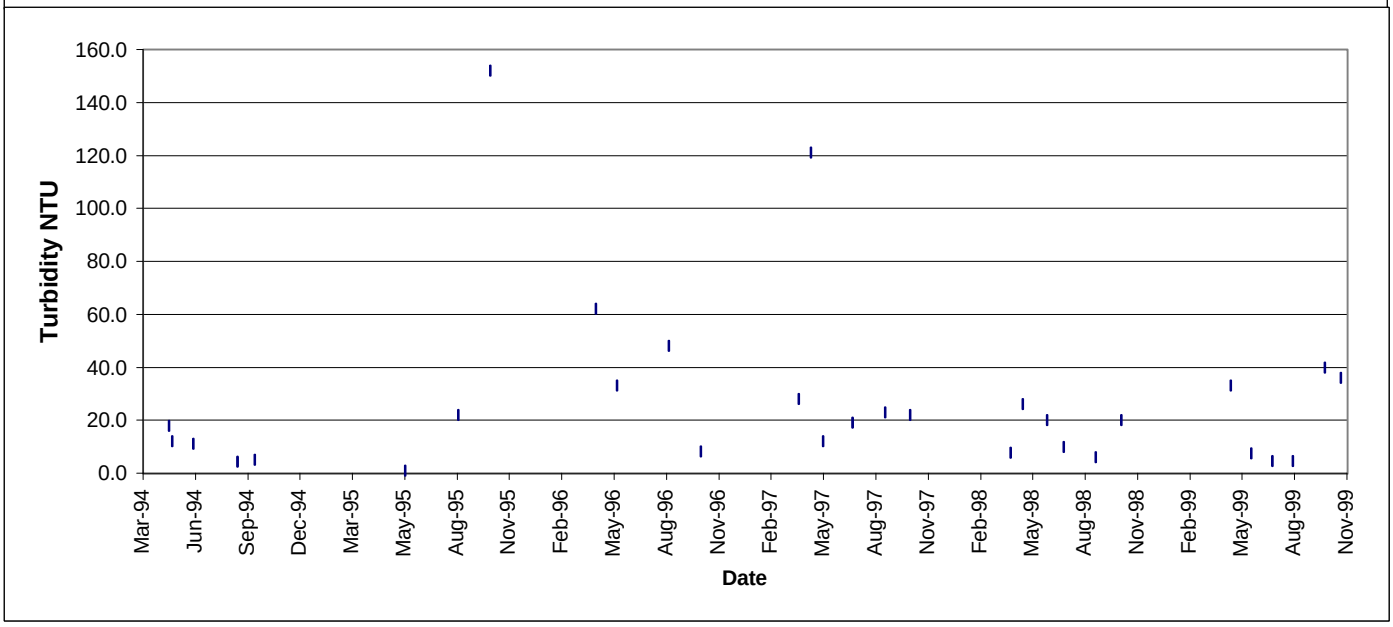
Additional Hudson River Water Quality Data

Glenmont at NIMO Raw Water Intake				Poughkeepsie STP			
Date	Temperature Deg C	Cond. umohs/cm	Turbidity NTU	Date	Temp. Deg C	Cond. umohs/cm	Turb. NTU
4/25/94	9.6	164	4.3	4/20/94	8.8	150	18.0
6/1/94	18.6	191	1.7	4/25/94	10.4	235	12.0
8/16/94	24	242	3.4	6/1/94	17.8	180	11.0
9/27/94	19.6	210	1.7	8/16/94	24.6	225	4.3
4/26/95	11.2	230	3.2	9/14/94	21.6	258	5.0
6/1/95	20.3	257	3.1	5/31/95	17.9	245	1.0
8/28/95	24.9	257	3.9	8/30/95	25.4	327	22.0
10/24/95	12.2	121	35	10/25/95	15.2	167	152.0
4/22/96	10.3	145	16	4/23/96	14.4	178	62.0
5/28/96	17.9	171	4.8	5/29/96	16.2	173	33.0
8/26/96	25.8	201	2.5	8/27/96	25.3	220	48.0
10/22/96	11.4	215	17	10/21/96	14.4	219	8.2
4/8/97	7.8	110	20	4/7/97	8.4	140	28.0
4/30/97	10.7	133	8	4/28/97	10.1	144	121.0
5/21/97	13.1	120	7	5/19/97	13.8	120	12.0
7/9/97	25.2	230	3	7/8/97	24.4	210	19.0
9/3/97	23.9	150	4.2	9/2/97	25.5	160	23.0
10/14/97	17	186	2.5	10/15/97	18.1	206	22.0
4/7/98	7.1	237	3.5	4/6/98	10	199	7.7
4/28/98	11.3	197	3	4/27/98	12.8	149	26.0
6/9/98	18.4	249	4.8	6/8/98	19	215	20.0
7/7/98	23.6	334	7.1	7/6/98	24.1	289	9.9
9/1/98		209	1.7	8/31/98	25.3	238	6.0
10/19/98	15	221	1.7	10/13/98	18.6	236	20.0
4/19/99	10.7	163	3.6	4/20/99	9.9	141	33.0
5/24/99	19.8	170	1.9	5/25/99		200	7.5
6/28/99	26.3	238	2.2	6/30/99	24.6	218	4.6
9/27/99	17.6	172	9.8	8/4/99	27.2	228	4.6
10/25/99	10.5	178	4.2	9/28/99	18.5	186	40.0
				10/26/99	13.1	192	36.0

Additional Hudson River Water Quality Data at Glenmont







Additional Hudson River Water Quality Data at Poughkeepsie