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UPPER WALKER RIVER WATER QUALITY STUDY, 2000

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INTRODUCTION

This report summarizes findings from a 2000 surface water quality investigation conducted by Linda Vance, now with the Biological Sciences Program at University Extension, University of California, Davis. The study was initiated and funded by the Bridgeport Ranchers Association, the USDA Forest Service, and the North Mono County Resource Conservation District in response to concerns about water quality in the district. The study involved surface water sampling throughout the watershed, from the high Sierra lakes at the headwaters of the East and West Walker Rivers to the irrigation-depleted flows entering Bridgeport Reservoir. Sampling was conducted between May, 2000 and September 2000. All stream locations (with the exception of Eagle Creek, which was inaccessibly in May) were sampled during the weeks of May 19, May 30, June 15, July 10, August 10, and September 13. The high Lakes were sampled twice, in mid-July and mid-August. Water samples were analyzed for Total Kjeldahl Nitrogen, Nitrate (NO3 at two different labs), Total Phosphorus, Phosphate (PO4), Ammonium Ion (NH4), Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), Chlorine (Cl), Sulfate (SO4) and Silica (Si). Dissolved Oxygen, temperature and pH were measured in the field. Turbidty, electroconductivity and Total Suspended Solids were analyzed in the Agronomy and Range Lab.

WATER QUALITY COMPONENTS INCLUDED IN THE STUDY

Total Kjeldahl Nitrogen (TKN)

TKN is a measure of both organic and inorganic forms (including ammonia) of nitrogen. Because organic nitrogen is not available to plants until it is decomposed into inorganic forms, measures of nitrogen alone are not useful in water quality analysis. TKN is the measure of nitrogen most often used in water quality testing. Detection level was 0.01 mg/L.

Nitrate (NO_3-)

Nitrate, reported in mg/L, is the most stable form of nitrogen in water, as well as being the primary form of nitrogen used by plants for growth. When sufficient levels of phosphorus are present, high nitrate levels can stimulate excessive plant or algal growth. Nitrates are commonly found in animal wastes and in sewage. Samples were analyzed for nitrate by both the University of California Division of Agriculture and Natural Resources lab and by the Department of Land Air and Water Resources lab at UC Davis. The minimum detectable level for the DANR lab was 0.05 mg/L, while the level for LAWR was 0.01 mg/L. Sample results from DANR are reported as NO3-N, and sample reports from LAWR are reported simply as NO3.

Total phosphorus (P)

Total phosphorus measures both inorganic and organic forms of phosphorus. Phosphorus can be present in dissolved or particulate form. Except where there are anthropogenic sources like sewage or waste disposal, or high inputs of animal wastes from domestic or wild animals, phosphorus is usually a "limiting nutrient" in running water. This means that no matter how much nitrogen is added to a system, it will not support abundant plant life. However, since phosphorus binds to soil and silt particles, it will often accumulate in reservoir sediments. It is reported in mg/L. The

Sulfate

Sulfate (SO4-2) is typically less than a few mg/L except in areas where acid drainage or acid deposition are common, or where gypsum is found. Sulfates can also be produced by oxidation of sulfide minerals like iron pyrite (FeS2), or of hydrogen sulfide gas (H2S). Since certain bacteria can use sulfate ion as a terminal electron acceptor in respiration, sulfate can be reduced to elemental sulfur or to hydrogen sulfide gas. Hydrogen sulfide concentrations are sometimes high in the deepest areas of reservoirs in late summer, and bottom releases of water can cause fish kills under such conditions.

Silica (Si)

Silica is not very soluble in water at normal (6-8) pH values, and therefore is not common in natural fresh waters, although it is an important nutrient for diatoms and other elements of aquatic food chains.

Turbidity

Turbidity measures the passage of light through water in Nephelometric Turbidity Units (NTU). It is a useful benchmark for measuring sediments, and for inferring the source of phosphorus, which tends to bind to soil particles. Pure distilled water has an NTU of 0. Water with suspended particulates (clay, silt, organic materials, microorganisms) can have an NTU of 50 or greater. Because particulates provide surfaces for bacterial growth, and because high turbidity levels reduce light penetration and therefore impair photosynthesis, high turbidity levels are considered to be detrimental to aquatic ecosystems.

Electroconductivity (EC)

Electroconductivity measures the ability of water to conduct an electric current, which in turn is determined by the content of ions --dissolved metals and other materials-- in the water. It is reported as microsiemens per centimeter (µS/cm), and generally ranges from 50-500 µS/cm in inland streams. Electroconductivity can be used to measure total dissolved salts (TDS). Although a specific correlation should be developed for each stream, a general rule of thumb is that TDS in parts per million = EC in µS/cm *0.55, so that an EC reading of 500 µS/cm would translate to a TDS level of 275 ppm. Although very high concentrations of TDS can be lethal to fish, the levels commonly found in running waters pose little danger.

pH

pH measures the concentration of hydrogen ions in water. Most natural fresh waters have a pH between 4.0 and 10.0. A pH level below 7.0 is considered acidic, and a pH above 7 is considered basic. Each full unit represents a ten-fold increase or decrease, i.e. water with a pH of 6.5 is ten times more acidic than water with a pH of 6.5. Most inland lakes and streams in California have a pH greater than 7.0. In reservoirs and other water bodies where aquatic plants are present, pH tends to increase in summer months as a result of photosynthesis. At high pH levels, the solubilization of ammonia, heavy metals, and salt is greater.

Total suspended solids (TSS)

Like turbidity, this is a measure of particulates within the water column. It is determined by filtering a water sample into a preweighed filter, drying the filter, and reweighing it. The difference

electroconductivity, pH, turbidity and total suspended solids, using standard laboratory methods. Dissolved oxygen, temperature and pH were measured in the field at the time of collection using a handheld meters. Chain-of-custody procedures were followed in collecting, preserving, shipment and delivery of samples for chemical analysis. Quality assurance procedures were followed at all stages, and included random resampling, spiked samples, blank samples, coded samples, and duplicate samples.

STATISTICAL ANALYSIS

To determine if differences existed between sampling sites on East Walker, Robinson Creek and Buckeye Creek subwatersheds, pairwise comparisons (t-tests for paired samples) were performed on the nutrients TKN, NO3, NH-4, P and PO4. When minimum detection levels were not met, a value 0.001 mg/L below the detection level was used in the analysis, e.g. <0.02 became 0.019. USGS data and data collected specifically for this study were combined (see Table 4 for the full dataset). Orthophosphate (the component sampled by the USGS) was compared with PO4, although they are not quite identical components. Similarly, the USGS measure of NO3 and NO2 was treated as only including NO3, since NO2 is rarely even detectable in fresh water. To obtain a TKN value for the USGS data, NO2, NO3 and NH4 data was combined.

The value of this "statistical analysis" is to identify trends rather than to make valid statistical conclusions. Because so many samples were below detection levels, necessitating the substitution described above, any normal distribution of values that might have existed was obscured, leaving the data quite skewed. Since normal distribution is an assumption on which the statistical validity of pairwise t-tests depends, the analysis is far from robust. However, non-parametric tests on a sample of this size would not be any more valid. The reader is therefore cautioned not to look for firm conclusions, but rather to see the data and comparisons as revealing certain trends.

Table 5 shows the results of the comparisons. The P-value for a two-tailed test at a confidence level of 95% is boxed for each set of comparisons. A P-value greater than 0.05 indicates that any difference between the means of samples collected from the two sites could have occurred simply as a result of the overall variability in the data. The higher the value (e.g. 0.83 is higher than 0.13), the stronger the indication that the sites are not different. Conversely, a value less than 0.05 implies that there is a genuine difference between the sites. When this occurs, an examination of the mean will indicate which of the two compared sites had higher concentrations of the nutrient.

RESULTS

Table 1 gives all results collected for this study (e.g. does not include USGS data) by site, arranged from upper to lower reaches for each stream sampled. Table 2 includes all results for this study by date. Table 3 lists the major nutrients by concentration across all sites. Table 4 shows the combined USGS data and data collected for this study for the common sites. Figure 1 contains charts showing upstream, middle and downstream sampling results for the major nutrients, based on the combined data set in Table 4. Results are discussed separately below by subwatershed.

Taken as a whole, the results show the same seasonal, flow-based pattern apparent in 1999. TKN and NO3 are higher early in the season during high flows, while P and PO4 show less dramatic

Sauger Creek

In general, Sauger Creek shows higher TKN concentrations than the 0.05 mg/L standard for TN set by Lahontan. The same is true for P levels, which were in excess of the standards for both the East Walker (0.06 mg/L) and Robinson-Buckeye (0.02 mg/L) on every occasion but one. NH4 and NO3 levels were also dramatically higher than in other creeks. These elevated nutrient concentrations are probably attributable in large part to the low flows in this creek, and to the sheep-grazing operations upstream. However, it should also be noted that virtually all the water from this creek is diverted for irrigation downstream of the sampling site, and little if any of the water probably reaches the reservoir. It should also be noted that no detectable changes in concentrations occurred between upstream and downstream sampling sites.

The High Lakes

In general, the high lakes show higher TKN concentrations than the 0.05 mg/L standard for TN set by Lahontan for Robinson and Buckeye Creeks. The same is probably true for P. Although a detection limit of 0.05 mg/L meant that P could not be fully assessed, almost half the samples had P levels at or above the detection limit. NO3 levels were comparable to those found in the downstream creeks and streams, as were PO4 levels. Although the short season certainly inhibits plant growth, in general the high lakes have sufficient nutrient concentrations to raise the possibility of long-term eutrophication. In particular, Crown, Fremont, Gilman, Hoover, Long, Robinson, Stella and Summit Lakes all have combined high NO3-PO4 levels

There is no detectable pattern to the nutrient data for the high lakes, except a slight seasonality in NO3 levels, suggesting that some degree of plant take-up occurs later in the summer. Certain lakes, particularly lakes in popular areas, such as Trumbull, Cooney and Frog Lake, have elevated levels of P and/or PO4, suggesting that there may be erosion from trails or from bank use.

DISCUSSION AND RECOMMENDATIONS

The seasonal patterns observed during this study are in line with expectations based on studies by other researchers in other watersheds. On the rising arm of the hydrograph, nitrogen concentrations should initially be high, as nutrients are leached out of the soil, then fall due to dilution, flushing, and plant uptake, and finally increase as water levels drop in late summer. Similarly, suspended solids and turbidity should show an increase with high flows, then decline with decreasing discharge.

In the light of data collected in 1999, it is not surprising that differences in nitrogen (both TKN and NO3) are not pronounced along an upstream-downstream gradient. The data on the high lakes is instructive in this regard, as it demonstrates relatively high "background" levels for TKN and NO3. There does not appear to be any conclusive evidence that cow manure is acting as a major nutrient loading factor in the lower reaches of the watershed. However, increases in P and PO4 do indicate ongoing erosion, particularly on Buckeye Creek. It should be noted, however, that both Robinson and Buckeye suffered substantial bank damage during the 1997 flood, and it may be awhile before damaged streambanks in Bridgeport Valley revegetate.

Appendix 1: Sampling sites and rationale (sites marked ** were also USGS sites)

Robinson Creek subwatershed

Site #	Name	Requested by	Description and rationale
1	Barney Inlet	USFS	Robinson Creek above Barney Lake just downstream of trail crossing, and upstream of beaver area and visible sedimentation
2	Barney Outlet	USFS	Robinson Creek below Barney Lake just downstream of outlet. Goal was to determine if beaver area above lake is contributing nutrients to Robinson Creek downstream
3	Horse Creek above Twin Lakes	USFS	Horse Creek US of confluence with Robinson. There is no permitted land use other than hiking and primitive camping here, so it was thought this might be a reference creek
4	Robinson Creek above Twin Lakes	USFS NMRCD/BRA	Robinson US of trail crossing/bridge to Horse Creek. This site is below the Twin Lakes resort but above the lakes, so it would permit comparisons with Sites 2 and 5.
5**	Robinson Creek at USGS gauge	USFS, NMRCD/BRA	Robinson DS of bridge by gauging station. This site is below the Twin Lakes outlet, and above several heavily used USFS campgrounds, so it would permit comparisons with sites 4 and 6.
6	Robinson at Doc & Al's	USFS, NMRCD/BRA	Robinson US of bridge on Buckeye Rd.This site is at the DS end of the USFS campgrounds and at the US end of cattle grazing activities in Bridgeport Valley.
7**	Robinson at 395	NMRCD/BRA	N. Robinson US of highway crossing. This site is DS of some cattle and irrigation uses, and upstream of others, and is a USGS site
8**	Robinson at WRID	NMRCD/BRA	Robinson at the fenceline between the Ascuaga Ranch and the Irrigation District lands. This site is below most grazing, but above any backflow from reservoir. It is near the USGS sampling site.

Buckeye Creek Subwatershed

9	Eagle Ck. US	USFS/BRA	Eagle Creek just US of cow loafing area in meadow beneath Eagle Peak. Most upstream point accessible during late May for sampling, so used as reference for 10
10	Eagle Ck. DS	USFS/BRA	Eagle Creek DS of USFS gate across road, and US of big S-turn down to Buckeye trail. Intended to assess any impact of grazing from 9 down.
11	Buckeye above Big Meadows	USFS, NMRCD/BRA	Buckeye below roughs, just upstream of cattle loafing area. This site was intended as a benchmark for sites downstream of grazing and recreational uses.
12	Buckeye below Big Meadows	USFS, NMRCD/BRA	Buckeye at fenceline between USFS property and Hunewill inholding DS of Big Meadows. To determine impact of grazing in Big Meadows.
13	Buckeye above FS	USFS	Buckeye DS of bridge to Hunewill "pack station " site. Intended as a comparison with 12 to identify any impacts of campground and sewage treatment area.
14**	Buckeye below FS	USFS, NMRCD/BRA	Buckeye US of bridge at USGS gauging station. Comparison with 11, and reference for 13 because it is above irrigated grazing areas.
15**	Buckeye at 395	NMRCD/BRA	Buckeye US of highway crossing. This site is DS of some cattle and irrigation uses, and upstream of others, and is a USGS site
16**	Buckeye at WRID	NMRCD/BRA	Buckeye at the fenceline between the Ascuaga Ranch and the Irrigation District lands. This site is below most grazing, but above any backflow from reservoir. It is near the USGS sampling site.

Sauger Creek

17**	Sauger at campground	USFS	Sauger just upstream of bridge in old campground on 395. This is slightly upstream of the USGS site. It was included to evaluate the impact, if any, of the USFS corrals
18	Sauger at FS	USFS	Just downstream of corrals at USFS compound, and upstream of diversion on Ascaugua ranch

TABLE 1: Sampling results by site

BARNEY LAKE (ROBINSON CK)

Date	Site	Discharge cfs(Inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
05/19/00	Barney Lake Inlet	48.0	38.9	9.2	8	0.45	7.3	4.0	0.9	<0.05	0.010
05/19/00	Barney Lake Outlet	46.7	43.1	9.1	8	1.91	7.6	6.2	1.1	<0.05	0.007
05/30/00	Barney Lake Inlet	84.0	35.2	8.9	22	1.06	8.1	5.4	0.8	<0.05	<0.007
05/30/00	Barney Lake Outlet	63.0	36.8	9.1	20	1.48	8.1	6.9	1.1	<0.05	<0.007
06/15/00	Barney Lake Inlet	86.0	41.2	9.3	24	1.68	7.6	36.6	0.2	<0.05	<0.007
06/15/00	Barney Lake Outlet	78.0	47.3	8.9	19	1.10	7.7	34.2	0.2	<0.05	<0.007
07/10/00	Barney Lake Inlet	32.0	49.3	8.8	8	0.48	6.9	5.2	0.1	<0.05	0.030
7/10/00	Barney Lake Outlet	27.1	54.7	7.8	4	0.74	6.4	5.4	0.2	<0.05	<0.007
8/18/00	Barney Lake Inlet	4.0	56.3	9.1	7	0.13	6.4	2.8	0.2	<0.05	0.020
8/18/00	Barney Lake Outlet	6.4	61.5	10.5	8	0.29	6.8	1.8	0.2	<0.05	<0.007
09/16/00	Barney Lake Inlet	3.5	51.6	7.3	12	0.66	7.1	4.0	0.3	<0.05	0.008
09/16/00	Barney Lake Outlet	3.1	63.8	7.4	12	1.62	7.2	6.2	0.3	<0.05	0.016

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
05/19/00	Barney Lake Inlet	0.215	0.11	<0.02	7.33	1.34	0.87	0.13	0.54	0.50	1.21
05/19/00	Barney Lake Outlet	0.059	0.08	0.05	6.08	0.40	0.74	0.19	0.28	0.25	1.07
05/30/00	Barney Lake Inlet	0.156	0.09	0.08	5.03	0.29	0.49	0.15	0.23	0.38	0.50
05/30/00	Barney Lake Outlet	<0.010	0.09	<0.02	5.64	0.27	0.57	0.17	0.23	0.35	0.57
06/15/00	Barney Lake Inlet	0.046	<0.05	<0.02	10.18	1.28	1.62	0.80	0.31	2.58	0.75
06/15/00	Barney Lake Outlet	<0.010	<0.05	<0.02	12.84	1.39	2.00	0.71	0.33	3.13	0.78
07/10/00	Barney Lake Inlet	0.020	<0.05	<0.02	5.04	0.27	0.43	0.10	0.28	0.05	0.32
7/10/00	Barney Lake Outlet	<0.010	<0.05	0.05	4.60	0.26	0.61	0.12	0.14	0.07	0.28
8/18/00	Barney Lake Inlet	0.019	<0.05	<0.02	11.20	3.88	0.34	0.16	0.45	0.02	0.44
8/18/00	Barney Lake Outlet	<0.010	<0.05	0.05	6.91	1.22	0.76	0.11	0.29	0.03	0.31
09/16/00	Barney Lake Inlet	0.125	<0.05	0.03	9.13	1.34	0.87	0.13	0.54	0.50	1.21
09/16/00	Barney Lake Outlet	<0.010	<0.05	0.02	3.98	0.40	0.74	0.19	0.28	0.25	1.07

BUCKEYE CK: BIG MEADOWS TO USGS GAUGE

Date	Site	Discharge cfs(Inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
05/19/00	Buckeye above Big Meadows	80.0	50.1	9.3	26	8.32	7.9	11.1	0.7	<0.05	0.008
05/19/00	Buckeye below Big Meadows	83.2	51.5	9.3	34	1.80	7.5	17.3	0.6	<0.05	<0.007
05/19/00	Buckeye above FS Campground	102.9	52.2	9.2	58	4.78	7.5	23.8	0.8	<0.05	<0.007
05/19/00	Buckeye below FS Campground	132.8	51.7	9.8	52	4.01	7.7	17.4	0.5	<0.05	<0.007
05/30/00	Buckeye above Big Meadows	132.0	41.1	9.2	10	0.44	8.1	18.9	0.8	<0.05	<0.007
05/30/00	Buckeye below Big Meadows	127.5	41.3	8.9	30	2.71	8.1	20.4	0.6	<0.05	<0.007
05/30/00	Buckeye above FS Campground	151.2	42.8	9.4	34	1.80	7.3	26.9	0.9	<0.05	<0.007
05/30/00	Buckeye below FS Campground	168.0	41.7	9.7	30	3.41	8.1	29.6	0.6	<0.05	<0.007
06/15/00	Buckeye above Big Meadows	160.2	47.4	9.2	76	1.68	7.9	13.5	0.3	<0.05	<0.007
06/15/00	Buckeye below Big Meadows	166.0	48.4	9.1	18	2.96	7.3	10.7	0.4	<0.05	<0.007
06/15/00	Buckeye above FS Campground	172.0	48.9	9.1	14	1.07	7.4	23.0	0.2	<0.05	<0.007
06/15/00	Buckeye below FS Campground	196.0	50.2	9.3	16	1.16	7.7	24.0	0.2	<0.05	<0.007
7/10/00	Buckeye above Big Meadows	55.7	55.0	8.3	4	0.68	6.6	9.4	0.2	<0.05	0.008
7/10/00	Buckeye below Big Meadows	58.8	59.0	8.2	16	0.56	6.3	36.1	0.2	<0.05	<0.007
7/10/00	Buckeye above FS Campground	58.8	61.0	8.4	14	1.32	7.0	39.3	0.1	<0.05	0.056
7/10/00	Buckeye below FS Campground	80.3	60.0	8.5	4	0.95	7.2	39.9	0.1	<0.05	<0.007
8/18/00	Buckeye above Big Meadows	12.1	48.2	10.6	7	0.22	6.6	16.4	0.3	<0.05	<0.007
8/18/00	Buckeye below Big Meadows	12.0	51.8	12.8	7	0.18	6.1	21.1	0.2	<0.05	<0.007
8/18/00	Buckeye above FS Campground	20.0	59.5	8.5	8	0.33	6.9	65.8	0.2	<0.05	0.030
8/18/00	Buckeye below FS Campground	31.0	60.6	8.5	8	0.31	7.0	42.6	0.2	<0.05	<0.007
09/15/00	Buckeye above Big Meadows	10.2	53.8	8.3	24	8.12	7.6	11.1	0.2	<0.05	0.011
09/15/00	Buckeye below Big Meadows	10.2	58.8	8.3	33	3.10	7.5	17.3	0.2	<0.05	<0.007
09/15/00	Buckeye above FS Campground	10.5	55.9	7.9	63	5.60	7.1	23.8	0.1	<0.05	0.008
09/15/00	Buckeye below FS Campground	11.3	56.1	7.9	44	0.57	7.5	81.1	0.2	<0.05	0.009

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
05/19/00	Buckeye above Big Meadows	<0.010	<0.05	<0.02	6.44	0.63	1.01	0.34	0.31	0.76	1.66
05/19/00	Buckeye below Big Meadows	0.075	<0.05	<0.02	7.74	0.65	0.87	0.34	0.17	0.86	1.83
05/19/00	Buckeye above FS Campground	0.042	<0.05	<0.02	8.99	0.94	1.17	0.50	0.24	1.27	2.27
05/19/00	Buckeye below FS Campground	<0.010	<0.05	<0.02	4.52	1.12	1.36	0.61	0.26	1.52	7.20
05/30/00	Buckeye above Big Meadows	0.126	0.09	0.02	7.90	0.61	0.95	0.44	0.32	1.12	2.04
05/30/00	Buckeye below Big Meadows	<0.010	0.08	0.02	8.03	0.70	0.91	0.36	0.28	1.23	1.98
05/30/00	Buckeye above FS Campground	<0.010	<0.05	<0.02	9.39	0.96	1.15	0.48	0.23	1.58	2.55
05/30/00	Buckeye below FS Campground	<0.010	0.09	0.02	8.93	0.98	1.21	0.48	0.27	1.67	2.88
06/15/00	Buckeye above Big Meadows	0.052	<0.05	<0.02	7.08	0.56	0.68	0.19	0.26	0.88	1.88
06/15/00	Buckeye below Big Meadows	0.086	0.16	0.04	6.73	0.60	0.54	0.25	0.25	0.83	2.05
06/15/00	Buckeye above FS Campground	0.050	<0.05	<0.02	8.39	0.86	0.91	0.36	0.27	1.37	2.25
06/15/00	Buckeye below FS Campground	0.050	<0.05	<0.02	8.64	0.81	1.02	0.44	0.27	1.32	2.55
7/10/00	Buckeye above Big Meadows	0.047	<0.05	<0.02	6.38	0.48	0.60	0.24	0.14	0.07	2.15
7/10/00	Buckeye below Big Meadows	0.031	<0.05	<0.02	8.76	0.79	1.07	0.52	0.57	0.05	2.82
7/10/00	Buckeye above FS Campground	0.032	<0.05	<0.02	10.88	1.16	1.27	0.71	0.50	0.13	3.49
7/10/00	Buckeye below FS Campground	<0.010	<0.05	<0.02	12.48	1.49	1.69	0.77	0.14	0.09	3.85
8/18/00	Buckeye above Big Meadows	<0.010	0.08	<0.02	7.33	0.49	1.53	0.23	0.21	0.02	2.11
8/18/00	Buckeye below Big Meadows	0.019	0.08	<0.02	11.61	1.62	1.77	0.93	0.22	0.02	4.20
8/18/00	Buckeye above FS Campground	0.032	0.06	0.03	11.22	1.43	1.66	0.87	0.22	0.03	4.22
8/18/00	Buckeye below FS Campground	0.053	0.08	<0.02	11.98	1.62	1.91	0.90	0.25	0.04	4.81
09/15/00	Buckeye above Big Meadows	<0.010	0.05	<0.02	5.26	0.63	1.01	0.34	0.31	0.76	1.66
09/15/00	Buckeye below Big Meadows	0.042	<0.05	<0.02	10.23	0.65	0.87	0.34	0.17	0.86	1.83
09/15/00	Buckeye above FS Campground	0.028	<0.05	<0.02	12.09	0.94	1.17	0.50	0.24	1.27	2.27
09/15/00	Buckeye below FS Campground	<0.010	<0.05	<0.02	5.94	1.35	2.50	0.30	0.56	1.11	9.80

ROBINSON CK: ABOVE TWIN LAKES TO DOC & AL'S

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
05/19/00	Horse Creek at Twin Lakes	22.9	41.2	9.2	18	1.12	7.5	18.5	0.9	<0.05	<0.007
05/19/00	Robinson above Twin Lakes	70.0	45.6	9.1	18	0.88	7.5	11.3	1.2	<0.05	<0.007
05/19/00	Robinson at gauge	125.2	46.4	9.0	18	0.63	8.1	28.0	0.5	<0.05	0.007
05/19/00	Robinson @ Doc & Al	130.1	47.8	8.9	18	1.30	8.2	35.6	0.4	<0.05	0.007
05/30/00	Horse Creek at Twin Lakes	44.8	39.3	11.1	20	1.26	7.1	32.3	1.0	0.08	<0.007
05/30/00	Robinson above Twin Lakes	118.8	42.3	10.2	20	0.08	7.2	17.5	1.4	<0.05	<0.007
05/30/00	Robinson at gauge	115.0	44.8	10.0	18	1.21	7.5	49.9	0.6	<0.05	<0.007
05/30/00	Robinson @ Doc & Al	120.0	45.2	9.8	20	0.73	7.4	57.1	0.4	<0.05	<0.007
06/16/00	Horse Creek at Twin Lakes	45.1	42.9	10.1	16	1.32	7.3	31.5	0.1	0.07	<0.007
06/16/00	Robinson above Twin Lakes	138.2	49.7	9.8	18	1.10	7.7	18.4	0.3	<0.05	<0.007
06/16/00	Robinson at gauge	178.0	52.4	9.6	14	1.26	7.9	46.1	0.4	<0.05	<0.007
06/16/00	Robinson @ Doc & Al	176.8	52.6	9.6	18	1.31	7.7	34.2	0.2	<0.05	<0.007
7/10/00	Horse Creek at Twin Lakes	20.1	58.1	8.9	6	2.13	7.2	28.0	0.1	<0.05	<0.007
7/10/00	Robinson above Twin Lakes	39.7	62.2	8.8	18	1.26	7.6	28.2	0.1	0.10	0.008
7/10/00	Robinson at gauge	98.6	63.5	8.4	12	1.05	7.4	42.5	0.2	<0.05	0.010
7/10/00	Robinson @ Doc & Al	87.5	65.2	8.4	4	1.66	7.4	46.8	0.1	<0.05	<0.007
7/25/00	Horse Creek at Twin Lakes	16.5	54.5	9.2	16	1.21	7.0	23.6	0.2	<0.05	<0.007
7/25/00	Robinson above Twin Lakes	57.6	68.9	8.1	16	1.01	7.5	25.2	0.2	<0.05	<0.007
7/25/00	Robinson at gauge	85.2	68.9	7.3	6	1.26	6.9	16.4	0.2	<0.05	<0.007
7/25/00	Robinson at Doc & Al	78.2	70.9	7.9	18	1.18	7.0	31.9	0.2	<0.05	<0.007
8/18/00	Horse Creek at Twin Lakes	11.0	58.8	10.8	8	0.42	6.2	8.1	0.3	<0.05	<0.007
8/18/00	Robinson above Twin Lakes	12.0	61.1	10.9	9	0.88	6.7	12.5	0.2	<0.05	<0.007
8/18/00	Robinson at gauge	65.0	63.1	9.2	8	0.30	6.6	24.5	0.4	<0.05	<0.007
8/18/00	Robinson @ Doc & Al	64.1	64.2	9.3	7	0.18	6.3	36.8	0.3	<0.05	<0.007
09/16/00	Horse Creek at Twin Lakes	12.6	49.5	8.9	17	1.02	7.8	18.5	0.3	<0.05	0.011
09/16/00	Robinson above Twin Lakes	10.7	50.5	8.4	15	0.92	7.6	11.3	0.2	<0.05	0.013
09/16/00	Robinson at gauge	21.6	52.5	8.5	16	0.76	7.9	28.0	0.2	<0.05	<0.007
09/16/00	Robinson @ Doc & Al	19.8	53.4	8.4	52	0.68	7.5	58.3	0.2	<0.05	<0.007

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
05/19/00	Horse Creek at Twin Lakes	0.368	0.08	0.02	11.26	0.40	0.84	0.31	0.26	2.07	1.85
05/19/00	Robinson above Twin Lakes	0.063	<0.05	<0.02	8.61	0.53	1.00	0.28	0.17	0.69	2.42
05/19/00	Robinson at gauge	<0.010	<0.05	<0.02	8.80	0.97	2.00	0.69	0.37	4.87	5.12
05/19/00	Robinson @ Doc & Al	<0.010	<0.05	<0.02	14.63	1.12	2.05	0.69	0.34	4.95	2.34
05/30/00	Horse Creek at Twin Lakes	0.485	0.09	0.03	12.50	0.48	0.75	0.32	0.27	2.54	1.81
05/30/00	Robinson above Twin Lakes	0.111	0.08	0.02	8.22	0.60	0.94	0.26	0.27	0.80	2.06
05/30/00	Robinson at gauge	0.078	<0.05	<0.02	13.13	1.17	1.85	0.46	0.38	4.00	2.51
05/30/00	Robinson @ Doc & Al	0.192	<0.05	<0.02	13.79	2.10	2.68	0.62	0.78	5.03	2.84
06/16/00	Horse Creek at Twin Lakes	0.366	0.12	0.04	10.57	0.33	0.47	0.25	0.16	2.02	1.46
06/16/00	Robinson above Twin Lakes	0.072	<0.05	<0.02	7.56	0.48	0.80	0.20	0.28	1.01	2.12
06/16/00	Robinson at gauge	<0.010	<0.05	<0.02	12.22	0.92	1.76	0.48	0.32	3.97	2.39
06/16/00	Robinson @ Doc & Al	0.033	<0.05	<0.02	11.64	0.68	0.93	0.26	0.27	2.27	2.53
7/10/00	Horse Creek at Twin Lakes	0.200	<0.05	<0.02	10.98	0.36	0.57	0.28	0.21	0.20	1.08
7/10/00	Robinson above Twin Lakes	0.261	<0.05	<0.02	10.90	0.31	0.58	0.28	0.64	0.12	1.52
7/10/00	Robinson at gauge	0.034	<0.05	<0.02	13.32	0.74	1.63	0.48	0.43	0.10	2.67
7/10/00	Robinson @ Doc & Al	0.068	<0.05	<0.02	13.35	0.84	1.67	0.53	0.14	0.16	2.24
7/25/00	Horse Creek at Twin Lakes	0.096	<0.05	<0.02	11.11	0.24	0.52	0.28	0.57	0.12	1.40
7/25/00	Robinson above Twin Lakes	0.075	<0.05	<0.02	9.80	0.58	1.23	0.32	0.57	0.10	3.54
7/25/00	Robinson at gauge	0.026	<0.05	<0.02	9.75	0.53	0.65	0.22	0.21	0.12	2.68
7/25/00	Robinson at Doc & Al	0.059	<0.05	<0.02	13.06	0.76	1.51	0.51	0.64	0.11	2.94
8/18/00	Horse Creek at Twin Lakes	<0.010	0.08	0.04	10.12	0.33	0.65	0.31	0.33	0.05	1.28
8/18/00	Robinson above Twin Lakes	<0.010	0.08	0.04	10.19	0.56	1.66	0.43	0.37	0.09	3.12
8/18/00	Robinson at gauge	<0.010	0.07	0.04	7.20	0.61	1.72	0.44	0.21	0.90	5.91
8/18/00	Robinson @ Doc & Al	<0.010	0.07	0.03	13.06	0.76	1.51	0.51	0.25	0.02	2.94
09/16/00	Horse Creek at Twin Lakes	0.032	0.10	0.05	13.06	0.59	1.64	0.12	0.76	1.57	4.55
09/16/00	Robinson above Twin Lakes	0.048	<0.05	<0.02	6.51	0.10	4.70	0.22	0.63	0.81	0.58
09/16/00	Robinson at gauge	0.044	<0.05	<0.02	7.62	0.79	1.70	0.49	0.37	3.57	4.52
09/16/00	Robinson @ Doc & Al	0.041	<0.05	<0.02	17.12	1.54	2.65	1.09	0.06	5.05	5.34

BUCKEYE CK: USGS GAUGE TO WRID FENCELINE

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
05/19/00	Buckeye below FS Campground	132.8	51.7	9.8	52	4.01	7.7	17.4	0.5	<0.05	<0.007
05/19/00	Buckeye (N) at 395	60.0	57.2	9.4	36	3.28	7.6	25.6	0.4	<0.05	0.010
05/19/00	Buckeye @ WRID	62.2	56.2	9.4	44	5.09	7.5	51.5	0.4	<0.05	0.010
05/30/00	Buckeye below FS Campground	168.0	41.7	9.7	30	3.41	8.1	29.6	0.6	<0.05	<0.007
05/30/00	Buckeye (N) at 395	142.6	44.8	9.5	2	1.35	8.4	48.0	0.4	<0.05	<0.007
05/30/00	Buckeye @ WRID	144.0	43.2	9.3	24	1.64	8.1	44.7	0.4	<0.05	<0.007
06/15/00	Buckeye below FS Campground	196.0	50.2	9.3	16	1.16	7.7	24.0	0.2	<0.05	<0.007
06/15/00	Buckeye (N) at 395	112.6	53.3	9.0	16	1.10	7.6	32.0	0.2	<0.05	<0.007
06/15/00	Buckeye @ WRID	102.5	53.1	8.8	20	3.45	7.7	20.9	0.4	<0.05	<0.007
7/25/00	Buckeye below FS Campground	62.1	61.7	10.1	14	1.23	7.8	42.6	0.2	<0.05	<0.007
7/25/00	Buckeye at 395	12.1	74.5	7.1	23	3.43	7.8	122.6	0.4	>0.05	<0.007
7/25/00	Buckeye at WRID fence	4.1	79.2	7.7	34	4.68	7.9	141.1	0.5	0.20	<0.007
8/18/00	Buckeye below FS Campground	31.0	60.6	8.5	8	0.31	7.0	42.6	0.2	<0.05	<0.007
8/18/00	Buckeye (N) at 395	7.5	63.5	7.2	10	1.32	7.8	51.9	0.3	<0.05	<0.007
8/18/00	Buckeye @ WRID	3.0	68.2	7.1	14	1.64	7.3	71.1	0.4	<0.05	<0.007
09/15/00	Buckeye below FS Campground	11.3	56.1	7.9	44	0.57	7.5	81.1	0.2	<0.05	0.009
09/15/00	Buckeye (N) at 395	3.1	55.1	7.7	40	1.18	7.9	189.4	0.1	<0.05	<0.007
09/15/00	Buckeye @ WRID	5.9	53.6	7.8	36	3.10	7.8	171.1	0.2	<0.05	0.090

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
05/19/00	Buckeye below FS Campground	<0.010	<0.05	<0.02	4.52	1.12	1.36	0.61	0.26	1.52	7.20
05/19/00	Buckeye (N) at 395	<0.010	<0.05	<0.02	6.02	1.49	2.04	0.76	0.27	1.92	9.20
05/19/00	Buckeye @ WRID	<0.010	<0.05	<0.02	6.40	1.68	3.49	1.00	0.35	2.07	9.60
05/30/00	Buckeye below FS Campground	<0.010	0.09	0.02	8.93	0.98	1.21	0.48	0.27	1.67	2.88
05/30/00	Buckeye (N) at 395	0.361	0.11	0.03	9.55	3.05	2.41	0.34	1.23	2.22	3.54
05/30/00	Buckeye @ WRID	0.174	0.09	0.02	10.60	2.32	2.26	0.54	0.70	2.22	3.51
06/15/00	Buckeye below FS Campground	0.050	<0.05	<0.02	8.64	0.81	1.02	0.44	0.27	1.32	2.55
06/15/00	Buckeye (N) at 395	0.093	0.06	0.02	9.37	1.50	1.85	0.83	0.32	2.38	2.83
06/15/00	Buckeye @ WRID	<0.010	0.05	<0.02	8.28	0.74	2.76	0.26	0.25	0.83	3.02
7/25/00	Buckeye below FS Campground	0.053	<0.05	<0.02	12.02	1.53	1.77	0.90	0.50	0.12	4.82
7/25/00	Buckeye at 395	0.120	<0.05	<0.02	13.20	2.23	16.22	1.93	1.03	0.41	11.55
7/25/00	Buckeye at WRID fence	0.160	<0.05	<0.02	16.35	2.71	20.82	2.39	1.21	0.45	11.64
8/18/00	Buckeye below FS Campground	0.053	0.08	<0.02	11.98	1.62	1.91	0.90	0.25	0.04	4.81
8/18/00	Buckeye (N) at 395	0.039	0.09	0.06	13.33	2.18	12.87	1.98	0.41	0.05	6.77
8/18/00	Buckeye @ WRID	0.037	0.12	0.08	16.35	2.71	18.73	2.19	0.44	0.16	10.56
09/15/00	Buckeye below FS Campground	<0.010	<0.05	<0.02	5.94	1.35	2.50	0.30	0.56	1.11	9.80
09/15/00	Buckeye (N) at 395	0.049	<0.05	<0.02	13.95	3.36	5.14	1.96	0.23	4.82	16.10
09/15/00	Buckeye @ WRID	0.041	<0.05	0.08	6.90	0.89	1.30	0.40	1.00	3.40	4.70

E. WALKER ABOVE & BELOW RESERVOIR

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV.	TKN mg/L	NO3-N mg/L	NH4-N mg/L
05/19/00	East Walker above Reservoir	68.0	61.8	9.1	30	3.88	8.4	98.8	1.1	<0.05	0.010
05/19/00	East Walker below Reservoir	165.0	60.3	9.2	55	4.82	8.7	134.9	0.5	0.05	0.030
05/30/00	East Walker above Reservoir	144.2	52.1	9.2	22	1.69	7.9	109.8	1.3	<0.05	<0.007
05/30/00	East Walker below Reservoir	187.5	50.5	8.9	90	5.18	7.9	163.1	0.6	<0.05	<0.007
06/16/00	East Walker above Reservoir	146.2	53.8	8.9	26	4.19	7.9	101.9	0.2	<0.05	<0.007
06/16/00	East Walker below Reservoir	225.0	53.4	8.7	88	5.02	8.1	144.0	0.4	<0.05	<0.007
7/25/00	East walker above Reservoir	32.5	70.0	8.6	16	1.69	7.8	125.7	0.2	<0.05	<0.007
7/25/00	East Walker below Reservoir	252.0	69.6	6.7	16	2.39	7.4	130.2	0.6	0.61	<0.007
8/18/00	East Walker above Reservoir	21.0	68.3	9.1	14	3.51	7.9	28.9	0.2	<0.05	0.020
8/18/00	East Walker below Reservoir	198.0	65.9	7.1	8	0.38	7.8	124.7	0.2	<0.05	0.610
09/16/00	East Walker above Reservoir	14.8	62.2	8.1	56	5.31	7.6	190.9	0.2	<0.05	0.012
09/16/00	East Walker below Reservoir	214.0	59.4	7.5	56	7.55	8.1	139.7	0.1	<0.05	0.060

Date	Site	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
05/19/00	East Walker above Reservoir	<0.010	<0.05	<0.02	21.08	3.20	9.07	2.93	0.89	10.63	19.66
05/19/00	East Walker below Reservoir	0.030	0.05	0.35	18.22	4.66	16.10	3.38	2.88	16.20	14.90
05/30/00	East Walker above Reservoir	0.099	0.10	0.03	19.96	4.07	5.17	1.50	1.04	7.67	7.12
05/30/00	East Walker below Reservoir	<0.010	0.08	0.02	30.31	7.50	21.83	3.70	3.63	18.45	7.38
06/16/00	East Walker above Reservoir	0.032	0.06	0.03	20.90	3.07	4.23	1.73	0.53	6.44	7.99
06/16/00	East Walker below Reservoir	0.030	<0.05	0.06	21.22	5.55	21.33	4.50	1.98	3.80	15.20
7/25/00	East walker above Reservoir	<0.010	<0.05	0.04	27.52	3.85	6.56	2.08	0.57	0.16	11.54
7/25/00	East Walker below Reservoir	0.028	0.13	0.05	22.26	3.69	10.16	2.20	0.57	0.23	7.71
8/18/00	East Walker above Reservoir	<0.010	0.08	0.05	17.80	3.88	10.21	1.69	1.45	7.30	22.10
8/18/00	East Walker below Reservoir	0.171	0.12	0.10	18.40	3.91	12.35	2.61	1.87	7.40	13.10
09/16/00	East Walker above Reservoir	<0.010	<0.05	<0.02	22.88	3.39	9.87	2.03	1.39	10.13	22.36
09/16/00	East Walker below Reservoir	0.044	<0.05	0.09	18.22	4.66	16.10	3.38	2.88	16.20	14.90

HIGH LAKES, JULY-AUGUST

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
7/10/00	Blue Lake Outlet	7.2	55.2	9.1	4	0.55	7.2	54.7	0.1	<0.05	0.020
8/18/00	Blue Lake Outlet	6.9	56.3	8.4	12	0.16	6.7	19.6	0.2	<0.05	0.020
7/10/00	Bonnie Lake Outlet	6.2	58.6	12.2	6	0.63	6.5	4.4	0.2	<0.05	0.016
8/18/00	Bonnie Lake Outlet	<1	62.1	11.4	16	0.20	6.1	0.4	0.4	<0.05	0.016
7/10/00	Chain o Lakes	n/a	67.1	6.8	14	1.99	6.7	18.7	0.2	<0.05	0.028
8/18/00	Chain o Lakes	n/a	66.0	9.1	15	0.22	6.4	9.5	0.3	<0.05	0.020
7/10/00	Cooney Lake Outlet	6.0	56.9	10.9	6	0.55	6.8	64.7	0.5	<0.05	<0.007
8/18/00	Cooney Lake Outlet	4.0	57.4	8.2	16	0.29	6.7	54.1	0.2	<0.05	<0.007
7/10/00	Crown Lake Inlet	12.0	49.6	12.5	4	0.57	6.6	4.7	0.6	0.07	0.010
7/10/00	Crown Lake Outlet	16.5	52.0	10.5	6	0.94	6.7	5.4	0.2	<0.05	0.064
8/18/00	Crown Lake Inlet	2.1	54.0	8.6	7	0.13	5.9	1.3	0.2	<0.05	<0.007
8/18/00	Crown Lake Outlet	3.1	59.8	7.1	5	0.09	6.1	3.9	0.2	<0.05	0.020
7/10/00	East Lake	12.0	55.9	11.2	8	0.92	7.0	42.9	0.2	<0.05	<0.007
8/18/00	East Lake	7.5	56.5	11.7	8	0.47	6.4	31.5	0.3	<0.05	<0.007
7/10/00	Fremont Lake Trail	n/a	69.2	9.3	6	2.05	7.0	20.2	0.4	<0.05	0.071
8/18/00	Fremont Lake Trail	n/a	67.0	11.0	7	0.35	6.2	15.3	0.2	<0.05	0.020
7/10/00	Fremont Lake Tule	n/a	69.1	9.4	14	1.89	6.5	20.0	0.2	<0.05	0.014
8/18/00	Fremont Lake Tule	n/a	67.1	11.2	9	0.34	7.1	16.9	0.3	<0.05	0.014
7/10/00	Frog Lake Outlet	5.3	11.5	55.2	14	0.85	6.9	71.2	0.1	<0.05	0.000
8/18/00	Frog Lake Outlet	3.0	53.8	10.1	9	0.33	6.8	47.5	0.3	<0.05	<0.007
7/10/00	Gilman Lake Outlet	11.5	57.0	11.8	6	0.55	7.0	42.2	0.2	<0.05	0.014
8/18/00	Gilman Lake Outlet	6.0	59.0	12.4	9	0.45	6.5	6.8	0.3	<0.05	0.014
7/10/00	Harriet Lake	8.0	58.6	11.0	8	2.25	7.0	5.7	0.2	<0.05	0.038
8/18/00	Harriet Lake	6.0	12.6	9.6	9	0.39	6.7	0.6	0.3	<0.05	0.020
7/10/00	Helen Lake Outlet	4.9	58.8	11.4	4	0.99	6.5	5.9	0.3	<0.05	0.015
8/18/00	Helen Lake Outlet	1.8	58.6	11.8	8	0.12	6.1	3.1	0.2	<0.05	0.015
7/10/00	Hoover (Lower) Lake Outlet	12.0	52.9	11.2	4	0.83	6.9	42.8	0.2	0.09	<0.007
8/18/00	Hoover (Lower) Lake Outlet	9.0	54.3	11.4	7	0.08	6.6	22.2	0.2	<0.05	<0.007
7/10/00	Long Lake (Upper)	n/a	70.3	7.9	8	0.94	6.8	11.3	0.2	<0.05	0.076
8/18/00	Long Lake (Upper)	n/a	66.4	9.8	10	0.56	6.0	5.3	0.3	<0.05	0.020
7/10/00	Peeler at Ranchena	1.0	55.8	12.1	16	0.62	6.9	4.9	0.2	<0.05	<0.007
8/18/00	Peeler at Ranchena	<1	59.0	9.4	7	0.09	6.4	3.3	0.2	<0.05	<0.007
7/10/00	Peeler at Robinson Outlet	6.0	56.5	10.6	4	0.64	6.4	1.5	0.2	<0.05	0.030
8/18/00	Peeler at Robinson Outlet	1.8	59.1	9.5	8	0.26	5.6	2.0	0.2	<0.05	0.020
7/10/00	Robinson Lake Lower Outlet	8.2	56.0	11.2	12	0.70	6.7	5.9	0.3	<0.05	0.013
8/18/00	Robinson Lake Lower Outlet	4.0	58.6	7.4	9	0.43	5.7	1.5	0.3	<0.05	0.010
7/10/00	Robinson Lake Upper Outlet	3.0	57.0	11.0	6	0.90	6.5	0.6	0.1	<0.05	0.009
8/18/00	Robinson Lake Upper Outlet	2.0	57.7	9.1	16	0.24	5.3	3.1	0.3	<0.05	0.020
7/10/00	Roosevelt Lake outlet	8.0	66.0	10.2	14	1.60	7.6	55.0	0.1	<0.05	<0.007
8/18/00	Roosevelt Lake outlet	n/a	69.6	10.4	10	0.42	6.7	161.2	0.2	<0.05	<0.007
7/10/00	Ruth Lake Outlet	2.2	59.8	11.2	14	2.98	6.7	5.0	0.2	<0.05	0.010
8/18/00	Ruth Lake Outlet	n/a	61.0	10.5	7	0.23	5.9	2.0	0.3	<0.05	0.010
7/10/00	Snow Lake Outlet	2.0	52.0	12.8	16	0.84	6.7	3.5	0.3	<0.05	0.010
8/18/00	Snow Lake Outlet	1.0	61.7	8.5	10	0.39	5.3	2.5	0.3	<0.05	<0.02
7/10/00	Stella Lake Outlet	2.5	62.8	11.3	6	1.61	6.4	4.6	0.2	<0.05	0.015
8/18/00	Stella Lake Outlet	n/a	60.2	9.0	6	0.19	6.4	4.1	0.2	<0.05	0.015
7/10/00	Summit Lake Outlet	4.1	57.1	11.4	8	1.03	6.8	47.4	0.4	<0.05	<0.007
8/18/00	Summit Lake Outlet	2.2	56.1	11.7	10	0.58	6.4	11.6	0.3	<0.05	<0.007
7/10/00	Tower Lake Outlet	6.6	52.5	12.8	12	0.62	6.5	6.1	0.2	0.08	0.010
8/18/00	Tower Lake Outlet	3.6	58.5	9.8	16	0.25	6.7	5.1	0.2	<0.05	0.010
7/10/00	Trumbull Lake Outlet	1.4	60.5	8.1	16	1.06	6.7	36.5	1.0	<0.05	<0.007
8/18/00	Trumbull Lake Outlet	0.5	55.9	8.7	12	2.81	6.7	15.2	0.2	<0.05	<0.007
7/10/00	Virginia Lake Upper Outlet	8.1	57.0	9.1	8	0.85	7.2	51.2	0.2	<0.05	<0.007
8/18/00	Virginia Lake Upper Outlet	4.5	58.3	7.7	19	0.81	6.9	41.4	0.3	<0.05	<0.007

Table 2: All results by date.

Date
Site Name

05/19/00	DATE	Discharge cfs(Inst)	TEMP F	D.O. mg/L	TSS mg/L	Turbidity Ntu	pH	EC UV	TKN mg/L	NO3-N mg/L	NH4-N mg/L
Barney Lake Inlet	05/19/00	48.0	38.9	9.2	8	0.45	7.3	4.0	0.9	<0.05	0.010
Barney Lake Outlet	05/19/00	46.7	43.1	9.1	8	1.91	7.6	6.2	1.1	<0.05	0.007
Buckeye above Big Meadows	05/19/00	80.0	50.1	9.3	26	8.32	7.9	11.1	0.7	<0.05	0.008
Buckeye below Big Meadows	05/19/00	83.2	51.5	9.3	34	1.80	7.5	17.3	0.6	<0.05	<0.007
Buckeye above FS Campground	05/19/00	102.9	52.2	9.2	58	4.78	7.5	23.8	0.8	<0.05	<0.007
Buckeye below FS Campground	05/19/00	132.8	51.7	9.8	52	4.01	7.7	17.4	0.5	<0.05	<0.007
Buckeye (N) at 395	05/19/00	60.0	57.2	9.4	36	3.28	7.6	25.6	0.4	<0.05	0.010
Buckeye @ WRID	05/19/00	62.2	56.2	9.4	44	5.09	7.5	51.5	0.4	<0.05	0.010
Eagle Ck US	05/19/00	*	*	*	*	*	*	*	*	*	*
Eagle Ck DS	05/19/00	*	*	*	*	*	*	*	*	*	*
East Walker above Reservoir	05/19/00	68.0	61.8	9.1	30	3.88	8.4	98.8	1.1	<0.05	0.010
East Walker below Reservoir	05/19/00	165.0	60.3	9.2	55	4.82	8.7	134.9	0.5	0.05	0.030
Green Lake Inlet	05/19/00	6.0	48.1	10.1	18	0.79	7.4	8.7	0.4	<0.05	0.008
Green Lake Outlet	05/19/00	27.0	40.3	10.2	20	1.93	7.3	23.9	0.4	<0.05	0.051
Green above FS Campground	05/19/00	89.8	44.3	9.8	22	2.01	7.4	33.3	0.8	<0.05	0.023
Green below FS Campground	05/19/00	89.8	44.6	9.8	18	0.68	7.5	24.3	0.8	<0.05	0.008
Green at guage	05/19/00	115.2	46.7	9.6	22	1.38	7.9	30.6	0.5	<0.05	0.007
Horse Creek at Twin Lakes	05/19/00	22.9	41.2	9.2	18	1.12	7.5	18.5	0.9	<0.05	<0.007
Robinson above Twin Lakes	05/19/00	70.0	45.6	9.1	18	0.68	7.5	11.3	1.2	<0.05	<0.007
Robinson at guage	05/19/00	125.2	46.4	9.0	18	0.63	8.1	28.0	0.5	<0.05	0.007
Robinson @ Doc & Al	05/19/00	130.1	47.8	8.9	18	1.30	8.2	35.6	0.4	<0.05	0.007
Robinson (N) at 395	05/19/00	42.7	49.9	8.9	24	2.88	7.7	36.7	0.4	<0.05	0.007
Robinson @ WRID fence	05/19/00	40.0	51.2	9.1	24	2.84	8.2	34.9	0.9	<0.05	<0.007
Sauger @ Campground	05/19/00	21.3	45.7	8.9	34	3.23	8.3	55.5	0.6	<0.05	<0.007
Sauger below FS Compound	05/19/00	20.2	45.7	8.9	54	4.15	8.2	93.8	0.6	<0.05	<0.007

05/19/00	DATE	NO3 mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
Barney Lake Inlet	05/19/00	0.215	0.11	<0.02	7.33	1.34	0.87	0.13	0.54	0.50	1.21
Barney Lake Outlet	05/19/00	0.059	0.08	0.05	6.08	0.40	0.74	0.19	0.28	0.25	1.07
Buckeye above Big Meadows	05/19/00	<0.010	<0.05	<0.02	6.44	0.63	1.01	0.34	0.31	0.76	1.66
Buckeye below Big Meadows	05/19/00	0.075	<0.05	<0.02	7.74	0.65	0.87	0.34	0.17	0.66	1.83
Buckeye above FS Campground	05/19/00	0.042	<0.05	<0.02	8.99	0.94	1.17	0.50	0.24	1.27	2.27
Buckeye below FS Campground	05/19/00	<0.010	<0.05	<0.02	4.52	1.12	1.36	0.61	0.26	1.52	7.20
Buckeye (N) at 395	05/19/00	<0.010	<0.05	<0.02	6.02	1.49	2.04	0.76	0.27	1.92	9.20
Buckeye @ WRID	05/19/00	<0.010	<0.05	<0.02	6.40	1.68	3.49	1.00	0.35	2.07	9.60
Eagle Ck US	05/19/00	*	*	*	*	*	*	*	*	*	*
Eagle Ck DS	05/19/00	*	*	*	*	*	*	*	*	*	*
East Walker above Reservoir	05/19/00	<0.010	<0.05	<0.02	21.08	3.20	9.07	2.93	0.89	10.63	19.66
East Walker below Reservoir	05/19/00	0.030	0.06	0.35	18.22	4.66	16.10	3.38	2.88	16.20	14.90
Green Lake Inlet	05/19/00	<0.010	<0.05	<0.02	7.97	0.42	1.25	0.46	0.23	3.76	3.00
Green Lake Outlet	05/19/00	0.174	<0.05	<0.02	11.35	0.50	1.49	0.89	0.54	11.23	1.97
Green above FS Campground	05/19/00	0.144	<0.05	<0.02	10.76	0.41	1.26	0.63	0.34	8.92	2.26
Green below FS Campground	05/19/00	0.074	<0.05	<0.02	10.81	0.40	1.23	0.48	0.26	8.58	2.34
Green at guage	05/19/00	0.033	<0.05	<0.02	10.89	0.46	1.37	0.52	0.25	7.93	2.31
Horse Creek at Twin Lakes	05/19/00	0.368	0.08	0.02	11.26	0.40	0.84	0.31	0.26	2.07	1.85
Robinson above Twin Lakes	05/19/00	0.063	<0.05	<0.02	8.61	0.53	1.00	0.28	0.17	0.89	2.42
Robinson at guage	05/19/00	<0.010	<0.05	<0.02	8.80	0.97	2.00	0.69	0.37	4.87	5.12
Robinson @ Doc & Al	05/19/00	<0.010	<0.05	<0.02	14.63	1.12	2.05	0.69	0.34	4.95	2.34
Robinson (N) at 395	05/19/00	<0.010	<0.05	<0.02	7.15	1.57	2.16	0.85	0.31	3.34	8.22
Robinson @ WRID fence	05/19/00	<0.010	<0.05	<0.02	10.30	2.07	2.99	1.05	0.44	3.66	12.72
Sauger @ Campground	05/19/00	0.050	0.06	0.05	10.10	3.55	9.06	2.68	1.38	4.20	24.72
Sauger below FS Compound	05/19/00	0.050	0.10	0.09	17.69	4.67	9.48	3.51	1.38	4.41	14.76

06/15/00

	DATE	Discharge cfs(inst)	TEMP F	D.O. mg/l	TSS mg/l	Turbidity ntu	pH	EC uV	TKN ppm	NO3-N ppm	NH4 mg/l
Barney Lake Inlet	06/15/00	86.0	41.2	9.3	24	1.68	7.6	36.6	0.2	<0.05	<0.007
Barney Lake Outlet	06/15/00	78.0	47.3	8.9	19	1.10	7.7	34.2	0.2	<0.05	<0.007
Buckeye above Big Meadows	06/15/00	160.2	47.4	9.2	76	1.68	7.9	13.5	0.3	<0.05	<0.007
Buckeye below Big Meadows	06/15/00	166.0	48.4	9.1	18	2.96	7.3	10.7	0.4	<0.05	<0.007
Buckeye above FS Campground	06/15/00	172.0	48.9	9.1	14	1.07	7.4	23.0	0.2	<0.05	<0.007
Buckeye below FS Campground	06/15/00	196.0	50.2	9.3	16	1.16	7.7	24.0	0.2	<0.05	<0.007
Buckeye (N) at 395	06/15/00	112.6	53.3	9.0	16	1.10	7.6	32.0	0.2	<0.05	<0.007
Buckeye @ WRID	06/15/00	102.5	53.1	8.8	20	3.45	7.7	20.9	0.4	<0.05	<0.007
Eagle Ck US	06/15/00	8.8	39.2	9.5	18	2.25	6.4	21.4	0.2	<0.05	<0.007
Eagle Ck DS	06/15/00	22.6	44.2	10.1	16	2.00	7.1	23.6	0.2	<0.05	<0.007
East Walker above Reservoir	06/15/00	146.2	53.8	8.9	26	4.19	7.9	101.9	0.2	<0.05	<0.007
East Walker below Reservoir	06/15/00	225.0	53.4	8.7	88	5.02	8.1	144.0	0.4	<0.05	<0.007
Green Lake Inlet	06/15/00	15.2	49.2	9.7	20	1.81	7.6	17.3	0.1	<0.05	<0.007
Green Lake Outlet	06/15/00	78.8	50.1	9.9	16	1.10	7.6	22.2	0.1	<0.05	<0.007
Green above FS Campground	06/15/00	130.1	53.1	9.9	18	1.08	7.4	26.1	0.2	<0.05	<0.007
Green below FS Campground	06/15/00	128.2	53.7	10.1	20	1.22	7.4	28.2	0.2	<0.05	<0.007
Green at guage	06/15/00	138.5	55.2	9.6	22	0.91	7.2	32.7	0.3	<0.05	<0.007
Horse Creek at Twin Lakes	06/15/00	45.1	42.9	10.1	16	1.32	7.3	31.5	0.1	0.07	<0.007
Robinson above Twin Lakes	06/15/00	138.2	49.7	9.8	18	1.10	7.7	18.4	0.3	<0.05	<0.007
Robinson at guage	06/15/00	178.0	52.4	9.6	14	1.26	7.9	46.1	0.4	<0.05	<0.007
Robinson @ Doc & Al	06/15/00	176.8	52.6	9.6	18	1.31	7.7	34.2	0.2	<0.05	<0.007
Robinson (N) at 395	06/15/00	89.3	54.8	8.7	24	1.75	7.7	50.2	0.1	<0.05	<0.007
Robinson @ WRID fence	06/15/00	83.1	55.9	9.1	14	0.78	7.6	54.9	0.3	<0.05	<0.007
Sauger @ Campground	06/15/00	5.3	50.3	8.1	33	2.88	7.6	135.4	0.3	0.06	<0.007
Sauger below FS Compound	06/15/00	5.1	50.7	8.1	36	2.92	7.6	136.2	0.3	0.06	<0.007
USGS Buckeye @ 395 6/6		150.0	n/a	n/a	26	2.62	7.1	34.4	0.3	<0.05	<0.007
USGS Buckeye @ Res 6/8		112.0	n/a	n/a	22	1.02	8.1	25.0	0.4	<0.05	<0.007
USGS Sauger 6/8		5.2	n/a	n/a	30	2.42	8.2	130.3	0.2	0.06	<0.007
USGS Green 6/6		125.0	n/a	n/a	20	1.97	7.8	35.1	0.2	<0.05	<0.007

06/15/00

	DATE	NO3 mg/l	P ppm	PO4 mg/l	Ca mg/l	Mg mg/l	Na mg/l	K mg/l	Cl mg/l	SO4 mg/l	Si ppm
Barney Lake Inlet	06/15/00	0.046	<0.05	<0.02	10.18	1.28	1.62	0.80	0.31	2.58	0.75
Barney Lake Outlet	06/15/00	<0.010	<0.05	<0.02	12.84	1.39	2.00	0.71	0.33	3.13	0.78
Buckeye above Big Meadows	06/15/00	0.052	<0.05	<0.02	7.08	0.56	0.68	0.19	0.26	0.88	1.88
Buckeye below Big Meadows	06/15/00	0.086	0.16	0.04	6.73	0.60	0.54	0.25	0.25	0.83	2.05
Buckeye above FS Campground	06/15/00	0.050	<0.05	<0.02	8.39	0.86	0.91	0.36	0.27	1.37	2.25
Buckeye below FS Campground	06/15/00	0.050	<0.05	<0.02	8.64	0.81	1.02	0.44	0.27	1.32	2.55
Buckeye (N) at 395	06/15/00	0.093	0.06	0.02	9.37	1.50	1.85	0.83	0.32	2.38	2.83
Buckeye @ WRID	06/15/00	<0.010	0.05	<0.02	8.28	0.74	2.76	0.26	0.25	0.83	3.02
Eagle Ck US	06/15/00	0.096	0.09	0.03	7.95	1.24	1.03	0.48	0.29	0.97	3.42
Eagle Ck DS	06/15/00	0.046	0.11	0.02	8.18	0.83	1.00	0.47	0.31	1.53	4.70
East Walker above Reservoir	06/15/00	0.032	0.06	0.03	20.90	3.07	4.23	1.73	0.53	6.44	7.99
East Walker below Reservoir	06/15/00	0.030	<0.05	0.06	21.22	5.55	21.33	4.50	1.96	3.80	15.20
Green Lake Inlet	06/15/00	0.049	0.07	0.03	7.96	0.35	0.62	0.17	0.28	4.04	1.54
Green Lake Outlet	06/15/00	0.077	0.10	0.04	8.44	0.27	0.86	0.15	0.24	6.61	2.02
Green above FS Campground	06/15/00	0.104	0.18	0.05	10.06	0.37	0.91	0.34	0.30	8.39	2.12
Green below FS Campground	06/15/00	0.090	0.15	0.04	9.92	0.35	0.92	0.35	0.23	8.07	2.19
Green at guage	06/15/00	0.021	<0.05	<0.02	10.53	0.40	0.93	0.34	0.27	8.52	2.30
Horse Creek at Twin Lakes	06/15/00	0.366	0.12	0.04	10.57	0.33	0.47	0.25	0.16	2.02	1.46
Robinson above Twin Lakes	06/15/00	0.072	<0.05	<0.02	7.56	0.48	0.80	0.20	0.28	1.01	2.12
Robinson at guage	06/15/00	<0.010	<0.05	<0.02	12.22	0.92	1.76	0.48	0.32	3.97	2.39
Robinson @ Doc & Al	06/15/00	0.033	<0.05	<0.02	11.64	0.68	0.93	0.26	0.27	2.27	2.53
Robinson (N) at 395	06/15/00	<0.010	0.13	0.04	13.35	1.29	1.83	0.65	0.32	3.19	3.18
Robinson @ WRID fence	06/15/00	0.028	0.14	0.02	5.26	0.29	0.47	0.09	0.24	0.19	0.80
Sauger @ Campground	06/15/00	0.050	0.08	0.09	17.22	4.87	9.98	2.10	1.42	5.24	12.36
Sauger below FS Compound	06/15/00	0.060	0.09	0.09	18.28	4.45	9.88	2.20	1.34	5.07	11.93
USGS Buckeye @ 395 6/6		0.063	0.05	<0.02	10.17	1.33	1.59	0.56	0.32	1.67	2.97
USGS Buckeye @ Res 6/8		0.118	0.05	<0.02	9.35	1.18	1.19	0.41	0.26	1.60	2.82
USGS Sauger 6/8		<0.010	0.07	0.03	16.92	5.13	10.69	2.26	1.32	5.43	12.24
USGS Green 6/6		0.089	0.15	0.03	11.08	0.51	1.12	0.41	0.30	8.99	2.35

7/10/2000 to 7/18/2000

	DATE	Discharge cfs(inst)	TEMP F	D.O. mg/l	TSS mg/l	Turbidity ntu	pH	EC uV	TKN ppm	NO3-N ppm	NH4 mg/l
Blue Lake Outlet	7/14/00	7.2	55.2	9.1	4	0.55	7.2	54.7	0.1	<0.05	0.020
Bonnie Lake Outlet	7/16/00	6.2	58.6	12.2	6	0.63	6.5	4.4	0.2	<0.05	0.016
Chain o Lakes	7/18/00	n/a	67.1	6.8	14	1.99	6.7	18.7	0.2	<0.05	0.028
Cooney Lake Outlet	7/14/00	6.0	56.9	10.9	6	0.55	6.8	64.7	0.5	<0.05	<0.007
Crown Lake Inlet	7/11/00	12.0	49.6	12.5	4	0.57	6.6	4.7	0.6	0.07	0.010
Crown Lake Outlet	7/11/00	16.5	52.0	10.5	6	0.94	6.7	5.4	0.2	<0.05	0.064
East Lake	7/14/00	12.0	55.9	11.2	8	0.92	7.0	42.9	0.2	<0.05	<0.007
Fremont Lake Trail	7/18/00	n/a	69.2	9.3	6	2.05	7.0	20.2	0.4	<0.05	0.071
Fremont Lake Tule	7/18/00	n/a	69.1	9.4	14	1.89	6.5	20.0	0.2	<0.05	0.014
Frog Lake Outlet	7/14/00	5.3	11.5	55.2	14	0.85	6.9	71.2	0.1	<0.05	0.000
Gilman Lake Outlet	7/14/00	11.5	57.0	11.8	6	0.55	7.0	42.2	0.2	<0.05	0.014
Harriet Lake	7/16/00	8.0	58.6	11.0	8	2.25	7.0	5.7	0.2	<0.05	0.038
Helen Lake Outlet	7/16/00	4.9	58.8	11.4	4	0.99	6.5	5.9	0.3	<0.05	0.015
Hoover (Lower) Lake Outlet	7/14/00	12.0	52.9	11.2	4	0.83	6.9	42.8	0.2	0.09	<0.007
Long Lake (Upper)	7/18/00	n/a	70.3	7.9	8	0.94	6.8	11.3	0.2	<0.05	0.076
Peeler at Rancheria	7/10/00	1.0	55.8	12.1	16	0.62	6.9	4.9	0.2	<0.05	<0.007
Peeler at Robinson Outlet	7/10/00	6.0	56.5	10.6	4	0.64	6.4	1.5	0.2	<0.05	0.030
Robinson Lake Lower Outlet	7/11/00	8.2	58.0	11.2	12	0.70	6.7	5.9	0.3	<0.05	0.013
Robinson Lake Upper Outlet	7/11/00	3.0	57.0	11.0	6	0.90	6.5	0.6	0.1	<0.05	0.009
Roosevelt Lake outlet	7/18/00	8.0	68.0	10.2	14	1.60	7.5	55.0	0.1	<0.05	<0.007
Ruth Lake Outlet	7/16/00	2.2	59.8	11.2	14	2.98	6.7	5.0	0.2	<0.05	0.010
Snow Lake Outlet	7/11/00	2.0	52.0	12.8	16	0.84	6.7	3.5	0.3	<0.05	0.010
Stella Lake Outlet	7/16/00	2.5	62.8	11.3	6	1.61	6.4	4.6	0.2	<0.05	0.015
Summit Lake Outlet	7/14/00	4.1	57.1	11.4	8	1.03	6.8	47.4	0.4	<0.05	<0.007
Tower Lake Outlet	7/17/00	6.5	52.5	12.8	12	0.62	6.5	6.1	0.2	0.08	0.010
Trumbull Lake Outlet	7/14/00	1.4	60.5	8.1	16	1.06	6.7	36.5	1.0	<0.05	<0.007
Virginia Lake Upper Outlet	7/14/00	8.1	57.0	9.1	8	0.85	7.2	51.2	0.2	<0.05	<0.007

7/10/2000 to 7/18/2000

	DATE	NO3 mg/l	P ppm	PO4 mg/l	Ca mg/l	Mg mg/l	Na mg/l	K mg/l	Cl mg/l	SO4 mg/l	Si ppm
Blue Lake Outlet	7/14/00	0.028	<0.05	<0.02	15.73	0.32	0.80	0.29	0.14	0.05	2.42
Bonnie Lake Outlet	7/16/00	0.013	<0.05	<0.02	4.87	0.39	0.23	0.10	0.21	0.06	0.27
Chain o Lakes	7/18/00	0.055	<0.05	<0.02	7.45	0.86	0.44	0.46	0.50	0.19	0.77
Cooney Lake Outlet	7/14/00	<0.010	0.12	0.05	18.35	0.30	0.94	0.30	0.21	0.05	2.61
Crown Lake Inlet	7/11/00	0.131	0.10	0.03	4.21	0.28	0.42	0.11	0.14	0.05	0.11
Crown Lake Outlet	7/11/00	0.085	<0.05	<0.02	5.89	0.48	0.40	0.22	0.21	0.09	0.78
East Lake	7/14/00	0.025	<0.05	<0.02	12.77	0.32	1.05	0.48	0.28	0.09	2.76
Fremont Lake Trail	7/18/00	0.043	0.10	0.04	7.78	0.89	0.67	0.61	0.21	0.20	0.17
Fremont Lake Tule	7/18/00	0.053	<0.05	<0.02	7.38	1.00	0.84	0.63	0.50	0.18	0.17
Frog Lake Outlet	7/14/00	0.032	<0.05	<0.02	18.38	0.31	0.99	0.31	0.50	0.08	2.56
Gilman Lake Outlet	7/14/00	0.080	<0.05	<0.02	12.96	0.31	0.95	0.32	0.21	0.05	1.95
Harriet Lake	7/16/00	0.031	<0.05	<0.02	6.15	0.39	0.27	0.14	0.28	0.22	0.39
Helen Lake Outlet	7/16/00	0.076	<0.05	<0.02	4.24	0.40	0.21	0.12	0.14	0.10	0.62
Hoover (Lower) Lake Outlet	7/14/00	0.148	<0.05	<0.02	12.94	0.33	0.95	0.32	0.14	0.08	1.68
Long Lake (Upper)	7/18/00	0.032	<0.05	<0.02	6.17	0.50	0.35	0.27	0.28	0.09	0.35
Peeler at Rancheria	7/10/00	0.013	<0.05	<0.02	4.66	0.26	0.35	0.13	0.57	0.06	0.37
Peeler at Robinson Outlet	7/10/00	0.041	<0.05	<0.02	4.12	0.28	0.26	0.10	0.14	0.06	0.14
Robinson Lake Lower Outlet	7/11/00	0.071	<0.05	<0.02	4.59	0.30	0.58	0.13	0.43	0.07	0.89
Robinson Lake Upper Outlet	7/11/00	0.025	<0.05	<0.02	4.34	0.29	0.46	0.12	0.21	0.09	0.77
Roosevelt Lake outlet	7/18/00	<0.010	<0.05	<0.02	31.22	3.62	7.23	1.31	0.50	0.15	5.67
Ruth Lake Outlet	7/16/00	0.015	<0.05	<0.02	4.97	0.33	0.22	0.13	0.50	0.29	0.48
Snow Lake Outlet	7/11/00	0.023	<0.05	<0.02	4.29	0.26	0.23	0.08	0.57	0.08	0.76
Stella Lake Outlet	7/16/00	0.034	<0.05	<0.02	4.46	0.40	0.20	0.11	0.21	0.15	0.38
Summit Lake Outlet	7/14/00	0.054	0.10	0.03	13.21	0.36	1.11	0.34	0.28	0.10	1.30
Tower Lake Outlet	7/17/00	0.150	<0.05	<0.02	5.05	0.42	0.28	0.17	0.43	0.06	0.64
Trumbull Lake Outlet	7/14/00	0.023	0.84	0.10	9.89	0.58	1.51	0.49	0.57	0.10	2.46
Virginia Lake Upper Outlet	7/14/00	0.033	<0.05	<0.02	15.37	0.32	0.76	0.42	0.28	0.08	2.29

08/18/00 to 08/25/00

	DATE	Discharge cfs(inst)	TEMP F	D.O. mg/l	TSS mg/l	Turbidity ntu	pH	EC uV	TKN ppm	NO3-N ppm	NH4 mg/l
Barney Lake Inlet	08/24/00	4.0	56.3	9.1	7	0.13	5.4	2.8	0.2	<0.05	0.020
Barney Lake Outlet	08/24/00	8.4	61.5	10.5	8	0.29	6.8	1.8	0.2	<0.05	<0.007
Buckeye above Big Meadows	08/21/01	12.1	48.2	10.6	7	0.22	6.6	16.4	0.3	<0.05	<0.007
Buckeye below Big Meadows	08/21/01	12.0	51.8	12.8	7	0.18	6.1	21.1	0.2	<0.05	<0.007
Buckeye above FS Campground	08/21/01	20.0	59.5	8.5	8	0.33	6.9	65.8	0.2	<0.05	0.030
Buckeye below FS Campground	08/21/01	31.0	60.6	8.5	8	0.31	7.0	42.6	0.2	<0.05	<0.007
Buckeye (N) at 395	08/21/01	7.5	63.5	7.2	10	1.32	7.8	51.9	0.3	<0.05	<0.007
Buckeye @ WRID	08/21/01	3.0	68.2	7.1	14	1.64	7.3	71.1	0.4	<0.05	<0.007
Eagle Ck US	08/21/01	4.0	56.1	7.7	7	0.26	6.1	24.8	0.2	0.06	<0.007
Eagle Ck DS	08/21/01	11.0	53.6	7.7	7	0.16	6.0	44.9	0.3	<0.05	0.030
East Walker above Reservoir	08/21/01	21.0	68.3	9.1	14	3.51	7.9	28.9	0.2	<0.05	0.020
East Walker below Reservoir	08/21/01	198.0	65.9	7.1	8	0.38	7.8	124.7	0.2	<0.05	0.610
Green Lake Inlet	08/22/00	3.1	58.2	7.6	9	0.40	6.3	18.1	0.2	<0.05	<0.007
Green Lake Outlet	08/22/00	12.5	60.6	8.7	5	0.10	6.4	17.5	0.2	<0.05	<0.007
Green above FS Campground	08/22/00	20.0	59.4	11.9	7	0.21	6.5	31.5	0.2	<0.05	<0.007
Green below FS Campground	08/22/00	20.0	59.8	11.8	12	1.11	6.7	35.9	0.2	<0.05	<0.007
Green at guage	08/22/00	21.0	62.1	9.2	23	8.22	6.9	28.6	0.3	<0.05	<0.007
Horse Creek at Twin Lakes	08/24/00	11.0	58.8	10.8	8	0.42	6.2	8.1	0.3	<0.05	<0.007
Robinson above Twin Lakes	08/24/00	12.0	61.1	10.9	9	0.88	6.7	12.5	0.2	<0.05	<0.007
Robinson at guage	08/24/00	65.0	63.1	9.2	8	0.30	6.6	24.5	0.4	<0.05	<0.007
Robinson @ Doc & Al	08/24/00	64.1	64.2	9.3	7	0.18	6.3	36.8	0.3	<0.05	<0.007
Robinson (N) at 395	08/24/00	10.5	66.2	8.9	8	0.55	6.4	47.5	0.2	<0.05	<0.007
Robinson @ WRID fence	08/24/00	8.7	66.8	8.1	4	0.20	7.7	38.1	0.2	<0.05	<0.007
Sauger @ Campground	08/25/01	4.2	68.0	7.1	26	10.25	6.8	89.9	0.5	0.18	0.100
Sauger below FS Compound	08/25/01	4.2	68.3	7.0	27	10.59	6.6	88.6	0.4	0.07	0.090

08/18/00 to 08/25/00

	DATE	NO3 mg/l	P ppm	PO4 mg/l	Ca mg/l	Mg mg/l	Na mg/l	K mg/l	Cl mg/l	SO4 mg/l	Si ppm
Barney Lake Inlet	08/24/00	0.019	<0.05	<0.02	11.20	3.88	0.34	0.16	0.45	0.02	0.44
Barney Lake Outlet	08/24/00	<0.010	<0.05	0.05	6.91	1.22	0.76	0.11	0.29	0.03	0.31
Buckeye above Big Meadows	08/21/01	<0.010	0.08	<0.02	7.33	0.49	1.53	0.23	0.21	0.02	2.11
Buckeye below Big Meadows	08/21/01	0.019	0.08	<0.02	11.61	1.62	1.77	0.93	0.22	0.02	4.20
Buckeye above FS Campground	08/21/01	0.032	0.06	0.03	11.22	1.43	1.66	0.87	0.22	0.03	4.22
Buckeye below FS Campground	08/21/01	0.053	0.08	<0.02	11.98	1.62	1.91	0.90	0.25	0.04	4.81
Buckeye (N) at 395	08/21/01	0.039	0.09	0.06	13.33	2.18	12.87	1.96	0.41	0.05	6.77
Buckeye @ WRID	08/21/01	0.037	0.12	0.08	16.35	2.71	18.73	2.19	0.44	0.16	10.56
Eagle Ck US	08/21/01	0.080	0.06	0.02	9.23	1.36	1.22	0.49	0.33	0.04	4.09
Eagle Ck DS	08/21/01	0.040	<0.05	0.00	12.13	1.46	1.55	0.83	0.26	0.03	4.02
East Walker above Reservoir	08/21/01	<0.010	0.06	0.05	17.80	3.88	10.21	1.69	1.45	7.30	22.10
East Walker below Reservoir	08/21/01	0.171	0.12	0.10	18.40	3.91	12.35	2.61	1.87	7.40	13.10
Green Lake Inlet	08/22/00	<0.010	0.06	0.02	7.91	0.45	1.56	0.62	0.28	0.03	4.17
Green Lake Outlet	08/22/00	<0.010	<0.05	0.02	8.99	0.36	1.10	0.45	0.22	0.02	2.21
Green above FS Campground	08/22/00	<0.010	0.09	0.05	10.65	0.41	1.13	0.43	0.27	0.02	2.45
Green below FS Campground	08/22/00	<0.010	0.07	0.03	11.49	0.54	1.28	0.51	0.39	0.72	3.10
Green at guage	08/22/00	<0.010	0.06	0.03	12.22	0.57	1.36	0.55	0.76	0.61	3.22
Horse Creek at Twin Lakes	08/24/00	<0.010	0.08	0.04	10.12	0.33	0.65	0.31	0.33	0.05	1.28
Robinson above Twin Lakes	08/24/00	<0.010	0.08	0.04	10.19	0.56	1.66	0.43	0.37	0.09	3.12
Robinson at guage	08/24/00	<0.010	0.07	0.04	7.20	0.61	1.72	0.44	0.21	0.90	5.91
Robinson @ Doc & Al	08/24/00	<0.010	0.07	0.03	13.06	0.76	1.51	0.51	0.25	0.02	2.94
Robinson (N) at 395	08/24/00	<0.010	<0.05	0.03	9.67	1.10	2.27	0.91	0.33	0.05	2.68
Robinson @ WRID fence	08/24/00	<0.010	0.08	0.06	15.33	3.10	4.87	1.73	0.56	0.16	9.89
Sauger @ Campground	08/25/01	0.160	0.07	0.09	12.35	4.12	9.88	2.23	0.78	0.19	28.20
Sauger below FS Compound	08/25/01	0.128	0.08	0.10	15.21	4.23	9.76	2.76	0.83	0.02	29.10

09/15/00

	DATE	Discharge cfs(inst)	TEMP F	D.O. mg/l	TSS mg/L	Turbidity	pH	EC	TKN ppm	NO3-N ppm	NH4-N mg/L
Barney Lake Inlet	09/17/00	3.5	51.6	7.3	12	0.66	7.1	4.0	0.3	<0.05	0.008
Barney Lake Outlet	09/17/00	3.1	63.8	7.4	12	1.62	7.2	6.2	0.3	<0.05	0.016
Buckeye above Big Meadows	09/16/00	10.2	53.8	8.3	24	8.12	7.6	11.1	0.2	<0.05	0.011
Buckeye below Big Meadows	09/16/00	10.2	58.8	8.3	33	3.10	7.5	17.3	0.2	<0.05	<0.007
Buckeye above FS Campground	09/16/00	10.5	55.9	7.9	63	5.60	7.1	23.8	0.1	<0.05	0.008
Buckeye below FS Campground	09/16/00	11.3	56.1	7.9	44	0.57	7.5	81.1	0.2	<0.05	0.009
Buckeye (N) at 395	09/16/00	3.1	55.1	7.7	40	1.18	7.9	189.4	0.1	<0.05	<0.007
Buckeye @ WRID	09/16/00	5.9	53.6	7.8	36	3.10	7.8	171.1	0.2	<0.05	0.090
Eagle Ck US	09/16/00	2.9	44.1	7.6	24	2.33	7.2	22.7	0.3	<0.05	0.009
Eagle Ck DS	09/16/00	8.8	47.7	7.9	22	1.67	7.1	43.8	0.2	<0.05	0.011
East Walker above Reservoir	09/16/00	14.8	62.2	8.1	56	5.31	7.6	190.9	0.2	<0.05	0.012
East Walker below Reservoir	09/16/00	214.0	59.4	7.5	56	7.55	8.1	139.7	0.1	<0.05	0.060
Green Lake Inlet	09/17/00	2.8	51.8	8.9	12	1.20	7.3	8.7	0.2	<0.05	0.008
Green Lake Outlet	09/17/00	8.1	56.2	8.1	8	0.93	7.2	23.9	0.2	<0.05	0.019
Green above FS Campground	09/17/00	8.8	53.1	7.8	14	2.05	7.1	33.3	0.3	<0.05	0.016
Green below FS Campground	09/17/00	8.9	53.8	7.8	18	2.65	7.4	24.3	0.2	<0.05	0.007
Green at gauge	09/17/00	9.1	55.7	7.7	56	1.16	7.8	106.8	0.1	<0.05	<0.007
Horse Creek at Twin Lakes	09/17/00	12.6	49.5	8.9	17	1.02	7.8	18.5	0.3	<0.05	0.011
Robinson above Twin Lakes	09/17/00	10.7	50.5	8.4	15	0.92	7.6	11.3	0.2	<0.05	0.013
Robinson at gauge	09/17/00	21.6	52.8	8.5	16	0.76	7.9	28.0	0.2	<0.05	<0.007
Robinson @ Doc & Al	09/17/00	19.8	53.4	8.4	52	0.68	7.5	58.3	0.2	<0.05	<0.007
Robinson (N) at 395	09/17/00	8.3	56.8	8.2	48	1.13	7.6	89.2	0.2	<0.05	<0.007
Robinson @ WRID fence	09/17/00	4.1	56.1	8.1	52	1.48	7.8	113.5	0.2	<0.05	<0.007
Sauger @ Campground	09/17/00	5.2	56.2	8.4	39	0.43	7.6	159.2	0.4	0.11	0.021
Sauger below FS Compound	09/17/00	5.2	56.3	8.4	36	0.48	7.7	166.2	0.2	0.12	0.028

09/15/00

	DATE	NO3 mg/L	P ppm	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si ppm
Barney Lake Inlet	09/17/00	0.125	<0.05	0.03	9.13	1.34	0.87	0.13	0.54	0.50	1.21
Barney Lake Outlet	09/17/00	<0.010	<0.05	0.02	3.98	0.40	0.74	0.19	0.28	0.28	1.07
Buckeye above Big Meadows	09/16/00	<0.010	0.05	<0.02	5.26	0.63	1.01	0.34	0.31	0.76	1.68
Buckeye below Big Meadows	09/16/00	0.042	<0.05	<0.02	10.23	0.65	0.87	0.34	0.17	0.86	1.83
Buckeye above FS Campground	09/16/00	0.028	<0.05	<0.02	12.09	0.94	1.17	0.50	0.24	1.27	2.27
Buckeye below FS Campground	09/16/00	<0.010	<0.05	<0.02	5.94	1.35	2.50	0.30	0.56	1.11	9.80
Buckeye (N) at 395	09/16/00	0.049	<0.05	<0.02	13.95	3.36	5.14	1.96	0.23	4.82	16.10
Buckeye @ WRID	09/16/00	0.041	<0.05	0.06	6.90	0.89	1.30	0.40	1.00	3.40	4.70
Eagle Ck US	09/16/00	0.032	<0.05	0.03	16.64	3.07	3.86	1.86	0.01	5.65	10.30
Eagle Ck DS	09/16/00	0.036	<0.05	0.03	11.76	2.28	2.83	1.65	0.68	2.47	6.52
East Walker above Reservoir	09/16/00	<0.010	<0.05	<0.02	22.88	3.39	9.87	2.03	1.39	10.13	22.36
East Walker below Reservoir	09/16/00	0.044	<0.05	0.09	18.22	4.66	16.10	3.38	2.88	16.20	14.90
Green Lake Inlet	09/17/00	<0.010	<0.05	<0.02	11.07	1.19	3.05	1.36	0.63	5.28	6.50
Green Lake Outlet	09/17/00	0.160	<0.05	<0.02	16.81	1.90	3.19	1.79	0.14	14.23	7.17
Green above FS Campground	09/17/00	0.011	<0.05	<0.02	18.69	2.28	4.38	1.83	0.16	11.82	9.16
Green below FS Campground	09/17/00	0.074	<0.05	<0.02	19.11	2.96	14.23	4.16	0.26	8.58	2.34
Green at gauge	09/17/00	<0.010	0.05	0.02	7.23	0.51	1.20	0.80	0.30	11.90	5.10
Horse Creek at Twin Lakes	09/17/00	0.032	0.10	0.05	13.06	0.59	1.64	0.12	0.76	1.57	4.55
Robinson above Twin Lakes	09/17/00	0.048	<0.05	<0.02	6.51	0.10	4.70	0.22	0.63	0.81	0.58
Robinson at gauge	09/17/00	0.044	<0.05	<0.02	7.62	0.79	1.70	0.49	0.37	3.57	4.52
Robinson @ Doc & Al	09/17/00	0.041	<0.05	<0.02	17.12	1.54	2.65	1.09	0.06	5.05	5.34
Robinson (N) at 395	09/17/00	0.088	<0.05	<0.02	9.66	1.62	2.50	1.40	0.50	4.20	10.90
Robinson @ WRID fence	09/17/00	<0.010	<0.05	<0.02	13.60	3.26	5.40	2.30	0.90	5.10	13.90
Sauger @ Campground	09/17/00	0.112	<0.05	0.02	10.20	3.33	9.80	2.60	0.90	5.50	27.90
Sauger below FS Compound	09/17/00	0.125	0.08	0.05	10.60	3.89	10.50	2.60	1.00	5.80	28.60

Date	By TKN Site	Inst. Discharge	mg/L
06/15/00	Buckeye below Big Meadows	166.0	0.4
7/10/00	Fremont Lake Trail	n/a	0.4
8/18/00	Robinson at guage	65.0	0.4
05/30/00	Buckeye (N) at 395	142.6	0.4
7/10/00	Summit Lake Outlet	4.1	0.4
8/18/00	Bonnie Lake Outlet	<1	0.4
09/15/00	Sauger @ Campground	5.2	0.4
05/30/00	Buckeye @ WRID	144.0	0.4
05/30/00	Eagle Ck DS	16.8	0.4
8/18/00	Robinson Lake Upper Outlet	2.0	0.3
8/18/00	Ruth Lake Outlet	n/a	0.3
7/10/00	Green Lake Inlet	5.1	0.3
7/10/00	Green Lake Outlet	22.7	0.3
7/10/00	Green below FS Campground	40.2	0.3
7/10/00	Helen Lake Outlet	4.9	0.3
06/15/00	Robinson above Twin Lakes	138.2	0.3
7/10/00	Robinson Lake Lower Outlet	8.2	0.3
7/10/00	Green at guage	44.5	0.3
06/15/00	Buckeye above Big Meadows	160.2	0.3
7/10/00	Snow Lake Outlet	2.0	0.3
06/15/00	Green at guage	138.5	0.3
09/15/00	Green above FS Campground	8.8	0.3
8/18/00	Buckeye above Big Meadows	12.1	0.3
8/18/00	Virginia Lake Upper Outlet	4.5	0.3
7/25/00	Sauger below FS Compound	2.7	0.3
06/15/00	Sauger below FS Compound	5.1	0.3
06/15/00	Sauger @ Campground	5.3	0.3
8/18/00	Harriet Lake	6.0	0.3
8/18/00	Robinson Lake Lower Outlet	4.0	0.3
8/18/00	Buckeye (N) at 395	7.5	0.3
8/18/00	Long Lake (Upper)	n/a	0.3
8/18/00	Snow Lake Outlet	1.0	0.3
8/18/00	Chain o Lakes	n/a	0.3
09/15/00	Horse Creek at Twin Lakes	12.6	0.3
8/18/00	Gilman Lake Outlet	6.0	0.3
8/18/00	Frog Lake Outlet	3.0	0.3
8/18/00	Horse Creek at Twin Lakes	11.0	0.3
8/18/00	East Lake	7.5	0.3
8/18/00	Fremont Lake Tule	n/a	0.3
09/15/00	Barney Lake Inlet	3.5	0.3
09/15/00	Eagle Ck US	2.9	0.3
8/18/00	Summit Lake Outlet	2.2	0.3
8/18/00	Green at guage	21.0	0.3
8/18/00	Robinson @ Doc & Al	64.1	0.3
09/15/00	Barney Lake Outlet	3.1	0.3
06/15/00	Robinson @ WRID fence	83.1	0.3
8/18/00	Eagle Ck DS	11.0	0.3
06/15/00	Barney Lake Outlet	78.0	0.2
09/15/00	Buckeye below FS Campground	11.3	0.2
09/15/00	Buckeye below FS Campground	11.3	0.2
7/10/00	Eagle Ck US	9.8	0.2
7/10/00	Eagle Ck DS	22.0	0.2
09/15/00	East Walker above Reservoir	14.8	0.2
09/15/00	Green Lake Inlet	2.8	0.2
09/15/00	Robinson @ WRID fence	4.1	0.2
7/25/00	Robinson at WRID Fence	9.1	0.2
09/15/00	Green Lake Outlet	8.1	0.2
7/10/00	Tower Lake Outlet	6.6	0.2
7/10/00	Hoover (Lower) Lake Outlet	12.0	0.2
7/25/00	Horse Creek at Twin Lakes	18.5	0.2
7/10/00	Green above FS Campground	39.8	0.2
09/15/00	Robinson (N) at 395	8.3	0.2
7/10/00	Crown Lake Outlet	16.5	0.2
7/10/00	Gilman Lake Outlet	11.5	0.2
7/25/00	Green below FS campground	38.3	0.2
7/25/00	Robinson above Twin Lakes	57.6	0.2
09/15/00	Green below FS Campground	8.9	0.2

Date	By NO3 Site	Inst. Discharge	mg/L
05/19/00	Barney Lake Outlet	46.7	0.059
7/25/00	Robinson at Doc & Al	78.2	0.059
8/18/00	Helen Lake Outlet	1.8	0.058
7/10/00	Chain o Lakes	n/a	0.055
7/10/00	Summit Lake Outlet	4.1	0.054
7/25/00	Buckeye below FS Campground	62.1	0.053
8/18/00	Buckeye below FS Campground	31.0	0.053
8/18/00	Buckeye below FS Campground	31.0	0.053
7/10/00	Fremont Lake Tule	n/a	0.053
06/15/00	Buckeye above Big Meadows	160.2	0.052
06/15/00	Buckeye above FS Campground	172.0	0.050
06/15/00	Buckeye below FS Campground	196.0	0.050
06/15/00	Buckeye below FS Campground	196.0	0.050
05/19/00	Sauger below FS Compound	20.2	0.050
8/18/00	Summit Lake Outlet	2.2	0.050
06/15/00	Sauger @ Campground	5.3	0.050
05/19/00	Sauger @ Campground	21.3	0.050
09/15/00	Buckeye (N) at 395	3.1	0.049
06/15/00	Green Lake Inlet	15.2	0.049
09/15/00	Robinson above Twin Lakes	10.7	0.048
8/18/00	Fremont Lake Trail	n/a	0.048
8/18/00	Robinson Lake Lower Outlet	4.0	0.048
7/10/00	Buckeye above Big Meadows	55.7	0.047
06/15/00	Eagle Ck DS	22.6	0.046
8/18/00	Crown Lake Inlet	2.1	0.046
06/15/00	Barney Lake Inlet	86.0	0.046
09/15/00	Robinson at gauge	21.6	0.044
09/15/00	East Walker below Reservoir	214.0	0.044
7/10/00	Fremont Lake Trail	n/a	0.043
09/15/00	Buckeye below Big Meadows	10.2	0.042
05/19/00	Buckeye above FS Campground	102.9	0.042
09/15/00	Robinson @ Doc & Al	19.8	0.041
09/15/00	Buckeye @ WRID	5.9	0.041
7/10/00	Peeler at Robinson Outlet	6.0	0.041
8/18/00	Eagle Ck DS	11.0	0.040
05/30/00	Sauger @ Campground	26.7	0.040
05/30/00	Sauger below FS Compound	26.4	0.040
8/18/00	Cooney Lake Outlet	4.0	0.040
8/18/00	Tower Lake Outlet	3.6	0.040
8/18/00	Fremont Lake Tule	n/a	0.040
05/30/00	Eagle Ck DS	16.8	0.039
8/18/00	Buckeye (N) at 395	7.5	0.039
8/18/00	Buckeye @ WRID	3.0	0.037
05/30/00	Green at guage	134.4	0.037
8/18/00	Gilman Lake Outlet	6.0	0.036
09/15/00	Eagle Ck DS	8.8	0.035
7/10/00	Robinson at guage	98.6	0.034
7/10/00	Stella Lake Outlet	2.5	0.034
8/18/00	Stella Lake Outlet	n/a	0.034
05/19/00	Green at guage	115.2	0.033
7/25/00	Green at gauge	36.8	0.033
06/15/00	Robinson @ Doc & Al	176.8	0.033
7/10/00	Virginia Lake Upper Outlet	8.1	0.033
7/10/00	Buckeye above FS Campground	58.8	0.032
8/18/00	Buckeye above FS Campground	20.0	0.032
7/10/00	Long Lake (Upper)	n/a	0.032
8/18/00	Long Lake (Upper)	n/a	0.032
09/15/00	Eagle Ck US	2.9	0.032
7/25/00	Robinson at 395	6.8	0.032
09/15/00	Horse Creek at Twin Lakes	12.6	0.032
7/10/00	Frog Lake Outlet	5.3	0.032
06/15/00	East Walker above Reservoir	146.2	0.032
7/10/00	Buckeye below Big Meadows	56.8	0.031
7/10/00	Harriet Lake	8.0	0.031
06/15/00	East Walker below Reservoir	225.0	0.030
05/19/00	East Walker below Reservoir	165.0	0.030
06/15/00	Robinson @ WRID fence	83.1	0.028

Date	By TKN Site	Inst. Discharge	mg/L
8/18/00	Green Lake Inlet	3.1	0.2
06/15/00	Buckeye (N) at 395	112.6	0.2
8/18/00	Eagle Ck US	4.0	0.2
7/10/00	Buckeye below FS Campground	80.3	0.1
7/10/00	Roosevelt Lake outlet	8.0	0.1
7/10/00	Robinson above Twin Lakes	39.7	0.1
7/10/00	Horse Creek at Twin Lakes	20.1	0.1
7/10/00	Robinson @ Doc & Al	87.5	0.1
09/15/00	Buckeye (N) at 395	3.1	0.1
7/10/00	Buckeye above FS Campground	58.8	0.1
7/10/00	Frog Lake Outlet	5.3	0.1
7/10/00	Blue Lake Outlet	7.2	0.1
09/15/00	Buckeye above FS Campground	10.5	0.1
7/10/00	Robinson Lake Upper Outlet	3.0	0.1
07/10/00	Barney Lake Inlet	32.0	0.1
09/15/00	East Walker below Reservoir	214.0	0.1
06/15/00	Robinson (N) at 395	89.3	0.1
06/15/00	Horse Creek at Twin Lakes	45.1	0.1
06/15/00	Green Lake Outlet	78.8	0.1
06/15/00	Green Lake Inlet	15.2	0.1
09/15/00	Green at gauge	9.1	0.1

Date	By NO3 Site	Inst. Discharge	mg/L
05/30/00	Green Lake Inlet	12.8	<0.010
05/30/00	Green Lake Outlet	84.7	<0.010
8/18/00	Roosevelt Lake outlet	n/a	<0.010
8/18/00	Green above FS Campground	20.0	<0.010
05/30/00	Buckeye below Big Meadows	127.5	<0.010
05/30/00	Eagle Ck US	4.1	<0.010
05/30/00	East Walker below Reservoir	187.5	<0.010
8/18/00	Buckeye above Big Meadows	12.1	<0.010
8/18/00	Horse Creek at Twin Lakes	11.0	<0.010
8/18/00	Green at guage	21.0	<0.010
8/18/00	Robinson @ WRID fence	8.7	<0.010
8/18/00	East Walker above Reservoir	21.0	<0.010
8/18/00	Robinson above Twin Lakes	12.0	<0.010
8/18/00	Robinson at guage	65.0	<0.010
8/18/00	Robinson @ Doc & Al	64.1	<0.010
8/18/00	Green below FS Campground	20.0	<0.010
7/25/00	Sauger below FS Compound	2.7	<0.010
8/18/00	Green Lake Inlet	3.1	<0.010
06/15/00	Buckeye @ WRID	102.5	<0.010
09/15/00	Buckeye above Big Meadows	10.2	<0.010
09/15/00	Green at gauge	9.1	<0.010

Date	By P Site	Inst. Discharge	mg/L
7/10/00	Trumbull Lake Outlet	1.4	0.84
06/15/00	Green above FS Campground	130.1	0.18
06/15/00	Buckeye below Big Meadows	166.0	0.16
06/15/00	Green below FS Campground	128.2	0.15
06/15/00	Robinson @ WRID fence	83.1	0.14
7/25/00	East Walker below Reservoir	252.0	0.13
06/15/00	Robinson (N) at 395	89.3	0.13
05/30/00	Sauger @ Campground	26.7	0.12
05/30/00	Sauger below FS Compound	26.4	0.12
7/10/00	Cooney Lake Outlet	6.0	0.12
8/18/00	Buckeye @ WRID	3.0	0.12
8/18/00	East Walker below Reservoir	198.0	0.12
06/15/00	Horse Creek at Twin Lakes	45.1	0.12
06/19/00	Barney Lake Inlet	48.0	0.11
05/30/00	Buckeye (N) at 395	142.6	0.11
06/15/00	Eagle Ck DS	22.6	0.11
05/30/00	East Walker above Reservoir	144.2	0.10
05/19/00	Sauger below FS Compound	20.2	0.10
7/10/00	Crown Lake Inlet	12.0	0.10
7/25/00	Sauger @ Campground	2.7	0.10
05/30/00	Green above FS Campground	115.6	0.10
7/10/00	Fremont Lake Trail	n/a	0.10
7/10/00	Summit Lake Outlet	4.1	0.10
09/15/00	Horse Creek at Twin Lakes	12.6	0.10
06/15/00	Green Lake Outlet	78.8	0.10
05/30/00	Barney Lake Outlet	63.0	0.09
05/30/00	Horse Creek at Twin Lakes	44.8	0.09
05/30/00	Barney Lake Inlet	84.0	0.09
05/30/00	Buckeye above Big Meadows	132.0	0.09
05/30/00	Green at guage	134.4	0.09
05/30/00	Buckeye below FS Campground	168.0	0.09
05/30/00	Buckeye below FS Campground	168.0	0.09
05/30/00	Green Lake Inlet	12.8	0.09
05/30/00	Green Lake Outlet	84.7	0.09
05/30/00	Buckeye @ WRID	144.0	0.09
06/15/00	Sauger below FS Compound	5.1	0.09
8/18/00	Robinson Lake Lower Outlet	4.0	0.09
8/18/00	Buckeye (N) at 395	7.5	0.09
8/18/00	Gilman Lake Outlet	6.0	0.09
8/18/00	Summit Lake Outlet	2.2	0.09
8/18/00	Cooney Lake Outlet	4.0	0.09

Date	By PO4 Site	Inst. Discharge	mg/L
05/19/00	East Walker below Reservoir	165.0	0.35
8/18/00	Trumbull Lake Outlet	0.5	0.12
7/10/00	Trumbull Lake Outlet	1.4	0.10
8/18/00	East Walker below Reservoir	198.0	0.10
8/18/00	Cooney Lake Outlet	4.0	0.10
8/18/00	Sauger below FS Compound	4.2	0.10
09/15/00	East Walker below Reservoir	214.0	0.09
05/19/00	Sauger below FS Compound	20.2	0.09
06/15/00	Sauger below FS Compound	5.1	0.09
06/15/00	Sauger @ Campground	5.3	0.09
8/18/00	Sauger @ Campground	4.2	0.09
09/15/00	Buckeye @ WRID	5.9	0.08
8/18/00	Buckeye @ WRID	3.0	0.08
05/30/00	Barney Lake Inlet	84.0	0.08
8/18/00	Roosevelt Lake outlet	n/a	0.07
8/18/00	Harriet Lake	6.0	0.07
06/15/00	East Walker below Reservoir	225.0	0.06
8/18/00	Robinson Lake Lower Outlet	4.0	0.06
8/18/00	Buckeye (N) at 395	7.5	0.06
8/18/00	Robinson @ WRID fence	8.7	0.06
8/18/00	Long Lake (Upper)	n/a	0.06
8/18/00	Snow Lake Outlet	1.0	0.06
8/18/00	Chain o Lakes	n/a	0.06
8/18/00	Peeler at Robinson Outlet	1.8	0.06
7/10/00	Barney Lake Outlet	27.1	0.05
8/18/00	Barney Lake Outlet	8.4	0.05
05/19/00	Barney Lake Outlet	46.7	0.05
06/15/00	Green above FS Campground	130.1	0.05
7/25/00	East Walker below Reservoir	252.0	0.05
7/10/00	Cooney Lake Outlet	6.0	0.05
09/15/00	Horse Creek at Twin Lakes	12.6	0.05
8/18/00	Green above FS Campground	20.0	0.05
8/18/00	Gilman Lake Outlet	6.0	0.05
8/18/00	East Walker above Reservoir	21.0	0.05
09/15/00	Sauger below FS Compound	5.2	0.05
8/18/00	Frog Lake Outlet	3.0	0.05
05/19/00	Sauger @ Campground	21.3	0.05
7/25/00	East walker above Reservoir	32.5	0.04
06/15/00	Buckeye below Big Meadows	166.0	0.04
06/15/00	Green below FS Campground	128.2	0.04
06/15/00	Robinson (N) at 395	89.3	0.04

Date	Site	By P Inst. Discharge	mg/L
05/19/00	Buckeye @ WRID	62.2	<0.05
05/19/00	Green Lake Inlet	6.0	<0.05
05/19/00	Robinson (N) at 395	42.7	<0.05
05/19/00	Robinson @ Doc & Al	130.1	<0.05
06/15/00	Robinson at guage	178.0	<0.05
05/30/00	Robinson (N) at 395	76.0	<0.05
05/30/00	Robinson @ Doc & Al	120.0	<0.05
05/19/00	Green Lake Outlet	27.0	<0.05
7/25/00	Buckeye at 395	12.1	<0.05
06/15/00	East Walker below Reservoir	225.0	<0.05
09/15/00	Sauger @ Campground	5.2	<0.05
8/18/00	Robinson Lake Upper Outlet	2.0	<0.05
8/18/00	Ruth Lake Outlet	n/a	<0.05
7/10/00	Green Lake Inlet	5.1	<0.05
7/10/00	Green Lake Outlet	22.7	<0.05
7/10/00	Green below FS Campground	40.2	<0.05
7/10/00	Helen Lake Outlet	4.9	<0.05
06/15/00	Robinson above Twin Lakes	138.2	<0.05
7/10/00	Robinson Lake Lower Outlet	8.2	<0.05
7/10/00	Green at guage	44.5	<0.05
06/15/00	Buckeye above Big Meadows	160.2	<0.05
7/10/00	Snow Lake Outlet	2.0	<0.05
06/15/00	Green at guage	138.5	<0.05
09/15/00	Green above FS Campground	8.8	<0.05
09/15/00	Barney Lake Inlet	3.5	<0.05
09/15/00	Eagle Ck US	2.9	<0.05
09/15/00	Barney Lake Outlet	3.1	<0.05
8/18/00	Eagle Ck DS	11.0	<0.05
06/15/00	Barney Lake Outlet	78.0	<0.05
09/15/00	Buckeye below FS Campground	11.3	<0.05
09/15/00	Buckeye below FS Campground	11.3	<0.05
7/10/00	Eagle Ck US	9.8	<0.05
7/10/00	Eagle Ck DS	22.0	<0.05
09/15/00	East Walker above Reservoir	14.8	<0.05
09/15/00	Green Lake Inlet	2.8	<0.05
09/15/00	Robinson @ WRID fence	4.1	<0.05
7/25/00	Robinson at WRID Fence	9.1	<0.05
09/15/00	Green Lake Outlet	8.1	<0.05
7/10/00	Tower Lake Outlet	6.6	<0.05
7/10/00	Hoover (Lower) Lake Outlet	12.0	<0.05
7/25/00	Horse Creek at Twin Lakes	18.5	<0.05
7/10/00	Green above FS Campground	39.8	<0.05
09/15/00	Robinson (N) at 395	8.3	<0.05
7/10/00	Crown Lake Outlet	16.5	<0.05
7/10/00	Gilman Lake Outlet	11.5	<0.05
7/25/00	Green below FS campground	38.3	<0.05
7/25/00	Robinson above Twin Lakes	57.6	<0.05
09/15/00	Green below FS Campground	8.9	<0.05
7/25/00	Robinson at Doc & Al	78.2	<0.05
8/18/00	Helen Lake Outlet	1.8	<0.05
7/10/00	Chain o Lakes	n/a	<0.05
7/25/00	Buckeye below FS Campground	62.1	<0.05
7/10/00	Fremont Lake Tule	n/a	<0.05
06/15/00	Buckeye above FS Campground	172.0	<0.05
06/15/00	Buckeye below FS Campground	196.0	<0.05
06/15/00	Buckeye below FS Campground	196.0	<0.05
09/15/00	Robinson above Twin Lakes	10.7	<0.05
7/10/00	Buckeye above Big Meadows	55.7	<0.05
06/15/00	Barney Lake Inlet	86.0	<0.05
09/15/00	Robinson at gauge	21.6	<0.05
09/15/00	Buckeye below Big Meadows	10.2	<0.05
09/15/00	Robinson @ Doc & Al	19.8	<0.05
7/10/00	Peeler at Robinson Outlet	6.0	<0.05
7/10/00	Robinson at guage	98.6	<0.05
7/10/00	Stella Lake Outlet	2.5	<0.05
8/18/00	Stella Lake Outlet	n/a	<0.05
7/25/00	Green at gauge	36.8	<0.05
06/15/00	Robinson @ Doc & Al	176.8	<0.05
7/10/00	Virginia Lake Upper Outlet	8.1	<0.05

Date	Site	By PO4 Inst. Discharge	mg/L
06/15/00	Barney Lake Outlet	78.0	<0.02
09/15/00	Buckeye below FS Campground	11.3	<0.02
09/15/00	Buckeye below FS Campground	11.3	<0.02
7/10/00	Eagle Ck US	9.8	<0.02
7/10/00	Eagle Ck DS	22.0	<0.02
09/15/00	East Walker above Reservoir	14.8	<0.02
09/15/00	Green Lake Inlet	2.8	<0.02
09/15/00	Robinson @ WRID fence	4.1	<0.02
7/25/00	Robinson at WRID Fence	9.1	<0.02
7/10/00	Buckeye below FS Campground	80.3	<0.02
7/10/00	Roosevelt Lake outlet	8.0	<0.02
05/30/00	Robinson (N) at 395	76.0	<0.02
7/10/00	Robinson above Twin Lakes	39.7	<0.02
7/10/00	Horse Creek at Twin Lakes	20.1	<0.02
05/30/00	Robinson @ Doc & Al	120.0	<0.02
05/19/00	Green Lake Outlet	27.0	<0.02
7/25/00	Buckeye at WRID fence	4.1	<0.02
09/15/00	Green Lake Outlet	8.1	<0.02
7/10/00	Tower Lake Outlet	6.6	<0.02
7/10/00	Hoover (Lower) Lake Outlet	12.0	<0.02
05/19/00	Green above FS Campground	89.6	<0.02
7/10/00	Green Lake Inlet	5.1	<0.02
7/10/00	Green Lake Outlet	22.7	<0.02
7/25/00	Buckeye at 395	12.1	<0.02
7/25/00	Horse Creek at Twin Lakes	18.5	<0.02
7/10/00	Green above FS Campground	39.8	<0.02
09/15/00	Robinson (N) at 395	8.3	<0.02
7/10/00	Crown Lake Outlet	16.5	<0.02
7/10/00	Green below FS Campground	40.2	<0.02
7/10/00	Gilman Lake Outlet	11.5	<0.02
7/25/00	Green below FS campground	38.3	<0.02
05/30/00	Robinson at guage	115.0	<0.02
7/10/00	Helen Lake Outlet	4.9	<0.02
7/25/00	Robinson above Twin Lakes	57.6	<0.02
05/19/00	Buckeye below Big Meadows	83.2	<0.02
05/19/00	Green below FS Campground	89.8	<0.02
09/15/00	Green below FS Campground	8.9	<0.02
06/15/00	Robinson above Twin Lakes	138.2	<0.02
7/10/00	Robinson Lake Lower Outlet	8.2	<0.02
7/10/00	Green at guage	44.5	<0.02
7/10/00	Robinson @ Doc & Al	87.5	<0.02
05/30/00	Green below FS Campground	115.2	<0.02
06/19/00	Robinson above Twin Lakes	70.0	<0.02
7/25/00	Robinson at Doc & Al	78.2	<0.02
8/18/00	Helen Lake Outlet	1.8	<0.02
7/10/00	Chain o Lakes	n/a	<0.02
7/25/00	Buckeye below FS Campground	62.1	<0.02
7/10/00	Fremont Lake Tule	n/a	<0.02
06/15/00	Buckeye above Big Meadows	160.2	<0.02
06/15/00	Buckeye above FS Campground	172.0	<0.02
06/15/00	Buckeye below FS Campground	196.0	<0.02
06/15/00	Buckeye below FS Campground	196.0	<0.02
09/15/00	Buckeye (N) at 395	3.1	<0.02
09/15/00	Robinson above Twin Lakes	10.7	<0.02
7/10/00	Buckeye above Big Meadows	55.7	<0.02
06/15/00	Barney Lake Inlet	86.0	<0.02
09/15/00	Robinson at gauge	21.6	<0.02
09/15/00	Buckeye below Big Meadows	10.2	<0.02
05/19/00	Buckeye above FS Campground	102.9	<0.02
09/15/00	Robinson @ Doc & Al	19.8	<0.02
7/10/00	Peeler at Robinson Outlet	6.0	<0.02
7/10/00	Robinson at guage	98.6	<0.02
7/10/00	Stella Lake Outlet	2.5	<0.02
8/18/00	Stella Lake Outlet	n/a	<0.02
05/19/00	Green at guage	115.2	<0.02
7/25/00	Green at gauge	36.8	<0.02
06/15/00	Robinson @ Doc & Al	176.8	<0.02
7/10/00	Virginia Lake Upper Outlet	8.1	<0.02
7/10/00	Buckeye above FS Campground	58.8	<0.02

Buckeye at FS vs Buckeye at 395, PO4

	Gauge	395
Mean	0.01064	0.014906667
Variance	5.91E-05	0.000220751
Observations	15	15
Pearson Correlation	0.700693	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.50987	
P(T<=t) one-tail	0.076656	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.153312	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at Reservoir, PO4

	Gauge	Reservoir
Mean	0.01064	0.024867
Variance	5.91E-05	0.000593
Observations	15	15
Pearson Correlation	0.469166	
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.52373	
P(T<=t) one-tail	0.012162	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.024324	
t Critical two-tail	2.144789	

Green at gauge vs E. Walker above reservoir, TKN

	Green	E. Walker
Mean	0.184829	0.165942857
Variance	0.05639	0.113949113
Observations	14	14
Pearson Correlation	0.437846	
Hypothesized Mean Difference	0	
df	13	
t Stat	0.223298	
P(T<=t) one-tail	0.413387	
t Critical one-tail	1.770932	
P(T<=t) two-tail	0.826774	
t Critical two-tail	2.160368	

E. Walker above R. vs. E. Walker Below, TKN

	Above	Below
Mean	0.228213	0.261127
Variance	0.163974	0.062038
Observations	15	15
Pearson Correlation	-0.30985	
Hypothesized Mean Difference	0	
df	14	
t Stat	-0.23732	
P(T<=t) one-tail	0.407923	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.815847	
t Critical two-tail	2.144789	

Green at gauge vs E. Walker above reservoir, NO3

	Green	E. Walker
Mean	0.019954	0.022680368
Variance	0.000339	0.001355973
Observations	14	14
Pearson Correlation	-0.0032	
Hypothesized Mean Difference	0	
df	13	
t Stat	-0.24751	
P(T<=t) one-tail	0.404191	
t Critical one-tail	1.770932	
P(T<=t) two-tail	0.808382	
t Critical two-tail	2.160368	

E. Walker above R. vs E. Walker Below, NO3

	Above	Below
Mean	0.021768	0.030994
Variance	0.001272	0.001635
Observations	15	15
Pearson Correlation	-0.16706	
Hypothesized Mean Difference	0	
df	14	
t Stat	-0.61384	
P(T<=t) one-tail	0.274582	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.549164	
t Critical two-tail	2.144789	

Green at gauge vs E. Walker above reservoir, NH4

	Green	E. Walker
Mean	0.004943	0.008314286
Variance	5.29E-06	3.12213E-05
Observations	14	14
Pearson Correlation	-0.30822	
Hypothesized Mean Difference	0	
df	13	
t Stat	-1.89226	
P(T<=t) one-tail	0.040469	
t Critical one-tail	1.770932	
P(T<=t) two-tail	0.080938	
t Critical two-tail	2.160368	

E. Walker above R. vs E. Walker Below, NH4

	Above	Below
Mean	0.008427	0.138973
Variance	2.92E-05	0.052882
Observations	15	15
Pearson Correlation	-0.00285	
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.1979	
P(T<=t) one-tail	0.022639	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.045278	
t Critical two-tail	2.144789	

Table 4: Combined USGS and FS/RCD samples for selected sites. Sites in bold were sampled for FS/USGS.

Station name	Date	Discharge cfs(inst)	TEMP F	D.O. mg/L	Turbidity Ntu	pH	EC uS/cm	TKN mg/L	NO3 mg/L	NH4-N mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
Buckeye at 395	04/13/00	12	6.5	8.9		7.7	76	0.0089	0.0049	0.0040	0.116	0.010							
Buckeye at 395	05/11/00	46	3	10	0.5	7.8	59	0.0149	0.0049	0.0100	0.011	0.002	6.47		2.7	1.44	0.2	2.4	9.9
Buckeye at 395	**05/18/00**	**60.0**	**57.2**	**9.4**	**3.28**	**7.6**	**25.6**	**0.4**	**0.009**	**0.0100**	**0.05**	**0.019**	**6.02**	**1.49**	**2.04**	**0.76**	**0.27**	**1.92**	**9.20**
Buckeye at 395	**05/30/00**	**142.6**	**44.8**	**9.5**	**1.35**	**8.4**	**48.0**	**0.4**	**0.361**	**0.0069**	**0.11**	**0.030**	**9.55**	**3.05**	**2.41**	**0.34**	**1.23**	**2.22**	**3.54**
Buckeye at 395	06/06/00	150	7	9.4	2.2	6.9	36	0.015	0.013	0.0020	0.032	0.001							
Buckeye at 395	**06/15/00**	**112.6**	**53.3**	**9.0**	**1.10**	**7.6**	**32.0**	**0.2**	**0.093**	**0.0069**	**0.06**	**0.020**	**9.37**	**1.50**	**1.85**	**0.83**	**0.32**	**2.38**	**2.83**
Buckeye at 395	07/12/00	45	12.5	8.8	1.4	7.5	61	0.0068	0.0049	0.0019	0.029	0.006							
Buckeye at 395	**07/25/00**	**12.1**	**74.5**	**7.1**	**3.43**	**7.8**	**122.6**	**0.4**	**0.120**	**0.0069**	**0.05**	**0.019**	**13.20**	**2.23**	**16.22**	**1.93**	**1.03**	**0.41**	**11.55**
Buckeye at 395	08/09/00	9.9	14		1.4		98	0.0068	0.0049	0.0019	0.036	0.011							
Buckeye at 395	**08/21/00**	**7.5**	**63.5**	**7.2**	**1.32**	**7.8**	**51.9**	**0.3**	**0.039**	**0.0069**	**0.09**	**0.060**	**13.33**	**2.18**	**12.87**	**1.98**	**0.41**	**0.05**	**6.77**
Buckeye at 395	09/13/00	2.8	11	7.6	0.7	7.2	132	0.055	0.046	0.0090	0.018	0.006	13.4		5.8	3.31	0.5	5.3	16.8
Buckeye at 395	**09/16/00**	**3.1**	**55.1**	**7.7**	**1.18**	**7.9**	**189.4**	**0.1**	**0.049**	**0.0069**	**0.05**	**0.019**	**13.95**	**3.36**	**5.14**	**1.96**	**0.23**	**4.82**	**16.10**
Buckeye at 395	10/12/00	12	6	9.7	0.3	6.8	114	0.0099	0.0049	0.0050	0.013	0.007							
Buckeye at 395	11/14/00	8.5	0.5	10.1	0.4	7.4	115	0.008	0.005	0.0030	0.008	0.007							
Buckeye at 395	12/12/00	11	0.1	10.4	0.4	7.9	120	0.0069	0.005	0.0019	0.004	0.007							
Buckeye at Reservoir	04/11/00	6	15	8.7		7.5	135	0.0119	0.0049	0.0070	0.048	0.022							
Buckeye at Reservoir	05/09/00	56	13	8.4	1.7	7.9	62	0.0149	0.0049	0.0100	0.029	0.007	6.2		4.1	1.46	0.5	2.6	9.9
Buckeye at Reservoir	**05/18/00**	**62.2**	**56.2**	**9.4**	**5.09**	**7.5**	**51.5**	**0.4**	**0.009**	**0.0100**	**0.05**	**0.019**	**6.40**	**1.68**	**3.49**	**1.00**	**0.35**	**2.07**	**9.60**
Buckeye at Reservoir	**05/30/00**	**144.0**	**43.2**	**9.3**	**1.64**	**8.1**	**44.7**	**0.4**	**0.174**	**0.0069**	**0.09**	**0.020**	**10.60**	**2.32**	**2.26**	**0.54**	**0.70**	**2.22**	**3.51**
Buckeye at Reservoir	06/07/00	112	15	8.2	3.3	7.6	47	~0.014	0.012	0.0020	0.045	0.005							
Buckeye at Reservoir	**06/15/00**	**102.5**	**53.1**	**8.8**	**3.45**	**7.7**	**20.9**	**0.4**	**0.009**	**0.0069**	**0.05**	**0.019**	**8.28**	**0.74**	**2.76**	**0.26**	**0.25**	**0.83**	**3.02**
Buckeye at Reservoir	07/11/00	22	15	6.8	1.5	7.6	77	0.0068	0.0049	0.0019	0.029	0.009							
Buckeye at Reservoir	**07/25/00**	**4.1**	**79.2**	**7.7**	**4.68**	**7.9**	**141.1**	**0.5**	**0.160**	**0.0069**	**0.05**	**0.019**	**16.35**	**2.71**	**20.82**	**2.39**	**1.21**	**0.45**	**11.64**
Buckeye at Reservoir	08/08/00	2	20	7	2.3	7.5	213	0.0068	0.0049	0.0019	0.1	0.044							
Buckeye at Reservoir	**08/21/00**	**3.0**	**68.2**	**7.1**	**1.64**	**7.3**	**71.1**	**0.4**	**0.037**	**0.0069**	**0.12**	**0.080**	**16.35**	**2.71**	**18.73**	**2.19**	**0.44**	**0.16**	**10.56**
Buckeye at Reservoir	09/12/00	8.4	13.5	8.1	<.5	7.1	193	0.0139	0.0049	0.0090	0.059	0.021	14.5		17.1	4.02	2.5	9.4	21.3
Buckeye at Reservoir	**09/16/00**	**5.9**	**53.6**	**7.8**	**3.10**	**7.8**	**171.1**	**0.2**	**0.041**	**0.0900**	**0.05**	**0.080**	**6.90**	**0.89**	**1.30**	**0.40**	**1.00**	**3.40**	**4.70**
Buckeye at Reservoir	10/11/00	20	5.5	7.6	0.6	8	131	0.0089	0.0049	0.0040	0.038	0.013							
Buckeye at Reservoir	11/15/00	25	0	10.5	1.1	7.2	135	0.01	0.008	0.0020	0.051	0.008							
Buckeye at Reservoir	12/11/00	27	0.5	10.3	2.6	7.9	130	0.01	0.008	0.0020	0.04	0.007							
Buckeye below FS	04/12/00	65						0.0068	0.0049	0.0019	0.014	0.002							
Buckeye below FS	05/10/00	137	4.5	9.7	0.6	7.8	40	0.0069	0.005	0.0019	0.01	0.002	4.84		1.6	0.91	0	1.6	7.7
Buckeye below FS	**05/18/00**	**132.8**	**51.7**	**9.8**	**4.01**	**7.7**	**17**	**0.500**	**0.009**	**0.0069**	**0.05**	**0.019**	**4.52**	**1.12**	**1.36**	**0.61**	**0.26**	**1.52**	**7.20**
Buckeye below FS	**05/30/00**	**168.0**	**41.7**	**9.7**	**3.41**	**8.1**	**30**	**0.600**	**0.009**	**0.0069**	**0.09**	**0.020**	**8.93**	**0.98**	**1.21**	**0.48**	**0.27**	**1.67**	**2.88**
Buckeye below FS	06/08/00	213	4.5	10	0.8	7.7	29	0.0239	0.022	0.0019	0.018	0.001							
Buckeye below FS	**06/15/00**	**196.0**	**50.2**	**9.3**	**1.16**	**7.7**	**24**	**0.200**	**0.050**	**0.0069**	**0.05**	**0.019**	**8.64**	**0.81**	**1.02**	**0.44**	**0.27**	**1.32**	**2.55**
Buckeye below FS	07/13/00	89	8.5	9.4	0.6	8	42	0.0119	0.01	0.0019	0.012	0.004							
Buckeye below FS	**7/13/00**	**80.3**	**60.0**	**8.5**	**0.95**	**7.2**	**40**	**0.100**	**0.009**	**0.0069**	**0.05**	**0.019**	**12.48**	**1.49**	**1.69**	**0.77**	**0.14**	**0.09**	**3.85**
Buckeye below FS	**07/25/00**	**62.1**	**61.7**	**10.1**	**1.23**	**7.8**	**43**	**0.200**	**0.053**	**0.0069**	**0.05**	**0.019**	**12.02**	**1.53**	**1.77**	**0.90**	**0.50**	**0.12**	**4.82**
Buckeye below FS	08/10/00	41	9.5	8.3	0.4	7.8	63	0.0229	0.021	0.0019	0.009	0.003							
Buckeye below FS	**08/21/00**	**31.0**	**60.6**	**8.5**	**0.31**	**7.0**	**43**	**0.200**	**0.053**	**0.0069**	**0.08**	**0.019**	**11.98**	**1.62**	**1.91**	**0.90**	**0.25**	**0.04**	**4.81**
Buckeye below FS	09/14/00	20	9.5	8.3	<.5	7.9	87	0.0079	0.0049	0.0030	0.01	0.012	10.3		3.3	2.31	0.4	4.6	12.9
Buckeye below FS	**09/16/00**	**11.3**	**56.1**	**7.9**	**0.57**	**7.5**	**81**	**0.200**	**0.009**	**0.0090**	**0.05**	**0.019**	**5.94**	**1.35**	**2.50**	**0.30**	**0.56**	**1.11**	**9.80**
Buckeye below FS	10/12/00	19	6	9.3	0.2	7.6	85	0.0069	0.0049	0.0020	0.006	0.007							
Buckeye below FS	11/14/00	22	0	10.5	0.2	7.8	88	0.0109	0.009	0.0019	0.007	0.007							
Buckeye below FS	12/13/00	16	0	8.5	2.6	8.1	100	0.024	0.006	0.0180	0.004	0.007							

Date	Site	Discharge cfs(Inst)	TEMP F	D.O. mg/L	Turbidity Ntu	pH	EC uS/cm	TKN mg/L	NO3 mg/L	NH4-N mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
East Walker above Reservoir	04/12/00	68 0	61.8	9.1	3.88	8.4	98.8	1.1	0.009	0.0100	0.05	0.019	21.08	3.20	9.07	2.93	0.89	10.63	19.66
East Walker above Reservoir	05/10/00	144.2	52.1	9.2	1.69	7.9	109.8	1.3	0.099	0.0069	0.10	0.030	19.96	4.07	5.17	1.50	1.04	7.87	7.12
East Walker above Reservoir	05/19/00	146.2	53.8	8.9	4.19	7.9	101.9	0.2	0.032	0.0069	0.06	0.030	20.90	3.07	4.23	1.73	0.53	6.44	7.99
East Walker above Reservoir	05/30/00	32.5	70.0	8.6	1.69	7.8	125.7	0.2	0.009	0.0069	0.05	0.042	27.52	3.85	6.56	2.08	0.57	0.16	11.54
East Walker above Reservoir	06/07/00	14.8	62.2	8.1	5.31	7.6	190.9	0.2	0.009	0.0120	0.05	0.019	22.88	3.39	9.87	2.03	1.39	10.13	22.36
East Walker above Reservoir	06/15/00	21.0	68.3	9.1	3.51	7.9	28.9	0.2	0.009	0.0200	0.08	0.050	17.80	3.88	10.21	1.69	1.45	7.30	22.10
East Walker above Reservoir	07/11/00	34	13	9.4		8.2	197	0.0068	0.0049	0.0019	0.051	0.023							
East Walker above Reservoir	07/25/00	71	14.5	8.5	0.6	8.5	166	0.0169	0.0049	0.0120	0.042	0.019	18		10.2	3.8	1	11.1	21.6
East Walker above Reservoir	08/08/00	143	19	7.5	1.8	7.7	126	0.016	0.009	0.0070	0.041	0.007							
East Walker above Reservoir	08/21/00	43	20.5	7.2	1.6	8.3	148	0.0079	0.0049	0.0030	0.042	0.016							
East Walker above Reservoir	09/12/00	28	21	9.1	2.3	8.4	197	0.0068	0.0049	0.0019	0.042	0.016							
East Walker above Reservoir	09/15/00	17	17	9.2	0.6	7.6	187	0.0169	0.0049	0.0110	0.03	0.013	19.8		11	3.99	1.5	10.6	24.3
East Walker above Reservoir	10/11/00	30	8.5	9.1	0.8	7.6	145	0.124	0.116	0.0080	0.069	0.033							
East Walker above Reservoir	11/13/00	36	0.5	11.4	0.8	7.2	148	0.022	0.005	0.0170	0.016	0.008							
East Walker above Reservoir	12/11/00	32	1	10.4	0.5	8.4	185	0.0069	0.005	0.0019	0.013	0.004							
East Walker below reservoir	04/12/00	136	13	8.3		8.3	216	0.041	0.005	0.0360	0.031	0.004							
East Walker below reservoir	05/10/00	154	14	8.1	2.8	8.5	214	0.046	0.017	0.0290	0.038	0.014	18.5		19.1	4.33	3.7	15.9	15.5
East Walker below reservoir	05/19/00	165.0	60.3	9.2	4.82	8.7	134.9	0.5	0.030	0.0300	0.05	0.350	18.22	4.66	16.10	3.38	2.88	16.20	14.90
East Walker below reservoir	05/30/00	187.5	50.5	8.9	5.18	7.9	163.1	0.6	0.009	0.0069	0.08	0.020	30.31	7.50	21.83	3.70	3.63	18.45	7.38
East Walker below reservoir	06/07/00	208	17	7.7	1.6	8.3	193	0.1	0.028	0.0720	0.073	0.036							
East Walker below reservoir	06/15/00	225.0	53.4	8.7	5.02	8.1	144.0	0.4	0.030	0.0069	0.05	0.060	21.22	5.55	21.33	4.50	1.98	3.80	15.20
East Walker below reservoir	07/11/00	274	19		1.6	8 3	161	0.626	0.019	0.6070	0.14	0.082							
East Walker below reservoir	07/25/00	252.0	69.6	6.7	2.39	7.4	130.2	0.6	0.028	0.0069	0.13	0.050	22.26	3.69	10.16	2.20	0.57	0.23	7.71
East Walker below reservoir	08/08/00	244	20.5	6.2	1.4	8.8	161	0.542	0.02	0.5220	0.18	0.127							
East Walker below reservoir	08/21/00	228	15.5	6.7	1.5	8.3	175	0.103	0.036	0.0670	0.145	0.089	16.4		13.4	3.7	1.9	7.2	12.5
East Walker below reservoir	09/12/00	214.0	59.4	7.5	7.55	8.1	139.7	0.1	0.044	0.0600	0.05	0.090	18.22	4.66	16.10	3.38	2.88	16.20	14.90
East Walker below reservoir	09/15/00	70	13	7.1	5.5	7.1	171	0.013	0.007	0.0060	0.153	0.001							
East Walker below reservoir	10/11/00	26	3.5	9.4	3	9	186	0.0169	0.015	0.0019	0.03	0.010							
East Walker below reservoir	11/13/00	198.0	65.9	7.1	0.38	7.8	124.7	0.2	0.171	0.6100	0.12	0.100	18.40	3.91	12.35	2.61	1.87	7.40	13.10
East Walker below reservoir	12/12/00	19	4	10	5.2	7.9	171	0.029	0.006	0.0230	0.052	0.001							
Green at gauge	05/19/00	115.2	46.7	9.6	1.38	7.9	30.6	0.5	0.033	0.0070	0.05	0.019	10.89	0.46	1.37	0.52	0.25	7.93	2.31
Green at gauge	05/30/00	134.4	43.2	10.3	1.59	7.0	35.4	0.8	0.037	0.0069	0.09	0.020	10.86	0.45	1.18	0.44	0.26	8.43	2.21
Green at gauge	06/06/00	125	12	8.3	0.4	7.1	41	0.015	0.011	0.0040	0.0004	0.001							
Green at gauge	06/15/00	138.5	55.2	9.6	0.91	7.2	32.7	0.3	0.021	0.0069	0.05	0.019	10.53	0.40	0.93	0.34	0.27	8.52	2.30
Green at gauge	07/12/00	48	16	8.3	0.6	7.4	44	0.0079	0.006	0.0019	0.0004	0.001							
Green at gauge	7/14/00	44.5	59.3	8.5	2.20	7.5	54.1	0.3	0.070	0.0069	0.05	0.019	12.80	0.45	1.12	0.43	0.53	0.22	2.45
Green at gauge	07/25/00	36.8	61.5	10.1	0.74	7.6	21.1	0.2	0.033	0.0069	0.05	0.019	13.55	0.57	1.47	0.60	0.43	0.07	2.64
Green at gauge	08/09/00	20	16.5		1.1		50	0.025	0.023	0.0020	0.034	0.017							
Green at gauge	08/22/00	21.0	62.1	9.2	8.22	6.9	28.6	0.3	0.009	0.0069	0.08	0.030	12.22	0.57	1.36	0.55	0.76	0.61	3.22
Green at gauge	09/13/00	8.3	14	7.6	<.5	7.1	58	0.0109	0.0049	0.0060	0.0079	0.019	7.46		1.9	0.46	E.2	12.2	5.2
Green at gauge	09/17/00	9.1	55.7	7.7	1.16	7.8	106.8	0.1	0.009	0.0069	0.05	0.020	7.23	0.51	1.20	0.80	0.30	11.90	5.10
Green at gauge	10/10/00	6.4	8	8.4	0.3	7.4	65	0.0079	0.0049	0.0030	0.0003	0.007							
Green at gauge	11/13/00	7.2	0	11	0.3	7.6	77	0.007	0.005	0.0020	0.004	0.007							
Green at gauge	12/12/00	5.3	0	10.6	0.3	7.9	75	0.0139	0.012	0.0019	0.0039	0.007							
Robinson @ 395	04/13/00	11	8	8.8		7.6	77	0.012	0.007	0.0050	0.023	0.004							
Robinson @ 395	05/11/00	39	6	9.4	0.5	7.6	60	0.0068	0.0049	0.0019	0.012	0.001	7.28		2.4	1.21	E.3	3.9	8.8
Robinson @ 395	05/19/00	42.7	49.9	8.9	2.88	7.7	36.7	0.4	0.009	0.0070	0.05	0.019	7.15	1.57	2.16	0.85	0.31	3.34	8.22
Robinson @ 395	05/30/00	76.0	48.6	9.5	0.70	7.4	51.9	0.4	0.262	0.0069	0.05	0.019	12.79	2.21	2.30	0.50	0.83	3.42	3.44
Robinson @ 395	06/06/00	124	14.5	8.3	0.8	7.3	64	0.011	0.008	0.0030	0.016	0.001							
Robinson @ 395	06/15/00	89.3	54.8	8.7	1.75	7.7	50.2	0.1	0.009	0.0069	0.13	0.040	13.35	1.29	1.83	0.65	0.32	3.19	3.18
Robinson @ 395	07/12/00	12	17	8.1	2.1	7.3	82	0.011	0.009	0.0020	0.018	0.003							
Robinson @ 395	07/25/00	6.8	73.8	7.1	1.12	7.2	65.7	0.2	0.032	0.0069	0.05	0.019	17.12	2.81	3.85	1.41	0.66	0.11	5.49
Robinson @ 395	08/09/00	8.8	17		1.5		77	0.0079	0.0049	0.0030	0.016	0.003							
Robinson @ 395	08/24/00	10.5	66.2	8.9	0.55	6.4	47.5	0.2	0.009	0.0069	0.05	0.030	9.67	1.10	2.27	0.91	0.33	0.05	2.68
Robinson @ 395	09/13/00	4.6	13.5	8	<.5	7.2	82	0.109	0.107	0.0020	0.0005	0.001	9.77		3	1.63	0.4	4	11.8

Date	Site	Discharge cfs(inst)	TEMP F	D.O. mg/L	Turbidity Ntu	pH	EC uS/cm	TKN mg/L	NO3 mg/L	NH4-N mg/L	P mg/L	PO4 mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO4 mg/L	Si mg/L
Robinson @ 395	09/17/00	8.3	56.8	8.2	1.13	7.6	89.2	0.2	0.088	0.0069	0.05	0.019	9.66	1.62	2.50	1.40	0.50	4.20	10.90
Robinson @ 395	10/12/00	5.1	9.5	8.2	0.4	6.8	75	0.0099	0.0049	0.0050	0.006	0.007							
Robinson @ 395	11/14/00	2.1	2.5	9.6	0.2	7.3	80	0.0179	0.016	0.0019	0.0002	0.007							
Robinson @ 395	12/12/00	4.5	2	10.1	0.3	7.8	83	0.0129	0.011	0.0019	0.0039	0.007							
Robinson at gauge	04/12/00	38	7	9.6		8.2	60	0.0068	0.0049	0.0019	0.0004	0.001							
Robinson at gauge	05/10/00	144	8	8.9	0.4	8	58	0.0068	0.0049	0.0019	0.0079	0.001	7.88		2	0.84	E.2	4.8	5.6
Robinson at gauge	05/19/00	125.2	46.4	9.0	0.63	8.1	28.0	0.5	0.009	0.0070	0.05	0.019	8.80	0.97	2.00	0.69	0.37	4.87	5.12
Robinson at gauge	05/30/00	115.0	44.8	10.0	1.21	7.5	49.9	0.6	0.078	0.0069	0.05	0.019	13.13	1.17	1.85	0.46	0.38	4.00	2.51
Robinson at gauge	06/08/00	214	12.5	8.2	0.4	7.8	56	0.009	0.007	0.0020	0.0079	0.001							
Robinson at gauge	06/15/00	178.0	52.4	9.6	1.26	7.9	46.1	0.4	0.009	0.0069	0.05	0.019	12.22	0.92	1.76	0.48	0.32	3.97	2.39
Robinson at gauge	7/12/00	98.6	63.5	8.4	1.05	7.4	42.5	0.2	0.034	0.0100	0.05	0.019	13.32	0.74	1.63	0.48	0.43	0.10	2.67
Robinson at gauge	07/13/00	115	16.5	7.6	0.4	7.8	47	0.0068	0.0049	0.0019	0.0005	0.001							
Robinson at gauge	07/25/00	85.2	68.9	7.3	1.26	6.9	16.4	0.2	0.026	0.0069	0.05	0.019	9.75	0.53	0.65	0.22	0.21	0.12	2.68
Robinson at gauge	08/10/00	76	18	7.1	0.4	7.4	45	0.0068	0.0049	0.0019	0.0005	0.001							
Robinson at gauge	08/24/00	65.0	63.1	9.2	0.30	6.6	24.5	0.4	0.009	0.0069	0.07	0.040	7.20	0.61	1.72	0.44	0.21	0.90	5.91
Robinson at gauge	09/14/00	26	15	7.4	<.5	7.7	49	0.229	0.037	0.1920	0.0079	0.088	6.7		1.7	0.66	E.2	3.5	5
Robinson at gauge	09/17/00	21.6	52.5	8.5	0.76	7.9	28.0	0.2	0.044	0.0069	0.05	0.019	7.62	0.79	1.70	0.49	0.37	[illegible]	4.52
Robinson at gauge	10/12/00	21	13.5	8.3	0.2	7.4	49	0.0079	0.0049	0.0030	0.0003	0.007							
Robinson at gauge	11/14/00	12	7.5	8.7	0.3	7.6	51	0.008	0.006	0.0020	0.004	0.007							
Robinson at gauge	12/13/00	10	4.5	8.6	0.3	8.3	54	0.057	0.053	0.0040	0.005	0.007							
Robinson at Reservoir	04/11/00	5	16	9.1		8.2	103	0.0068	0.0049	0.0019	0.014	0.006							
Robinson at Reservoir	05/09/00	36	17	7.6	0.5	8	88	0.0089	0.0049	0.0040	0.018	0.002	10.7		3.6	2.25	0.3	[illegible]	12.2
Robinson at Reservoir	05/19/00	40.0	51.2	9.1	2.84	8.2	34.9	0.9	0.009	0.0069	0.05	0.019	10.30	2.07	2.99	1.05	0.44	[illegible]	12.72
Robinson at Reservoir	05/30/00	120.0	49.9	9.3	4.62	7.8	110.9	0.9	0.257	0.0069	0.08	0.020	17.99	4.41	6.61	1.93	1.33	[illegible]	1.33
Robinson at Reservoir	06/07/00	123	19	7.4	2	7.7	68	0.012	0.01	0.0020	0.027	0.001							
Robinson at Reservoir	06/15/00	83.1	55.9	9.1	0.78	7.6	54.9	0.3	0.028	0.0069	0.14	0.020	5.26	0.29	0.47	0.09	0.24	[illegible]	0.80
Robinson at Reservoir	07/11/00	15	14	6.6	2.2	7.5	88	0.0099	0.008	0.0019	0.026	0.003							
Robinson at Reservoir	07/25/00	9.1	79.2	6.4	1.10	7.8	95.0	0.2	0.009	0.0069	0.05	0.019	18.27	2.90	4.75	1.63	0.71	0.11	7.92
Robinson at Reservoir	08/08/00	12	15.5	7.3	1.4	7.6	108	0.0099	0.0049	0.0050	0.026	0.003							
Robinson at Reservoir	08/24/00	8.7	66.8	8.1	0.20	7.7	38.1	0.2	0.009	0.0069	0.08	0.060	15.33	3.10	4.87	1.73	0.56	0.16	9.89
Robinson at Reservoir	09/12/00	3.9	11.5	7.6	<.5	7.1	123	0.0079	0.0049	0.0030	0.016	0.007	13.8		5.4	3.02	0.7	5	15.7
Robinson at Reservoir	09/17/00	4.1	56.1	8.1	1.48	7.8	113.5	0.2	0.009	0.0069	0.05	0.019	13.60	3.26	5.40	2.30	0.90	5.10	13.90
Robinson at Reservoir	10/11/00	6.7	7.5	7.8	0.5	7.6	110	0.0099	0.0049	0.0050	0.014	0.001							
Robinson at Reservoir	11/15/00	4.2	2	9.1	0.4	7.4	130	0.017	0.009	0.0080	0.009	0.009							
Robinson at Reservoir	12/11/00	6.6	2.5	10.2	0.4	8.2	130	0.0119	0.01	0.0019	0.01	0.007							
Sauger at Campground	04/13/00	20	5.5	9.1		8.3	118	0.04	0.037	0.0030	0.107	0.045							
Sauger at Campground	05/11/00	13	1	10.9	2.2	8.3	120	0.056	0.052	0.0040	0.044	0.038	10.8	3.66	8.7	3.66	1.6	3.5	28.3
Sauger at Campground	05/19/00	21.3	45.7	8.9	3.23	8.3	55.5	0.6	0.050	0.0069	0.06	0.050	10.10	3.55	9.06	2.38	1.38	4.20	24.72
Sauger at Campground	05/30/00	26.7	46.1	8.7	0.86	8.0	88.0	0.6	0.040	0.0069	0.12	0.019	12.94	4.06	6.22	1.90	1.30	4.40	8.56
Sauger at Campground	06/09/00	2.3	10		2.1		201	0.294	0.282	0.0120	0.1	0.060							
Sauger at Campground	06/15/00	5.3	50.3	8.1	2.88	7.6	135.4	0.3	0.050	0.0069	0.08	0.090	17.22	4.87	9.98	2.10	1.42	5.24	12.36
Sauger at Campground	07/12/00	3	10.5	9.1	0.7	8	201	0.189	0.18	0.0090	0.09	0.056							
Sauger at Campground	07/25/00	2.7	72.1	9.0	1.59	7.8	128.9	0.6	0.130	0.0069	0.10	0.030	19.11	4.96	13.00	2.85	0.50	0.15	17.99
Sauger at Campground	08/21/00	4.2	68.0	7.1	10.25	6.8	89.9	0.5	0.160	0.1000	0.07	0.090	12.35	4.12	9.88	2.23	0.78	0.19	28.20
Sauger at Campground	09/13/00	5.1	9	8.5		7.3	149	0.163	0.148	0.0150	0.091	0.045	11.5	3.92	11.8	3.92	1.3	5.9	30.4
Sauger at Campground	09/17/00	5.2	56.2	8.4	0.43	7.6	159.2	0.4	0.112	0.0210	0.05	0.020	10.20	3.33	9.80	2.60	0.90	5.50	27.90
Sauger at Campground	10/12/00	5.6	4	9.9	0.7	7.6	136	0.0109	0.0049	0.0060	0.023	E.006							
Sauger at Campground	11/14/00	4.4	2.5	10.1	0.7	7.7	160	0.1429	0.141	0.0019	0.051	0.038							
Sauger at Campground	12/12/00	6.1	1.5	10.7	0.5	8.5	136	0.1039	0.102	0.0019	0.054	0.037							

Table 5: Comparison of mean values, upstream and downstream sites (see text)

Buckeye at FS vs Buckeye at 395, TKN

	Gauge	395
Mean	0.134807	0.128813333
Variance	0.035682	0.026782871
Observations	15	15
Pearson Correlation	0.880425	
Hypothesized Mean Difference	0	
df	14	
t Stat	0.259031	
P(T<=t) one-tail	0.399691	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.799381	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at Reservoir, TKN

	Gauge	Reservoir
Mean	0.134807	0.159813
Variance	0.035682	0.039144
Observations	15	15
Pearson Correlation	0.799121	
Hypothesized Mean Difference	0	
df	14	
t Stat	-0.78829	
P(T<=t) one-tail	0.221836	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.443672	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at 395, NO3

	Gauge	395
Mean	0.018068	0.051019335
Variance	0.000338	0.008650369
Observations	15	15
Pearson Correlation	0.162122	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.38964	
P(T<=t) one-tail	0.093171	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.186341	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at Reservoir, NO3

	Gauge	Reservoir
Mean	0.018068	0.032498
Variance	0.000338	0.003121
Observations	15	15
Pearson Correlation	0.331145	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.0603	
P(T<=t) one-tail	0.153479	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.306959	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at 395, NH4

	Gauge	395
Mean	0.005193	0.005546667
Variance	1.95E-05	8.74267E-06
Observations	15	15
Pearson Correlation	0.021738	
Hypothesized Mean Difference	0	
df	14	
t Stat	-0.26008	
P(T<=t) one-tail	0.399295	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.798589	
t Critical two-tail	2.144789	

Buckeye at FS vs Buckeye at Reservoir, NH4

	Gauge	Reservoir
Mean	0.005193	0.01116
Variance	1.95E-05	0.000485
Observations	15	15
Pearson Correlation	0.23369	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.07877	
P(T<=t) one-tail	0.149462	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.298924	
t Critical two-tail	2.144789	

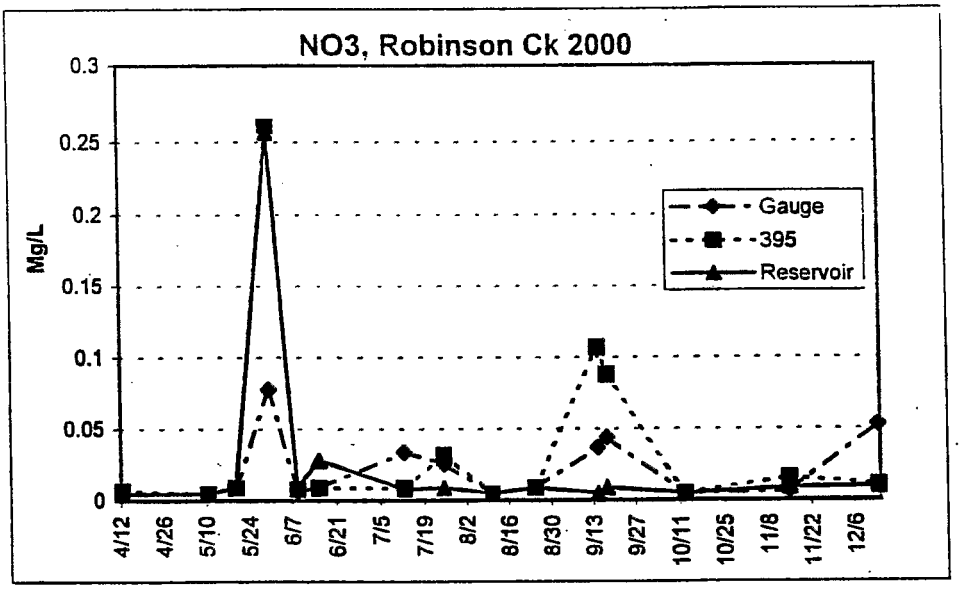
Buckeye at FS vs Buckeye at 395, P

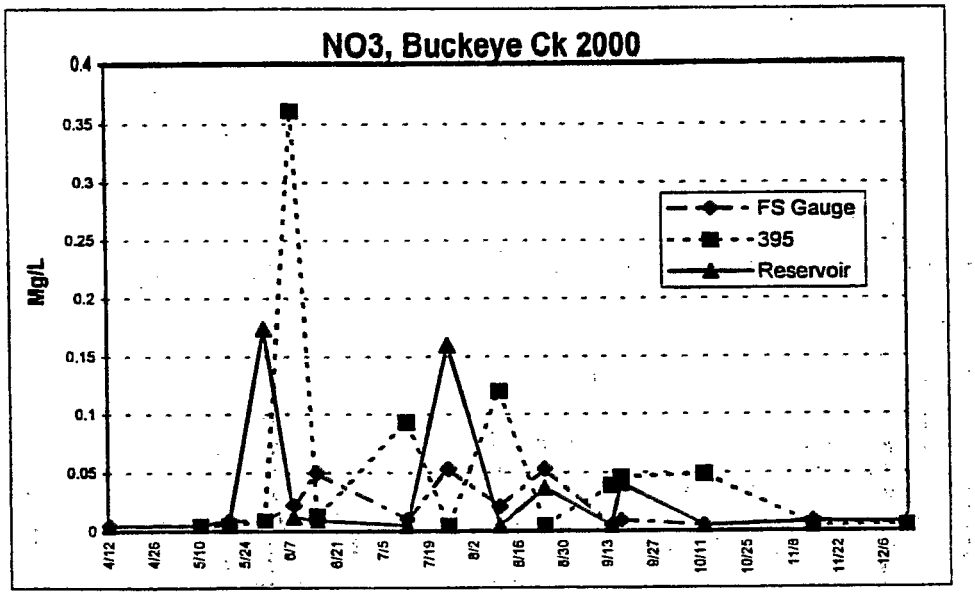
	Gauge	395
Mean	0.0304	0.044933333
Variance	0.000806	0.001287781
Observations	15	15
Pearson Correlation	0.705578	
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.19744	
P(T<=t) one-tail	0.022658	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.045317	
t Critical two-tail	2.144789	

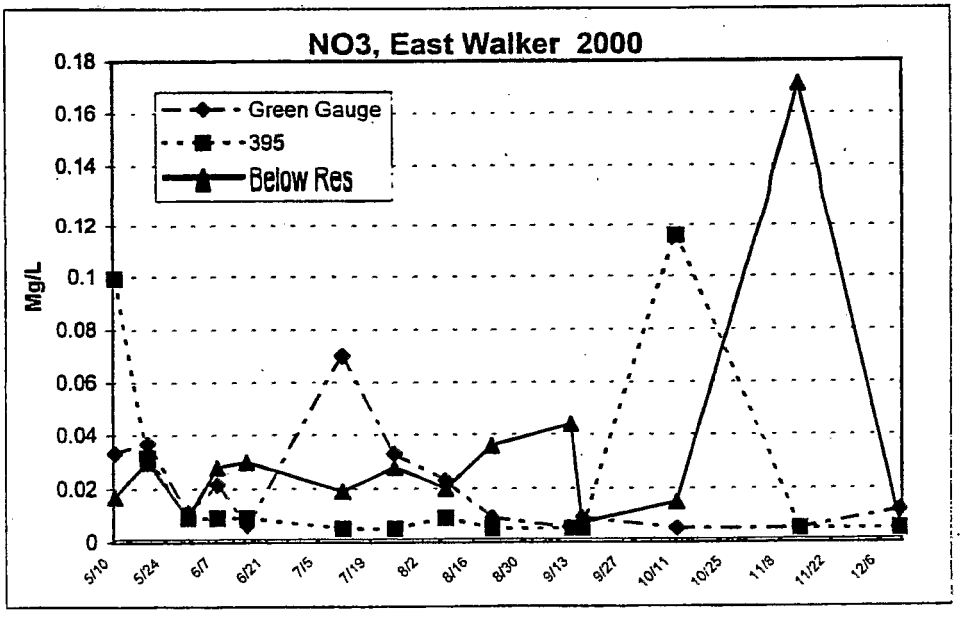
Buckeye at FS vs Buckeye at Reservoir, P

	Gauge	Reservoir
Mean	0.0304	0.0564
Variance	0.000806	0.000688
Observations	15	15
Pearson Correlation	0.574623	
Hypothesized Mean Difference	0	
df	14	
t Stat	-3.98621	
P(T<=t) one-tail	0.000676	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.001352	
t Critical two-tail	2.144789	

Figure 1: Compared nutrient values for US and DS sites







Robinson at Gauge vs Robinson at 395, NH4

	Gauge	395
Mean	0.017013	0.0045
Variance	0.002351	5.20171E-06
Observations	15	15
Pearson Correlation	-0.28134	
Hypothesized Mean Difference	0	
df	14	
t Stat	0.987138	
P(T<=t) one-tail	0.170165	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.340329	
t Critical two-tail	2.144789	

Robinson at Gauge vs Robinson at Res., NH4

	Gauge	Reservoir
Mean	0.017013	0.00494
Variance	0.002351	5.25E-06
Observations	15	15
Pearson Correlation	-0.22548	
Hypothesized Mean Difference	0	
df	14	
t Stat	0.953296	
P(T<=t) one-tail	0.178305	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.356611	
t Critical two-tail	2.144789	

Robinson at Gauge vs Robinson at 395, P

	Gauge	395
Mean	0.023293	0.0314
Variance	0.000643	0.0011
Observations	15	15
Pearson Correlation	0.606859	
Hypothesized Mean Difference	0	
df	14	
t Stat	-1.15528	
P(T<=t) one-tail	0.133656	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.267313	
t Critical two-tail	2.144789	

Robinson at Gauge vs Robinson at Res., P

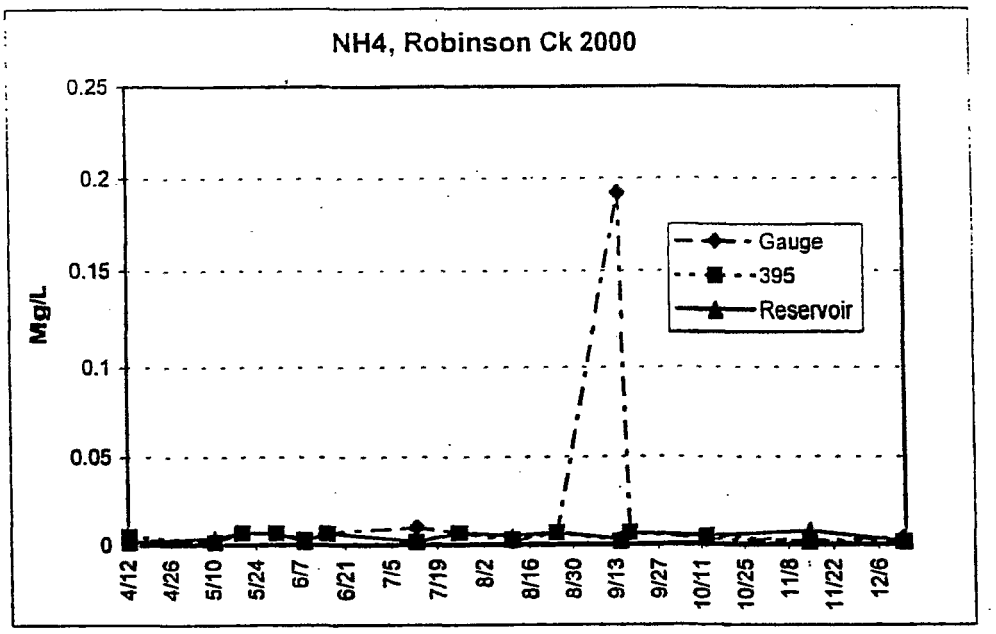
	Gauge	Reservoir
Mean	0.023293	0.040467
Variance	0.000643	0.001305
Observations	15	15
Pearson Correlation	0.696682	
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.5662	
P(T<=t) one-tail	0.011201	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.022402	
t Critical two-tail	2.144789	

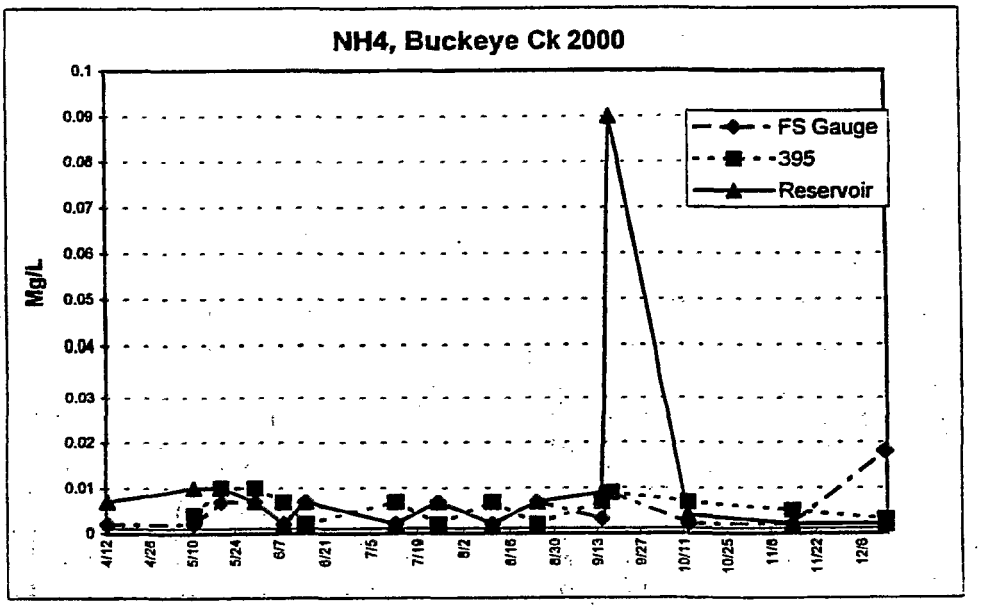
Robinson at Gauge vs Robinson at 395, PO4

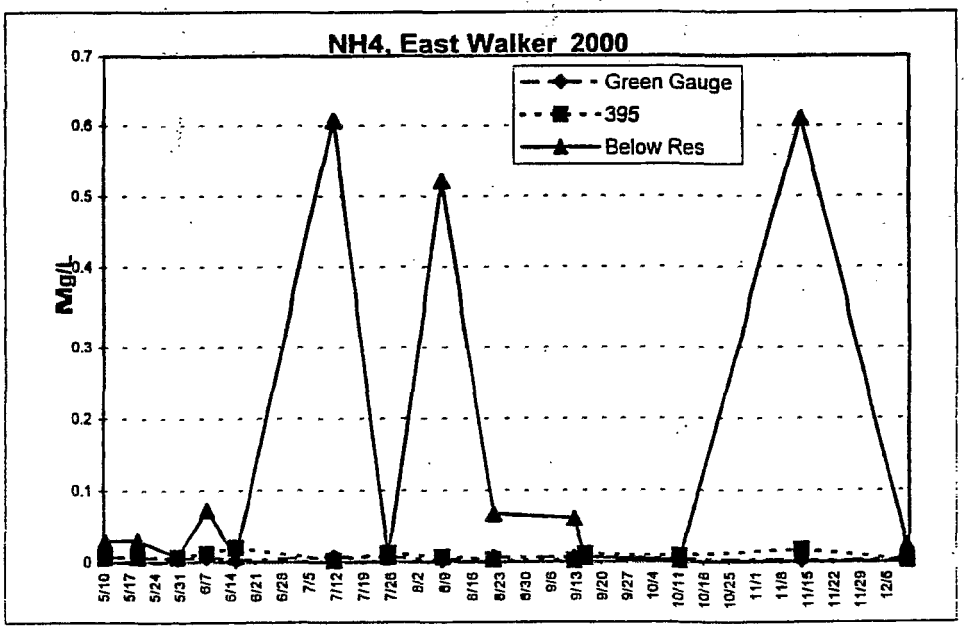
	Gauge	395
Mean	0.016553	0.0120
Variance	0.000513	0.0001
Observations	15	15
Pearson Correlation	0.102564	
Hypothesized Mean Difference	0	
df	14	
t Stat	0.725714	
P(T<=t) one-tail	0.239985	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.47997	
t Critical two-tail	2.144789	

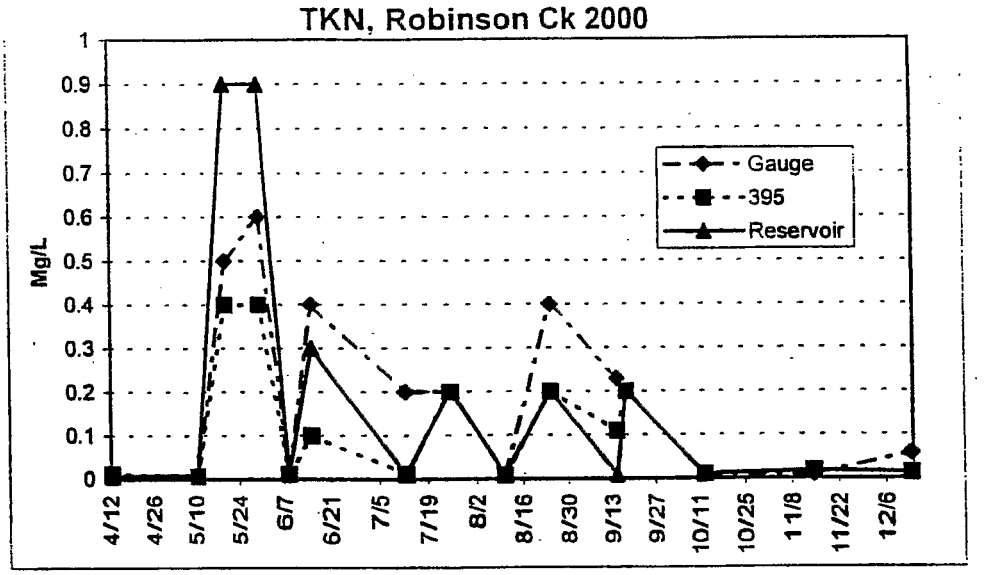
Robinson at Gauge vs Robinson at Res., PO4

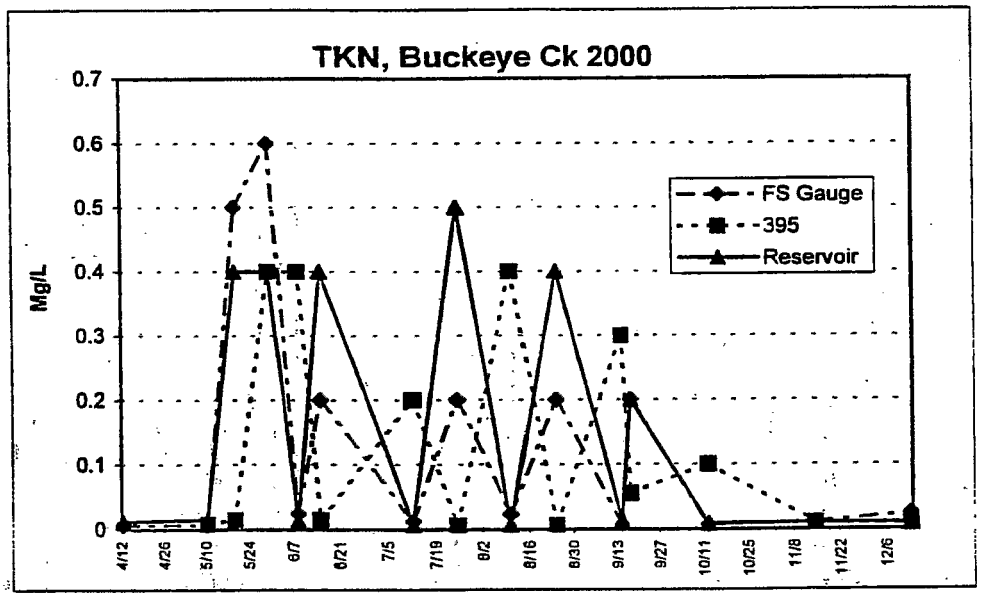
	Gauge	Reservoir
Mean	0.016553	0.01302
Variance	0.000513	0.000227
Observations	15	15
Pearson Correlation	0.306619	
Hypothesized Mean Difference	0	
df	14	
t Stat	0.593909	
P(T<=t) one-tail	0.281024	
t Critical one-tail	1.761309	
P(T<=t) two-tail	0.562047	
t Critical two-tail	2.144789	

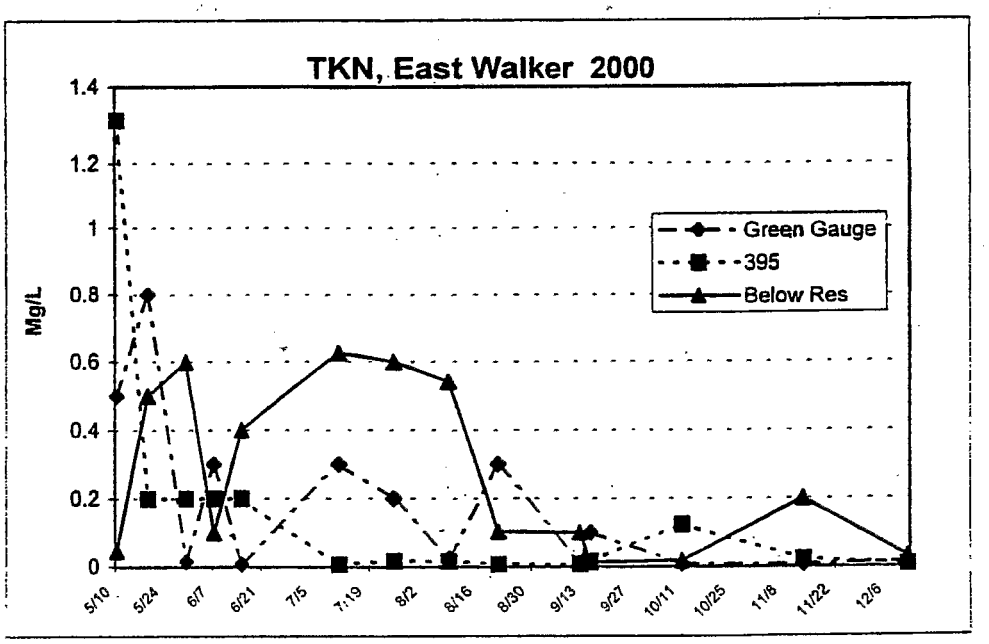

NH4, Robinson Ck 2000
Mg/L
0.25
0.2
0.15
0.1
0.05
0
Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6

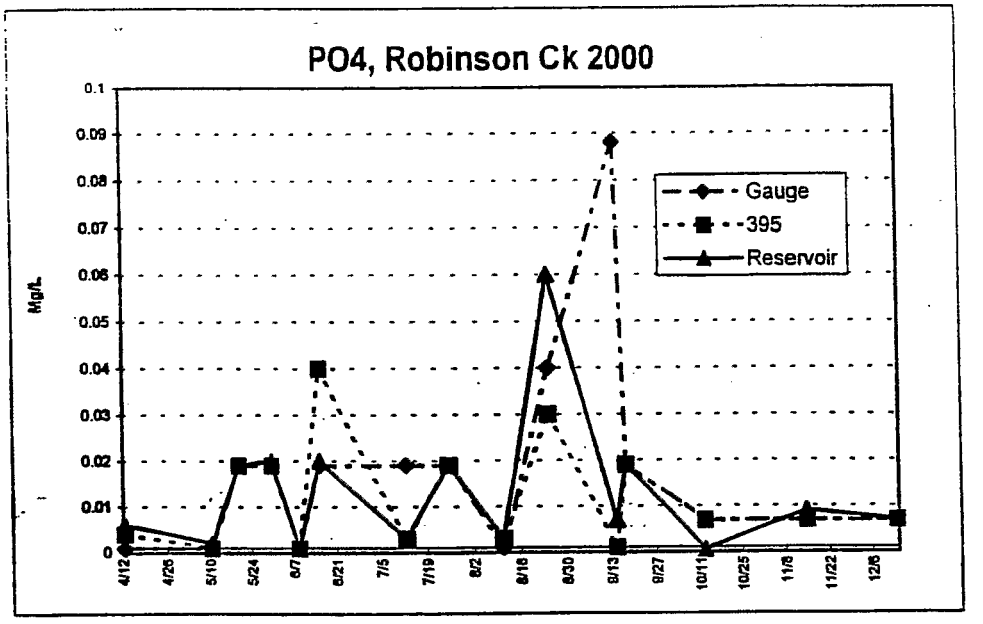

NH4, Buckeye Ck 2000
Mg/L
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
FS Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6

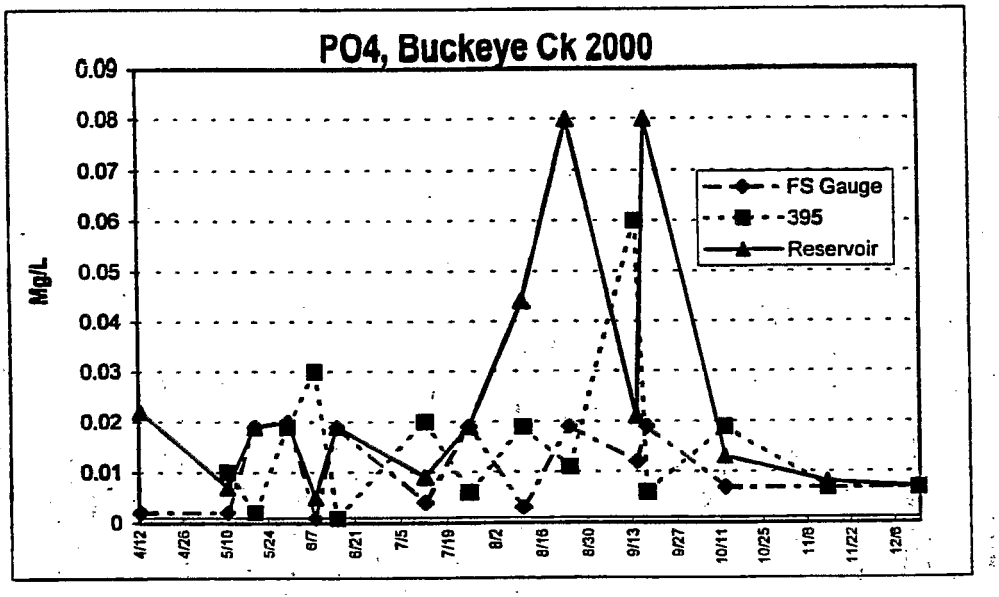

NH4, East Walker 2000
Mg/L
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Green Gauge
395
Below Res
5/10
5/17
5/24
5/31
6/7
6/14
6/21
6/28
7/5
7/12
7/19
7/26
8/2
8/9
8/16
8/23
8/30
9/6
9/13
9/20
9/27
10/4
10/11
10/18
10/25
11/1
11/8
11/15
11/22
11/29
12/6

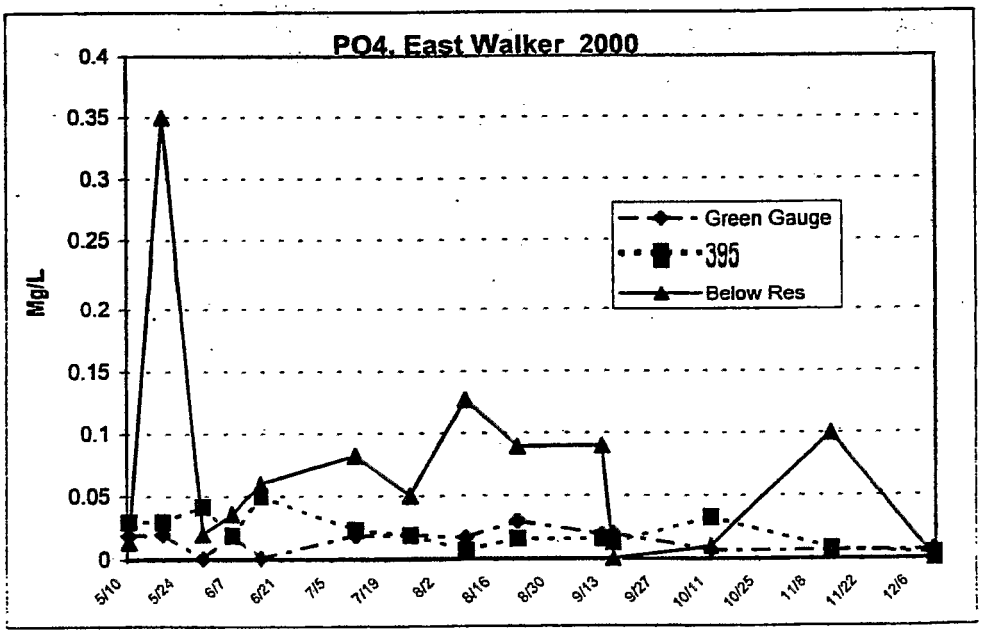

TKN, Robinson Ck 2000
Mg/L
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6

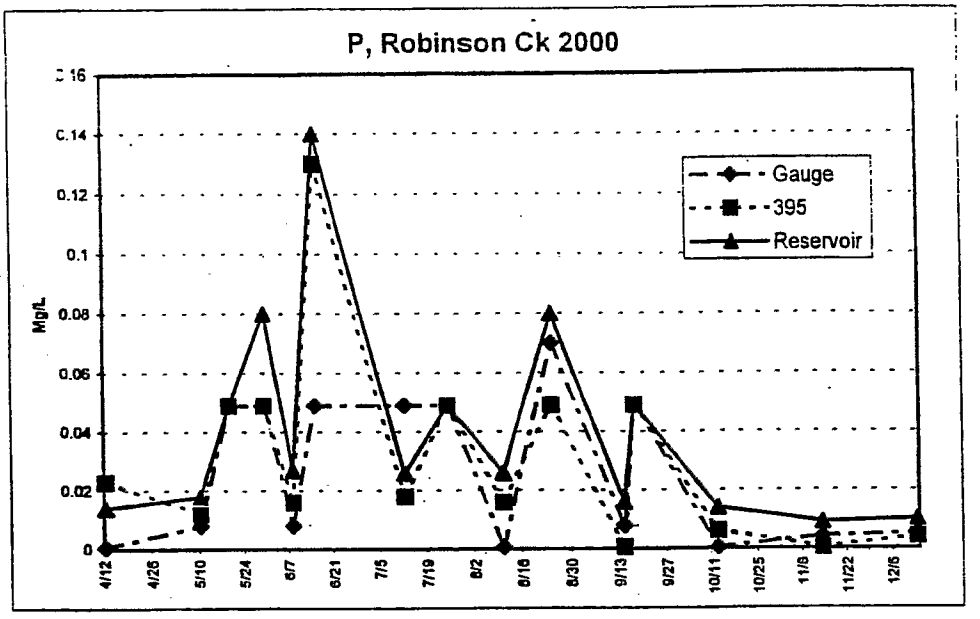

TKN, Buckeye Ck 2000
Mg/L
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
FS Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6

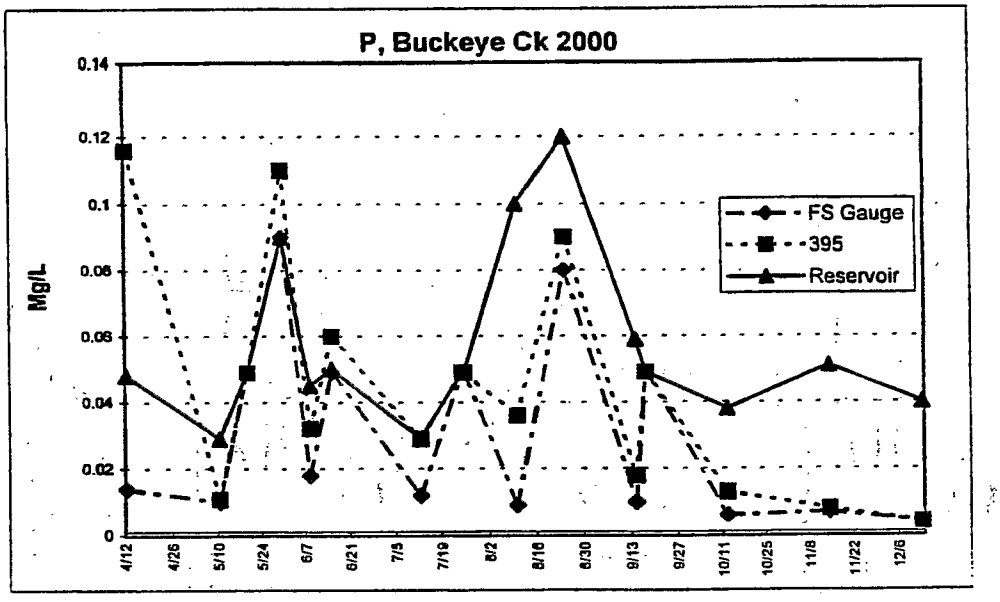

TKN, East Walker 2000
Mg/L
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Green Gauge
395
Below Res
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6

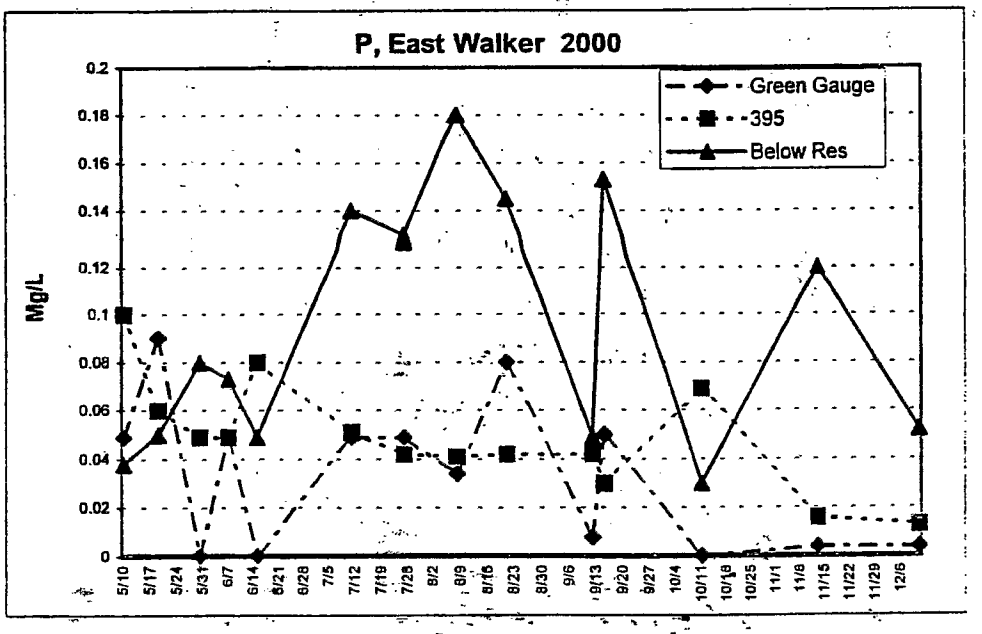

PO4, Robinson Ck 2000
Mg/L
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6


PO4, Buckeye Ck 2000
Mg/L
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
FS Gauge
395
Reservoir
4/12
4/26
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6


PO4, East Walker 2000
Mg/L
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Green Gauge
395
Below Res
5/10
5/24
6/7
6/21
7/5
7/19
8/2
8/16
8/30
9/13
9/27
10/11
10/25
11/8
11/22
12/6


P, Robinson Ck 2000
Mg/L
Gauge
395
Reservoir


P, Buckeye Ck 2000
Mg/L
FS Gauge
395
Reservoir


P, East Walker 2000
Mg/L
Green Gauge
395
Below Res