

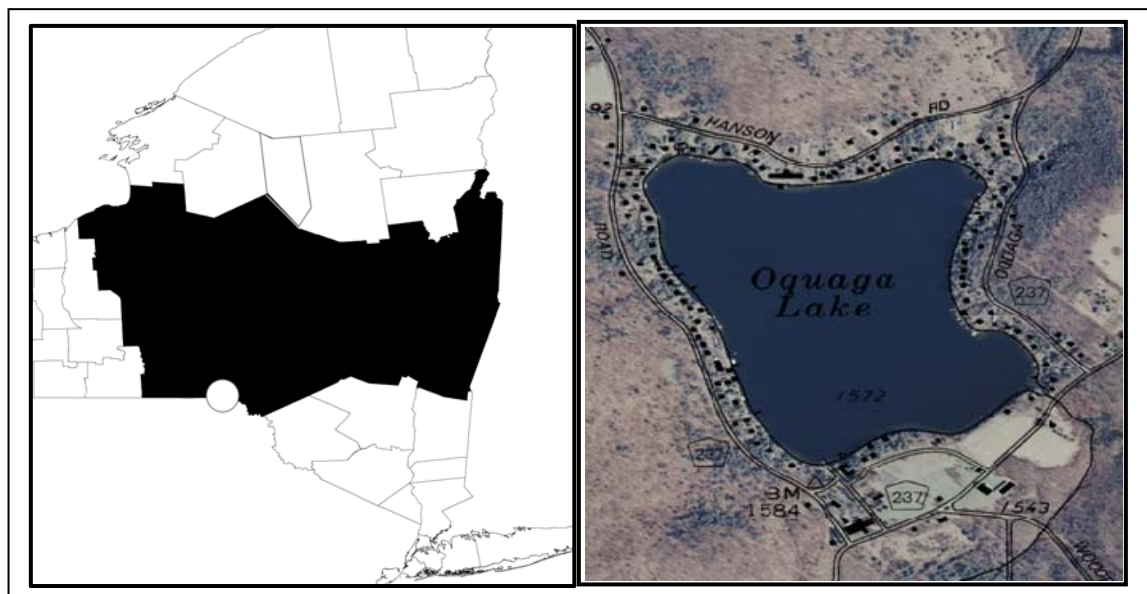
Appendix A: CSLAP 2009 Lake Water Quality Summary: Oquaga Lake

General Lake Information

Location	town of Deposit
County	Broome
Basin	Delaware River
Size	54.4 hectares (134.4 acres)
Lake Origins	Natural
Watershed Area	630 hectares (1556 acres)
Retention Time	3.3 years
Mean Depth	13.9 meters
Sounding Depth	35 meters
Public Access?	no
Major Tributaries	no named tribs
Lake Tributary To...	Starboard Creek to West Branch Delaware River
WQ Classification	AA (potable water)
Lake Outlet Latitude	42.020
Lake Outlet Longitude	-75.454
Sampling Years	1987-1992, 2002-2009
2009 Samplers	Mark, Andrew and Emma Millspaugh, Holly Faulkner, Molly Banda, and Colby Raymond
Main Contact	Mark Millspaugh

Lake Map

(sampling location marked with a circle)



Background

Oquaga Lake is a 134 acre, class AA lake found in the Town of Deposit in Broome County in the Southern Tier region of New York State. It was first sampled as part of CSLAP in 1987.

It is one of 4 CSLAP lakes among the >25 lakes found in Broome County, and one of 12 CSLAP lakes among the >240 lakes and ponds in the Delaware River drainage basin.

Lake Uses

Oquaga Lake is a Class AA lake; this means that the best intended use for the lake is for potable water—drinking, contact recreation—swimming and bathing, non-contact recreation—boating and angling, aquatic life, and aesthetics. The lake is used by lake residents and invited guests for non-power boating and swimming, through residential shoreline access to the lake. There is no public access to the lake.

It is not known by the report authors if private stocking occurs in Oquaga Lake.

General statewide fishing regulations are applicable in Oquaga Lake. In addition, the open season on trout lasts from April 1st through October 15th, with no size limits and a daily take limit of 5, with no more than 2 >12" and 5 brook trout under 8".

There are no lake-specific fish consumption advisories on Oquaga Lake.

Historical Water Quality Data

CSLAP sampling was conducted on Oquaga Lake from 1987-1992, and 2002-2009. The CSLAP reports for Oquaga Lake for several years are posted on the NYSFOLA website at www.nysfola.org, under NYS Lake Association Lake List.

Oquaga Lake was sampled by the Conservation Department (the predecessor to the NYSDEC) on August 8th, 1935 as part of the Biological Survey of the Delaware River basin. The temperature and oxygen surveys from this study show dissolved oxygen reductions only near the lake bottom (close to 111 feet), and exceeding critical levels for all fish at all depths. Most of the parameters sampled in CSLAP were not analyzed as part of this survey. The results from the “shared” parameters are included in Table 2. The results from this survey suggest water quality conditions in 1935 were similar to those measured in 2004.

The field notes from this survey indicate the following:

“Oquaga Lake is a deep body of water (max. 111ft) with excellent chemical conditions on the bottom. Lake trout are present but those caught average small in size. Lake herring are recommended for stocking. The latter should supply a much needed deep-water forage fish for the lake trout. This species taken by the survey party had been feeding on small perch which are not plentiful judging from the gill-net collection. Rock bass dominate the shallow water. Sunfish are scarce along the shores. Only moderate numbers of large small-mouthed bass are recommended for planting since there is too little shallow water which produces bass food.”

Furthermore, rooted aquatic plants are scarce and recreational uses have caused the removal of other shelter.

Vegetation is scant.”

Neither the ephemeral inlets to nor the outlet (Starboard Creek) has been monitored through the NYSDEC Rotating Intensive Basins (RIBS) or stream biomonitoring programs.

Lake Association and Management History

Oquaga Lake is served by the Oquaga Lake Association, developed “to preserve, improve and protect Oquaga Lake and the lands adjoining the same and bordering thereon, all located in the Town of Sanford, Broome County, New York; to develop and promote the said territory as a summer resort; to prevent the contamination of the waters thereof; to further and advance the social and general welfare of the said territory and the owners and occupants thereof and the members of this Association; to do any and all acts necessary to carry into effect the foregoing objectives, including acquiring and holding title and property rights in and to the said Oquaga Lake, adjoining lands and springs and water courses in the vicinity.”

The lake association is involved in a variety of activities, including:

- the first lake in the State of New York to prohibit the use of jet skis and other specialty watercraft
- annual well water testing by Benchmark Analytics of Sayre PA
- social activities, including a fishing tournament, opening cocktail party, ring of fire, family day (field games/water sports), annual Meeting

The lake association maintains a web site at <http://www.oquaga.com/> .

Summary of 2009 CSLAP Sampling Results

Evaluation of Eutrophication Indicators

Total phosphorus and chlorophyll *a* readings were lower than normal in 2009, but Secchi disk transparency readings were close to normal, and none of these indicators has exhibited any clear long-term trends. The lake can be characterized as *mesoligotrophic*, or moderately unproductive, based on chlorophyll *a* (typical of *mesotrophic* lakes), Secchi disk transparency, and total phosphorus (typical of *oligotrophic* lakes). The TSI evaluation suggests that each of these trophic indicators is “internally consistent”—each of these indicators is in the expected range given the readings of the other indicators. Overall trophic conditions are summarized on the Lake Scorecard.

Evaluation of Potable Water Indicators

Algae levels are not high enough to render the lake susceptible to taste and odor compounds or elevated DBP (disinfection by product) compounds that could affect the potability

of the water, suggesting no impacts to potable water use from algae. Deepwater phosphorus and ammonia readings are similar to those measured at the lake surface, so deepwater intakes may also support potable water use.

Evaluation of Limnological Indicators

Most of the limnological indicators measured in CSLAP in 2009 were close to normal. Ammonia and total nitrogen readings were lower than normal in 2009, perhaps in response to wetter weather. However, none of these limnological indicators has exhibited any clear long-term trends. It is likely that the small changes in each of these indicators have been within the normal range of variability in the lake. Overall limnological conditions are summarized in the Lake Scorecard.

Evaluation of Biological Condition

The 1992 phytoplankton survey indicated relatively low algal biomass dominated by golden-brown algae and dinoflagellates. It is not known if this is representative of the normal distribution of algal communities in the lake.

The fish community is comprised of at least one warmwater fish species, and at least three coldwater fish species, based on incomplete inventory information. This suggests that the lake can most likely be characterized as a coldwater fishery.

Macrophyte, zooplankton, and macroinvertebrates have not been evaluated through CSLAP in Oquaga Lake.

Evaluation of Lake Perception

Aquatic plant coverage was greater than normal in 2009, consistent with a long-term increase in aquatic plant coverage, particularly since 2004. It is not known if this is due to an increase in native or exotic plants; no exotic plants have been verified in the lake. Water quality and recreational assessments were close to normal in 2009, and neither of these measures of lake perception has exhibited any clear long-term trends. Overall lake perception is summarized on the Lake Scorecard.

Evaluation of Local Climate Change

Water temperature readings in the summer index period were lower to normal in 2009, and both air and water temperature readings have decreased in the last twenty years. It is not known if this is an indication of the local climate change or if it represents normal variability.

Lake Scorecard

Category	Indicator	Classification	2009 Change?	Long Term Change?
Eutrophication Indicators	Water Clarity	Oligotrophic	No	No
	Chlorophyll <i>a</i>	Mesotrophic	Lower than normal	No
	Total Phosphorus	Oligotrophic	Lower than normal	No
Potable Water Indicators	Hypolimnetic Ammonia	Similar to Surface NH ₄		
	Hypolimnetic Arsenic			
	Hypolimnetic Iron			
	Hypolimnetic Manganese			
Limnological Indicators	Hypolimnetic Phosphorus	Similar to Surface TP		
	Nitrate + Nitrite	Low NO _x		
	Ammonia	Low Ammonia		
	Total Nitrogen	Low Total Nitrogen		
	pH	Circumneutral		
	Specific Conductance	Softwater		
	True Color	Uncolored		
	Calcium	Not Susceptible to Zebra Mussels		
Lake Perception	WQ Assessment	Crystal Clear	No	No
	Aquatic Plant Coverage	Subsurface Plant Growth	Greater coverage	Increasing
	Recreational Assessment	Excellent	No	No
Biological Condition	Phytoplankton	Low biomass dominated by golden-brown algae and dinoflagellates	Not known	Not known
	Macrophytes	Not measured through CSLAP	Not known	Not known
	Zooplankton	Not measured through CSLAP	Not known	Not known
	Macroinvertebrates	Not measured through CSLAP	Not known	Not known
	Fish	Coldwater fishery?	Not known	Not known
	Invasive Species	None observed through CSLAP	Not known	Not known
Local Climate Change	Air Temperature		No	Decreasing
	Water Temperature		Lower than normal	Decreasing

Evaluation of Lake Condition Impacts to Lake Uses

Oquaga Lake is among the lakes listed on the 2002 Delaware River drainage basin PWL as unassessed.

Potable Water (Drinking Water)

The CSLAP dataset at Oquaga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, is inadequate to evaluate the use of the lake for potable water. The low algae levels and lack of deepwater anoxia suggest that potable water use should be supported.

Contact Recreation (Swimming)

The CSLAP dataset at Oquaga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggests that swimming and contact recreation should be fully supported, although additional information about bacterial levels is needed to evaluate the safety of the water for swimming.

Non-Contact Recreation (Boating and Fishing)

The CSLAP dataset on Oquaga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that non-contact recreation should be fully supported.

Aquatic Life

The CSLAP dataset on Oquaga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aquatic life should be fully supported, although additional data are needed to evaluate the food and habitat conditions for aquatic organisms in the lake.

Aesthetics

The CSLAP dataset on Oquaga Lake, including water chemistry data, physical measurements, and volunteer samplers' perception data, suggest that aesthetics should be fully supported.

Fish Consumption

There are no fish consumption advisories posted for Oquaga Lake.

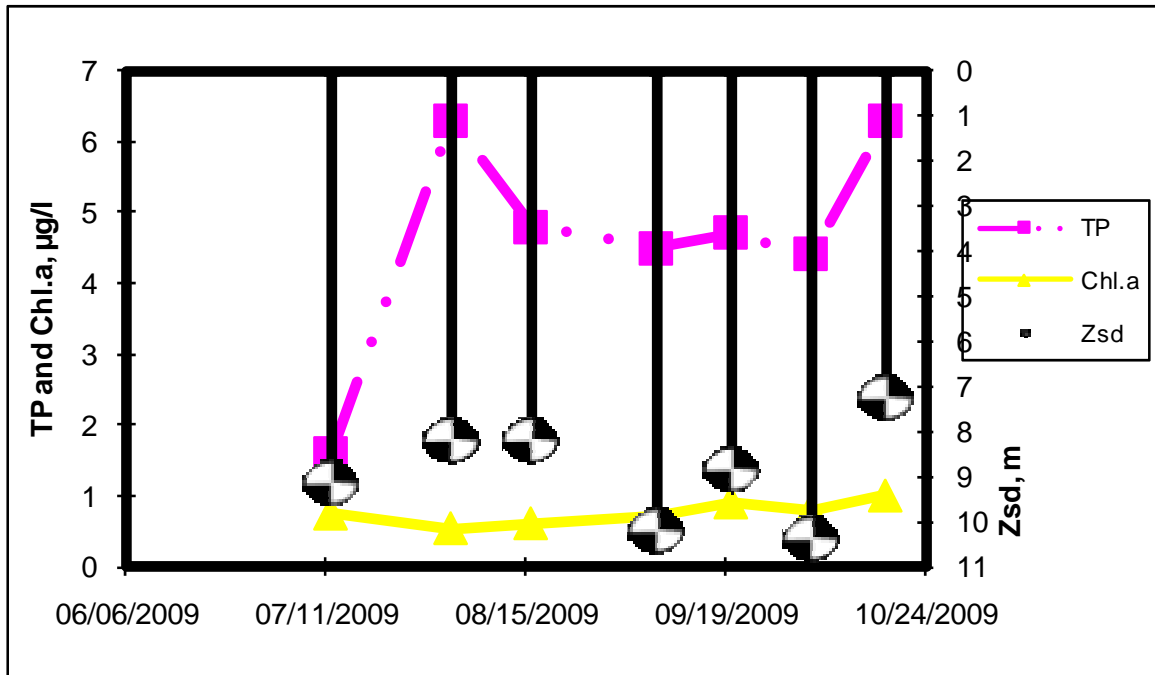
Additional Comments and Recommendations

Aquatic plant survey data may help to determine if the increase in aquatic plant coverage is associated with nuisance or exotic plants.

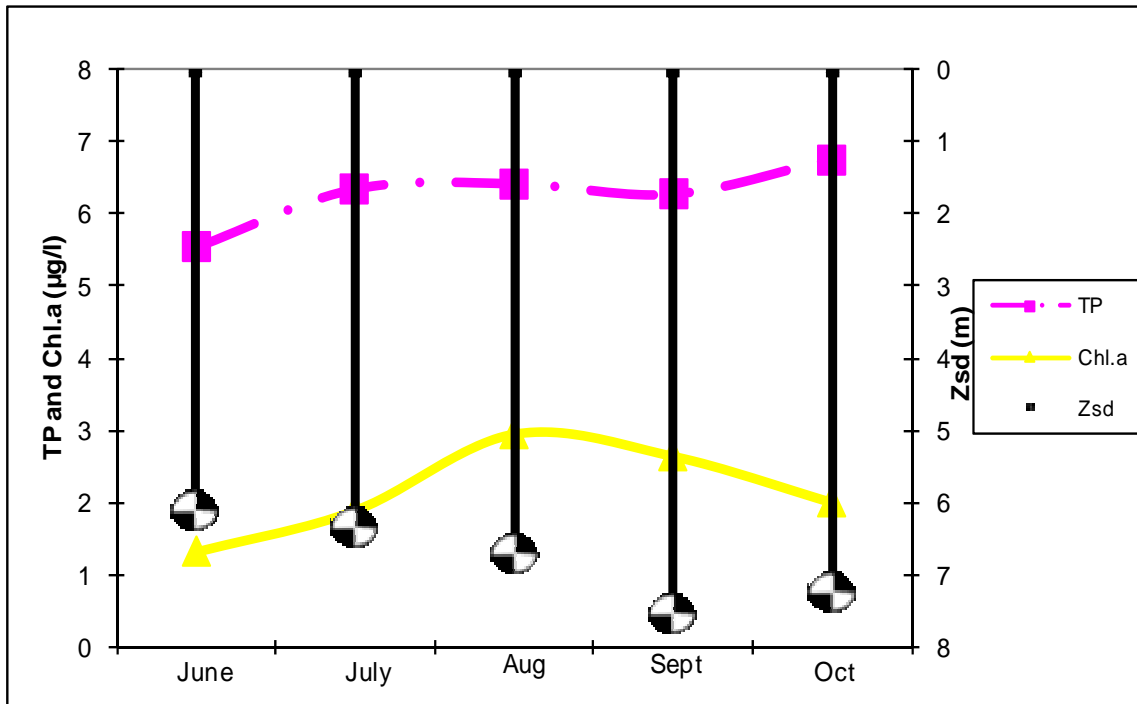
Aquatic Plant IDs-2009

None submitted in 2009.

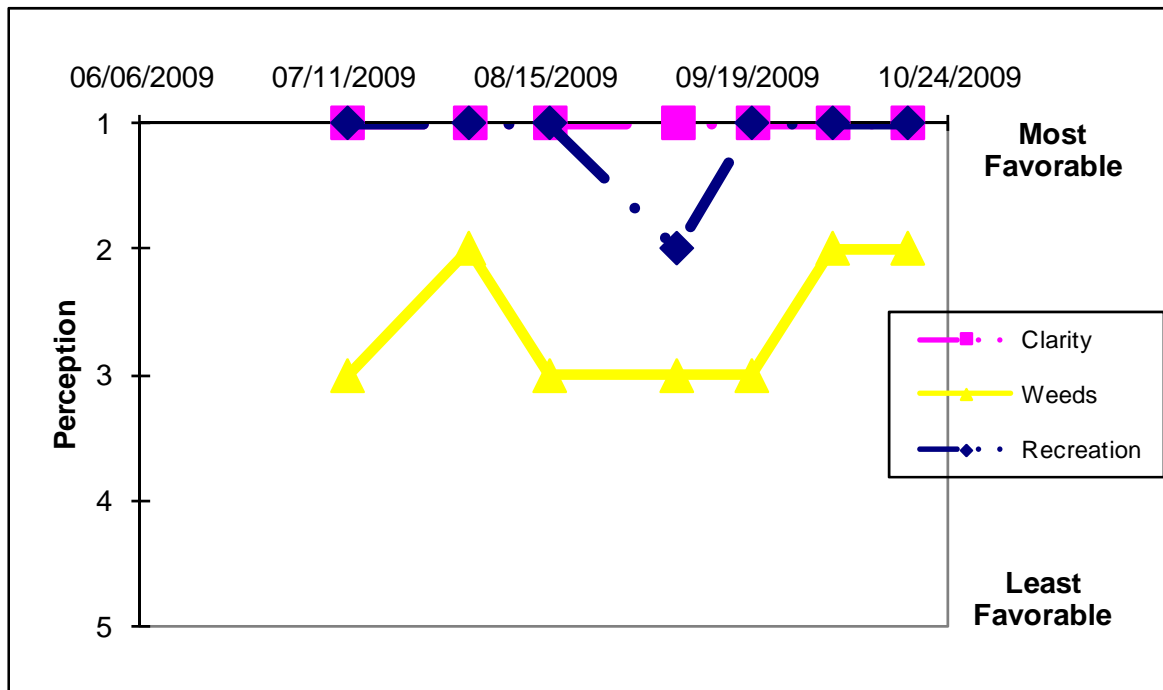
Time Series: Trophic Indicators, 2009



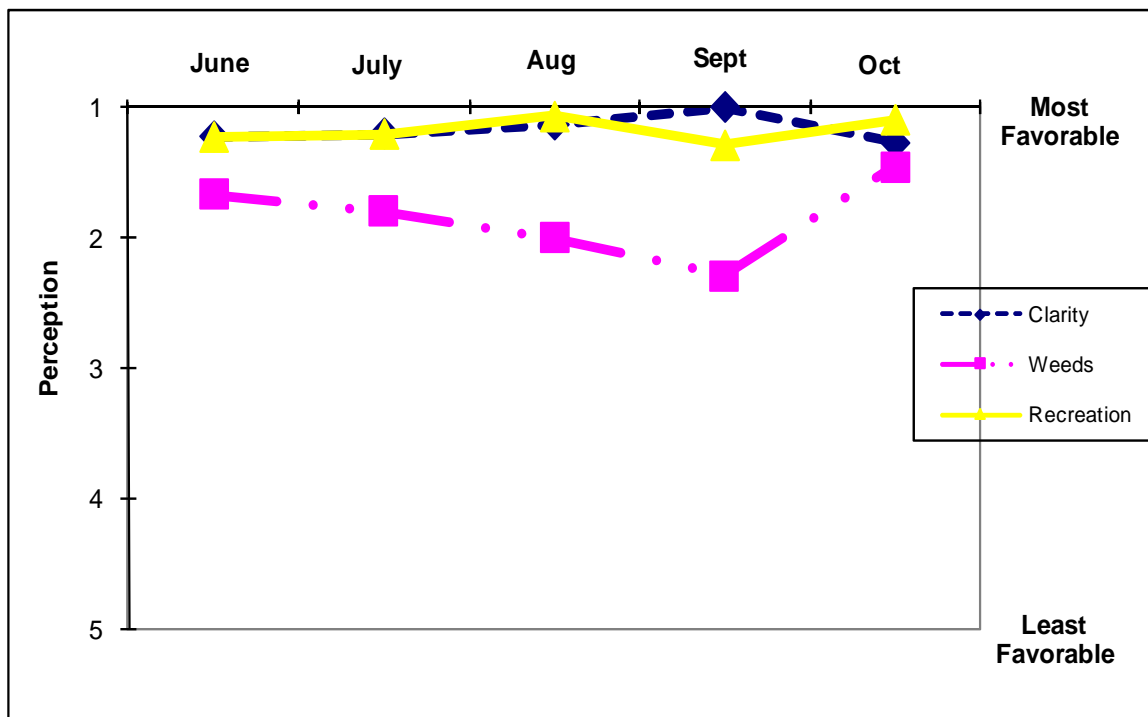
Time Series: Trophic Indicators, Typical Year (1987-2009)



Time Series: Lake Perception Indicators, 2009



Time Series: Lake Perception Indicators, Typical Year (1987-2009)



Appendix B- CSLAP Water Quality Sampling Results for Oquaga Lake

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	TKN	TN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
30	Oquaga L	6/13/1987	30.0	3.63	1.5	0.005	0.02				8	7.15	55		
30	Oquaga L	6/21/1987	30.0	5.75	1.5	0.007	0.02				9	7.16	54		1.20
30	Oquaga L	7/5/1987	30.0	5.25	1.5	0.009	0.01				5	7.08	54		2.70
30	Oquaga L	7/11/1987	30.0	5.75	1.5	0.006	0.01				2	7.04	54		
30	Oquaga L	7/19/1987	27.0	5.50	1.5	0.003	0.01				6	7.07	54		2.70
30	Oquaga L	7/26/1987	30.0	3.88	1.5	0.006	0.01				5	6.95	54		6.40
30	Oquaga L	8/3/1987	30.0	2.75	1.5	0.009	0.01				5	6.88	55		19.20
30	Oquaga L	8/10/1987	30.0	3.38	1.5	0.008	0.01				5	6.85	55		14.40
30	Oquaga L	8/17/1987	30.0	5.25	1.5	0.005	0.01				6	7.13	56		1.70
30	Oquaga L	8/23/1987	30.0	5.25	1.5	0.005	0.01				4	7.07	53		3.90
30	Oquaga L	8/30/1987	30.0	4.50	1.5	0.005	0.01				6	7.49	53		
30	Oquaga L	9/7/1987	30.0	5.25	1.5	0.012	0.18				3	7.16	56		9.90
30	Oquaga L	9/16/1987	30.0	6.00	1.5	0.005	0.02				2	7.39	63		5.00
30	Oquaga L	10/10/1987	30.0	4.25	1.5	0.007	0.01				6	7.11	54		10.60
30	Oquaga L	10/23/1987	30.0	4.63	1.5										
30	Oquaga L	7/1/1988	30.0	5.75	1.5	0.007	0.01				5	6.33	61		3.25
30	Oquaga L	7/13/1988	30.0	6.50	1.5	0.009					4	8.06	66		4.66
30	Oquaga L	7/21/1988	30.0	5.00	1.5	0.011	0.01				5	7.39	57		2.74
30	Oquaga L	7/28/1988	30.0	6.25	1.5	0.006					5	7.55	57		1.06
30	Oquaga L	8/4/1988	30.0	6.00	1.5	0.005	0.01				3	7.98	60		1.37
30	Oquaga L	8/11/1988	30.0	5.50	1.5	0.006					8				1.63
30	Oquaga L	8/18/1988	30.0	5.50	1.5	0.006	0.01				7	7.14	56		2.07
30	Oquaga L	8/25/1988	30.0	4.75	1.5	0.006					7				2.15
30	Oquaga L	9/2/1988	30.0	5.50	1.5	0.008	0.01				3	7.78	57		2.00
30	Oquaga L	9/15/1988	30.0	5.75	1.5	0.005	0.01				3	7.62	60		3.18
30	Oquaga L	7/10/1989	30.0	4.88	1.5	0.005	0.01				3	7.85	57		2.33
30	Oquaga L	8/2/1989	30.0	4.25	1.5	0.007					2	7.40	58		1.20
30	Oquaga L	8/9/1989	30.0	4.25	1.5	0.009					2	7.89	55		
30	Oquaga L	8/19/1989	30.0	5.25	1.5	0.010	0.01				4	7.83	56		0.43
30	Oquaga L	8/26/1989	30.0	5.13	1.5	0.013					2	7.44			2.22
30	Oquaga L	9/4/1989	30.0	4.75	1.5	0.008					2	7.36	56		4.11
30	Oquaga L	9/13/1989	30.0	5.63	1.5	0.007	0.01				2	7.54	58		3.05
30	Oquaga L	7/14/1990	30.0	4.25	1.5	0.011	0.01				5	7.23	64		3.01
30	Oquaga L	7/20/1990	30.0	5.25	1.5	0.007					3	7.54	57		0.63
30	Oquaga L	8/3/1990	30.0	5.25	1.5	0.008	0.01				1	7.89	56		2.08
30	Oquaga L	8/20/1990	30.0	5.75	1.5	0.006					3	7.29	79		2.43
30	Oquaga L	9/1/1990	30.0	6.25	1.5	0.004	0.01				2	6.60	57		1.34
30	Oquaga L	9/11/1990	30.0	6.50	1.5	0.012					1	6.75	57		2.21
30	Oquaga L	9/27/1990	30.0	6.25	1.5	0.008	0.01				3	7.74	57		2.75
30	Oquaga L	7/1/1991	30.0	6.50	1.5	0.008	0.01				2	7.61	59		1.26
30	Oquaga L	7/15/1991	30.0	6.25	1.5	0.007					3	7.52	59		2.41
30	Oquaga L	7/28/1991	30.0	5.75	1.5	0.007	0.01				2	7.63	57		2.90
30	Oquaga L	8/13/1991	30.0	4.50	1.5	0.010					2	7.29	58		6.88
30	Oquaga L	8/26/1991	30.0	2.75	1.5	0.011	0.01				4	6.95	58		13.40
30	Oquaga L	9/9/1991	30.0	1.75	1.5	0.012					45	7.60	59		23.80
30	Oquaga L	6/25/1992	30.0	5.75	1.5	0.008					2	7.69	60		1.98
30	Oquaga L	7/24/1992	30.0	4.45	1.5	0.011					4	7.75	59		4.48
30	Oquaga L	10/4/1992	30.0	3.50	1.5	0.014	0.01				5	7.68	60		6.97
30	Oquaga L	06/23/02	16.0	5.45	1.5	0.007	0.00	0.02	0.40	129.58	8	7.52	72		1.17
30	Oquaga L	07/07/02	30.0	6.45	1.5	0.003	0.00	0.05	0.26	165.55	9				0.95
30	Oquaga L	07/21/02	30.0	8.15	1.5	0.007	0.01	0.05	0.29	93.72	6	7.47	73		0.56
30	Oquaga L	08/05/02	30.0	9.85	1.5	0.005	0.00	0.06	0.40	168.44	3	7.37	73		0.64
30	Oquaga L	08/18/02	30.0	10.20	1.5	0.005	0.01	0.03	0.40	163.73	3	6.90	74		0.97
30	Oquaga L	09/02/02	30.0	12.30	1.5	0.003	0.00	0.01	0.37	238.35	2	7.21	74		1.25
30	Oquaga L	09/25/02	26.0	9.58		0.006	0.00	0.02	0.53	206.89					
30	Oquaga L	10/06/02		6.85			0.01	0.03	0.26		7	7.46	73		0.48
30	Oquaga L	10/20/02	30.0	7.55		0.006	0.01	0.05	0.37	128.89	5	7.26	72		0.41
30	Oquaga L	6/30/2003	30.0	5.50	1.0	0.007	0.01	0.01	0.19	61.36	7	7.16	73	6.1	
30	Oquaga L	7/13/2003	30.0	5.05		0.006	0.00	0.00	0.16	60.51	10	7.20	72		1.72
30	Oquaga L	7/27/2003	30.0	5.90		0.011	0.00	0.00	0.03	5.15		7.08	70		1.19
30	Oquaga L	8/12/2003	30.0	9.70	1.5	0.004	0.01	0.00	0.18	100.44	11	6.41	78		1.58
30	Oquaga L	8/25/2003	30.0	9.50		0.003	0.03	0.01	0.23	151.53		7.14	72	6.2	0.23
30	Oquaga L	9/2/2003	30.0	6.90		0.005	0.00	0.00	0.18	83.53	8	7.15	72		0.13
30	Oquaga L	9/28/2003	30.0	9.45		0.006	0.00	0.01	0.23	85.30	7	6.68	69		0.50

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	TKN	TN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
30	Oquaga L	10/13/2003	30.0	9.35		0.007	0.00	0.00	0.22	72.49	6	7.18	74		1.12
30	Oquaga L	6/13/2004	30+	6.10	1.0	0.004	0.01	0.02			16	6.54	74		3.22
30	Oquaga L	6/29/2004	30+	10.20	1.0	0.003	0.01	0.01	0.27	214.45	9	5.78	80		0.10
30	Oquaga L	7/2/2004	30+	8.90	1.0										
30	Oquaga L	7/11/2004	30+	8.40	1.0	0.002	0.01	0.01	0.32		7	6.75	81		1.40
30	Oquaga L	7/25/2004				0.006	0.01	0.01	0.34	130.81	2	6.55	75		0.05
30	Oquaga L	8/10/2004	30+	9.40	1.0	0.007	0.02	0.02	0.36	122.79	2	6.80	76	5.0	1.80
30	Oquaga L	8/22/2004	30+	11.30	1.0	0.004	0.02	0.01	0.32	183.57	27	7.49	84		1.00
30	Oquaga L	9/6/2004		9.10		0.004	0.02	0.02	0.39	206.50	1	7.95	57		0.30
30	Oquaga L	9/26/2004	30+	7.40	1.5	0.003	0.02	0.01	0.48	299.97	2	7.08	50		0.70
30	Oquaga L	6/19/2005	30+	6.60	1.5	0.007	0.01	0.01	0.14	46.55	1	6.80	49	5.7	1.4
30	Oquaga L	7/9/2005	30+	5.50	1.5	0.004	0.07	0.01	0.10	54.86	1	7.40	68		0.7
30	Oquaga L	7/24/2005	30+	6.80	1.5	0.004	0.01	0.01	0.01	2.53	6	7.54	60		0.1
30	Oquaga L	8/9/2005	30+	6.10	1.5	0.005	0.01	0.01	0.11	48.53	1	7.42	70		0.8
30	Oquaga L	9/5/2005				0.006	0.01	0.01	0.19	65.71	9	7.86	56	7.0	0.3
30	Oquaga L	9/17/2005	30+	6.35		0.007	0.09	0.01	0.12	36.94	7	7.59	78		0.2
30	Oquaga L	10/9/2005	30+	6.75		0.005	0.01	0.01	0.10	45.14	4	7.82	35		0.2
30	Oquaga L	10/22/05	30+	4.73		0.009	0.01	0.01	0.06	16.31	6	7.37	22		1.2
30	Oquaga L	6/25/2006				0.004	0.03	0.02	0.42	209.99	27	8.07	127	5.8	0.67
30	Oquaga L	7/9/2006	30+	5.60	1.5	0.006	0.01	0.01	0.26	100.28	19	7.10	54		0.24
30	Oquaga L	7/23/2006	30+	5.70	1.5	0.007	0.03	0.02	0.47	157.57	18	7.52	66		1.62
30	Oquaga L	8/6/2006	30+	7.30	1.5	0.006	0.02	0.02	0.43	153.96		7.38	76		0.53
30	Oquaga L	8/20/2006	30+	9.25		0.004	0.02	0.03	0.64	352.26	5	8.28	55	5.8	0.69
30	Oquaga L	9/4/2006	30+	8.95		0.006			0.40	137.65	6	7.56	62		0.90
30	Oquaga L	9/17/2006	30+	10.80		0.005	0.02	0.05	0.47	229.64	10	6.68	66		0.44
30	Oquaga L	10/8/2006	30+	11.65	1.5	0.006	0.03	0.02	0.41	140.40	12	7.33	72		0.66
30	Oquaga L	7/8/2007	30+	10.80	1.0	0.005	0.06	0.02	0.51	218.19	1	7.17	75	5.1	1.06
30	Oquaga L	7/21/2007	30+	10.10	1.0	0.006	0.01	0.01	0.23	81.73	5	8.10	57		0.96
30	Oquaga L	8/8/2007	30+	8.85	1.0	0.005	0.00	0.01	0.44	215.91	2	7.67	60		0.68
30	Oquaga L	8/19/2007	30+	8.40	1.0	0.009	0.01	0.01	0.39	91.64	1	7.65	37		1.23
30	Oquaga L	9/3/2007	30+	8.25	12.0	0.006	0.00	0.02	0.45	156.93	6	8.20	68	6.5	0.44
30	Oquaga L	9/16/2007	30+	7.95		0.004	0.01	0.01	0.41	206.88	6	8.26	55		0.66
30	Oquaga L	10/7/2007	30+	9.05	1.5	0.009	0.06	0.11	0.71	174.26	3	7.50	62		0.77
30	Oquaga L	10/20/2007	30+	7.45	1.5		0.09	0.03	0.57		4	7.78	56		1.27
30	Oquaga L	6/15/2008	30+	6.55	1.0	0.007	0.03	0.02	0.33	108.82	2	7.60	86	5.8	
30	Oquaga L	6/30/2008	~20	6.75		0.004	0.01	0.04	0.21	111.81	4	7.34	75		1.26
30	Oquaga L	7/13/2008	30+	6.55	1.0	0.004	0.01	0.10	0.20	121.02	8	7.46	70		1.24
30	Oquaga L	8/3/2008	30+	10.20	1.0	0.002	0.01	0.03	0.17	195.29	3	7.51	64		1.03
30	Oquaga L	8/16/2008	30+	8.90	1.0	0.006	0.01	0.01	0.20	74.93		7.43	69	5.4	0.95
30	Oquaga L	9/1/2008		9.65	1.0	0.004	0.01	0.01	0.29	174.83	5	7.43	69		0.41
30	Oquaga L	9/20/2008	20.0	9.25	1.0	0.007	0.01	0.09	0.31	105.71	5	7.39	69		0.74
30	Oquaga L	10/11/2008	30+	8.35		0.008	0.01	0.05	0.37	107.99	6	8.43	59		0.62
30	Oquaga L	06/29/2009	18.5	5.25	1.5	0.004	0.01	0.01	0.08	44.18	8	7.25	59	5.4	0.95
30	Oquaga L	07/12/2009	30.0	9.15	1.5	0.002	0.01	0.00	0.12	170.50	14	6.29	67		0.74
30	Oquaga L	08/02/2009	30.0	8.20	1.5	0.006	0.05	0.03	0.16	56.22	8	8.89	33		0.53
30	Oquaga L	08/16/2009	30.0	8.25	1.5	0.005	0.02	0.02	0.18	83.42	7	6.81	51		0.60
30	Oquaga L	09/07/2009	33.0	10.25		0.005	0.02	0.01	0.16	79.20	8	7.16	55	4.4	0.70
30	Oquaga L	09/20/2009	30.0	8.85	1.0	0.005	0.01	0.03	0.11	49.15	4	7.74	56		0.90
30	Oquaga L	10/04/2009	33.0	10.40	1.0	0.004	0.01	0.01	0.10	52.00	6	7.21	63		0.79
30	Oquaga L	10/17/2009	33.0	7.28	1.5	0.006	0.01	0.01	0.13	45.75	2	7.79	67		1.00
30	Oquaga L	06/23/02	16.0			0.008	0.01	0.02	0.39	46.14					
30	Oquaga L	07/07/02	30.0			0.006	0.00	0.04	0.29	48.10					
30	Oquaga L	07/21/02	30.0			0.017	0.01	0.08	0.48	28.53					
30	Oquaga L	08/05/02	30.0			0.008	0.00	0.04	0.39	48.65					2.58
30	Oquaga L	08/18/02	30.0			0.007	0.02	0.04	0.46	65.00					
30	Oquaga L	09/02/02	30.0	8.15			0.00	0.01	0.37						
30	Oquaga L	09/25/02	26.0	9.58	24.0	0.008	0.00	0.04	0.37	46.20					
30	Oquaga L	10/06/02		6.85	20.0		0.01	0.05	0.34						
30	Oquaga L	10/20/02	30.0	7.55	15.0		0.01	0.05	0.33						
30	Oquaga L	6/30/2003				0.006	0.01	0.02	0.16	24.91					
30	Oquaga L	7/13/2003				0.005	0.00	0.00	0.14	28.54					
30	Oquaga L	7/27/2003			13.0	0.016	0.00	0.00	0.03	1.53					
30	Oquaga L	8/12/2003				0.010	0.00	0.00	0.19	19.31					
30	Oquaga L	8/25/2003			12.5	0.006	0.01	0.00	0.09	14.86					
30	Oquaga L	9/2/2003				0.005	0.01	0.04	0.16	30.09					
30	Oquaga L	9/28/2003				0.006	0.00	0.01	0.19	33.44					
30	Oquaga L	10/13/2003				0.006	0.00	0.00	0.11	16.95					

LNum	PName	Date	Zbot	Zsd	Zsamp	Tot.P	NO3	TKN	TN	TN/TP	TColor	pH	Cond25	Ca	Chl.a
30	Oquaga L	6/13/2004				0.013	0.01	0.02							
30	Oquaga L	6/29/2004				0.007	0.01	0.01	0.27	41.04					
30	Oquaga L	7/11/2004				0.003	0.01	0.01	0.25	97.70					
30	Oquaga L	7/25/2004				0.012	0.01	0.03	0.17	14.87					
30	Oquaga L	8/10/2004				0.005	0.01	0.02	0.13	26.07					
30	Oquaga L	8/22/2004				0.008	0.02	0.02	0.01	0.61					
30	Oquaga L	9/6/2004				0.007	0.02	0.03							
30	Oquaga L	6/19/2005				0.009									
30	Oquaga L	7/9/2005				0.007									
30	Oquaga L	7/24/2005				0.005									
30	Oquaga L	8/9/2005				0.005									
30	Oquaga L	9/5/2005				0.012									
30	Oquaga L	9/17/2005			13.0	0.011									
30	Oquaga L	10/9/2005			10.0	0.009									
30	Oquaga L	10/22/05				0.008									
30	Oquaga L	6/25/2006				0.007									
30	Oquaga L	7/9/2006	30+			0.009									
30	Oquaga L	7/23/2006	30+			0.010									
30	Oquaga L	8/6/2006	30+			0.014									
30	Oquaga L	8/20/2006	30+		15.0	0.008									
30	Oquaga L	9/4/2006	30+		20.0	0.006									
30	Oquaga L	9/17/2006	30+		12.0	0.006									
30	Oquaga L	10/8/2006	30+			0.008									
30	Oquaga L	7/8/2007				0.009									
30	Oquaga L	7/21/2007				0.008									
30	Oquaga L	8/8/2007				0.008									
30	Oquaga L	8/19/2007				0.010									
30	Oquaga L	9/3/2007				0.010									
30	Oquaga L	9/16/2007				0.006									
30	Oquaga L	10/7/2007				0.018									
30	Oquaga L	10/20/2007				0.007									
30	Oquaga L	6/15/2008	30+			0.011									
30	Oquaga L	6/30/2008	~20		15.0	0.008									
30	Oquaga L	7/13/2008	30+			0.009									
30	Oquaga L	8/3/2008	30+			0.014									
30	Oquaga L	9/1/2008			10.0	0.007									
30	Oquaga L	9/20/2008	20.0		20.0	0.008									
30	Oquaga L	10/11/2008	30+		25.0	0.006									
30	Oquaga L	06/29/2009			12.0	0.008		0.00							
30	Oquaga L	07/12/2009			12.0	0.001									
30	Oquaga L	08/02/2009				0.007		0.01							
30	Oquaga L	08/16/2009			10.0	0.006									
30	Oquaga L	09/07/2009				0.005		0.01							
30	Oquaga L	09/20/2009			10.0	0.005									
30	Oquaga L	10/04/2009			12.0	0.009		0.01							
30	Oquaga L	10/17/2009			18.0	0.005									

LNum	PName	Date	Zbot	Zsd	Zsamp	QaQc	TAir	TH20	QA	QB	QC	QD
30	Oquaga L	6/13/1987	30.0	3.63	1.5	1	23	19				
30	Oquaga L	6/21/1987	30.0	5.75	1.5	1	21	23				
30	Oquaga L	7/5/1987	30.0	5.25	1.5	1	24	23				
30	Oquaga L	7/11/1987	30.0	5.75	1.5	1	85	78				
30	Oquaga L	7/19/1987	27.0	5.50	1.5	1	29	25				
30	Oquaga L	7/26/1987	30.0	3.88	1.5	1	30	26				
30	Oquaga L	8/3/1987	30.0	2.75	1.5	1	25	24				
30	Oquaga L	8/10/1987	30.0	3.38	1.5	1	25	24				
30	Oquaga L	8/17/1987	30.0	5.25	1.5	1	29	26				
30	Oquaga L	8/23/1987	30.0	5.25	1.5	1	16	23				
30	Oquaga L	8/30/1987	30.0	4.50	1.5	1	26	19				
30	Oquaga L	9/7/1987	30.0	5.25	1.5	1	22	18				
30	Oquaga L	9/16/1987	30.0	6.00	1.5	1	22	19				
30	Oquaga L	10/10/1987	30.0	4.25	1.5	1	13	14				
30	Oquaga L	10/23/1987	30.0	4.63	1.5	1	17	12				
30	Oquaga L	7/1/1988	30.0	5.75	1.5	1	19	17				

LNum	PName	Date	Zbot	Zsd	Zsamp	QaQc	TAir	TH20	QA	QB	QC	QD
30	Oquaga L	7/13/1988	30.0	6.50	1.5	1	28	24				
30	Oquaga L	7/21/1988	30.0	5.00	1.5	1	18	23				
30	Oquaga L	7/28/1988	30.0	6.25	1.5	1	26	24				
30	Oquaga L	8/4/1988	30.0	6.00	1.5	1	25	26				
30	Oquaga L	8/11/1988	30.0	5.50	1.5	1	27	25				
30	Oquaga L	8/18/1988	30.0	5.50	1.5	1	21	23				
30	Oquaga L	8/25/1988	30.0	4.75	1.5	1	20	21				
30	Oquaga L	9/2/1988	30.0	5.50	1.5	1	23	21				
30	Oquaga L	9/15/1988	30.0	5.75	1.5	1	14	16				
30	Oquaga L	7/10/1989	30.0	4.88	1.5	1	20	22				
30	Oquaga L	8/2/1989	30.0	4.25	1.5	1	22	24				
30	Oquaga L	8/9/1989	30.0	4.25	1.5	1	20	20				
30	Oquaga L	8/19/1989	30.0	5.25	1.5	1	21	24				
30	Oquaga L	8/26/1989	30.0	5.13	1.5	1	21	21				
30	Oquaga L	9/4/1989	30.0	4.75	1.5	1	18	20				
30	Oquaga L	9/13/1989	30.0	5.63	1.5	1	21	21				
30	Oquaga L	7/20/1990	30.0	5.25	1.5	1	30	25				
30	Oquaga L	8/3/1990	30.0	5.25	1.5	1	27	24				
30	Oquaga L	8/20/1990	30.0	5.75	1.5	1	15	21				
30	Oquaga L	9/1/1990	30.0	6.25	1.5	1	25	23				
30	Oquaga L	9/11/1990	30.0	6.50	1.5	1	20	21				
30	Oquaga L	9/27/1990	30.0	6.25	1.5	1	21	13				
30	Oquaga L	7/1/1991	30.0	6.50	1.5	1	18	26				
30	Oquaga L	7/15/1991	30.0	6.25	1.5	1	25	22				
30	Oquaga L	7/28/1991	30.0	5.75	1.5	1	23	24				
30	Oquaga L	8/13/1991	30.0	4.50	1.5	1	24	23				
30	Oquaga L	8/26/1991	30.0	2.75	1.5	1	18	23				
30	Oquaga L	9/9/1991	30.0	1.75	1.5	1	20	22				
30	Oquaga L	6/25/1992	30.0	5.75	1.5	1	23	19	1	1	1	
30	Oquaga L	7/24/1992	30.0	4.45	1.5	1	17	20	1	1	1	5
30	Oquaga L	10/4/1992	30.0	3.50	1.5	1	19	16				
30	Oquaga L	06/23/02	16.0	5.45	1.5	1	20	17	1	1	1	
30	Oquaga L	07/07/02	30.0	6.45	1.5	1	25	19	1	1	1	
30	Oquaga L	07/21/02	30.0	8.15	1.5	1	25	22	1	2	1	
30	Oquaga L	08/05/02	30.0	9.85	1.5	1	22	24	1	2	1	
30	Oquaga L	08/18/02	30.0	10.20	1.5	1	24		1	2	1	
30	Oquaga L	09/02/02	30.0	12.30	1.5	1	23	22	1	2	1	
30	Oquaga L	09/25/02	26.0	9.58		1	13					
30	Oquaga L	10/06/02		6.85		1	16		2	1	1	5
30	Oquaga L	10/20/02	30.0	7.55		1	10		1	1	2	5
30	Oquaga L	6/30/2003	30.0	5.50	1.0	1	21	22	1	1	1	
30	Oquaga L	7/13/2003	30.0	5.05		1	17	21	1	1	1	5
30	Oquaga L	7/27/2003	30.0	5.90		1	24		2	1	2	
30	Oquaga L	8/12/2003	30.0	9.70	1.5	1			1	1	1	
30	Oquaga L	8/25/2003	30.0	9.50		1	16	19	1	2	1	
30	Oquaga L	9/2/2003	30.0	6.90		1	16	17	1	1	3	5
30	Oquaga L	9/28/2003	30.0	9.45		1		16	1	1	2	5
30	Oquaga L	10/13/2003	30.0	9.35		1	16	12	1	1	1	
30	Oquaga L	6/13/2004	30+	6.10	1.0	1	21	19	2	2	1	5
30	Oquaga L	6/29/2004	30+	10.20	1.0	1	18	19	1	2	1	0
30	Oquaga L	7/2/2004	30+	8.90	1.0	1	19	20	1	2	1	0
30	Oquaga L	7/11/2004	30+	8.40	1.0	1	21	20	1	2	1	0
30	Oquaga L	8/10/2004	30+	9.40	1.0	1	23	18	1	2	1	0
30	Oquaga L	8/22/2004	30+	11.30	1.0	1			1	2	1	0
30	Oquaga L	9/6/2004		9.10		1	18	17	1	3	1	5
30	Oquaga L	9/26/2004	30+	7.40	1.5	1	17	15	1	2	1	0
30	Oquaga L	6/19/2005	30+	6.60	1.5	1	16	15	1	2	2	5
30	Oquaga L	7/9/2005	30+	5.50	1.5	1	15	17	1	2	2	5
30	Oquaga L	7/24/2005	30+	6.80	1.5	1	20		1	2	1	0
30	Oquaga L	8/9/2005	30+	6.10	1.5	1	22	20	1	2	1	0
30	Oquaga L	9/17/2005	30+	6.35		1	15	17	1	2	1	5
30	Oquaga L	10/9/2005	30+	6.75		1		11	1	1	1	5

LNum	PName	Date	Zbot	Zsd	Zsamp	QaQc	TAir	TH20	QA	QB	QC	QD
30	Oquaga L	10/22/05	30+	4.73		1	7	8	2	1	1	158
30	Oquaga L	7/9/2006	30+	5.60	1.5	1	18		2	2	1	0
30	Oquaga L	7/23/2006	30+	5.70	1.5	1	17	19	2	2	1	5
30	Oquaga L	8/6/2006	30+	7.30	1.5	1	17	20	2	2	1	0
30	Oquaga L	8/20/2006	30+	9.25		1	18	17	2	2	2	8
30	Oquaga L	9/4/2006	30+	8.95		1	16	14	1	2	1	5
30	Oquaga L	9/17/2006	30+	10.80		1	18	15	1	2	1	0
30	Oquaga L	10/8/2006	30+	11.65	1.5	1	12	10	1	2	1	0
30	Oquaga L	7/8/2007	30+	10.80	1.0	1	21	15	1	2	1	0
30	Oquaga L	7/21/2007	30+	10.10	1.0	1	19	16	1	2	1	0
30	Oquaga L	8/8/2007	30+	8.85	1.0	1	16	18	1	2	1	0
30	Oquaga L	8/19/2007	30+	8.40	1.0	1	11	16	1	2	1	5
30	Oquaga L	9/3/2007	30+	8.25	12.0	1	18	15	1	3	1	0
30	Oquaga L	9/16/2007	30+	7.95		1	10	14	1	2	1	5
30	Oquaga L	10/7/2007	30+	9.05	1.5	1	14	13	2	2	1	5
30	Oquaga L	10/20/2007	30+	7.45	1.5	1	13	10	1	1	1	5
30	Oquaga L	6/15/2008	30+	6.55	1.0	1	18	10	1	2	1	0
30	Oquaga L	6/30/2008	~20	6.75		1	18	15	1	2	1	8
30	Oquaga L	7/13/2008	30+	6.55	1.0	1	16	18	1	2	2	5
30	Oquaga L	8/3/2008	30+	10.20	1.0	1	17	18	1	2	1	0
30	Oquaga L	8/16/2008	30+	8.90	1.0	1	13	15	1	2	1	0
30	Oquaga L	9/1/2008		9.65	1.0	1	26	15	1	3	1	7
30	Oquaga L	9/20/2008	20.0	9.25	1.0	1	17	14	1	3	1	8
30	Oquaga L	10/11/2008	30+	8.35		1	21	10	1	2	1	0
30	Oquaga L	06/29/2009	18.5	5.25	1.5	1	21	15	2	2	2	1
30	Oquaga L	07/12/2009	30.0	9.15	1.5	1	17	13	1	3	1	8
30	Oquaga L	08/02/2009	30.0	8.20	1.5	1	15	16	1	2	1	5
30	Oquaga L	08/16/2009	30.0	8.25	1.5	1	27	24	1	3	1	2
30	Oquaga L	09/07/2009	33.0	10.25		1	18	14	1	3	2	8
30	Oquaga L	09/20/2009	30.0	8.85	1.0	1	17	13	1	3	1	0
30	Oquaga L	10/04/2009	33.0	10.40	1.0	1	10	9	1	2	1	8
30	Oquaga L	10/17/2009	33.0	7.28	1.5	1	3	5	1	2	1	5
30	Oquaga L	09/02/02	30.0	8.15		2	23	10				
30	Oquaga L	09/25/02	26.0	9.58	24.0	2	13	14				
30	Oquaga L	10/06/02		6.85	20.0	2	16	9				
30	Oquaga L	10/20/02	30.0	7.55	15.0	2	10	12				
30	Oquaga L	9/17/2005	30+		13.0	2		6				
30	Oquaga L	10/9/2005	30+		10.0	2		4				
30	Oquaga L	10/22/05	30+			2		5				
30	Oquaga L	8/20/2006	30+		15.0	2		4				
30	Oquaga L	9/4/2006	30+		20.0	2		4				
30	Oquaga L	9/17/2006	30+		12.0	2		6				
30	Oquaga L	6/30/2008	~20		15.0	2		4				
30	Oquaga L	9/20/2008	20.0		20.0	2		5				
30	Oquaga L	10/11/2008	30+		25.0	2		6				
30	Oquaga L	08/16/2009			10.0	2		5				
30	Oquaga L	09/07/2009				2		5				
30	Oquaga L	10/04/2009			12.0	2		4				
30	Oquaga L	10/17/2009			18.0	2		4				

Legend Information

<i>Indicator</i>	<i>Description</i>	<i>Detection Limit</i>	<i>Standard (S) / Criteria (C)</i>
General Information			
Lnum	lake number (unique to CSLAP)		
Lname	name of lake (as it appears in the Gazetteer of NYS Lakes)		
Date	sampling date		
Field Parameters			
Zbot	lake depth at sampling point, meters (m)		
Zsd	Secchi disk transparency or clarity	0.1m	1.2m (C)
Zsamp	water sample depth (m)	0.1m	none
Tair	air temperature (C)	-10C	none
TH20	water temperature (C)	-10C	none
Laboratory Parameters			
Tot.P	total phosphorus (mg/l)	0.003 mg/l	0.020 mg/l (C)
NOx	nitrate + nitrite (mg/l)	0.01 mg/l	10 mg/l NO3 (S), 2 mg/l NO2 (S)
NH4	total ammonia (mg/l)	0.01 mg/l	2 mg/l NH4 (S)
TN	total nitrogen (mg/l)	0.01 mg/l	none
TN/TP	nitrogen to phosphorus (molar) ratio, = (TKN + NOx)*2.2/TP		none
TCOLOR	true (filtered) color (ptu, platinum color units)	1 ptu	none
pH	powers of hydrogen (S.U., standard pH units)	0.1 S.U.	6.5, 8.5 S.U. (S)
Cond25	specific conductance, corrected to 25C (umho/cm)	1 umho/cm	none
Ca	calcium (mg/l)	1 mg/l	none
Chl.a	chlorophyll a (ug/l)	0.01 ug/l	none
Fe	iron (mg/l)	0.1 mg/l	0.3 mg/l (S)
Mn	manganese (mg/l)	0.01 mg/l	0.3 mg/l (S)
As	arsenic (mg/l)	1 ug/l	10 ug/l (S)
Lake Assessment			
QA	water quality assessment, 5 point scale; 1 = crystal clear, 2 = not quite crystal clear, 3 = definite algae greenness, 4 = high algae levels, 5 = severely high algae levels		
QB	aquatic plant assessment, 5 point scale; 1 = no plants visible, 2 = plants below surface, 3 = plants at surface, 4 = plants dense at surface, 5 = surface plant coverage		
QC	recreational assessment, 5 point scale; 1 = could not be nicer, 2 = excellent, 3 = slightly impaired, 4 = substantially impaired, 5 = lake not usable		
QD	reasons for recreational assessment, 8 choices; 1 = poor water clarity, 2 = excessive weeds, 3 = too much algae, 4 = lake looks bad, 5 = poor weather, 6 = litter/surface debris, 7 = too many lake users, 8 = other		