LAKE MENOMIN
2002 LAKE PLANNING GRANT
FINAL REPORT

Prepared for:

City of Menomonie
800 Wilson Avenue
Menomonie, WI 54751

January 2003

Prepared by:

Cedar Corporation
604 Wilson Avenue
Menomonie, WI 54751

Project #: 0055-0393-500

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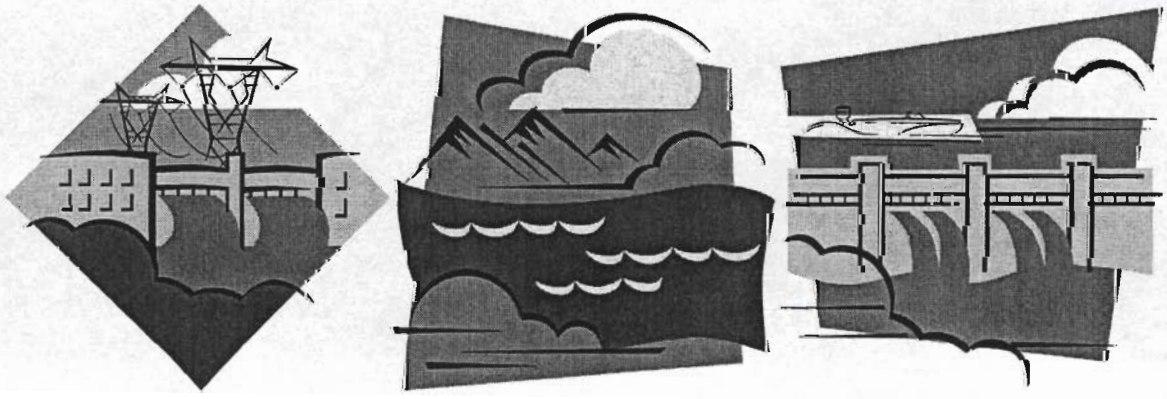
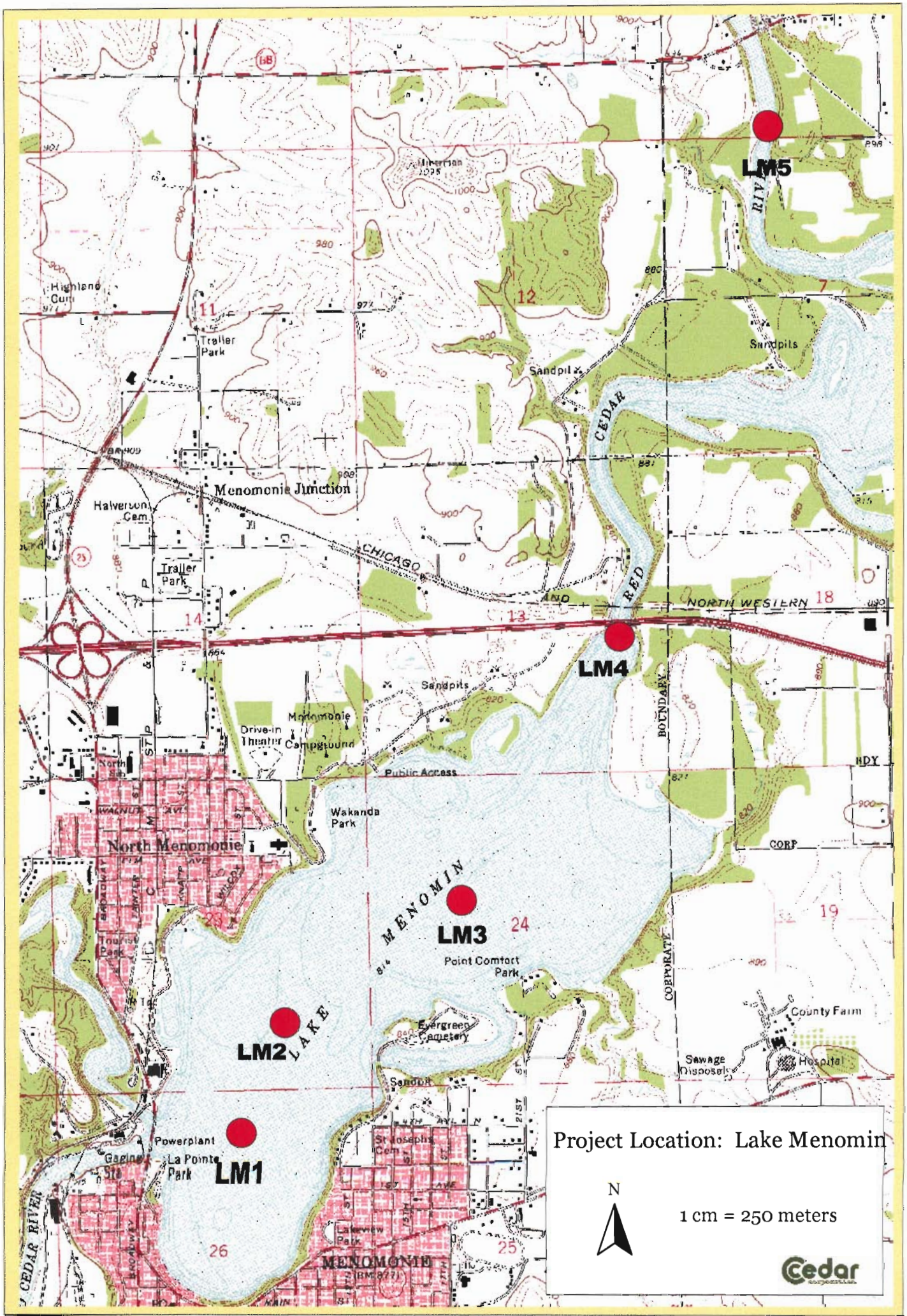


FIGURES:

Sampling Locations on Lake Menomin


LM5
LM4
LM3
LM2
LM1
Project Location: Lake Menomin
N
1 cm = 250 meters
Menomonie Junction
North Menomonie
MENOMONIE
LAKE MENOMIN
CEDAR RIVER
RED CEDAR
CHICAGO AND NORTH WESTERN
Trailer Park
Sandpits
Drive-in Theatre
Campground
Public Access
Wakanda Park
Point Comfort Park
Evergreen Cemetery
County Farm
Sewage Disposal
Hospital
Powerplant
Gaging Sta
La Pointe Park
Lakeview Park
St Josephs Cem
Halverson Cem
Highland Cem
BOUNDARY
CORPORATE
CORP
HDY

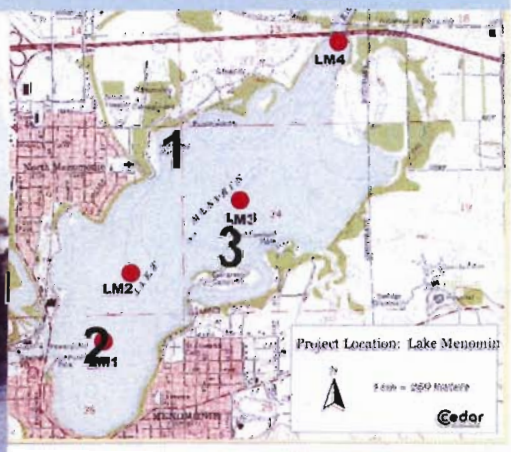
FIGURES:

Lake Menomin Boat Tour

Lake Menomin Boat Tour

July 29, 2002

A tour of Lake Menomin took place late summer of 2002 when the lake was bright green and smelling like sulfur. Those in attendance were Tainter/Menomin Lake Improvement Association, Dunn County Land Conservation Department, Cedar Corporation, City of Menomonie Citizens, and City Council. Since the community is unhappy with the Lake's appearance and odor, this tour was scheduled to educate others on what has and what is being done by City and WDNR officials to look for remedies of this issue.



1. Facing Northwest. Near the Dunn County Fish & Game. ←

2. Facing South. Near South Menomonie. Mike Kinney, Dunn Co. LCD, giving a tour presentation on the Lake and Menomonie's history. →

3. Facing East. Near Point Comfort Park. ←

TABLES:

State Lab of Hygiene Data

Surface only samples

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant

State Lab of Hygiene Results									In-Situ
Site Location	Date	Water Temp (°C)	TSS (mg/L)	Diss. N NO3-N02 (mg/L)	Diss. P Ortho-P (mg/L)	TP (mg/L)	TKN (mg/L)	Chla-a (ug/L)	Surface pH
LM1	5/30/02	17.90	7	0.697	*ND*	0.057	0.87	31.0	9.14
LM1	6/13/02	21.64	11	0.614	0.011	0.080	0.71		8.74
LM1	6/27/02	25.96	8	0.954	0.064	0.132	0.82	22.3	8.26
LM1	7/11/02	24.55	12	0.458	0.03	0.126	1.48	45.4	8.74
LM1	7/25/02	24.36	16	*ND*	0.025	0.133	1.32	38.8	9.2
LM1	8/8/02	24.20	13	0.295	0.037	0.130	1.29	7.3	9.11
LM1	8/22/02	21.00	16	0.230	0.024	0.138	1.45	106.0	9.33
LM1	9/5/02	23.20	17	0.422	0.018	0.168	1.78	105.0	9.08
LM1	9/19/02	21.00	10	No Test	0.057	0.165	No Test	59.0	7.99
LM1	10/3/02	13.80	5	No Test	0.045	0.101	No Test	16.2	7.71
LM1 Ave		21.76	11.50	0.52	0.03	0.12	1.22	47.89	8.73
LM2	5/30/02	19.20	**	0.656	*ND*	0.050	0.79	24.0	9.16
LM2	6/13/02	21.61	6	0.632	0.014	0.091	0.80		8.74
LM2	6/27/02	24.54	5.7	0.965	0.062	0.126	0.71	13.8	7.86
LM2	7/11/02	24.70	12	0.466	0.034	0.125	1.28	26.4	8.75
LM2	7/25/02	24.36	28	*ND*	0.027	0.213	2.18	45.2	9.3
LM2	8/8/02	24.10	13	0.448	0.044	0.140	1.33	22.7	9.06
LM2	8/22/02	20.40	14	0.229	0.027	0.107	1.04	34.8	9.29
LM2	9/5/02	26.10	13	0.579	0.034	0.147	1.16	67.3	8.99
LM2	9/19/02	21.00	7	No Test	0.058	0.136	No Test	32.8	8.02
LM2	10/3/02	13.50	4	No Test	0.043	0.099	No Test	17.7	7.86
LM2 Ave		21.95	11.41	0.57	0.04	0.12	1.16	31.63	8.70
LM3	5/30/02	20.50		0.626	*ND*	0.056	0.80	25.0	9.14
LM3	6/13/02	20.99	8	0.737	0.031	0.097	0.84		8.74
LM3	6/27/02	25.41	7	0.922	0.065	0.153	0.87	29.8	8.26
LM3	7/11/02	23.89	14	0.800	0.048	0.152	1.24	31.6	8.74
LM3	7/25/02	23.99	24	0.162	0.025	0.202	2.40	56.3	9.2
LM3	8/8/02	23.80	15	0.589	0.048	0.147	1.20	11.4	9.11
LM3	8/22/02	20.00	12	0.744	0.048	0.143	0.90	45.0	9.33
LM3	9/5/02	23.40	8	0.694	0.047	0.122	0.92	39.4	9.08
LM3	9/19/02	21.00	10	No Test	0.058	0.152	No Test	44.8	7.99
LM3	10/3/02	13.00	4	No Test	0.054	0.116	No Test	7.3	7.71
LM3 Ave.		21.60	11.33	0.66	0.05	0.13	1.15	32.28	8.73
LM4	5/30/02	17.10	9	0.920	0.006	0.076	0.82	24.0	8.38
LM4	6/13/02	20.47	5	0.850	0.043	0.106	0.77		7.60
LM4	6/27/02	23.57	7	0.924	0.079	0.154	0.79	3.5	7.39
LM4	7/11/02	23.91	12	0.764	0.042	0.143	1.30	10.9	8.43
LM4	7/25/02	23.31	10	0.766	0.046	0.118	0.89	13.7	8.30
LM4	8/8/02	22.70	13	0.699	0.055	0.155	1.06	25.6	8.51
LM4	8/22/02	18.60	10	0.758	0.044	0.134	1.08	48.0	8.93
LM4	9/5/02	22.40	9	0.873	0.058	0.138	0.86	25.4	8.43
LM4	9/19/02	19.20	6	No Test	0.061	0.134	No Test	8.9	7.62
LM4	10/3/02	13.00	4	No Test	0.055	0.111	No Test	6.4	7.67
LM4 Ave.		20.43	8.50	0.82	0.05	0.13	0.95	18.49	8.13

State Lab of Hygiene Results									In-Situ
Site Location	Date	Water Temp (°C)	TSS (mg/L)	Diss. N NO3-N02 (mg/L)	Diss. P Ortho-P (mg/L)	TP (mg/L)	TKN (mg/L)	Chla-a (ug/L)	Surface pH
LM5	6/13/02	20.37	6	0.836	0.043	0.101	0.71		7.64
LM5	6/27/02	23.60	**	0.870	0.103	0.151	0.77	16.0	7.55
LM5	7/11/02	25.00	11	0.674	0.038	0.118	1.32	23.6	8.66
LM5	7/25/02	24.00	10	0.033	0.033	0.100	0.96	21.0	8.71
LM5	8/8/02	22.60	9	0.695	0.064	0.128	0.73	7.4	8.31
LM5	8/22/02	20.70	60	0.661	0.031	0.528	5.59	309.0	9.12
LM5	9/5/02	22.80	9	0.879	0.074	0.148	0.74	16.5	8.30
LM5	9/19/02	19.10	0.5	No Test	0.054	0.128	No Test	12.2	7.78
LM5	10/3/02	13.40	2	No Test	0.054	0.103	No Test	7.1	7.75
LM5 Ave.		21.29	13.44	0.66	0.05	0.17	1.55	51.60	8.20

Notes:

1. ND: No Detection = Less than detected limit or 0 mg/L
2. ** = not enough sample to analize.
3. No Test = not tested for this parameter at this time

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant

	Trophic Indicators		
Site Location	SLOH TP (ug/L)	SLOH Chla-a (ug/L)	Secchi Depth (ft)
LM1	57	31.0	4.5
LM1	80		4.6
LM1	132	22.3	3.6
LM1	126	45.4	3.0
LM1	133	38.8	3.0
LM1	130	7.3	4.0
LM1	138	106.0	4.5
LM1	168	105.0	3.7
LM1	165	59.0	2.9
LM1	101	16.2	4.5
LM1 Ave	123	48	4
LM2	50	24.0	5.3
LM2	91		4.3
LM2	126	13.8	4.0
LM2	125	26.4	3.5
LM2	213	45.2	2.0
LM2	140	22.7	3.9
LM2	107	34.8	3.6
LM2	147	67.3	3.6
LM2	136	32.8	3.0
LM2	99	17.7	4.5
LM2 Ave	123	32	4
LM3	56	25.0	5.2
LM3	97		4.4
LM3	153	29.8	3.5
LM3	152	31.6	3.5
LM3	202	56.3	2.3
LM3	147	11.4	3.5
LM3	143	45.0	3.5
LM3	122	39.4	3.6
LM3	152	44.8	4.0
LM3	116	7.3	4.6
LM3 Ave	184	32	4
LM4	76	24.0	5.0
LM4	106		5.0
LM4	154	3.5	3.3
LM4	143	10.9	4.0
LM4	118	13.7	3.2
LM4	155	25.6	3.2
LM4	134	48.0	3.8
LM4	138	25.4	3.6
LM4	134	8.9	3.9
LM4	111	6.4	4.9
LM4 Ave.	127	18	4

Trophic classicifation of WI-lakes (Adopted from *Lillie and Mason, 1983*)			
Trophic Class	TP (ug/L)	Chla-a (ug/L)	Secchi Depth (ft)
Oligotrophic	3	2	12
	10	5	8
Mesotrophic	18	8	6
	27	10	6
Eutrophic	30	11	5
	50	15	4

Total Phosphorus Concentrations for WI - Lakes & Impoundments (Adopted from *Lillie and Mason, 1983*)		
TP (ug/L)	Indicator	
1	Excellent	
10	Very Good	
20	Good	← Ave. for lakes
30		
40	Fair	
50		
60		← Ave. for impoundments
70		
80		
90		
100	Poor	
110		
120		
130		
140		
150		
150+	Very Poor	

	Trophic Indicators		
Site Location	SLOH TP (ug/L)	SLOH Chla-a (ug/L)	Secchi Depth (ft)
LM5	101		4.9
LM5	151	16.0	3.3
LM5	118	23.6	4.0
LM5	100	21.0	2.3
LM5	128	7.4	4.0
LM5	528	309.0	1.0
LM5	148	16.5	3.6
LM5	128	12.2	3.9
LM5	103	7.1	4.7
LM5 Ave	167	52	4

TABLES:

Lake In-Situ Water Quality Data

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant
Site: **LM-1**

Latitude: 44° 53.143 ft or (0584962 UTM)
Longitude: 91° 55.451 ft or (4970600 UTM)

Total Column Depth (ft) 15.0

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance mS/cm)	pH (units)
10/3/2002	12:00 AM	51	10SE	100	4.5	0	13.80	10.01	0.20	7.71
						0.5	13.90	9.96	0.20	7.71
						1.0	13.90	9.86	0.20	7.73
						1.5	14.00	9.86	0.20	7.75
						2.0	14.00	8.56	0.20	7.77
						2.5	14.00	9.51	0.20	7.77
						3.0	14.00	9.29	0.20	7.75
						3.5	13.90	9.29	0.20	7.75
						4.0	13.90	9.26	0.20	7.75
						4.5	13.80	9.00	0.20	7.71
						4.9	13.70	8.32	0.20	7.69
9/19/2002	9:55 AM	69	8W	100	2.9	0	21.00	9.04	0.19	7.99
						0.5	21.10	8.96	0.19	7.99
						1.0	21.10	8.86	0.19	7.97
						1.5	21.10	8.74	0.19	7.93
						2.0	21.10	8.56	0.19	7.93
						2.5	21.10	8.42	0.19	7.86
						3.0	21.10	8.35	0.19	7.90
						3.5	21.10	8.35	0.19	7.87
						4.0	20.70	5.89	0.20	7.60
						4.5	20.40	5.50	0.23	7.42
						4.9	20.30	3.39	0.22	7.33

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance mS/cm)	pH (units)
9/5/2002	12:55 PM	85	SE	50	3.7	0	23.20	5.15	0.19	9.08
						0.5	23.20	5.53	0.19	9.10
						1.0	23.20	5.53	0.19	9.10
						1.5	23.20	5.61	0.19	9.10
						2.0	23.20	5.68	0.20	9.12
						2.5	23.10	5.72	0.19	9.10
						3.0	23.10	5.55	0.20	9.12
						3.5	23.10	5.61	0.20	9.08
						4.0	22.90	5.43	0.20	8.94
						4.5	22.70	4.95	0.20	8.83
						4.9	22.70	4.95	0.20	8.75
8/22/2002	9:35AM	67	10N	100	4.5	0	21.00	7.50	0.200	9.33
						0.5	21.20	7.80	0.200	9.33
						1.0	21.20	9.10	0.200	9.33
						1.5	21.40	10.50	0.200	9.33
						2.0	21.40	11.20	0.200	9.33
						2.5	21.50	11.60	0.200	9.31
						3.0	21.50	11.50	0.200	9.29
						3.5	21.50	11.40	0.200	9.26
						4.0	21.50	11.40	0.200	9.22
						4.5	21.40	10.80	0.200	9.14
						4.9	21.40	10.50	0.200	9.09
8/8/2002	1120	78	SSW	0	4.0	0	24.26	13.30	0.211	9.11
						0.5	24.26	13.54	0.213	9.12
						1.0	24.24	13.41	0.215	9.12
						1.5	24.20	13.00	0.217	9.08
						2.0	23.91	12.02	0.220	9.08
						2.5	23.65	10.68	0.220	8.93
						3.0	23.51	9.36	0.223	8.88
						3.5	22.96	7.34	0.221	8.60
						4.0	22.85	6.99	0.226	8.60
						4.5	22.79	6.71	0.226	8.56
						4.9	22.77	6.40	0.226	8.54

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance mS/cm)	pH (units)
7/25/2002	10:30 AM	70	SE	100	3.0	0	24.36	11.78	0.182	9.2
						0.5	24.35	11.47	0.185	9.20
						1.0	24.35	11.84	0.185	9.21
						1.5	24.36	11.72	0.184	9.19
						2.0	24.36	11.66	0.185	9.19
						2.5	24.36	11.65	0.185	9.18
						3.0	24.36	11.66	0.185	9.18
						3.5	24.37	11.54	0.185	9.17
						4.0	24.37	11.56	0.185	9.17
						4.5	24.15	8.66	0.191	8.96
						4.9	22.33	3.05	0.307	7.80
7/11/2002	9:55 AM	73	SE	10	3.0	0	24.55	10.18	0.231	8.74
						0.5	24.54	9.85	0.231	8.74
						1.0	24.55	10.04	0.231	8.73
						1.5	24.47	9.70	0.231	8.72
						2.0	24.37	9.34	0.231	8.67
						2.5	24.07	8.48	0.234	8.53
						3.0	23.92	7.93	0.236	8.45
						3.5	23.85	7.77	0.236	8.43
						4.0	23.70	7.37	0.237	8.37
						4.5	23.68	7.20	0.238	8.35
						4.9	23.68	7.18	0.238	8.34
6/27/2002	11:45 AM	89	NE	50	3.6	0	25.96	10.23	0.202	8.26
						0.5	24.64	10.02	0.202	8.16
						1.0	24.33	9.10	0.202	7.89
						1.5	23.82	8.17	0.202	7.51
						2.0	23.66	7.58	0.205	7.41
						2.5	23.58	7.15	0.205	7.32
						3.0	23.46	6.62	0.206	7.32
						3.5	23.38	6.51	0.215	7.31
						4.0	23.31	6.03	0.218	7.23
						4.5	23.07	5.19	0.221	7.11
						4.9	22.97	4.36	0.220	7.07

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance mS/cm)	pH (units)
6/13/2002	12:25 AM	68	NE	50	4.6	0.0	21.64	12.55	0.14	8.74
						0.5	21.65	12.61	0.14	8.74
						1.0	21.61	12.49	0.14	8.74
						1.5	21.51	12.38	0.14	8.71
						2.0	21.09	11.77	0.14	8.55
						2.5	20.54	11.12	0.14	8.16
						3.0	19.67	8.09	0.14	7.68
						3.5	19.52	7.31	0.14	7.60
						4.0	19.26	6.75	0.14	7.47
						4.5	18.75	6.10	0.15	7.32
						4.9	18.53	3.30	0.15	7.22
5/30/2002	11:00 AM	80	NE	10	4.5	0.5	19.46	17.38	0.17	9.14
						1.0	18.33	18.31	0.17	9.12
						1.5	17.24	14.36	0.18	8.56
						2.0	16.94	12.49	0.18	8.40
						2.5	16.74	11.99	0.19	8.30
						3.0	16.48	11.32	0.18	8.27
						3.5	16.42	11.17	0.18	8.27
						4.0	16.24	10.88	0.18	8.20
						4.5	15.58	9.71	0.18	8.15
						4.9	14.65	6.03	0.19	7.50

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant
Site: **LM-2**

Latitude: 44° 53.314 ft or (0585241 UTM)
Longitude: 91° 55.235 ft or (4970921 UTM)

Total Column Depth (ft) 15.0

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
10/3/2002	12:40 PM	51	10SE	100	4.5	0	13.5	9.88	0.2	7.86
						0.5	13.9	9.76	0.2	7.86
						1.0	14	9.57	0.2	7.86
						1.5	14.1	9.54	0.2	7.86
						2.0	14.1	9.44	0.2	7.86
						2.5	14	9.34	0.2	7.86
						3.0	14	9.27	0.2	7.86
						3.5	14	9.17	0.2	7.84
						4.0	14	9.14	0.2	7.79
						4.5	13.8	8.65	0.2	7.73
9/19/2002	10:35	69	8W	100	3	0	21	9	0.19	8.02
						0.5	21.1	9.03	0.19	8.02
						1.0	21.1	8.9	0.19	8.01
						1.5	21.2	8.85	0.19	8.01
						2.0	21.2	8.68	0.19	7.95
						2.5	21.2	8.59	0.19	7.97
						3.0	21.1	8.05	0.19	7.84
						3.5	20.5	7.35	0.2	7.57
						4.0	20.3	6.03	0.2	7.49
						4.5	20.2	5.45	0.2	7.46

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
9/5/2002	1:00 PM	85	SE	50	3.6	0	26.1	4.49	0.19	8.99
						0.5	23.9	4.49	0.19	8.97
						1.0	23.5	4.98	0.2	8.97
						1.5	23.2	5.11	0.2	8.98
						2.0	23	5.09	0.2	8.93
						2.5	22.9	5.12	0.2	8.96
						3.0	22.9	5.1	0.2	8.96
						3.5	22.8	5.12	0.2	8.89
						4.0	22.8	5.12	0.2	8.83
						4.5	22.7	4.87	0.2	8.64
8/22/2002	9:21 AM	67	10N	100	3.6	0	20.4	8.2	0.2	9.29
						0.5	20.4	8.7	0.2	9.29
						1.0	21	10.5	0.2	9.29
						1.5	21	11.2	0.2	9.29
						2.0	21.2	11.6	0.2	9.29
						2.5	21.2	11.7	0.2	9.27
						3.0	21.3	11.8	0.2	9.22
						3.5	21	9.6	0.2	8.88
						4.0	21	9.4	0.2	8.84
						4.5	21	8.5	0.2	8.67
8/8/2002	1145	78	SSW	0	3.9	0	24.13	12.74	0.218	9.06
						0.5	24.12	12.92	0.218	9.06
						1.0	24	12.47	0.218	9.05
						1.5	23.97	12.2	0.218	9.02
						2.0	23.85	11.73	0.219	9
						2.5	23.37	9.87	0.222	8.84
						3.0	23.13	8.04	0.221	8.67
						3.5	22.93	6.18	0.225	8.5
						4.0	22.83	5.8	0.228	8.46
						4.5	22.72	4.8	0.232	8.32

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
7/25/2002	10:45	70	SE	100	2	0	24.36	13.29	0.187	9.3
						0.5	24.46	12.83	0.188	9.30
						1.0	24.46	12.63	0.188	9.28
						1.5	24.47	12.49	0.188	9.27
						2.0	24.46	12.33	0.188	9.26
						2.5	24.46	12.19	0.188	9.24
						3.0	24.45	11.88	0.189	9.22
						3.5	24.44	12.02	0.189	9.19
						4.0	24.32	10.27	0.19	9.04
						4.5	23.94	2.50	0.228	8.25
7/11/2002	10:30	73	SE	10	3.5	0	24.7	10.41	0.233	8.75
						0.5	24.71	10.37	0.233	8.76
						1.0	24.68	10.32	0.232	8.75
						1.5	24.41	9.55	0.232	8.65
						2.0	24.1	8.66	0.233	8.56
						2.5	24.03	8.18	0.234	8.50
						3.0	23.95	7.51	0.236	8.41
						3.5	23.91	6.77	0.238	8.28
						4.0	23.73	6.57	0.239	8.20
						4.5	23.56	4.2	0.263	7.73
6/27/2002	12:15 AM	89	NE	50	4	0	24.54	9.30	0.219	7.86
						0.5	24.32	8.77	0.219	7.76
						1.0	23.98	8.26	0.221	7.59
						1.5	23.91	7.95	0.221	7.61
						2.0	23.82	7.78	0.220	7.55
						2.5	23.66	6.85	0.218	7.31
						3.0	23.52	6.18	0.217	7.26
						3.5	23.39	6.12	0.217	7.27
						4.0	23.29	5.99	0.220	7.27
						4.5	23.00	5.44	0.225	7.10

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
6/13/2002	12:45 AM	68	NE	50	4.3	0.0	21.61	11.62	0.138	8.74
						0.5	21.61	12.07	0.138	8.76
						1.0	21.60	12.08	0.138	8.75
						1.5	21.58	11.97	0.138	8.74
						2.0	21.36	11.70	0.138	8.68
						2.5	21.10	11.19	0.139	8.55
						3.0	20.74	10.44	0.140	8.38
						3.5	19.37	8.28	0.144	7.59
						4.0	18.91	5.74	0.147	7.45
						4.5	18.02	4.05	0.155	7.32
5/30/2002	11:15 AM	80	NE	10	5.3	0.5	20.17	17.31	0.172	9.16
						1.0	20.07	17.27	0.171	9.18
						1.5	19.47	17.73	0.17	9.20
						2.0	17.19	16.8	0.168	9.03
						2.5	16.92	15.05	0.183	8.51
						3.0	16.58	15.01	0.166	9.04
						3.5	16.28	15.89	0.16	9.15
						4.0	15.45	12.6	0.163	8.87
						4.5	15.02	9.29	0.175	8.24
						4.7	14.83	7.77	0.182	7.80

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant
Site: **LM-3**

Latitude: 44° 53.791 ft or (0586103 UTM)
Longitude: 91° 55.572 ft or (4971815 UTM)

Total Column Depth (ft) 10.0

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
10/3/2002	1:20 PM	51	10SE	100	4.6	0	13	9.67	0.19	7.71
						0.5	13	9.31	0.2	7.69
						1.0	13.1	9.1	0.2	7.71
						1.5	13.1	9.1	0.2	7.73
						2.0	13.1	9.12	0.2	7.73
						2.5	13.2	9.07	0.2	7.73
						3.0	13.2	9.07	0.2	7.73
						3.2	13.2	9.02	0.2	7.75
9/19/2002	10:55 AM	69	8W	100	4	0.0	21.00	8.96	0.19	8.02
						0.5	21.10	8.65	0.19	8.01
						1.0	21.00	8.74	0.19	7.97
						1.5	20.90	8.63	0.19	7.93
						2.0	20.70	8.46	0.19	7.82
						2.5	20.00	7.23	0.20	7.64
						3.0	19.50	7.02	0.20	7.60
						3.2	19.40	6.78	0.21	7.55
9/5/2002	1:25 PM	85	SE	50	3.6	0	23.4	4.13	0.2	8.76
						0.5	23	4.71	0.2	8.85
						1.0	22.7	4.87	0.2	8.85
						1.5	22.6	4.88	0.2	8.81
						2.0	22.6	4.88	0.2	8.73
						2.5	22.4	4.78	0.2	8.62
						3.0	22.4	4.74	0.2	8.56
						3.2	22	4.44	0.2	8.56

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
8/22/2002	9:07AM	67	10N	100	3.5	0	20	7.5	0.21	8.87
						0.5	20.3	8.1	0.2	8.93
						1.0	20.3	9.5	0.2	8.93
						1.5	20.5	10.2	0.21	8.93
						2.0	20.5	10.6	0.21	8.95
						2.5	20.6	10.9	0.2	8.91
						3.0	20.6	11	0.2	8.95
						3.2	20.6	10.8	0.2	8.95
8/8/2002	1210	78	SSW	10	3.5	0	23.85	11.98	0.21	8.91
						0.5	23.82	11.9	0.21	8.93
						1.0	23.6	11.79	0.209	8.91
						1.5	23.65	11.6	0.209	8.92
						2.0	23.41	11.1	0.209	8.86
						2.5	23.13	10.2	0.209	8.78
						3.0	22.51	8.35	0.211	8.56
						3.2	22.51	8.4	0.211	8.57
7/25/2002	11:00 AM	70	SE	100	2.3	0	23.99	11.39	0.190	9.10
						0.5	24.01	11.40	0.190	9.11
						1.0	24.02	11.61	0.190	9.09
						1.5	23.97	11.24	0.191	9.07
						2.0	23.80	10.72	0.192	9.01
						2.5	23.70	10.27	0.193	8.94
						3.0	23.66	9.78	0.193	8.91
						3.2	23.66	9.69	0.193	8.91
7/11/2002	10:50 AM	73	SE	10	3.5	0	23.89	7.88	0.241	8.34
						0.5	23.91	7.77	0.241	8.34
						1.0	23.89	7.69	0.241	8.34
						1.5	23.86	7.53	0.241	8.33
						2.0	23.82	7.43	0.241	8.34
						2.5	23.73	7.33	0.241	8.32
						3.0	23.46	6.53	0.241	8.17
						3.2	23.46	6.38	0.241	8.15

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
6/27/2002	12:30 AM	89	NE	50	3.5	0.0	25.41	9.54	0.216	8.00
						0.5	24.86	9.44	0.216	8.01
						1.0	24.34	9.22	0.215	7.86
						1.5	23.31	7.5	0.212	7.38
						2.0	23.16	6.86	0.212	7.29
						2.5	23.09	6.41	0.212	7.25
						3.0	23.06	6.12	0.212	7.22
						3.2	23.06	6.12	0.212	7.22
6/13/2002	1:10 PM	68	NE	50	4.4	0.0	20.99	11.1	0.141	8.27
						0.5	21.01	10.07	0.141	8.28
						1.0	20.93	9.93	0.141	8.23
						1.5	20.94	10.01	0.141	8.21
						2.0	20.88	9.9	0.141	8.16
						2.5	20.67	8.53	0.142	8.03
						3.0	20.07	7.82	0.145	7.61
						3.2	19.93	7.1	0.146	7.55
5/30/2002	11:40 AM	80	NE	10	5.2	0.5	20.81	15.36	0.172	9.18
						1.0	20.82	16.18	0.171	9.16
						1.5	20.77	15.81	0.172	9.13
						2.0	19.55	15.81	0.177	8.96
						2.5	16.98	13.17	0.187	8.38
						3.0	16.91	12.13	0.187	8.37

Project: City of Menomonie: **Lake Menomin** Lake Planning Management Grant
Site: **LM-4**

Latitude: 44° 54.464 ft or (0587032 UTM)
Longitude: 91° 53.853 ft or (4973074 UTM)
Total Column Depth (ft) 20.0

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
10/3/2002	1:50 PM	51	10SE	100	4.9	0	13	9.46	0.2	7.67
						0.5	13.1	8.94	0.2	7.67
						1.0	13.2	8.89	0.2	7.71
						1.5	13.3	8.87	0.2	7.71
						2.0	13.3	8.92	0.2	7.73
						2.5	13.3	8.92	0.2	7.73
						3.0	13.3	8.92	0.2	7.73
						3.5	13.3	8.92	0.2	7.73
						4.0	13.3	8.92	0.2	7.73
						4.5	13.3	8.97	0.2	7.73
						5.0	13.3	8.97	0.2	7.73
						5.5	13.3	8.97	0.2	7.73
						6.0	13.3	8.97	0.2	7.73
9/19/2002	11:36 AM	69	8W	100	3.9	0	19.20	6.90	0.2	7.62
						0.5	18.80	7.00	0.21	7.53
						1.0	18.70	6.97	0.21	7.53
						1.5	18.60	7.00	0.21	7.53
						2.0	18.60	7.03	0.21	7.53
						2.5	18.60	7.06	0.21	7.53
						3.0	18.60	7.02	0.21	7.53
						3.5	18.50	7.05	0.21	7.53
						4.0	18.50	7.01	0.21	7.53
						4.5	18.50	7.00	0.21	7.53
						5.0	18.50	7.03	0.21	7.53
						5.5	18.50	7.04	0.21	7.53
						6.0	18.20	7.04	0.21	7.58

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
9/5/2002	1:45 PM	85	SE	50	3.6	0	22.40	3.96	0.19	8.43
						0.5	22.40	3.96	0.19	8.45
						1.0	22.20	4.11	0.2	8.43
						1.5	22.20	4.11	0.2	8.45
						2.0	22.10	4.15	0.2	8.47
						2.5	22.00	4.25	0.2	8.49
						3.0	22.00	4.25	0.2	8.49
						3.5	23.30	4.32	0.2	8.49
						4.0	21.90	4.38	0.2	8.49
						4.5	21.90	4.41	0.2	8.49
						5.0	21.90	4.41	0.2	8.51
						5.5	21.90	4.45	0.2	8.51
						6.0	21.90	4.45	0.2	8.51
8/22/2002	8:50 AM	67	10N	100	3.75	0	18.6	9.3	0.21	8.93
						0.5	20.2	9.4	0.21	8.97
						1.0	20.4	9.5	0.21	8.99
						1.5	20.4	9.5	0.21	8.99
						2.0	20.6	9.5	0.21	8.99
						2.5	20.6	9.5	0.21	8.99
						3.0	20.6	9.5	0.21	8.99
						3.5	20.6	9.5	0.21	8.99
						4.0	20.7	9.3	0.21	8.97
						4.5	20.7	9.3	0.21	8.97
						5.0	20.7	9.4	0.2	8.93
						5.5	20.8	9.3	0.2	8.97
						6.0	20.8	9.3	0.2	8.97
8/8/2002	1235	78	SSW	10	3.2	0	22.72	9.25	0.202	8.51
						0.5	22.68	9.12	0.202	8.53
						1.0	22.68	9.21	0.203	8.53
						1.5	22.67	9.02	0.203	8.54
						2.0	22.66	8.99	0.204	8.54
						2.5	22.66	9.01	0.204	8.54
						3.0	22.68	9.01	0.205	8.55
						3.5	22.65	8.96	0.206	8.55
						4.0	22.67	8.97	0.206	8.56
						4.5	22.67	9.03	0.206	8.58
						5.0	22.69	8.96	0.206	8.57
						5.5	22.74	9.11	0.207	8.58
						6.0	22.73	9.13	0.207	8.58

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
7/25/2002	11:15 AM	70	SE	100	3.2	0	23.31	7.50	0.209	8.30
						0.5	23.34	6.41	0.209	8.31
						1.0	23.35	6.36	0.210	8.30
						1.5	23.36	6.31	0.210	8.31
						2.0	23.35	6.28	0.210	8.31
						2.5	23.36	6.25	0.210	8.30
						3.0	23.36	6.25	0.210	8.30
						3.5	23.35	6.23	0.210	8.29
						4.0	23.36	6.14	0.210	8.29
						4.5	23.36	6.03	0.210	8.29
						5.0	23.36	6.04	0.210	8.28
						5.5	23.36	6.17	0.209	8.28
						6.0	23.36	6.14	0.209	8.28
7/11/2002	11:10	73	SE	10	4	0	23.91	7.44	0.238	8.43
						0.5	23.90	7.16	0.238	7.42
						1.0	23.83	7.18	0.238	8.41
						1.5	23.82	7.07	0.238	8.40
						2.0	23.86	7.18	0.238	8.41
						2.5	23.92	7.22	0.238	8.42
						3.0	23.91	7.21	0.238	8.41
						3.5	23.90	7.08	0.238	8.41
						4.0	23.91	7.23	0.238	8.41
						4.5	23.91	7.32	0.238	8.41
						5.0	23.90	7.29	0.238	8.41
						5.5	23.90	7.27	0.238	8.41
						6.0	23.91	7.11	0.238	8.43
6/27/2002	12:45 AM	89	NE	50	3.3	0	23.57	8.20	0.206	7.39
						0.5	23.48	7.84	0.209	7.40
						1.0	23.48	7.80	0.209	7.41
						1.5	23.48	7.78	0.209	7.41
						2.0	23.48	7.72	0.209	7.41
						2.5	23.47	7.85	0.209	7.41
						3.0	23.48	7.81	0.209	7.41
						3.5	23.48	7.82	0.209	7.41
						4.0	23.46	7.64	0.209	7.41
						4.5	23.47	7.76	0.209	7.42
						5.0	23.48	7.71	0.209	7.42
						5.5	23.48	7.70	0.210	7.41
						6.0	23.48	7.69	0.209	7.41

Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
6/13/2002	1:20 PM	68	NE	50	5	0.0	20.47	8.82	0.146	7.60
						0.5	20.46	8.13	0.146	7.63
						1.0	20.44	8.03	0.146	7.63
						1.5	20.43	7.98	0.146	7.63
						2.0	20.36	7.85	0.145	7.62
						2.5	20.36	7.84	0.145	7.61
						3.0	20.33	7.78	0.146	7.61
						3.5	20.44	7.82	0.145	7.63
						4.0	20.43	7.87	0.146	7.63
						4.5	20.41	7.82	0.146	7.62
						5.0	20.37	7.79	0.146	7.60
						5.5	20.38	7.74	0.146	7.60
						6.0	20.36	7.74	0.146	7.60
5/30/2002	12:00 PM	80	NE	10	5	0.5	17.05	13.07	0.187	8.38
						1.0	17.11	12.35	0.187	8.38
						1.5	17.04	12.06	0.187	8.39
						2.0	17.14	11.94	0.187	8.41
						2.5	16.96	11.85	0.187	8.36
						3.0	16.91	11.78	0.187	8.37
						3.5	16.93	11.73	0.187	8.35
						4.0	16.92	11.66	0.188	8.36
						4.5	16.90	11.66	0.187	8.35
						5.0	16.95	11.61	0.188	8.36
						5.5	16.95	11.60	0.119	8.36
						6.0	16.80	11.59	0.188	8.33
						6.5	16.78	11.53	0.188	8.33

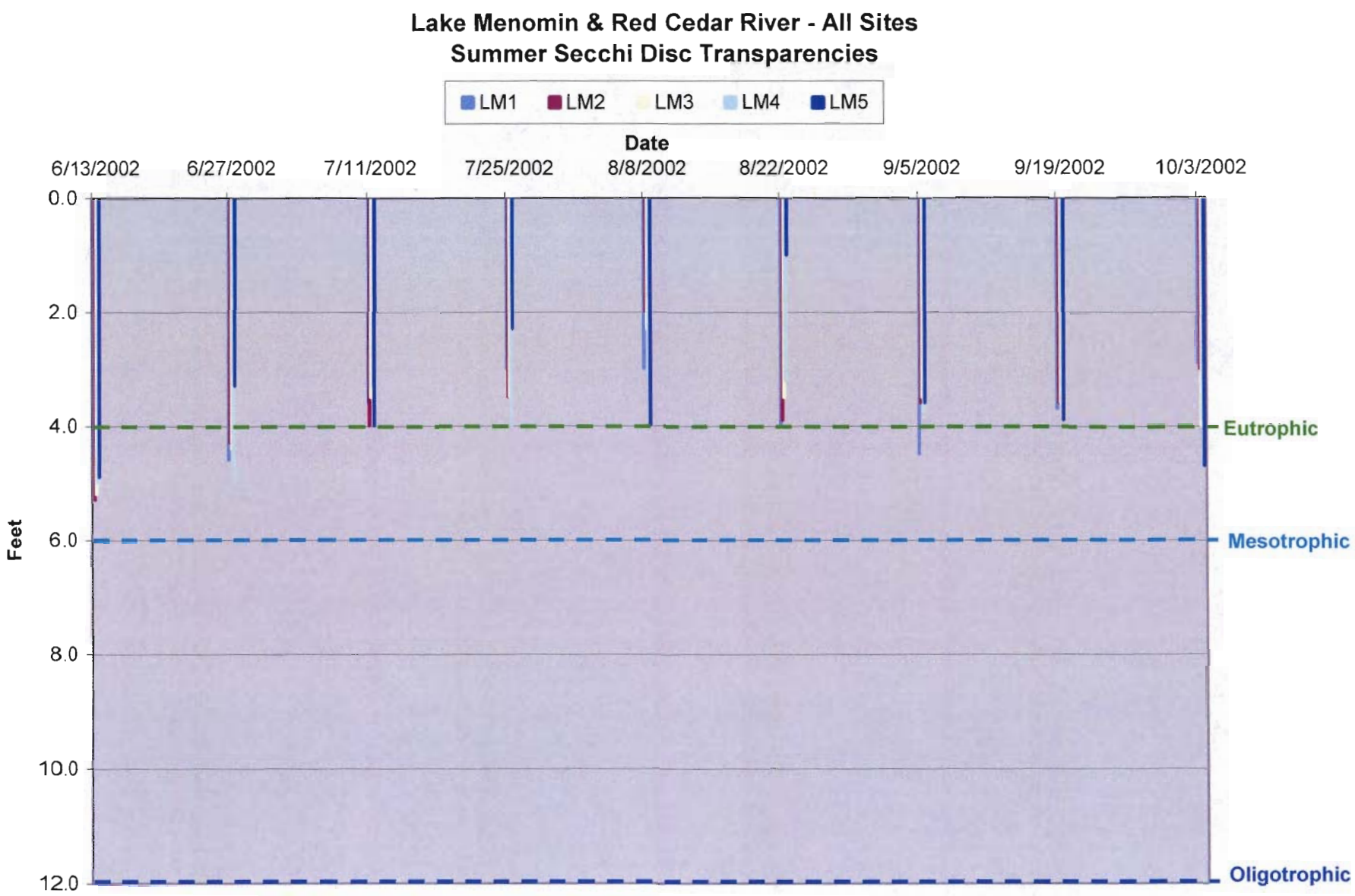
Project: City of Menomonie: **Red Cedar River--Below Cedar Falls Dam**
Site: **LM-5**
Storet Number: **173235**
Latitude: 44° 55.696 ft or (0587759 UTM)
Longitude: 91° 53.277 ft or (4975366 UTM)
Total Column Depth (ft) 20.0

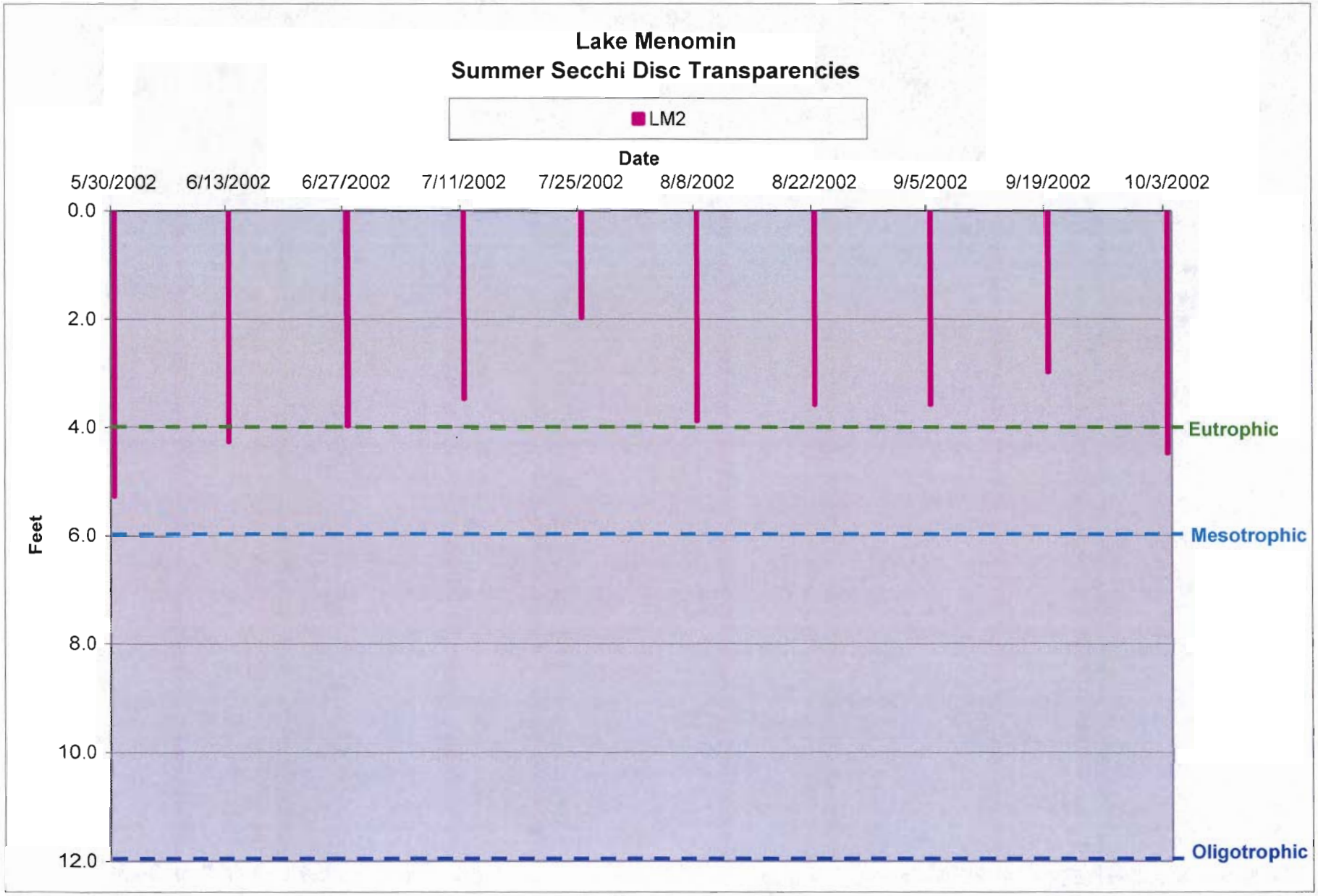
Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
10/3/2002	2:45 PM	51	10SE	100	4.7	0.0	13.40	9.95	0.200	7.75
						0.5	13.60	9.53	0.200	7.75
						1.0	13.60	9.34	0.200	7.80
						1.5	13.60	9.39	0.200	7.82
						2.0	13.60	9.26	0.200	7.80
						2.3	13.60	9.26	0.200	7.80
9/19/2002	12:15 PM	69	8W	100	3.9	0.0	19.10	8.43	0.170	7.78
						0.5	19.00	8.03	0.210	7.62
						1.0	18.90	8.04	0.210	7.64
						1.5	18.80	8.04	0.210	7.64
						2.0	18.80	8.03	0.210	7.64
						2.3	18.80	8.04	0.210	7.64
9/5/2002	2:20 PM	85	SE	50	3.6	0.0	22.80	3.88	0.180	8.30
						0.5	22.50	4.05	0.190	8.26
						1.0	22.30	4.13	0.190	8.62
						1.5	22.20	4.21	0.190	8.36
						2.0	22.20	4.21	0.190	8.39
						2.3	22.10	4.31	0.190	8.36
8/22/2002	8:15 AM	67	10N	100	1	0.0	20.70	10.00	0.200	9.12
						0.5	20.70	10.10	0.200	9.14
						1.0	20.80	10.00	0.200	9.14
						1.5	20.90	9.90	0.200	9.14
						2.0	20.90	9.90	0.200	9.14
						2.3	21.00	9.70	0.200	9.14
8/8/2002	1305	78	SSE	10	4	0.0	22.62	8.94	0.193	8.31
						0.5	22.62	8.90	0.195	8.33
						1.0	22.62	8.81	0.196	8.34
						1.5	22.66	8.89	0.196	8.36
						2.0	22.68	8.84	0.197	8.36
						2.3	22.68	8.87	0.197	8.37

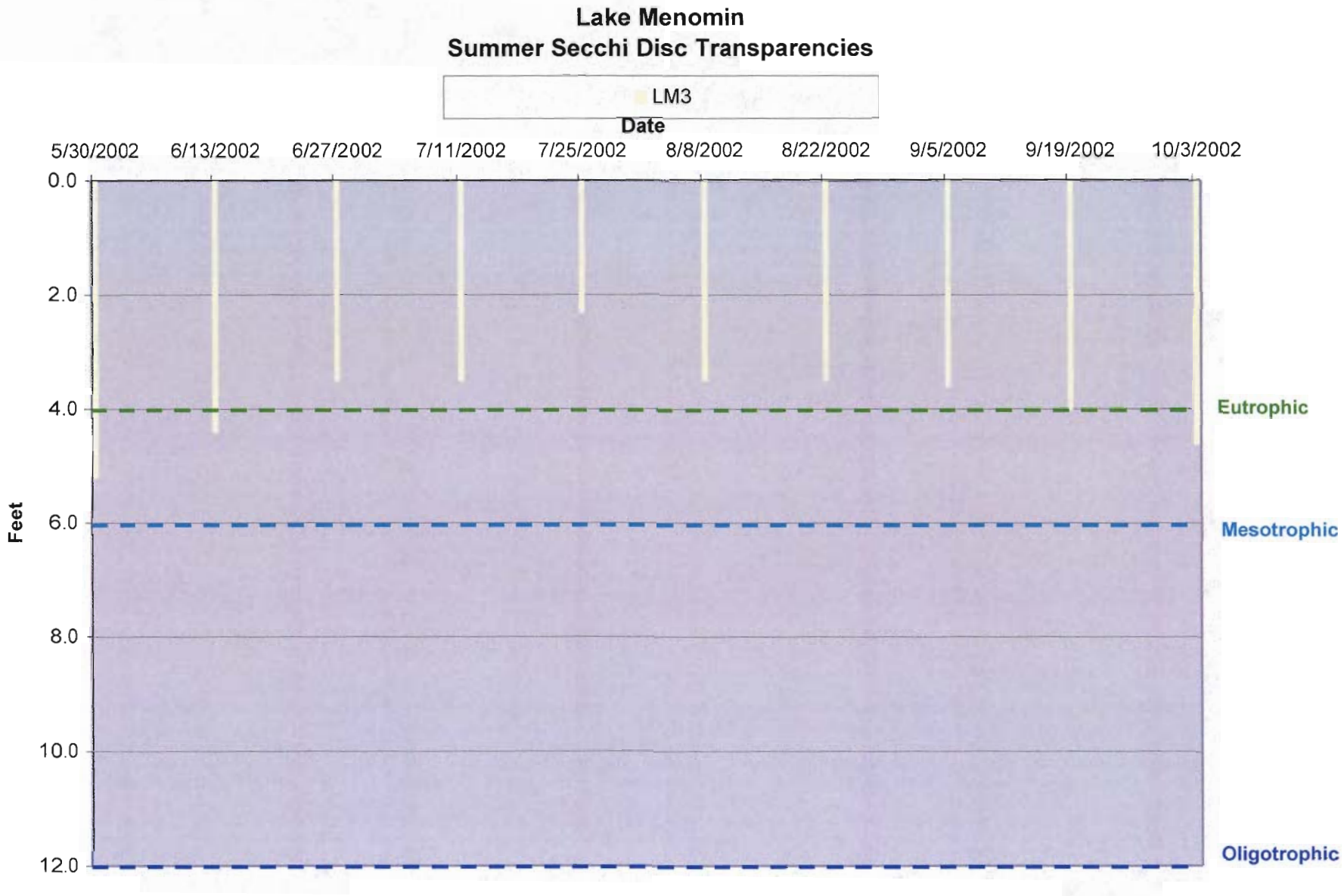
Date	Time	Air Temp (°F)	Wind Direction	Cloudy (%)	Secchi Depth (ft)	Depth (m)	Temperature (°C)	Dissolved Oxygen (mg/L)	Specific Conductance (MS/cm)	pH (units)
7/25/2002	12:15	70	SE	100	2.3	0.0	24.00	8.67	0.205	8.71
						0.5	23.99	8.21	0.205	8.70
						1.0	23.98	8.17	0.205	8.69
						1.5	23.98	8.14	0.207	8.69
						2.0	23.98	8.04	0.205	8.67
						2.3	23.98	8.02	0.205	8.67
7/11/2002	12:00 PM	73	SE	10	4	0.0	25.00	9.16	0.237	8.66
						0.5	25.01	9.13	0.237	8.68
						1.0	25.02	9.10	0.237	8.68
						1.5	25.02	9.10	0.237	8.68
						2.0	25.02	9.08	0.237	8.67
						2.3	25.03	9.15	0.237	8.67
6/27/2002	1:30 PM	89	NE	50	3.3	0.0	23.60	14.64	0.215	7.55
						0.5	23.59	9.00	0.215	7.56
						1.0	23.59	8.42	0.215	7.56
						1.5	23.60	8.29	0.215	7.56
						2.0	23.60	8.33	0.215	7.56
						2.3	23.60	8.38	0.214	7.61
6/13/2002	1:55 PM	68	NE	50	4.9	0.0	20.37	8.83	0.149	7.64
						0.5	20.43	8.49	0.149	7.69
						1.0	20.49	8.78	0.149	7.75
						1.5	20.54	8.52	0.149	7.76
						2.0	20.54	8.44	0.149	7.77
						2.3	20.56	8.40	0.149	7.77

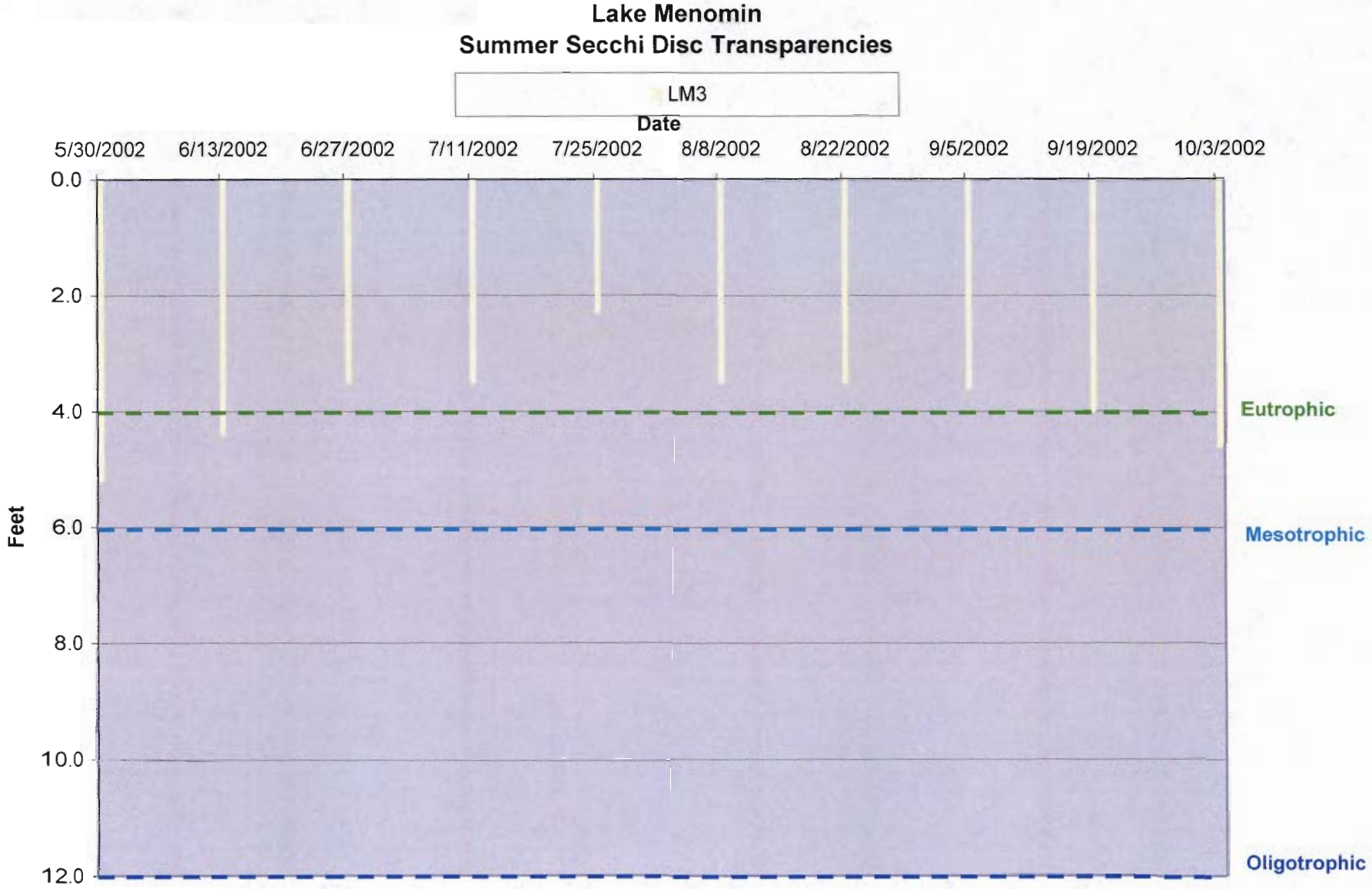
GRAPHS:

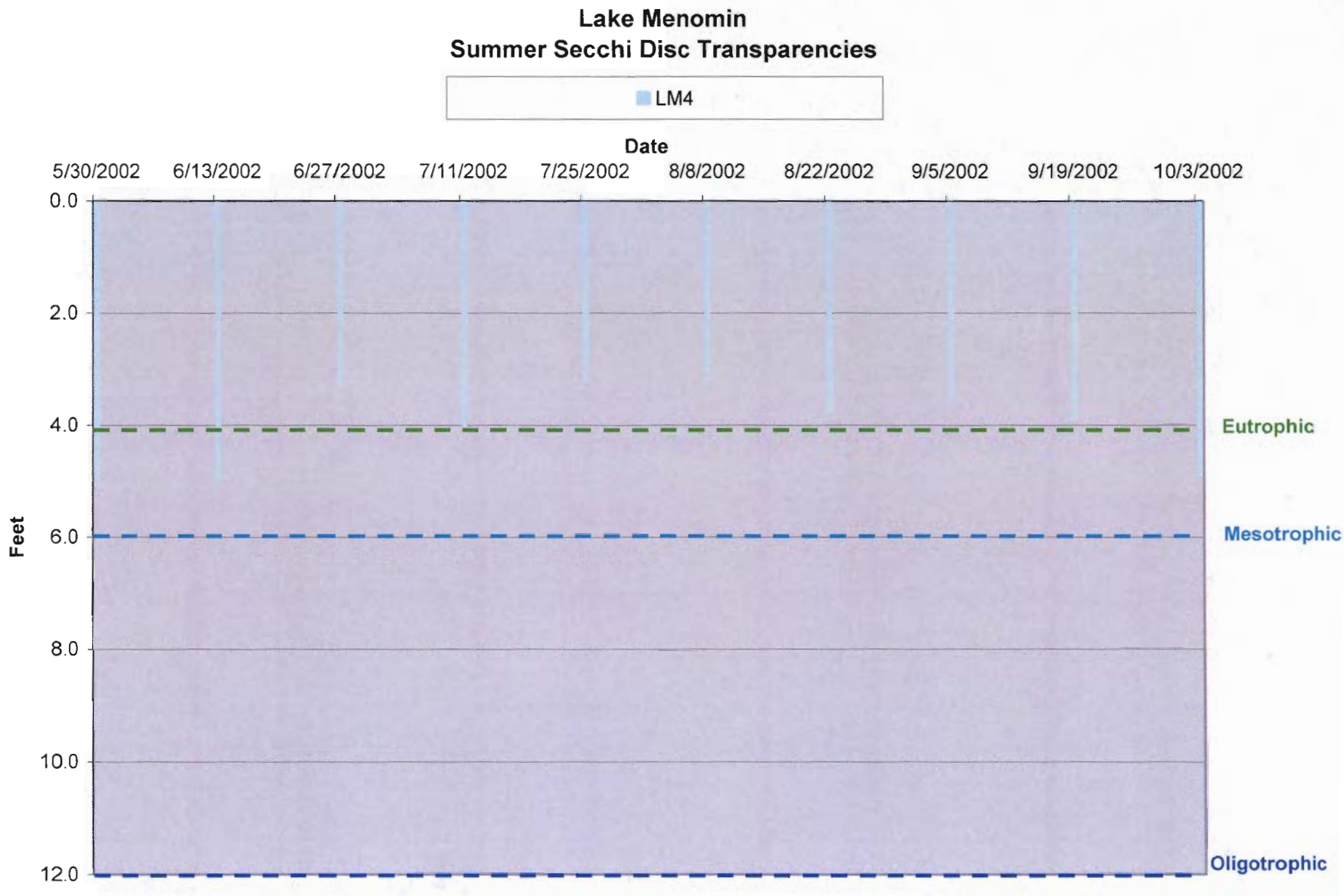
Summer Secchi Disc
Transparencies

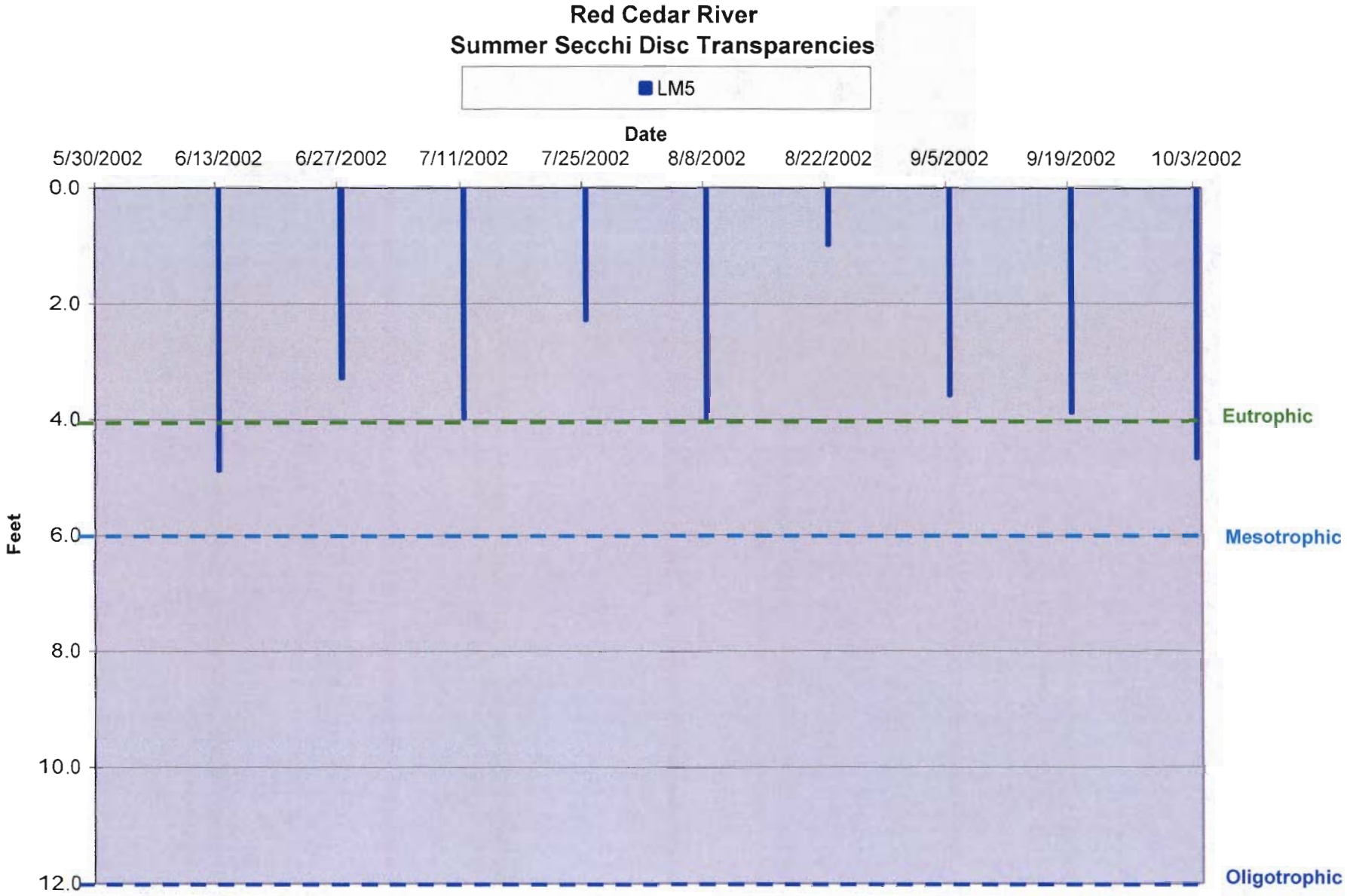

Lake Menomin & Red Cedar River - All Sites
Summer Secchi Disc Transparencies
LM1
LM2
LM3
LM4
LM5
Date
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic


Lake Menomin
Summer Secchi Disc Transparencies
LM2
Date
5/30/2002
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic


Lake Menomin
Summer Secchi Disc Transparencies
LM3
Date
5/30/2002
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic

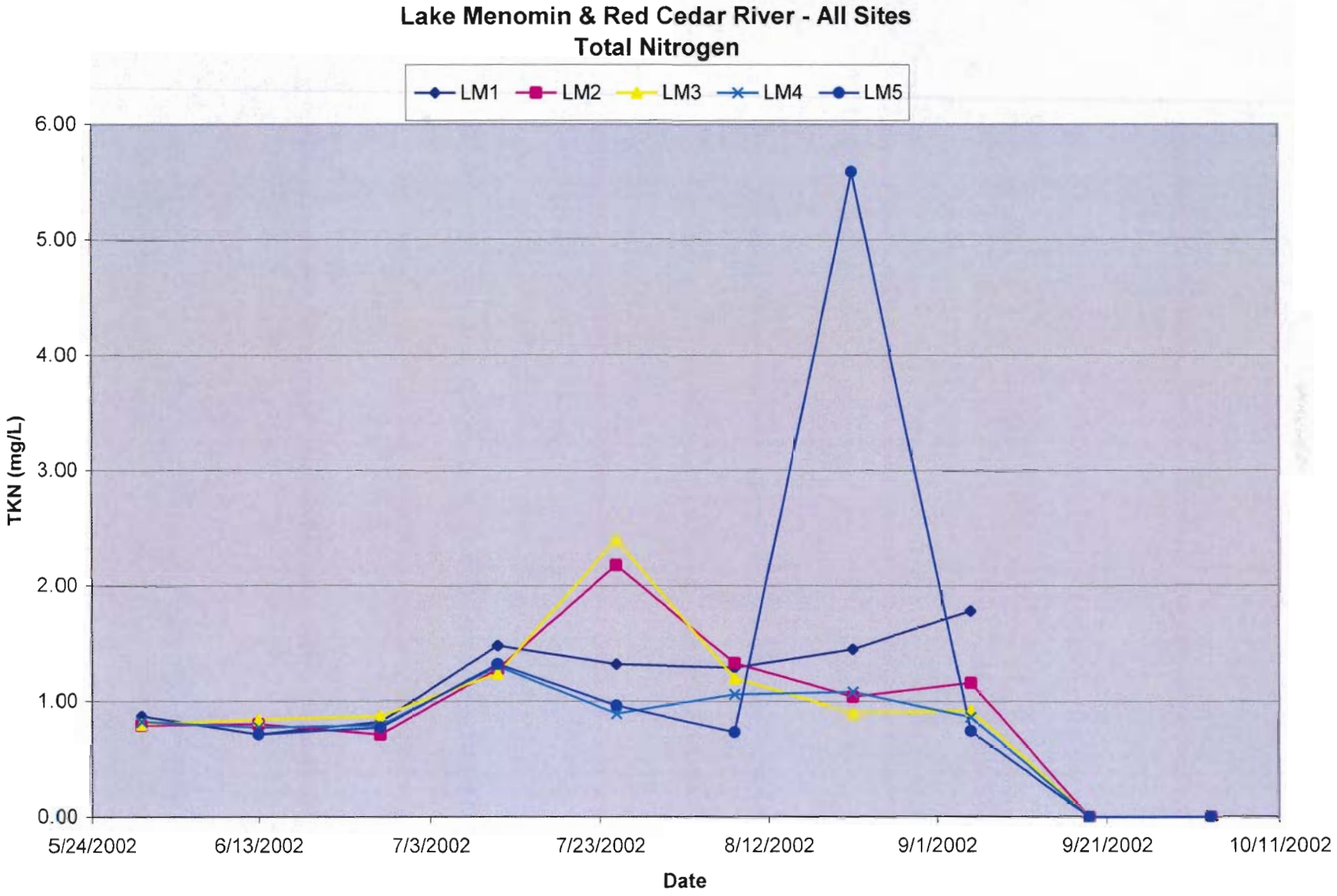

Lake Menomin
Summer Secchi Disc Transparencies
LM3
Date
5/30/2002
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic

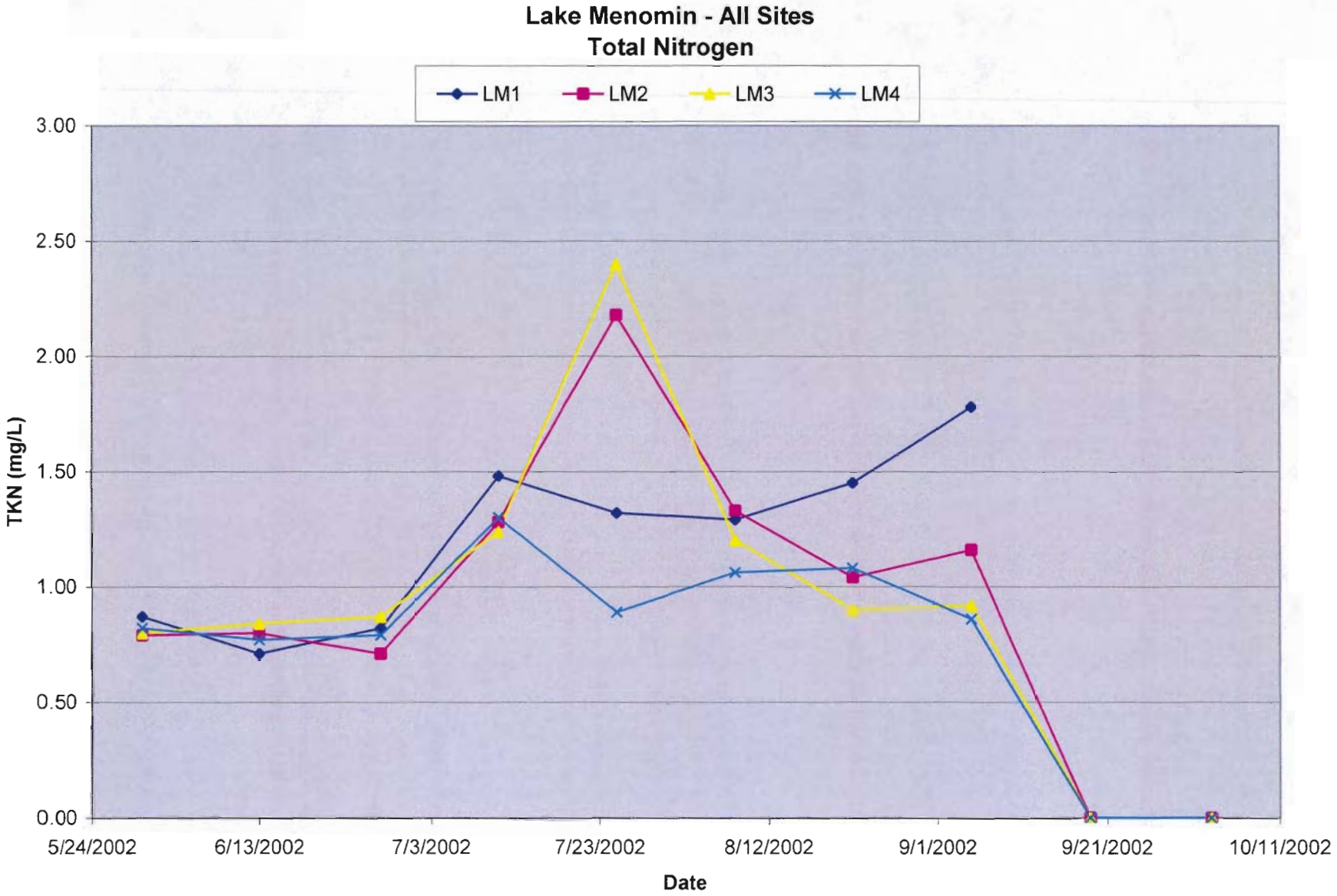

Lake Menomin
Summer Secchi Disc Transparencies
LM4
Date
5/30/2002
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic

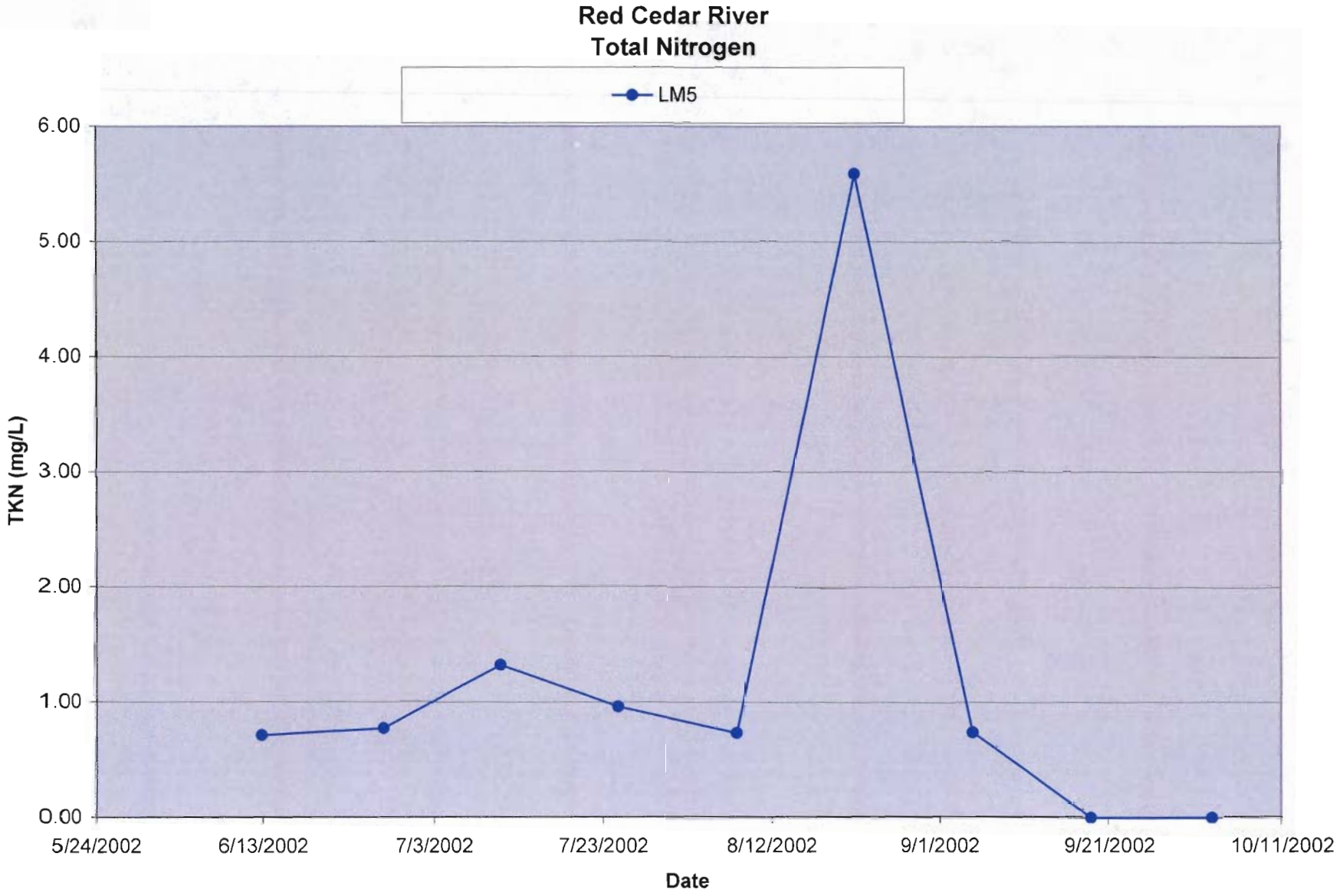

Red Cedar River
Summer Secchi Disc Transparencies
LM5
Date
5/30/2002
6/13/2002
6/27/2002
7/11/2002
7/25/2002
8/8/2002
8/22/2002
9/5/2002
9/19/2002
10/3/2002
Feet
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Eutrophic
Mesotrophic
Oligotrophic

GRAPHS:

Total Nitrogen Concentrations


Lake Menomin & Red Cedar River - All Sites
Total Nitrogen
LM1
LM2
LM3
LM4
LM5
6.00
5.00
4.00
3.00
2.00
1.00
0.00
TKN (mg/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

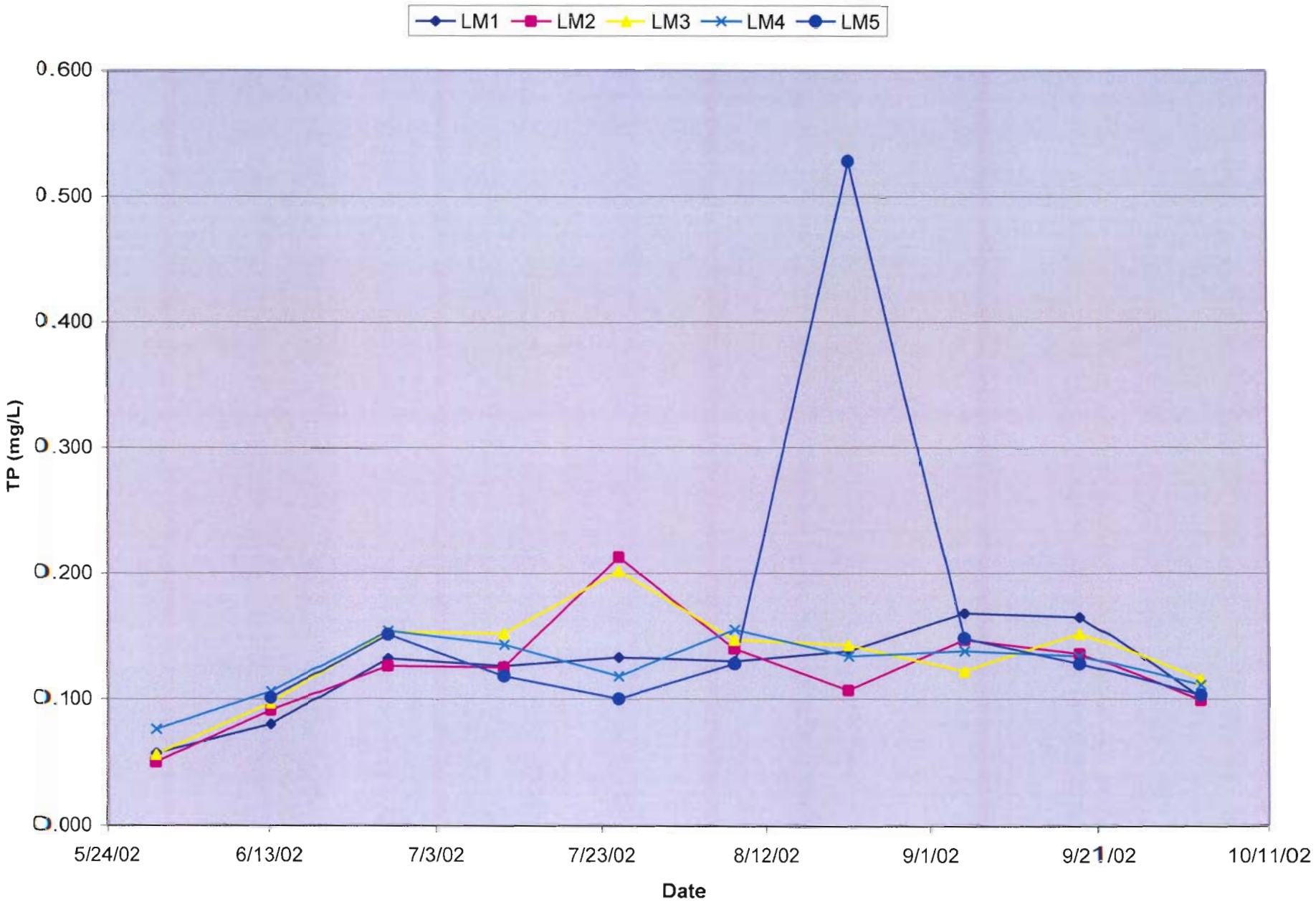

Lake Menomin - All Sites
Total Nitrogen
LM1
LM2
LM3
LM4
3.00
2.50
2.00
1.50
1.00
0.50
0.00
TKN (mg/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date


Red Cedar River
Total Nitrogen
LM5
6.00
5.00
4.00
3.00
2.00
1.00
0.00
TKN (mg/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

GRAPHS:

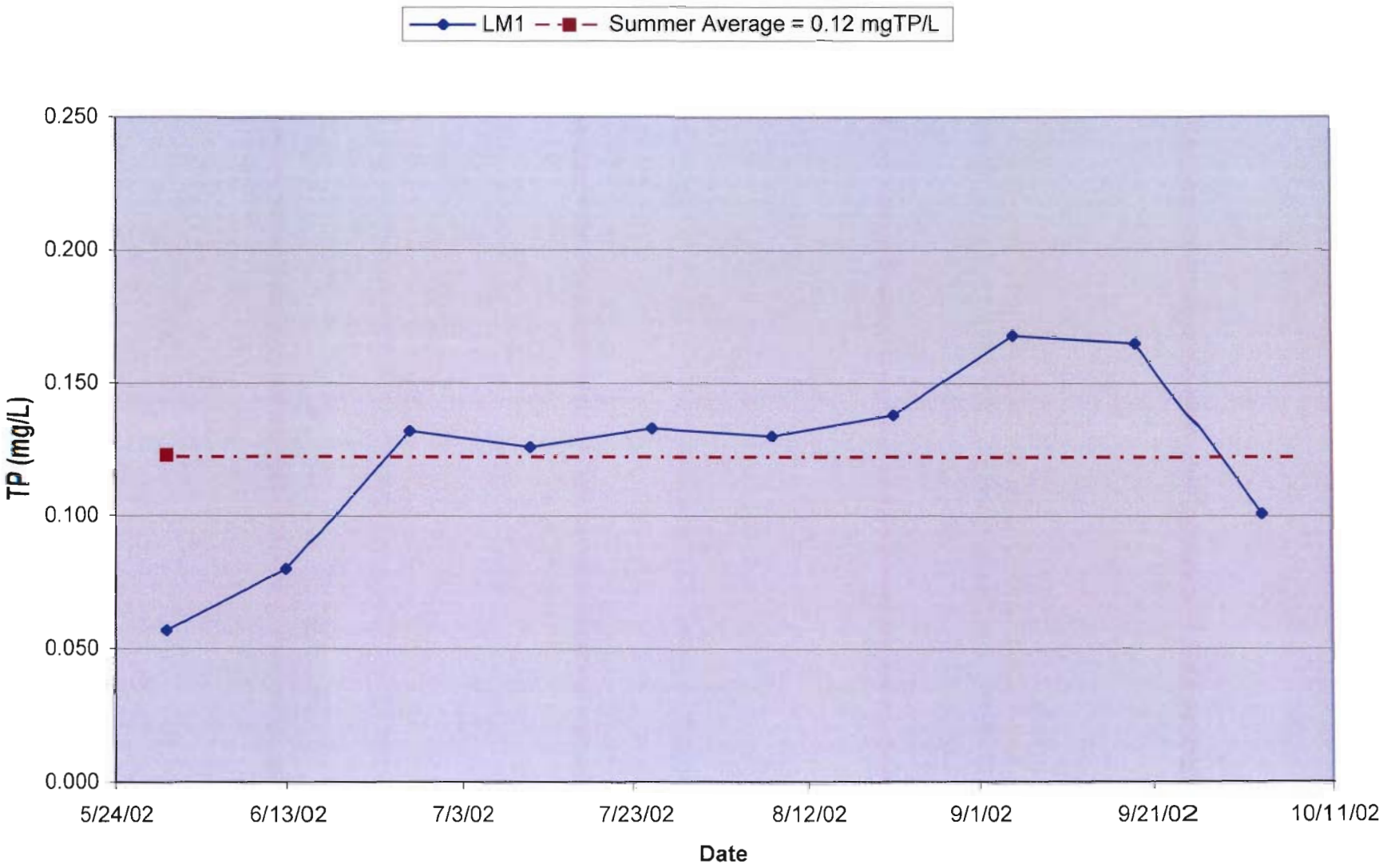
Total Phosphorus Concentrations

Lake Menomin & Red Cedar River - All Sites
Total Phosphorus Concentrations

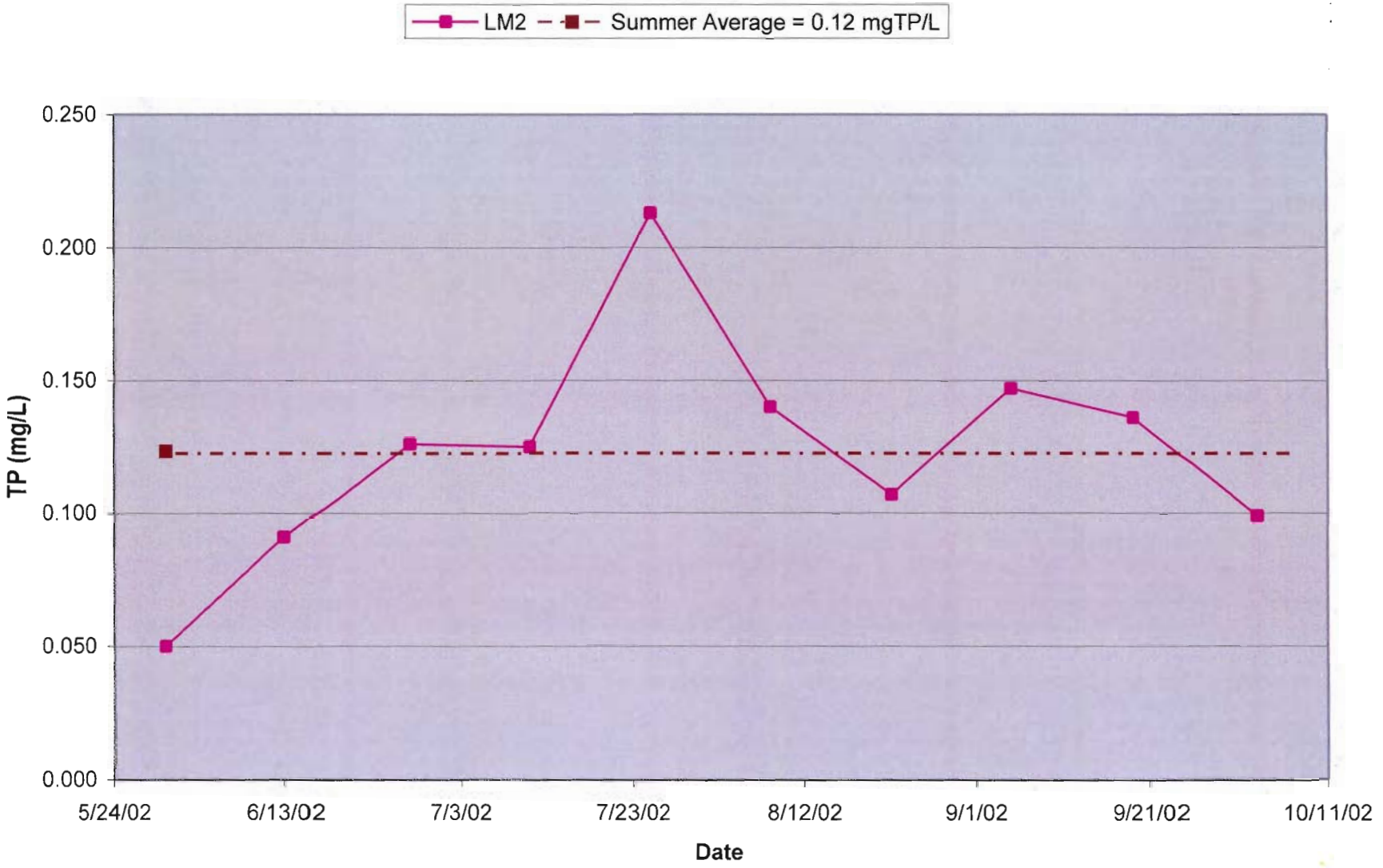



Lake Menomin - All Sites
Total Phosphorus Concentrations
LM1
LM2
LM3
LM4
0.250
0.200
0.150
0.100
0.050
0.000
TP (mg/L)
5/24/02
6/13/02
7/3/02
7/23/02
8/12/02
9/1/02
9/21/02
10/11/02
Date

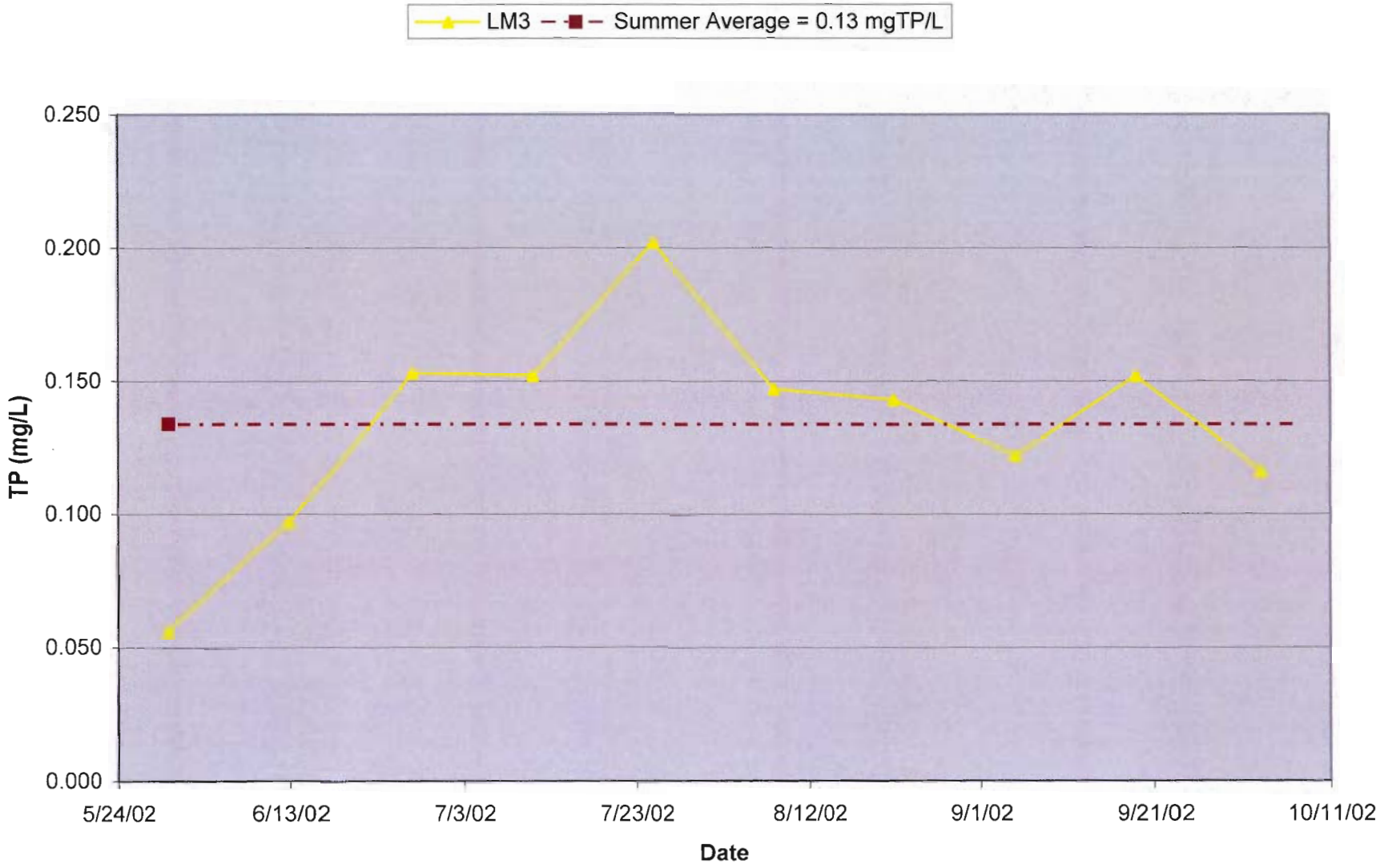
Lake Menomin
Total Phosphorus Concentrations

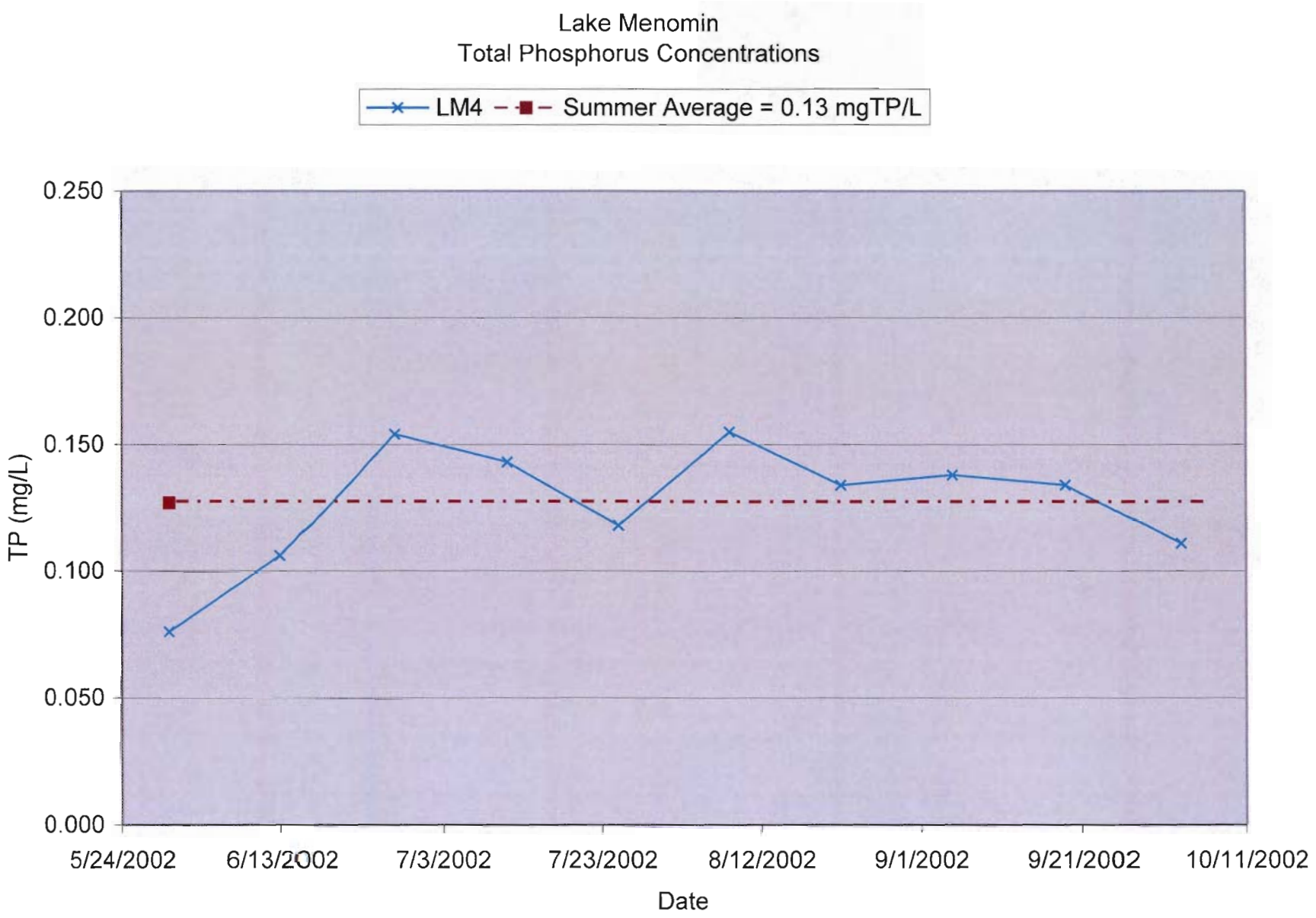


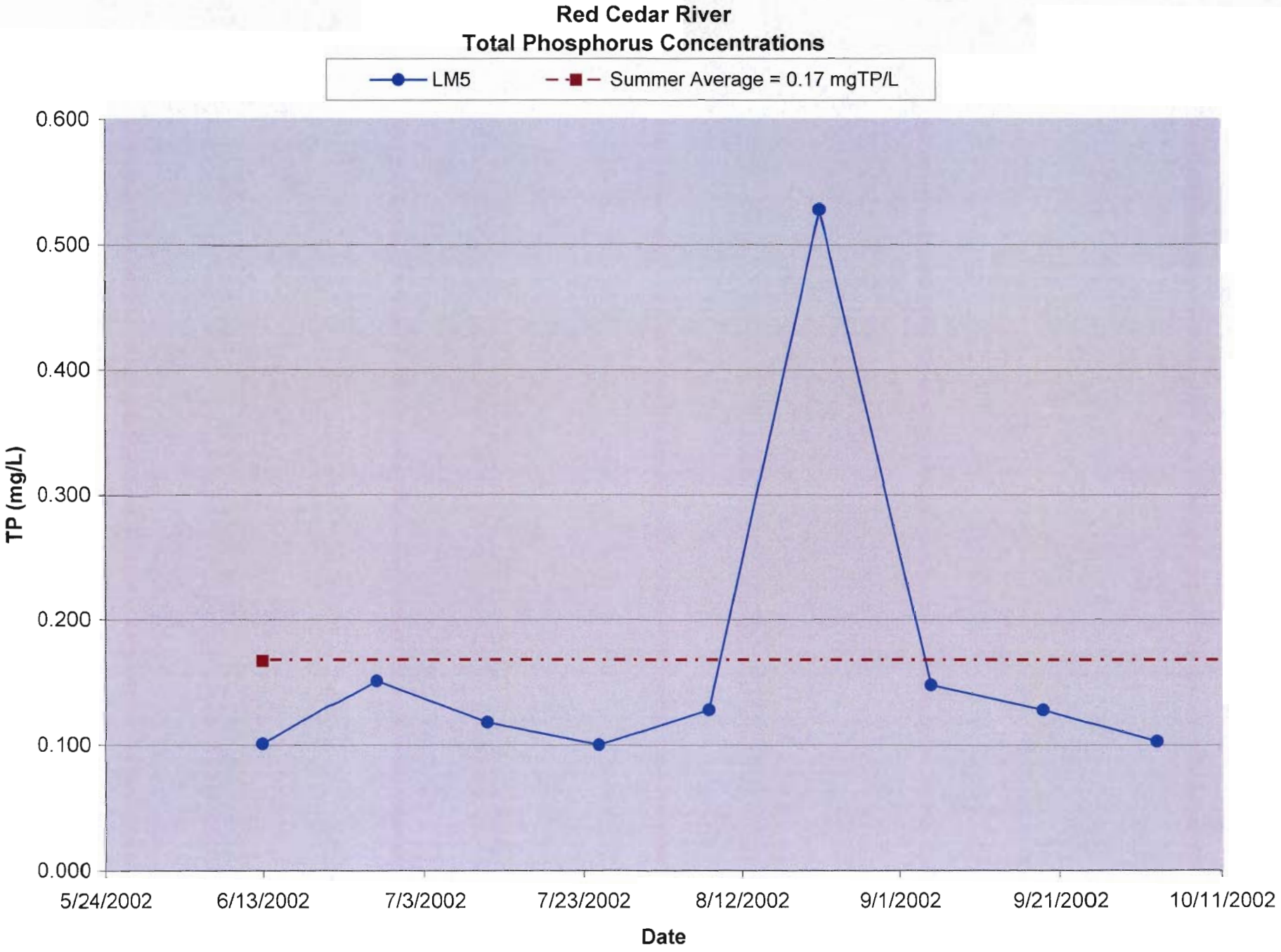
Lake Menomin
Total Phosphorus Concentrations



Lake Menomin
Total Phosphorus Concentrations

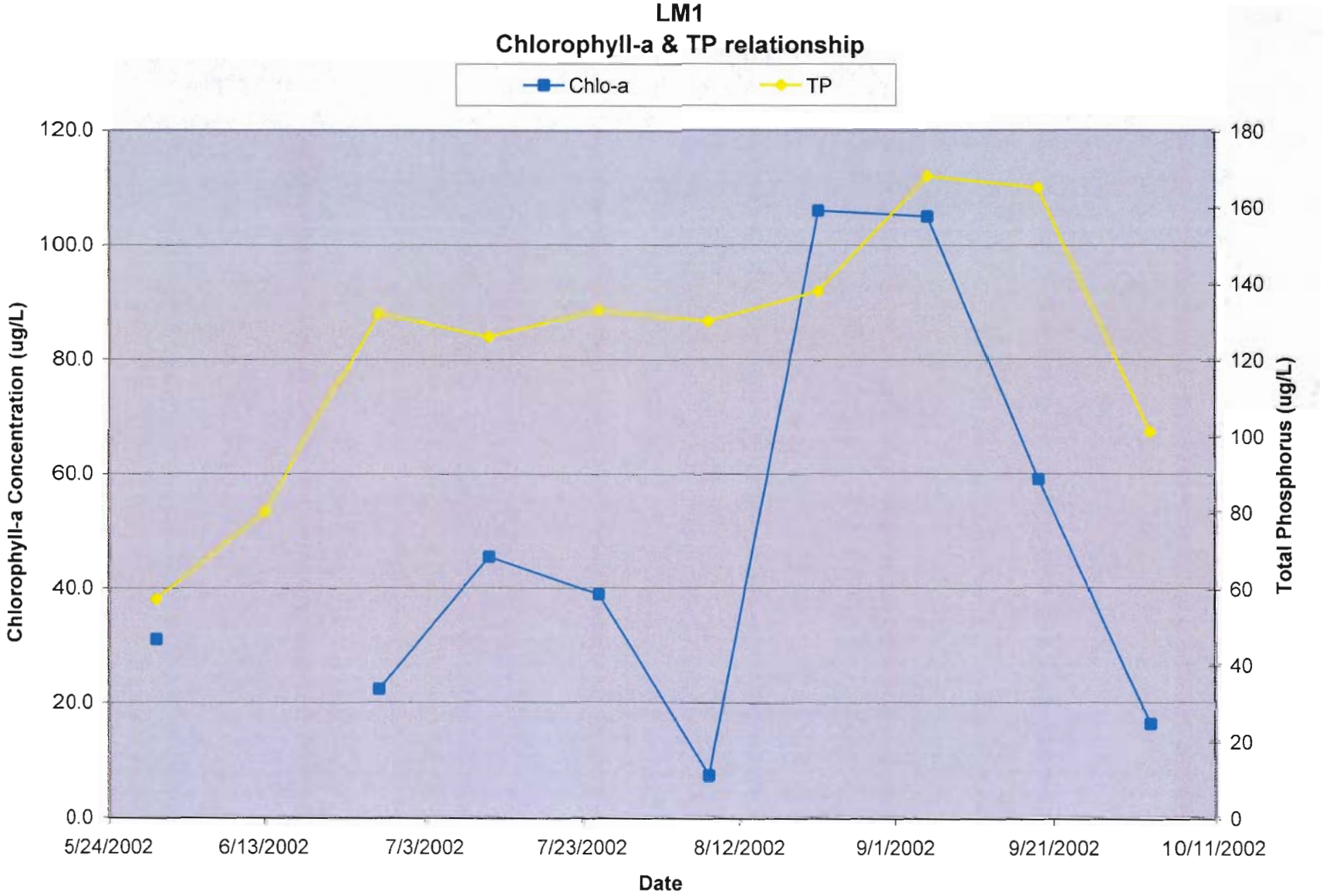


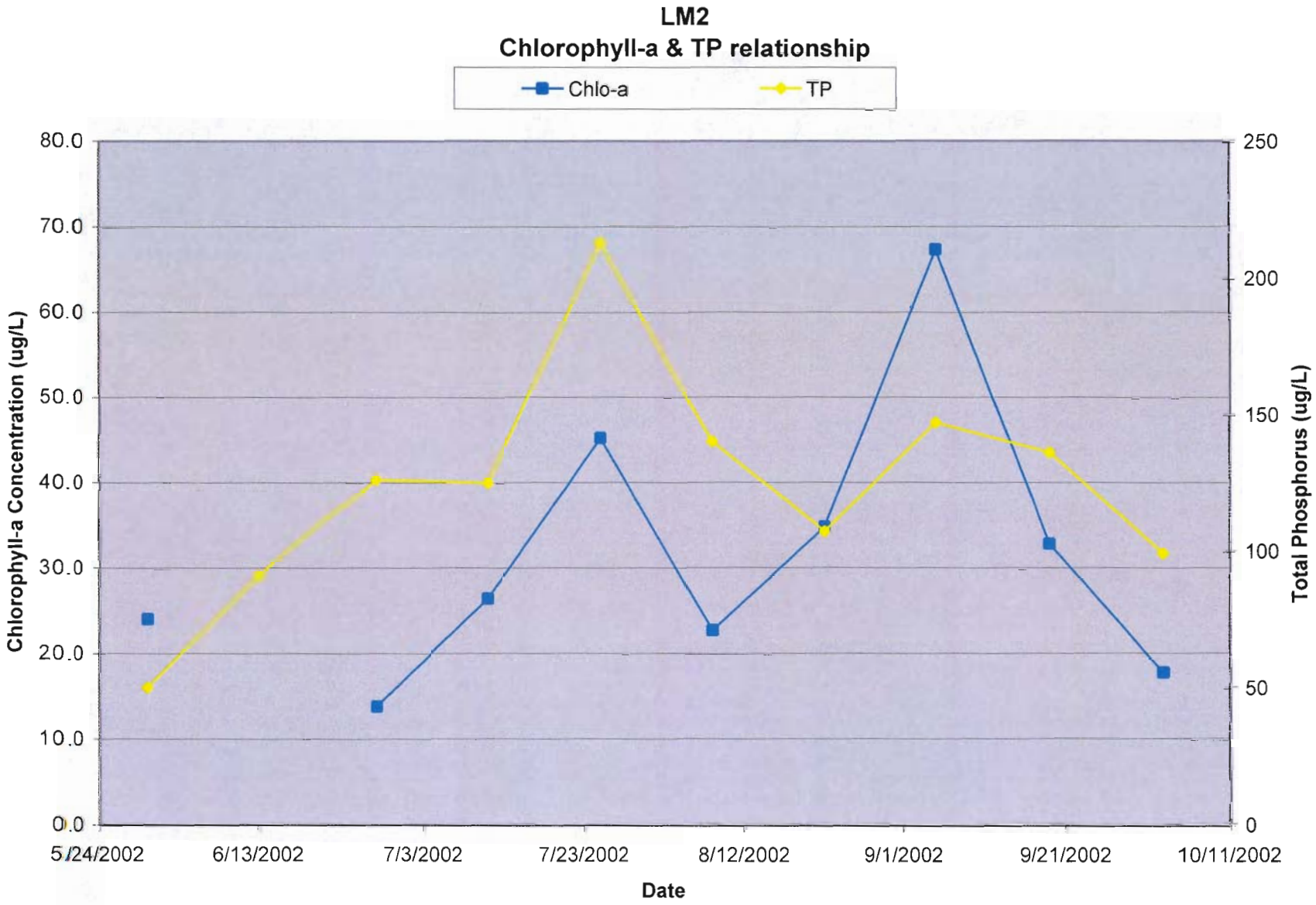

Lake Menomin
Total Phosphorus Concentrations
LM4
Summer Average = 0.13 mgTP/L
0.250
0.200
0.150
0.100
0.050
0.000
TP (mg/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

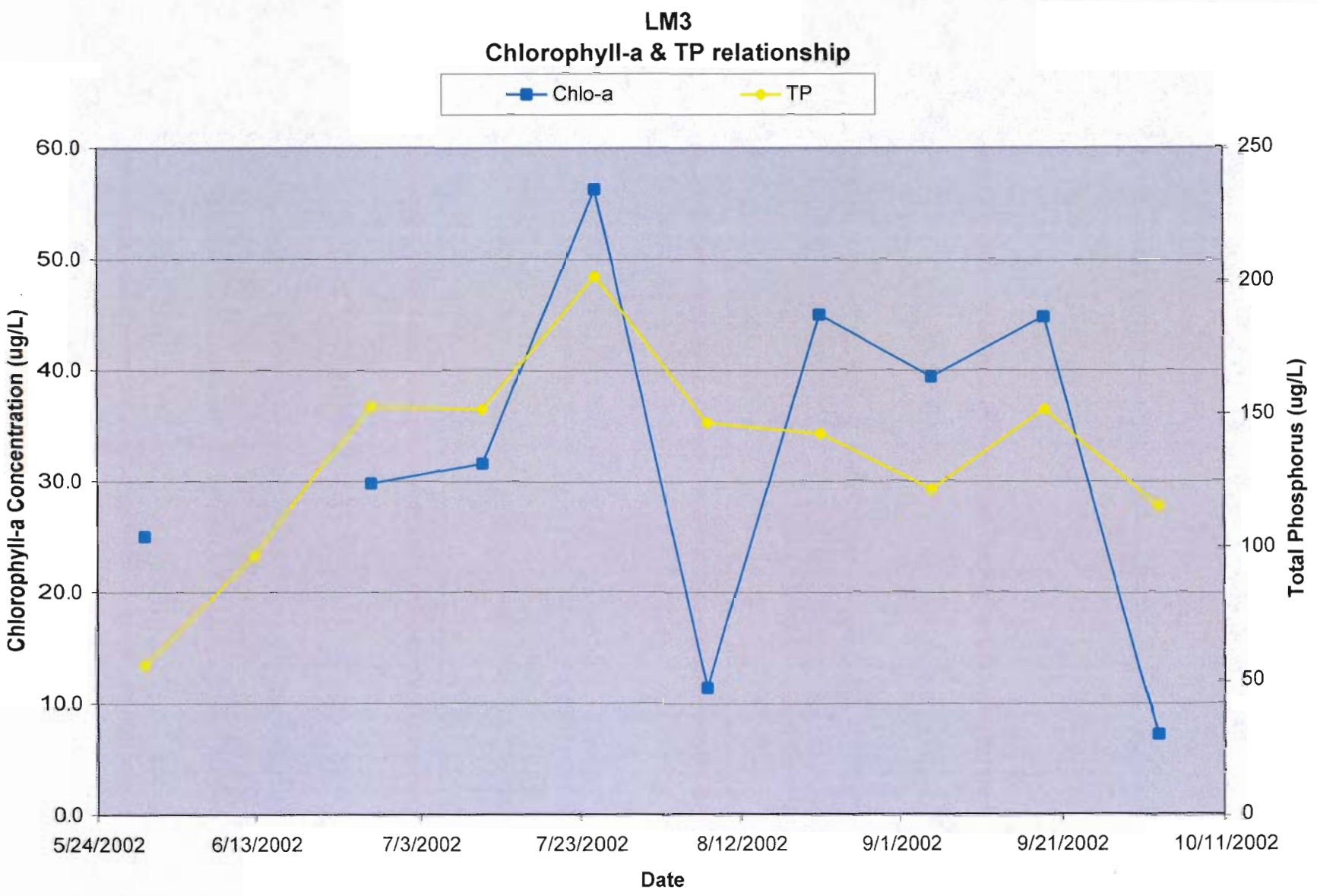

Red Cedar River
Total Phosphorus Concentrations
LM5
Summer Average = 0.17 mgTP/L
0.600
0.500
0.400
0.300
0.200
0.100
0.000
TP (mg/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

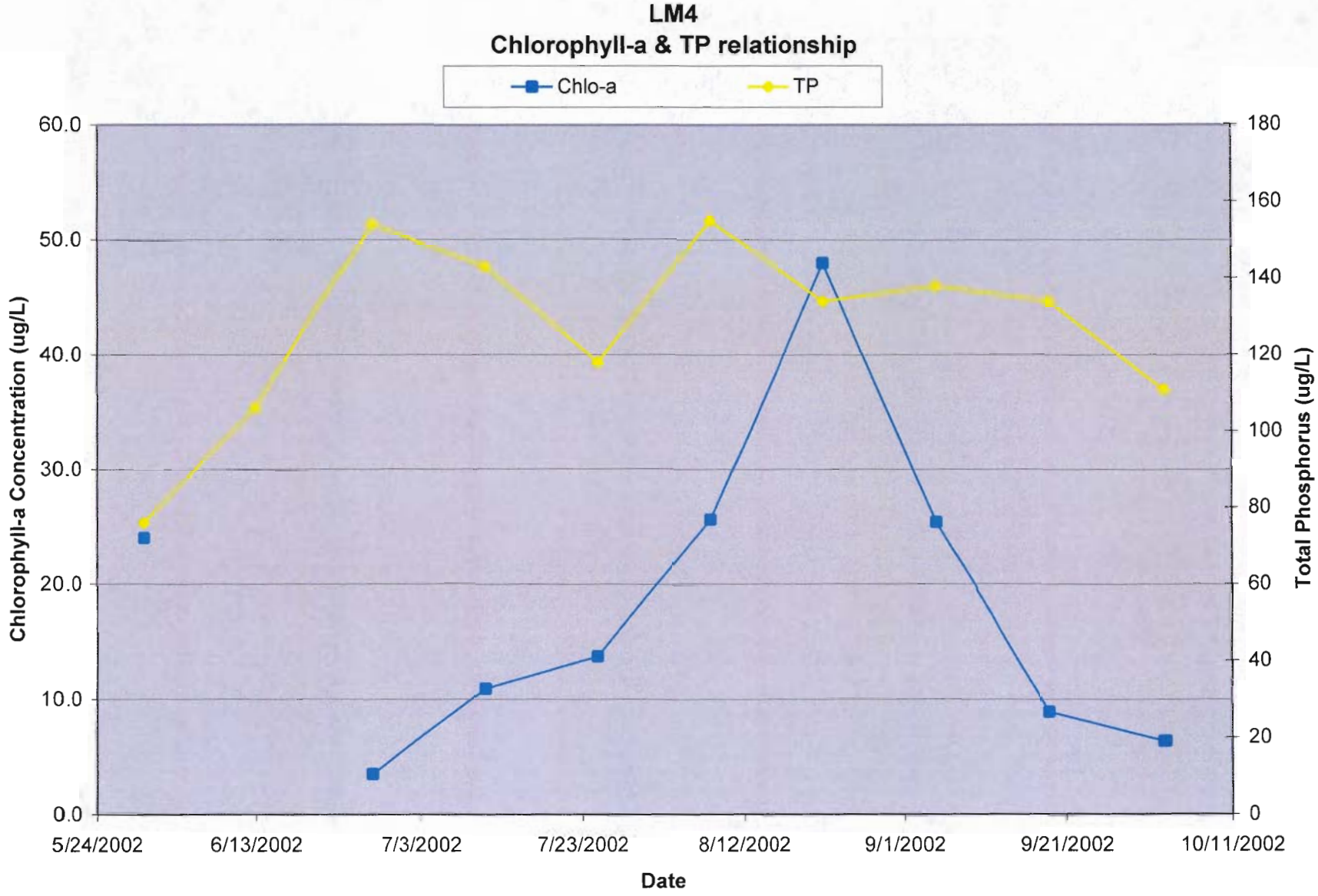
GRAPHS:

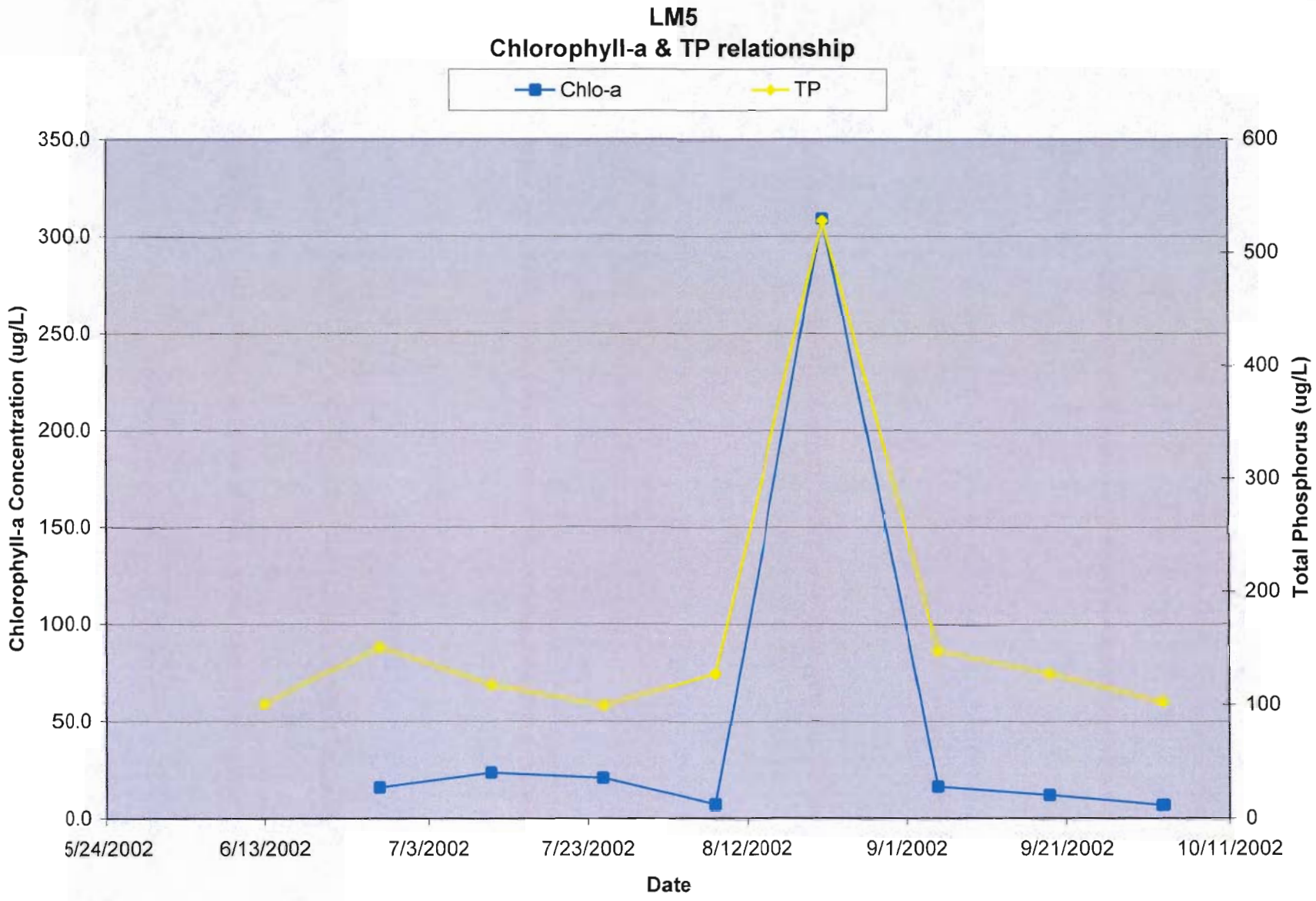
Chlorophyll-a & Total Phosphorus
Relationship


LM1
Chlorophyll-a & TP relationship
Chlo-a
TP
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Chlorophyll-a Concentration (ug/L)
180
160
140
120
100
80
60
40
20
0
Total Phosphorus (ug/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date


LM2
Chlorophyll-a & TP relationship
Chlo-a
TP
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Chlorophyll-a Concentration (ug/L)
250
200
150
100
50
0
Total Phosphorus (ug/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

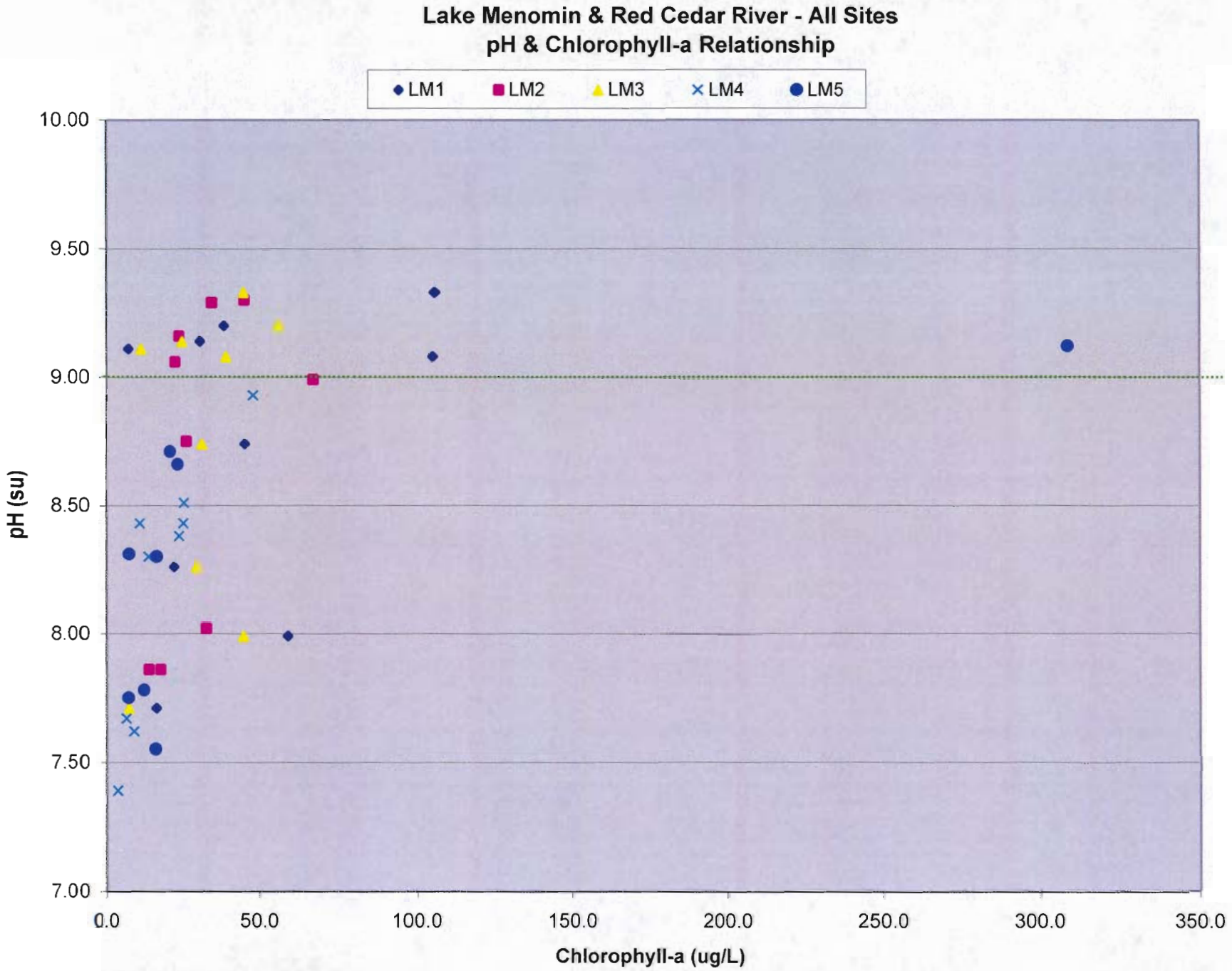

LM3
Chlorophyll-a & TP relationship
Chlo-a
TP
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Chlorophyll-a Concentration (ug/L)
250
200
150
100
50
0
Total Phosphorus (ug/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

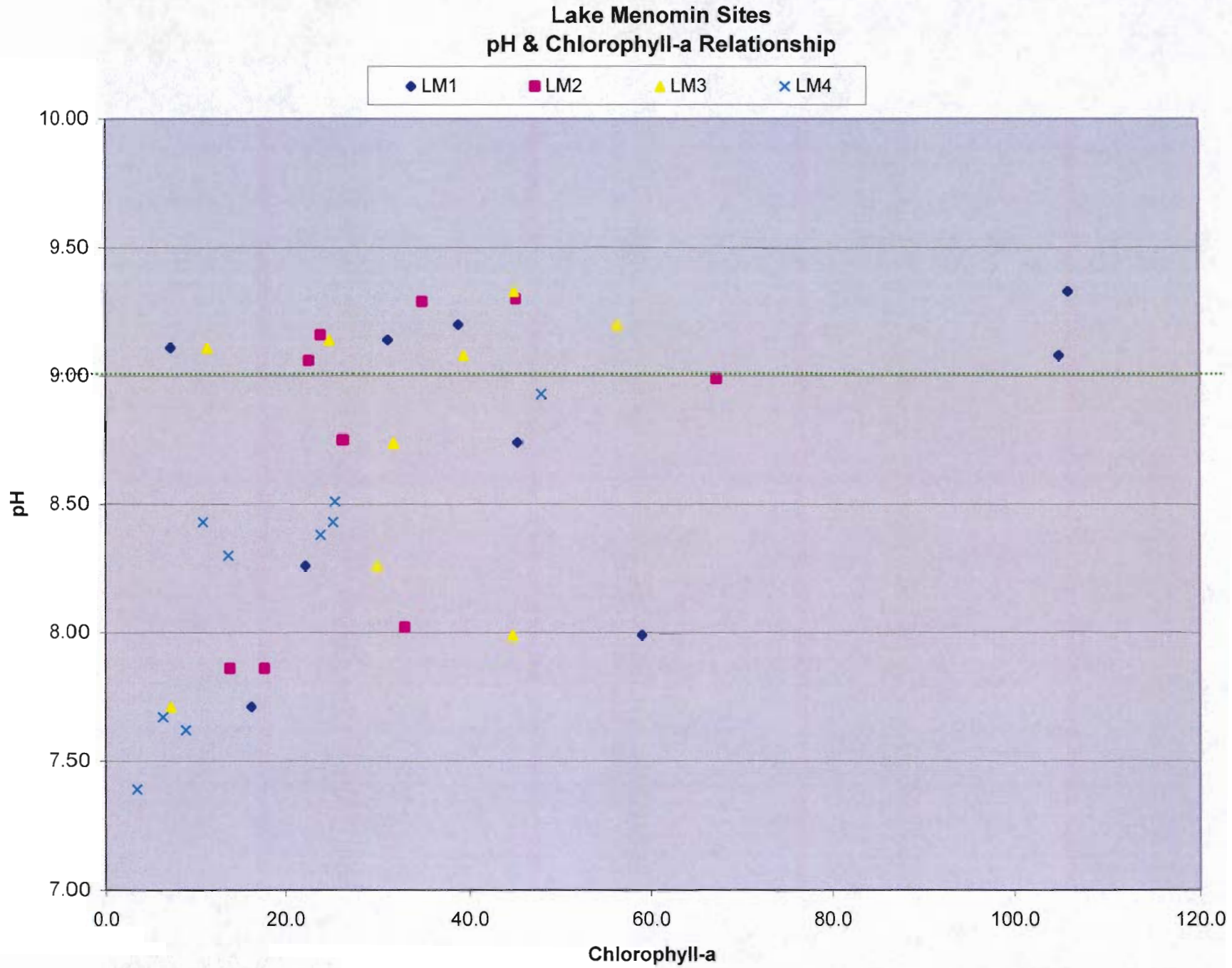

LM4
Chlorophyll-a & TP relationship
Chlo-a
TP
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Chlorophyll-a Concentration (ug/L)
180
160
140
120
100
80
60
40
20
0
Total Phosphorus (ug/L)
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

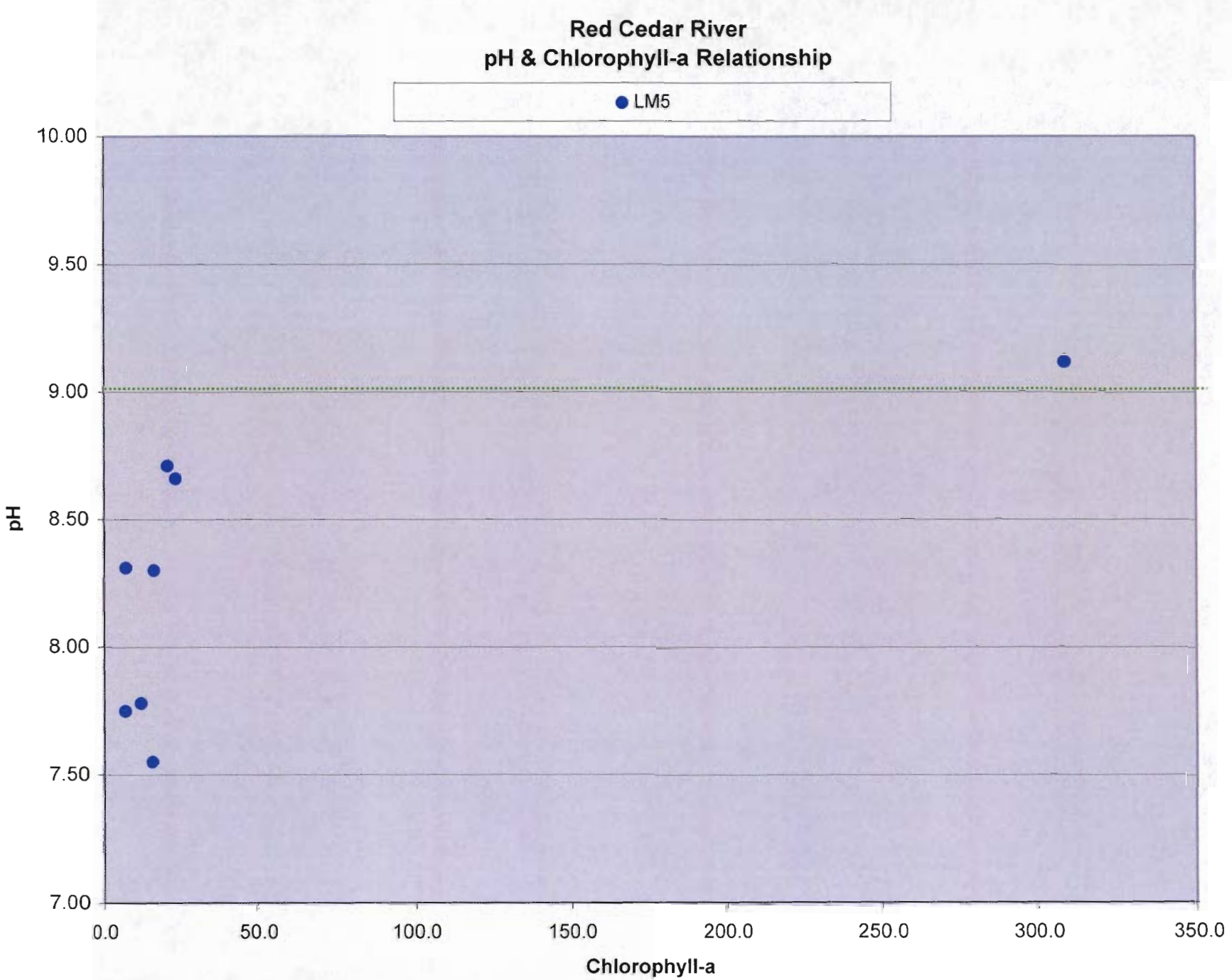

LM5
Chlorophyll-a & TP relationship
Chlo-a
TP
Chlorophyll-a Concentration (ug/L)
Total Phosphorus (ug/L)
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
600
500
400
300
200
100
0
5/24/2002
6/13/2002
7/3/2002
7/23/2002
8/12/2002
9/1/2002
9/21/2002
10/11/2002
Date

GRAPHS:

pH & Chlorophyll-a Relationships


Lake Menomin & Red Cedar River - All Sites
pH & Chlorophyll-a Relationship
LM1
LM2
LM3
LM4
LM5
10.00
9.50
9.00
8.50
8.00
7.50
7.00
pH (su)
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
Chlorophyll-a (ug/L)


Lake Menomin Sites
pH & Chlorophyll-a Relationship
LM1
LM2
LM3
LM4
10.00
9.50
9.00
8.50
8.00
7.50
7.00
pH
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Chlorophyll-a


Red Cedar River
pH & Chlorophyll-a Relationship
LM5
10.00
9.50
9.00
8.50
8.00
7.50
7.00
pH
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
Chlorophyll-a

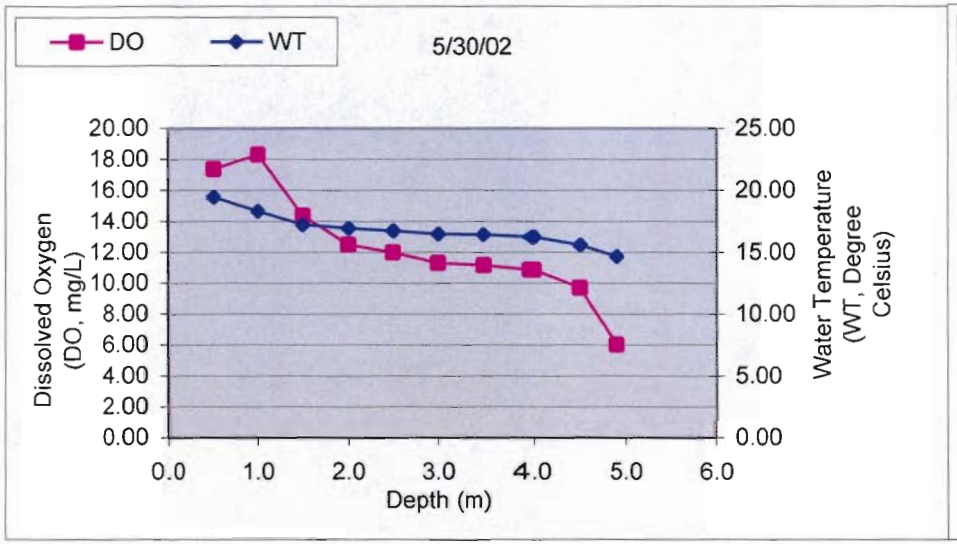
GRAPHS:

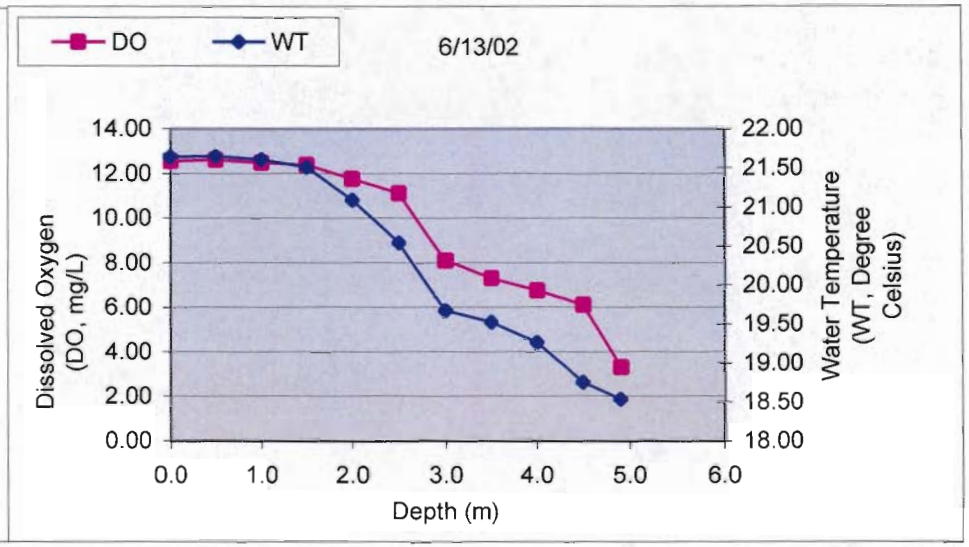
Dissolved Oxygen & Water Temperature

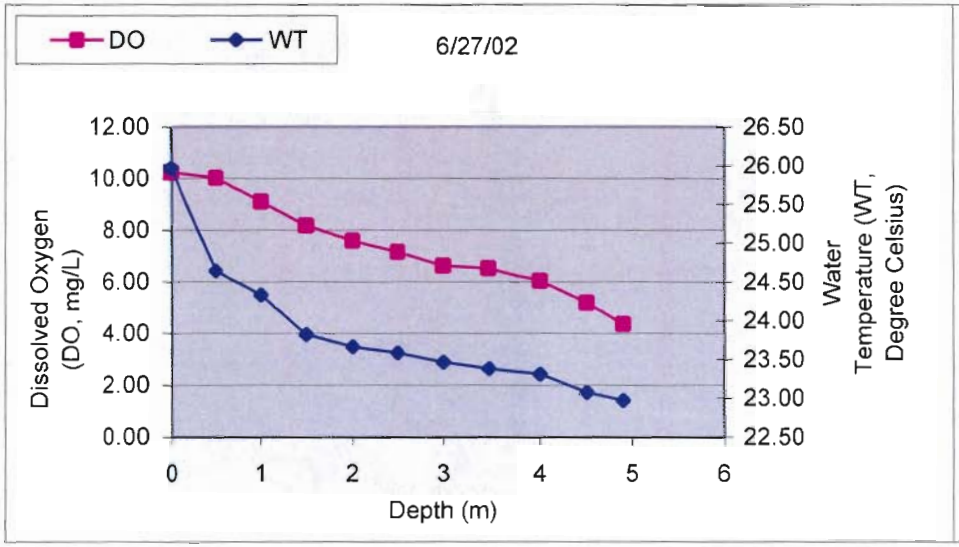
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

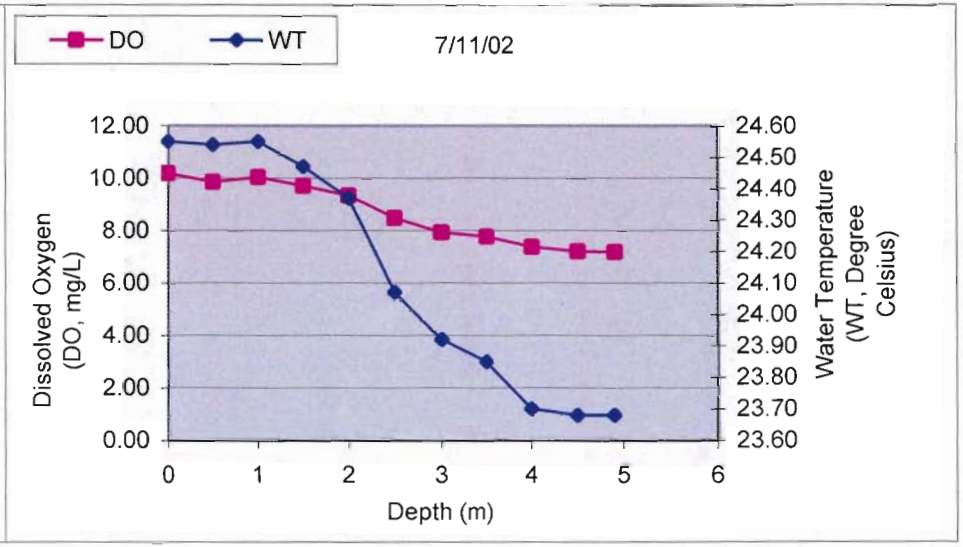
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





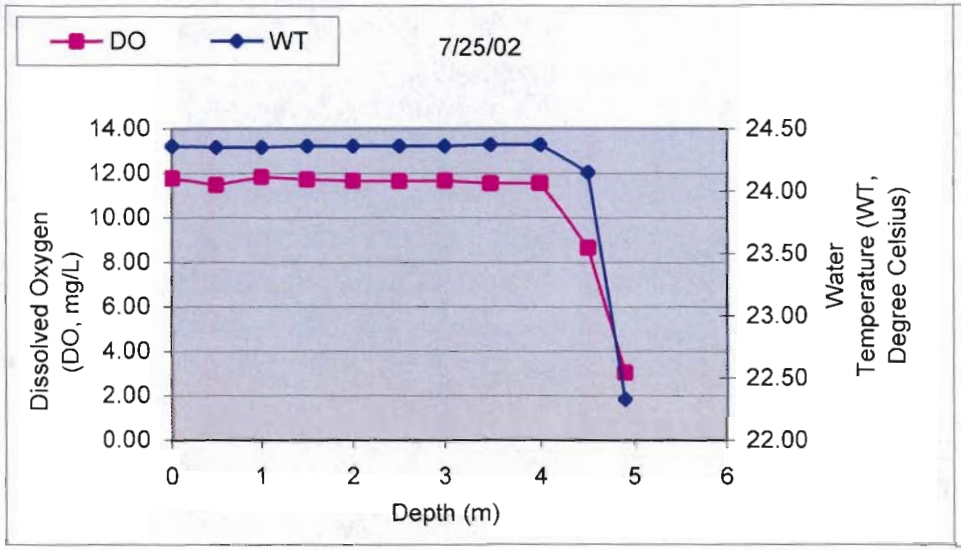


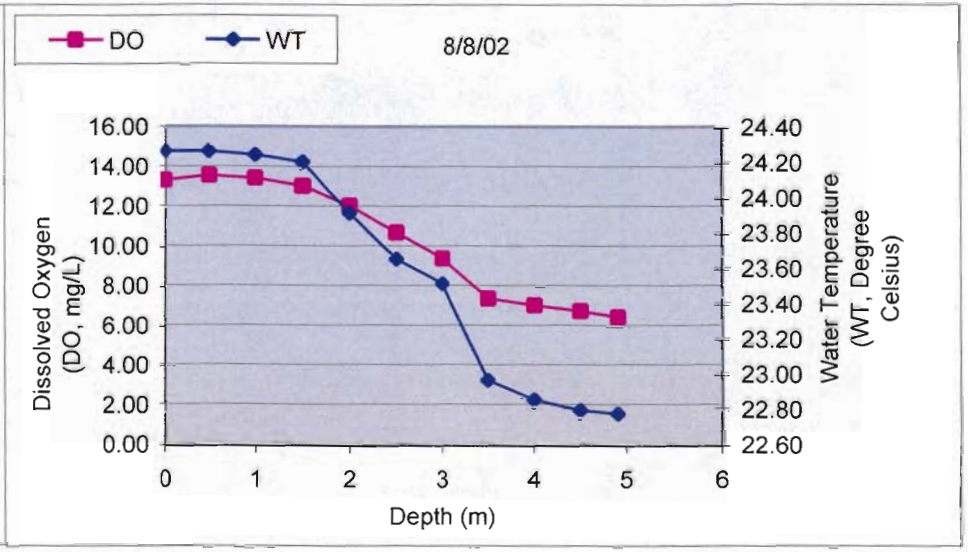


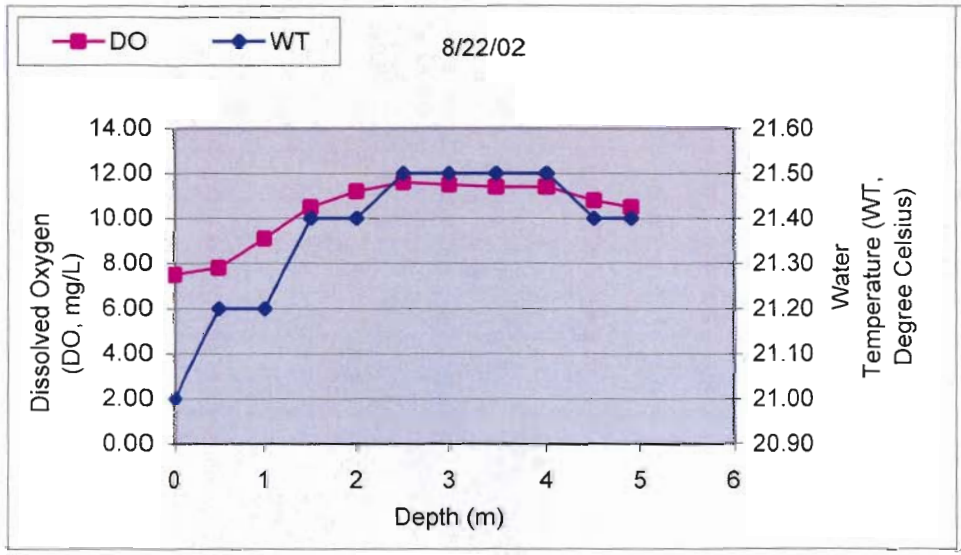
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

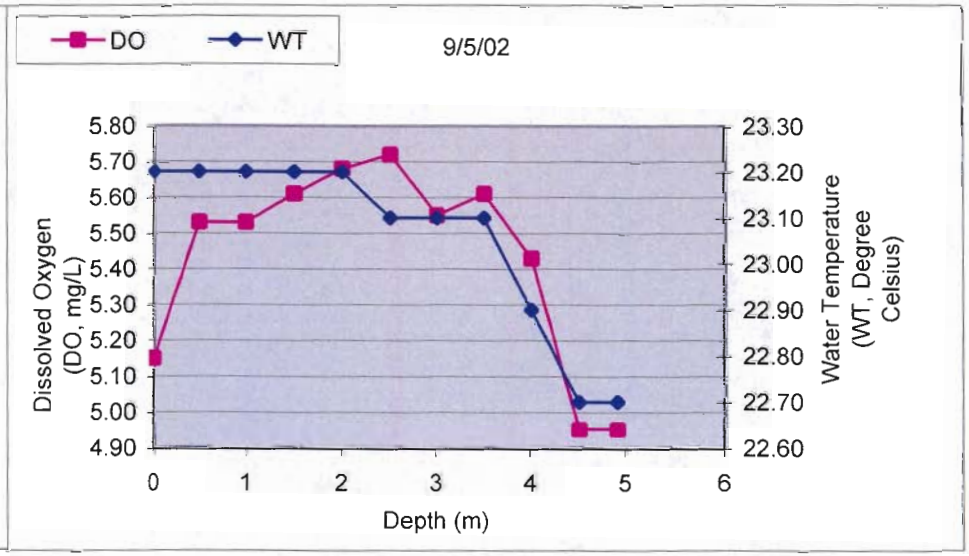
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





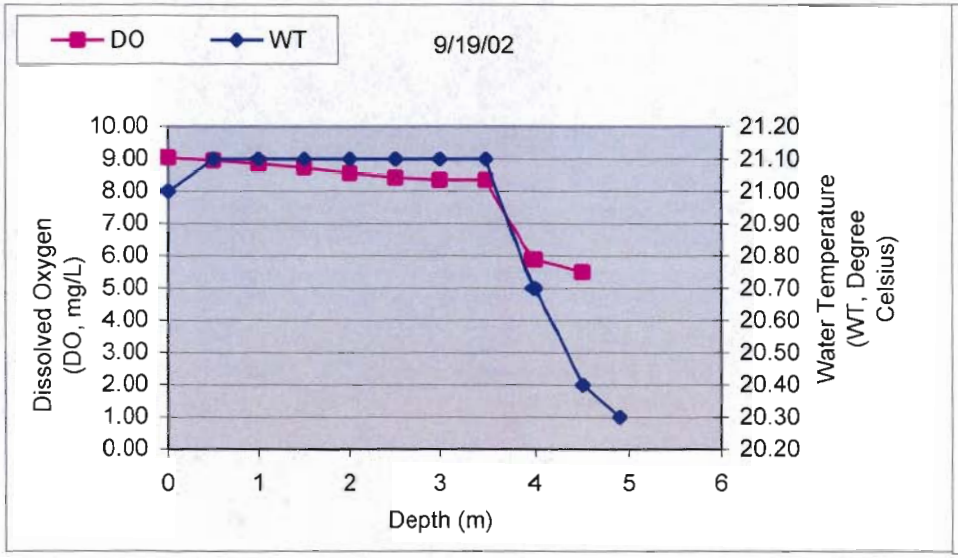


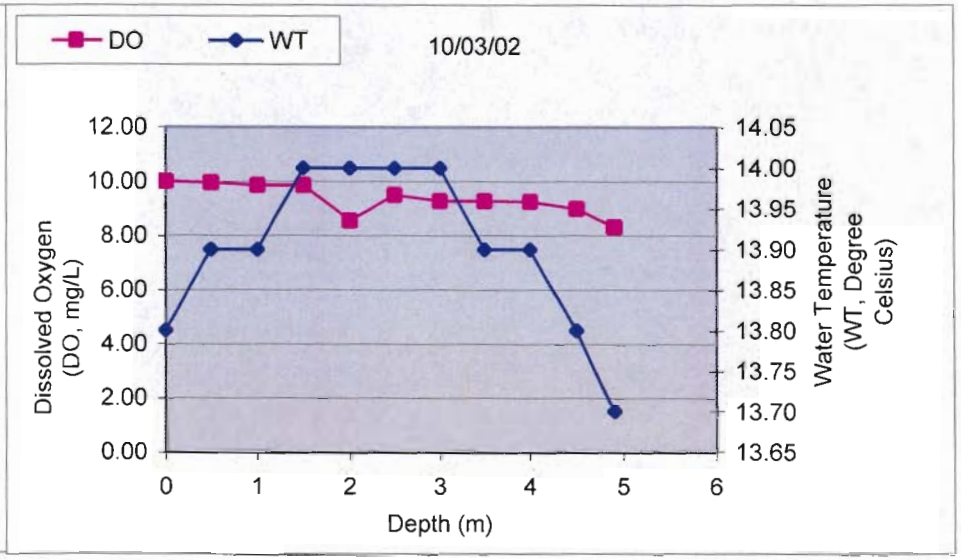


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

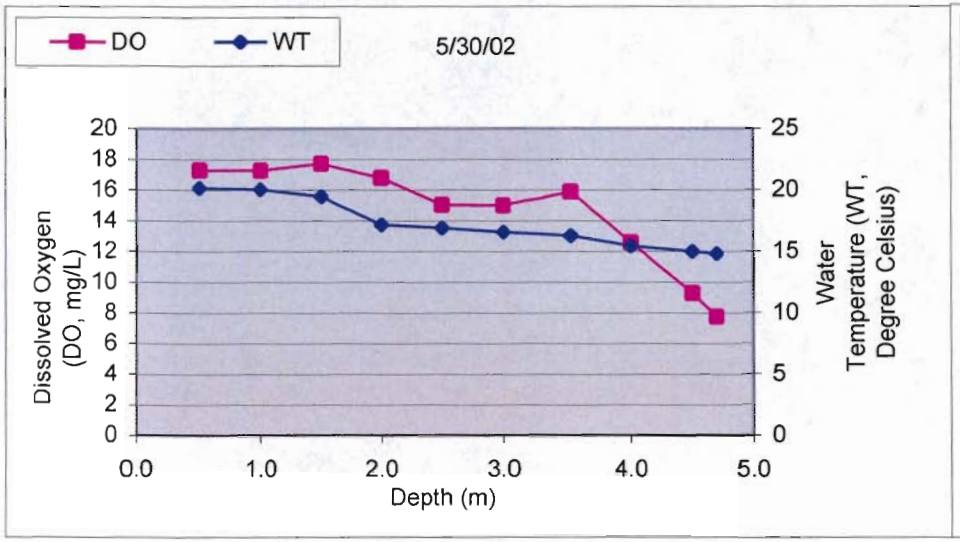


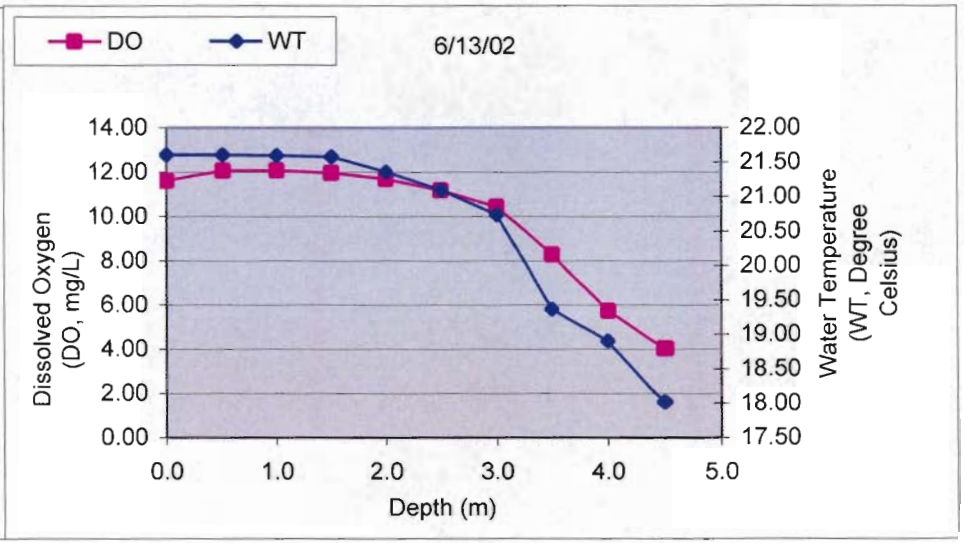


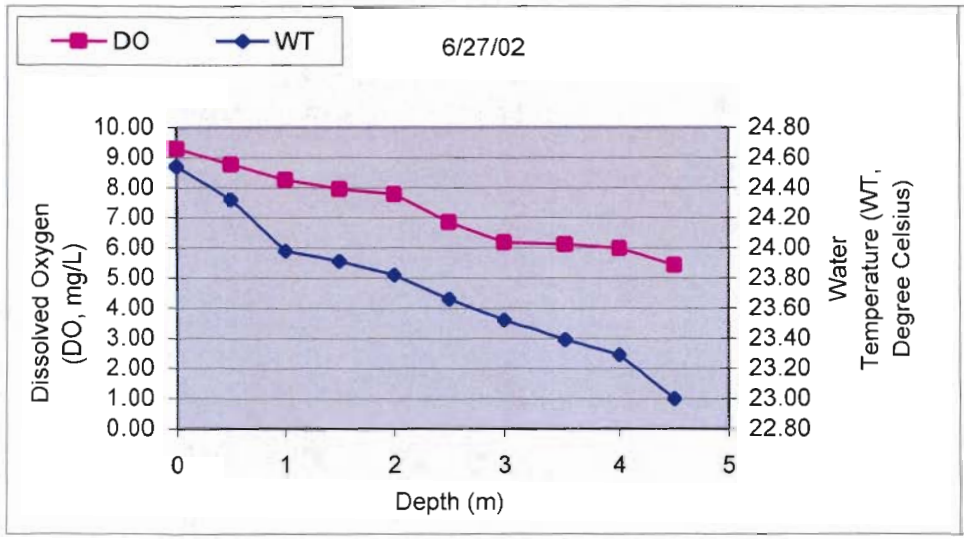
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

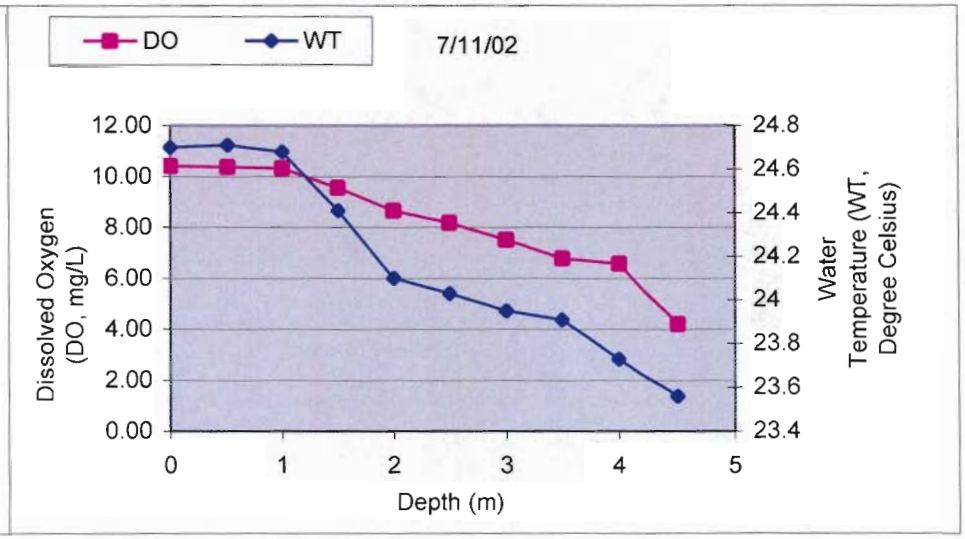
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





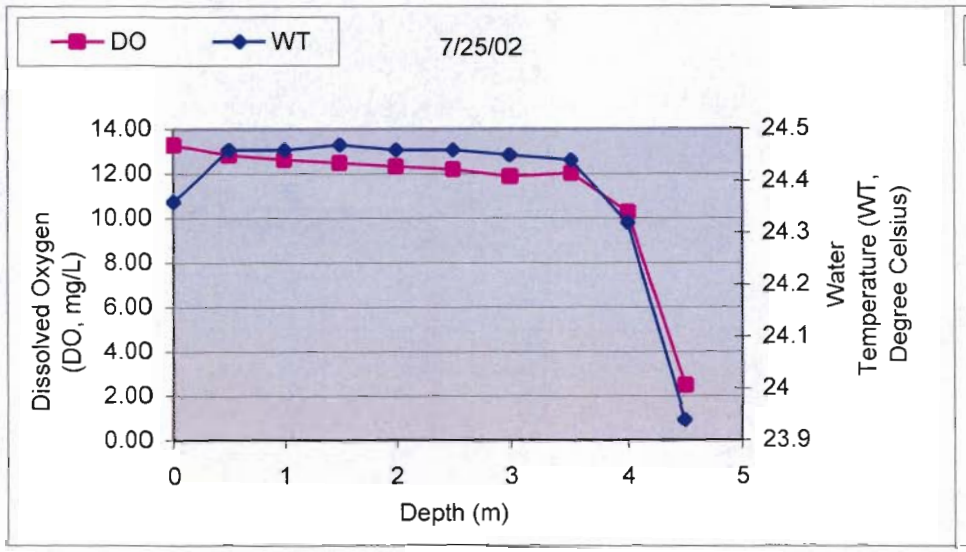


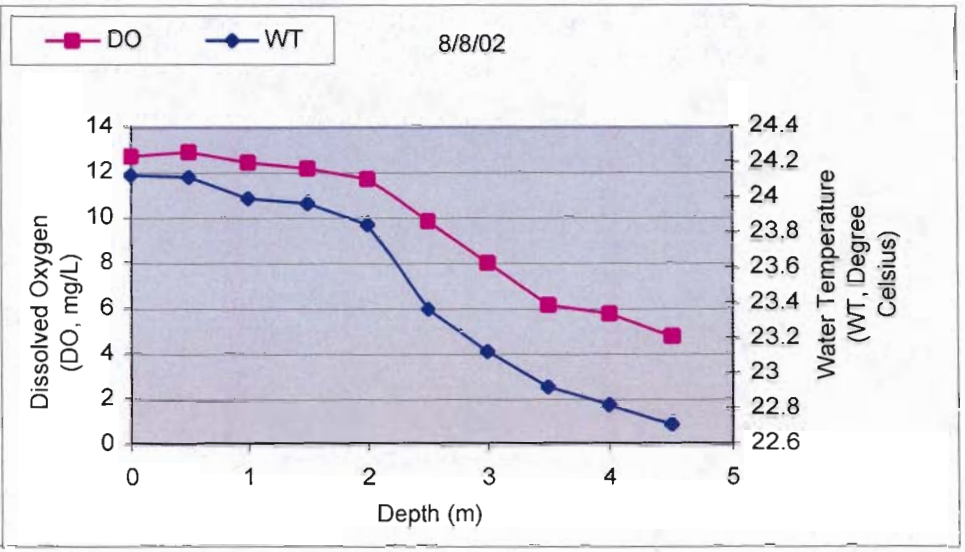


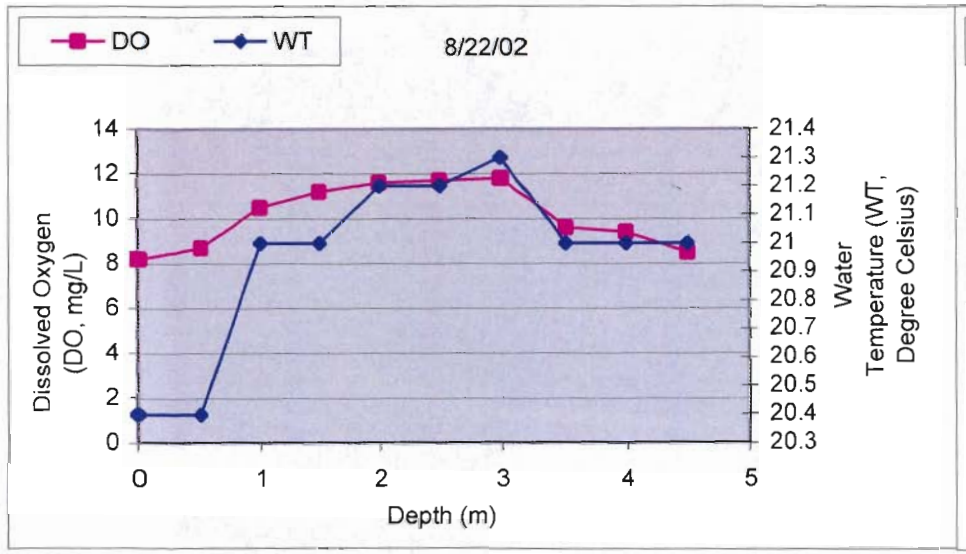
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

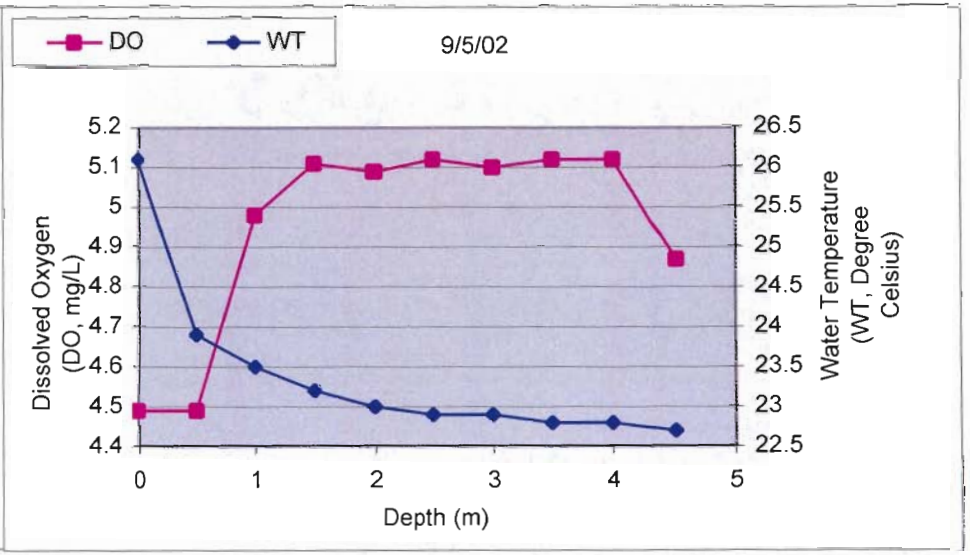
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





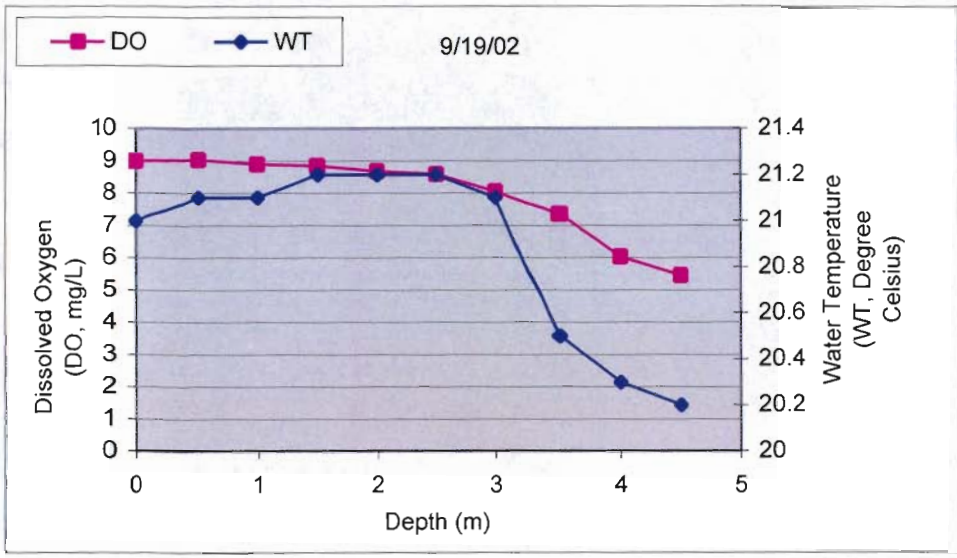


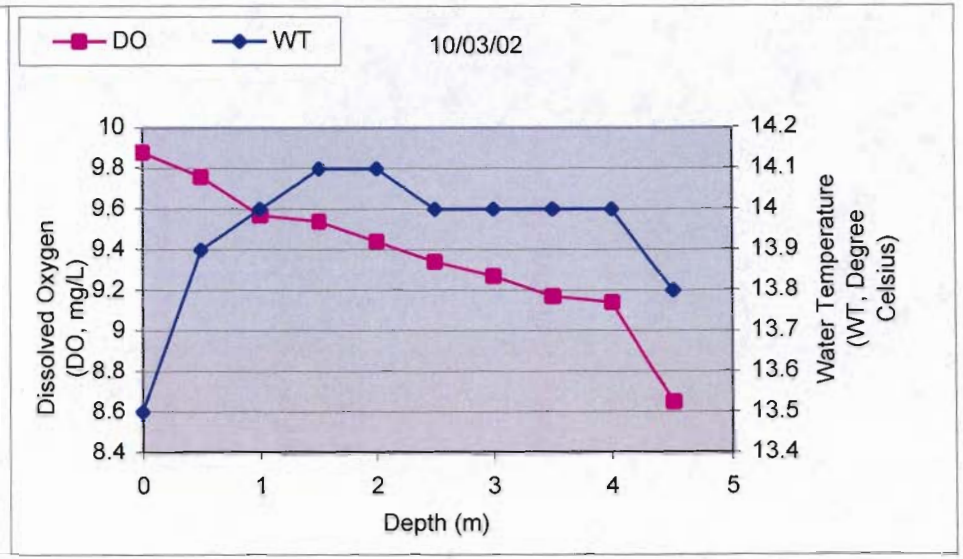


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

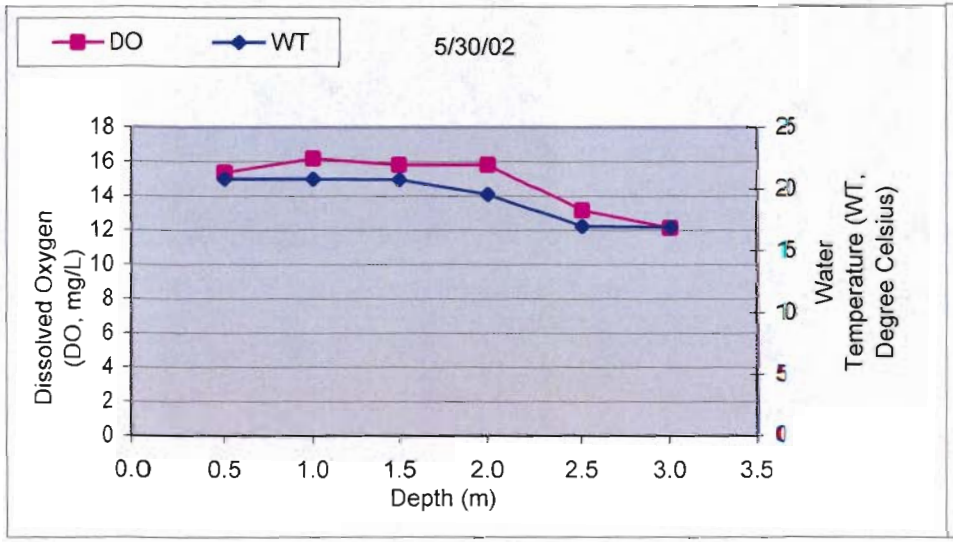


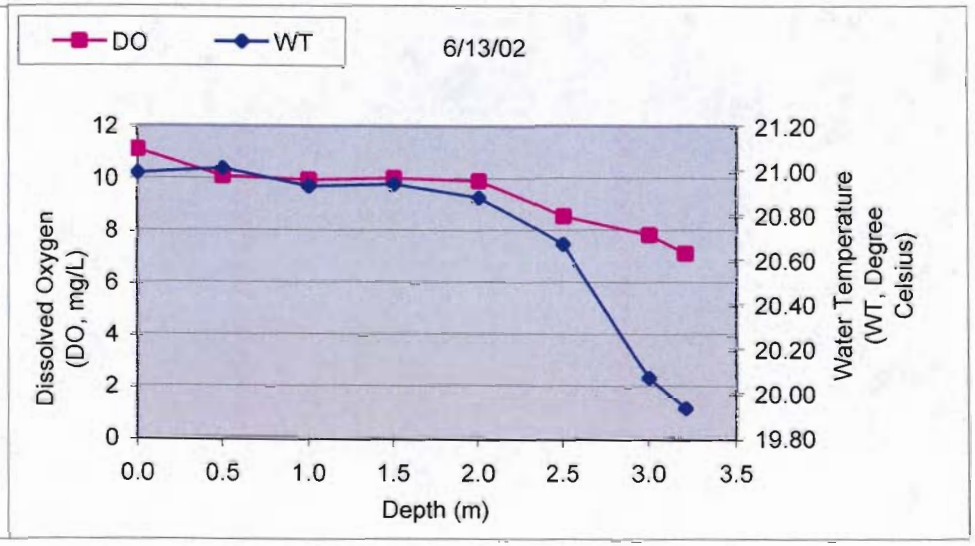


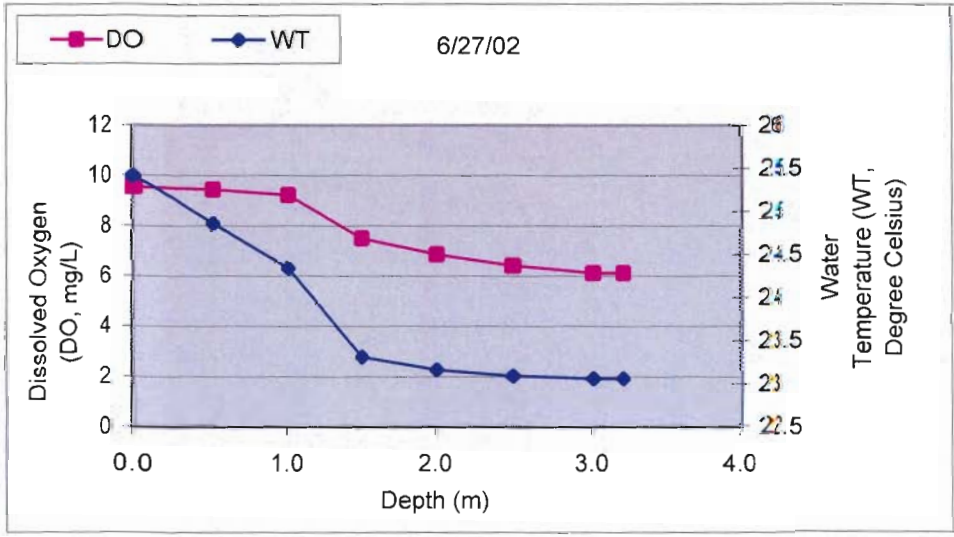
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

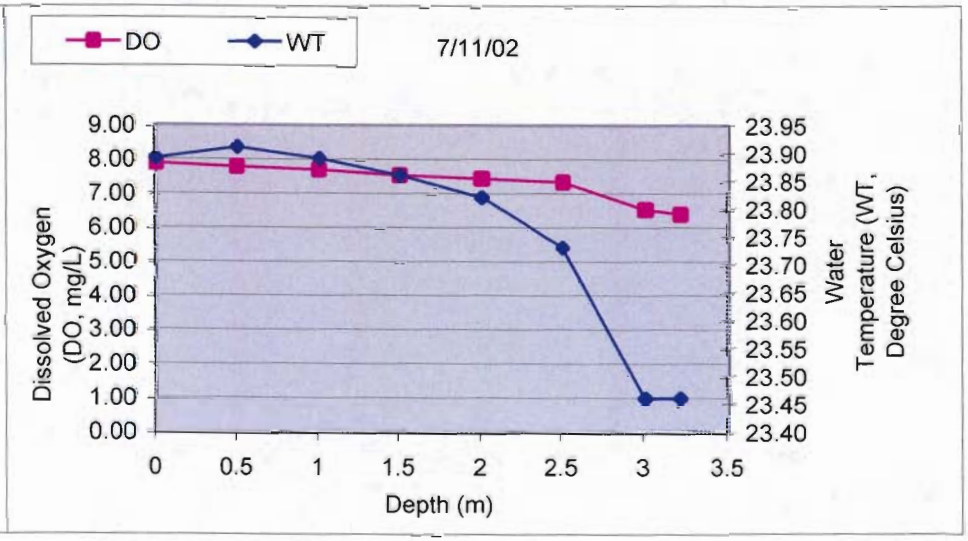
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





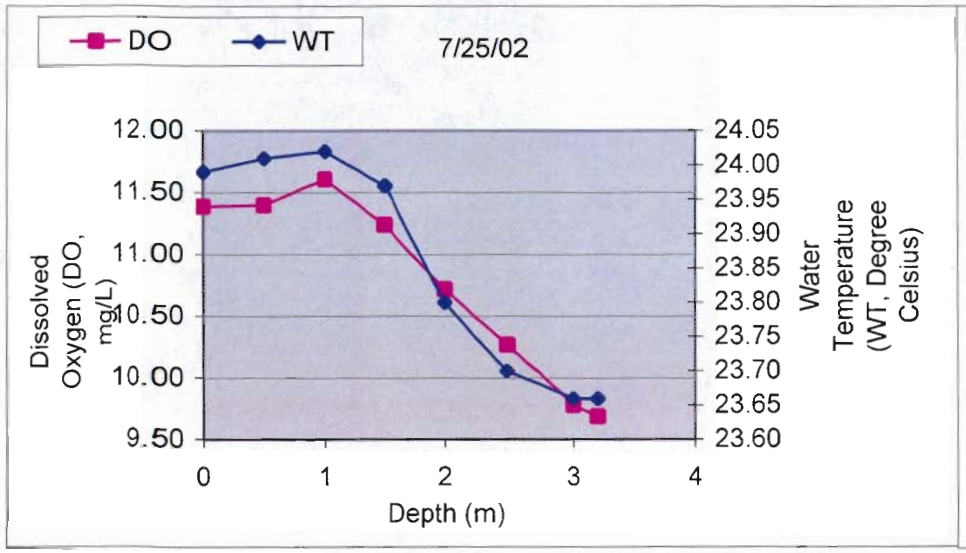


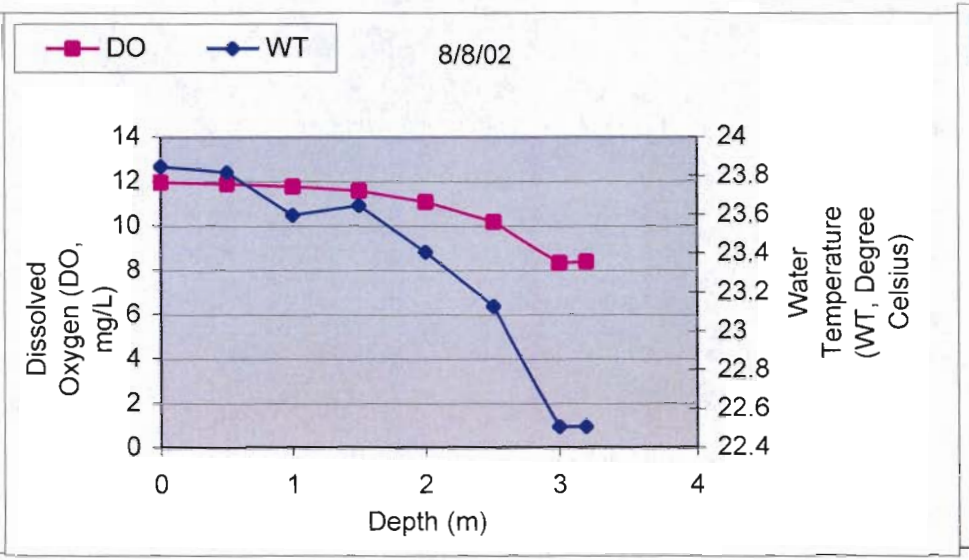


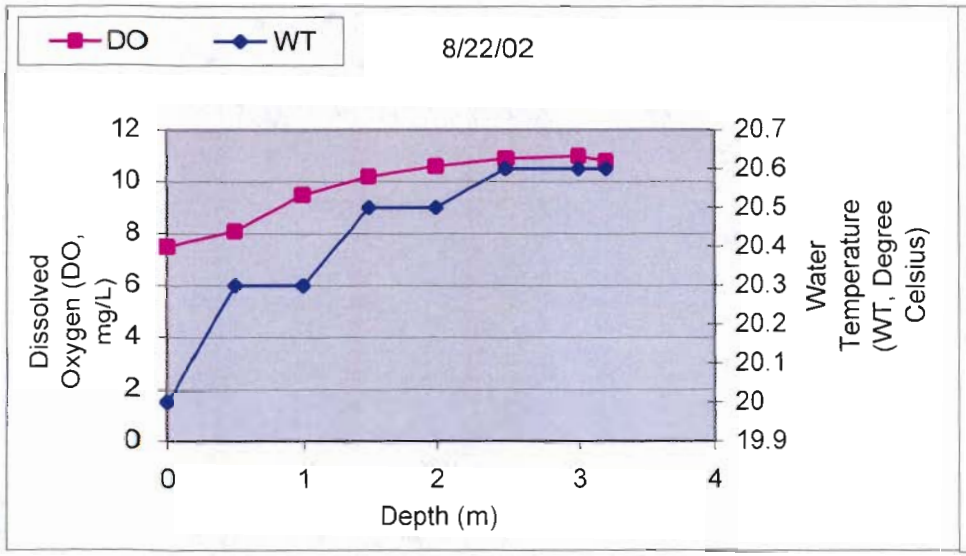
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

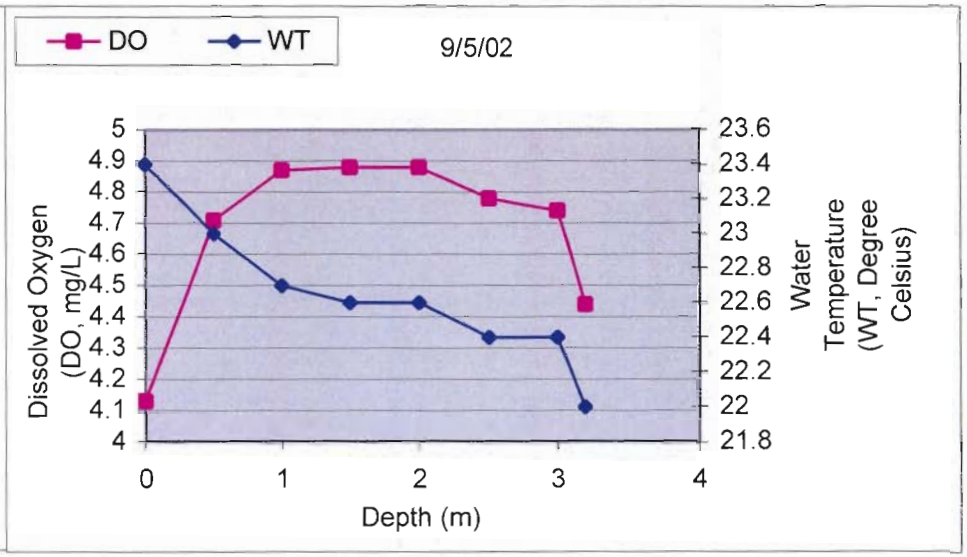
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





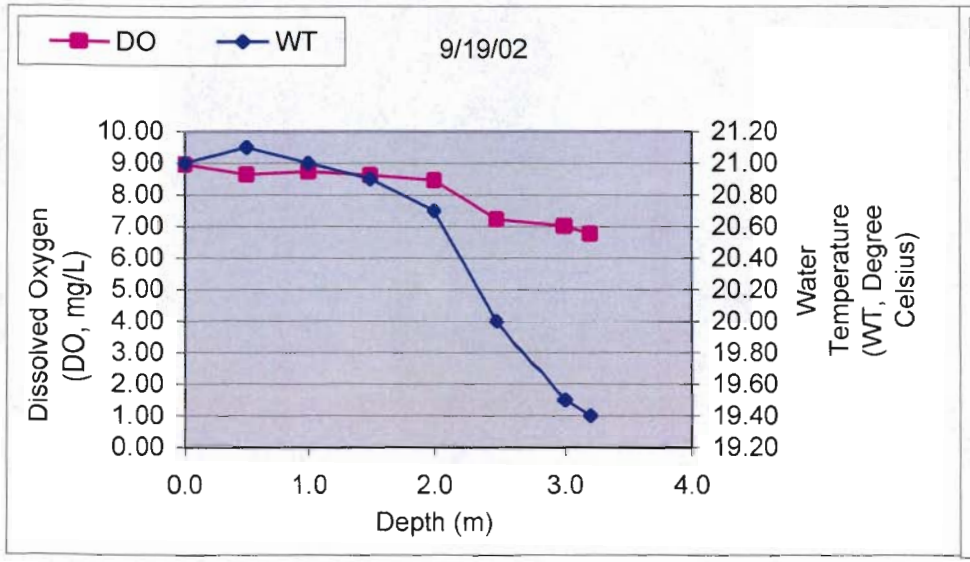


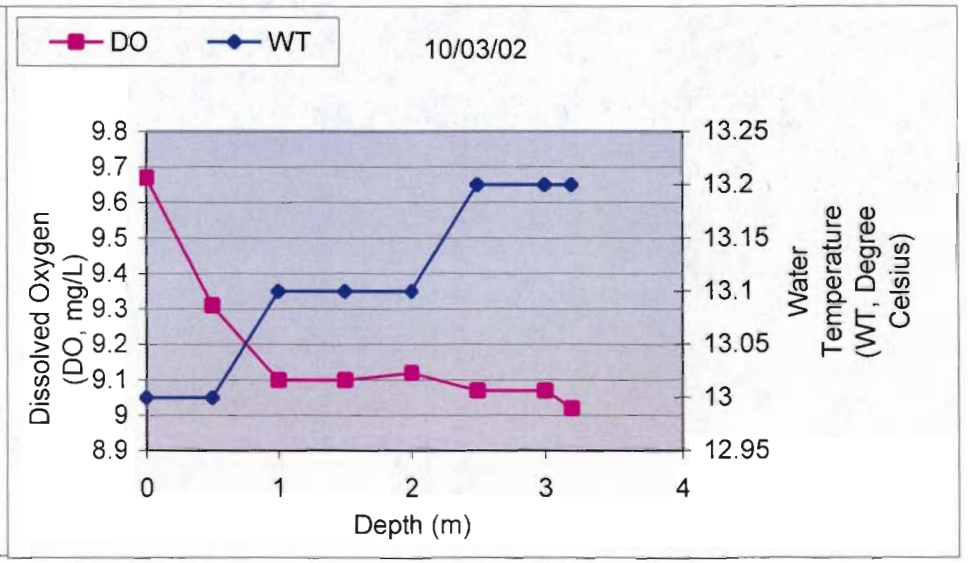


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

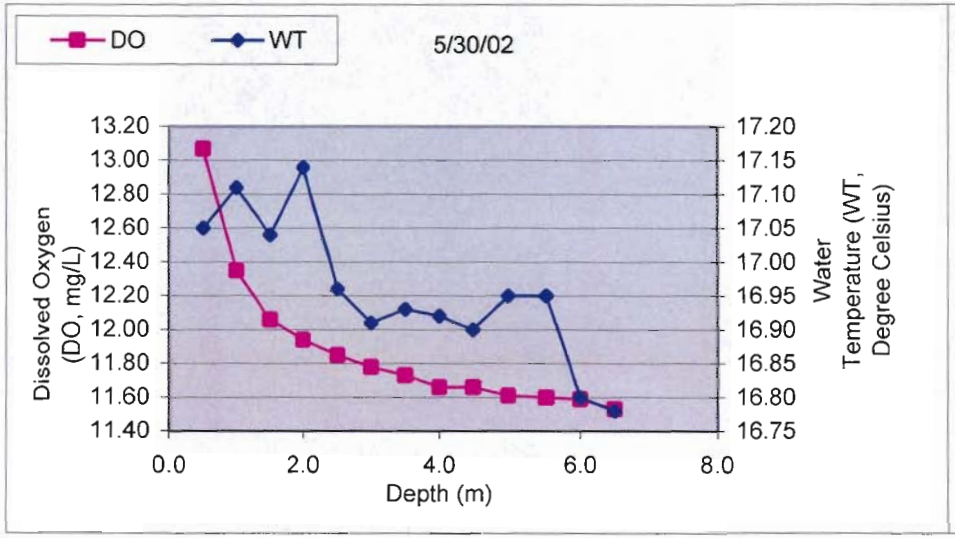


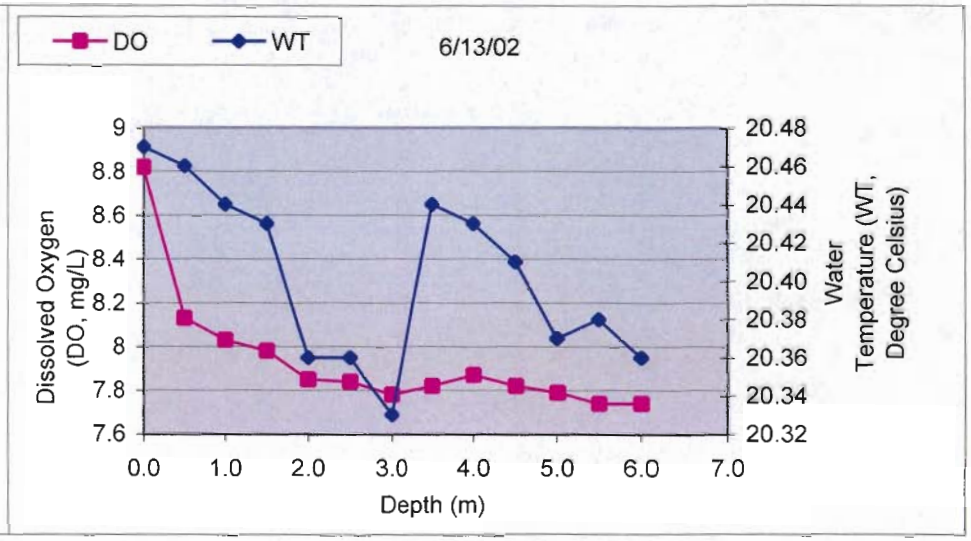


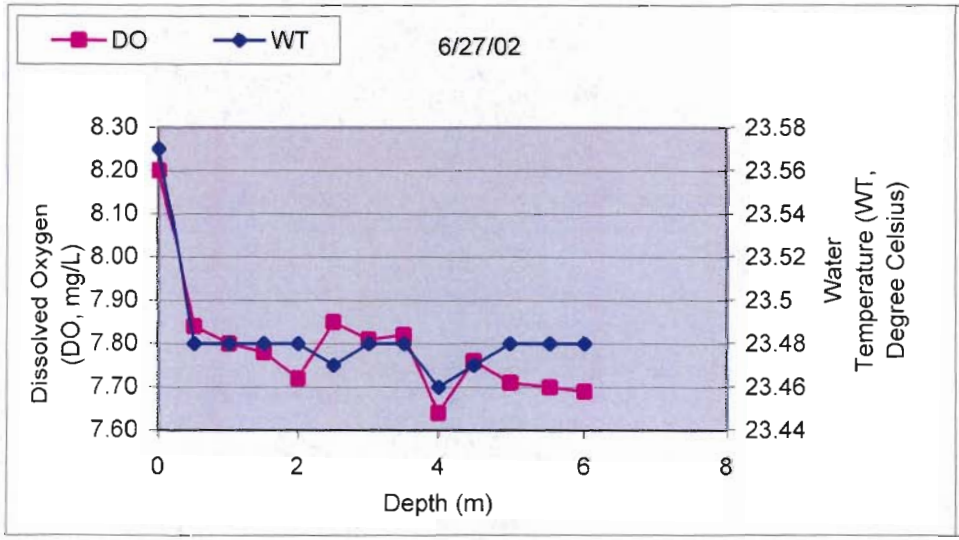
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

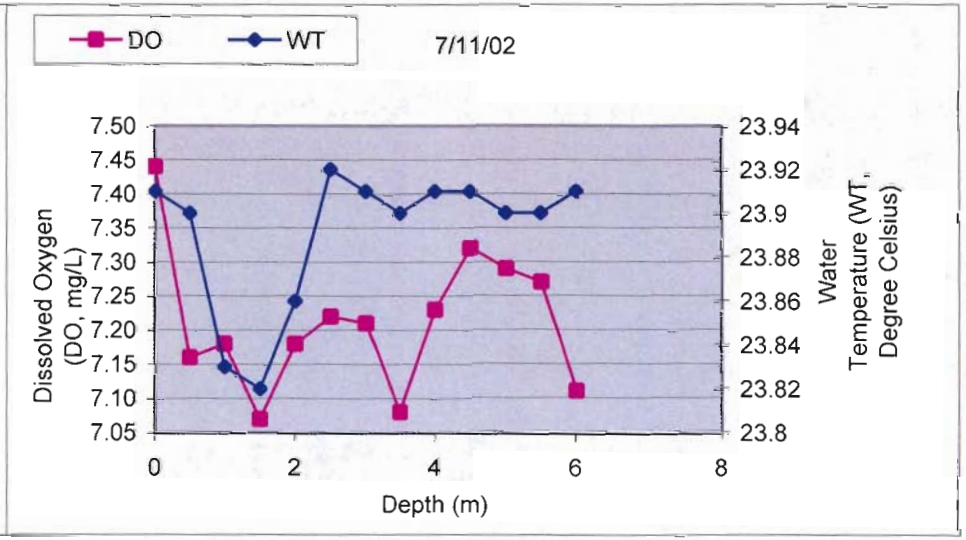
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





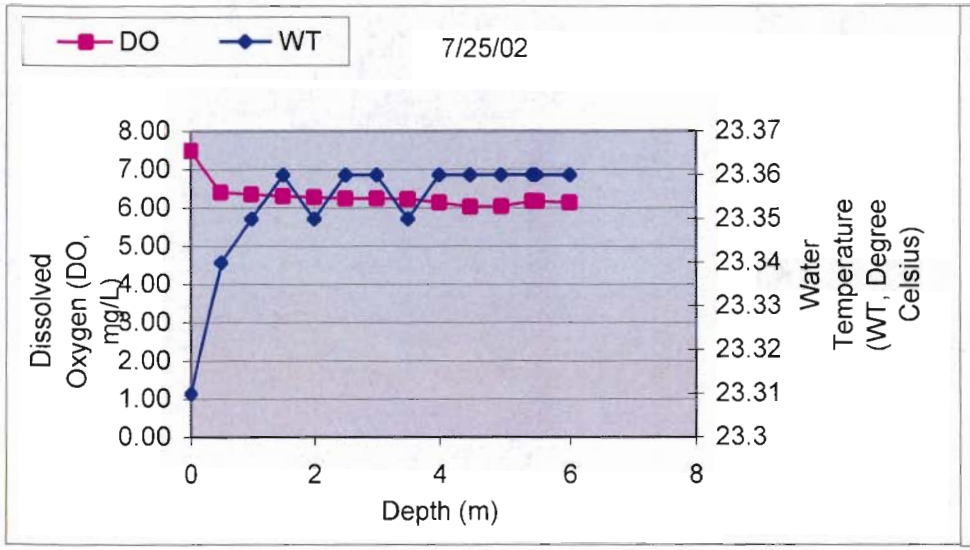


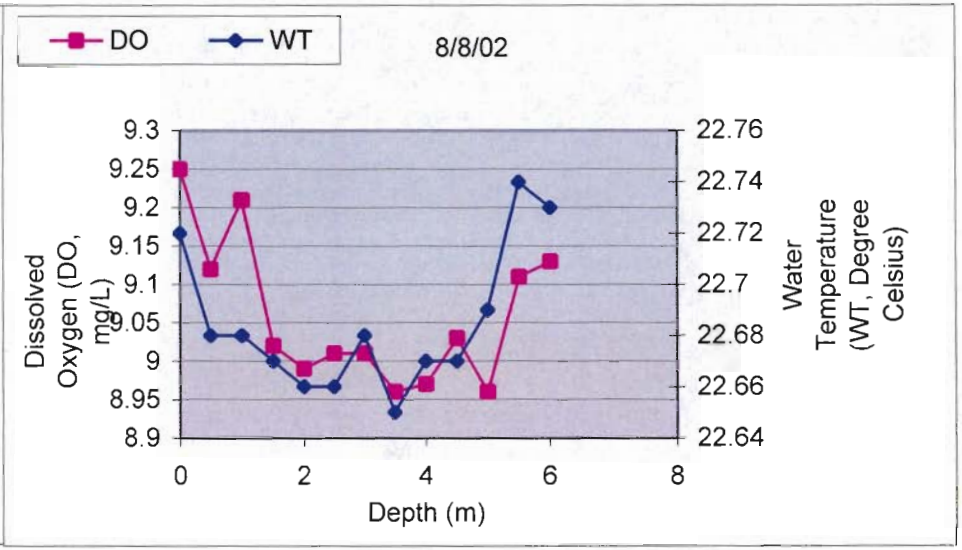


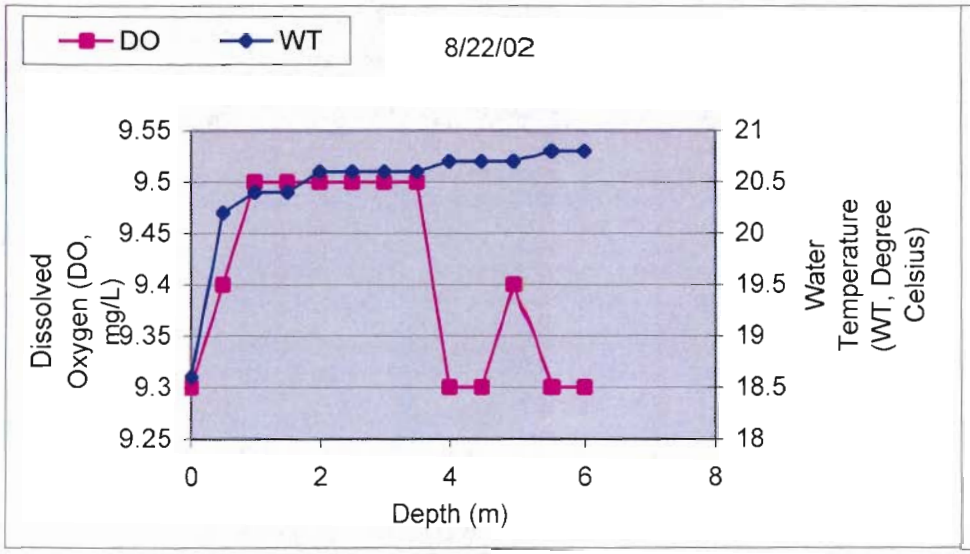
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

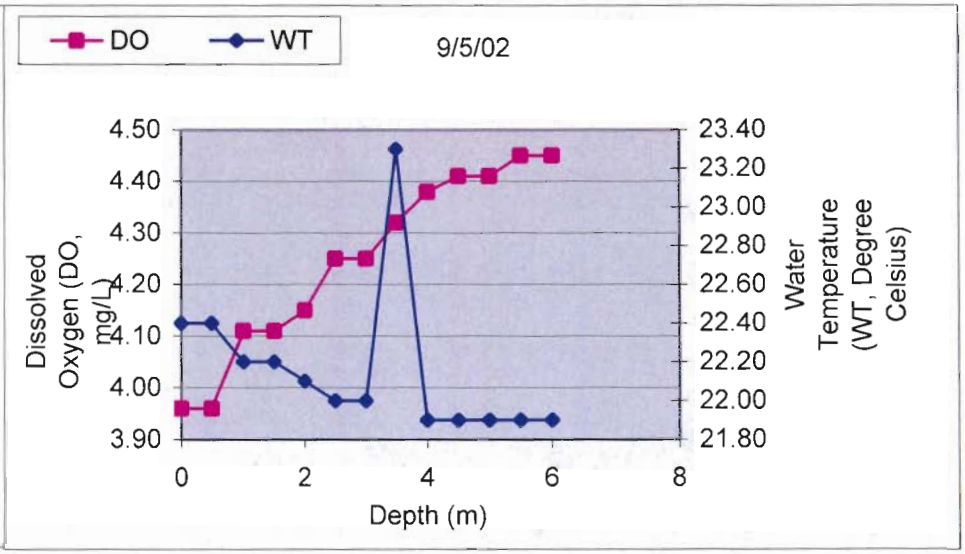
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





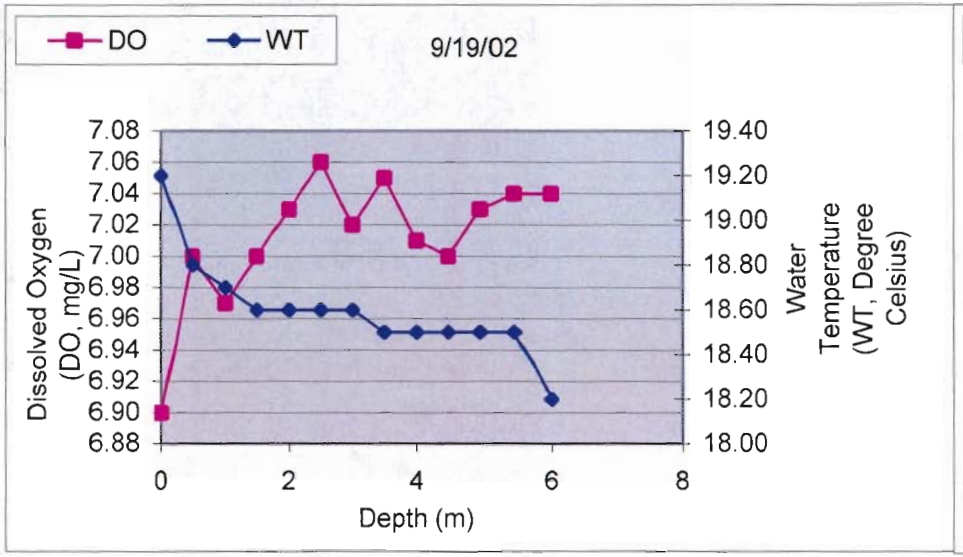


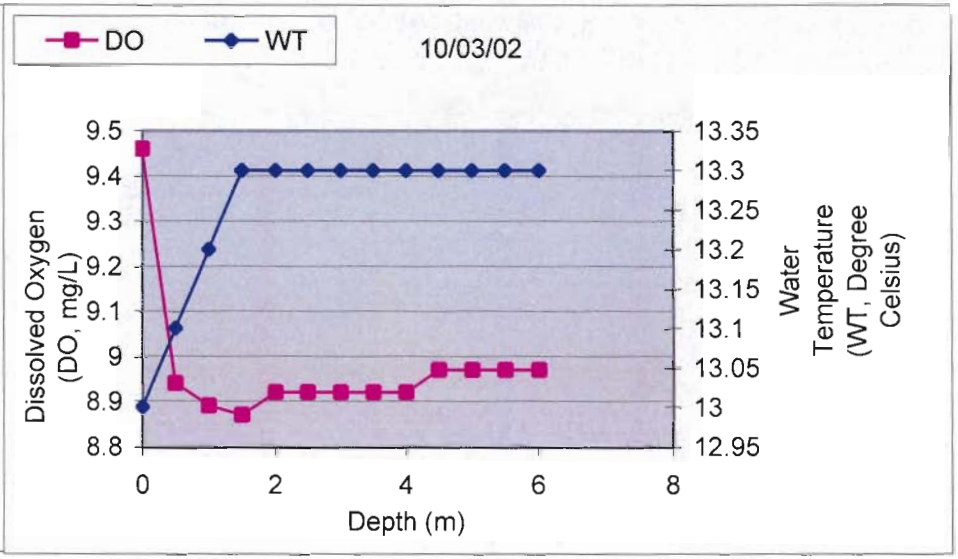


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

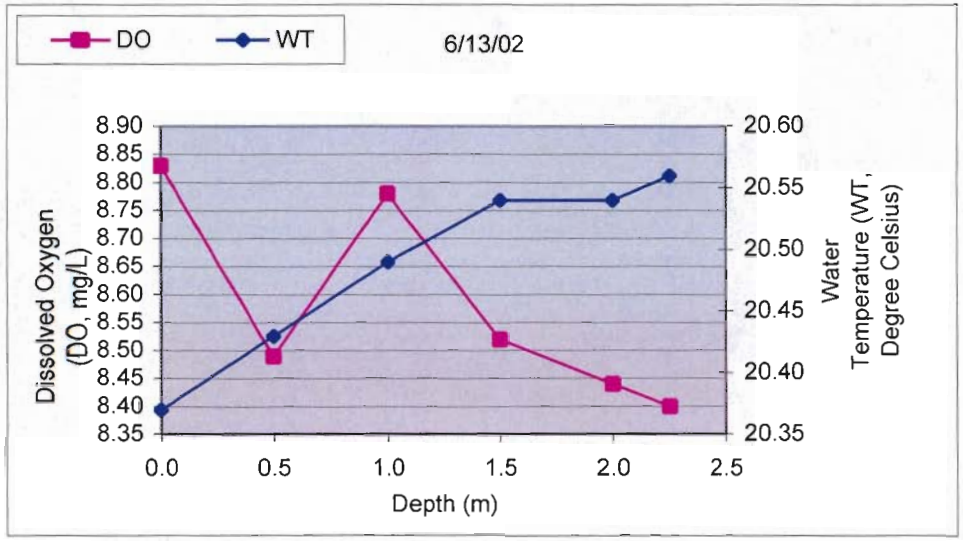


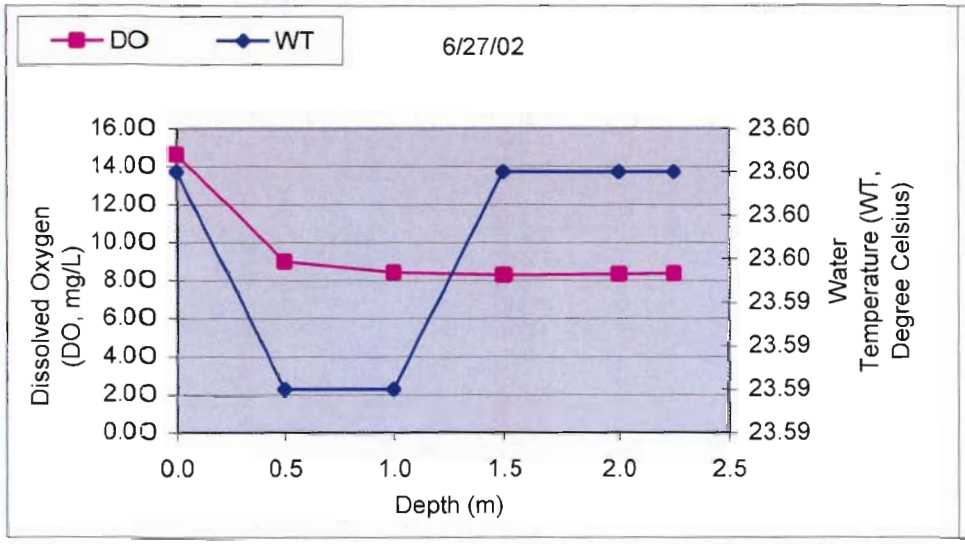


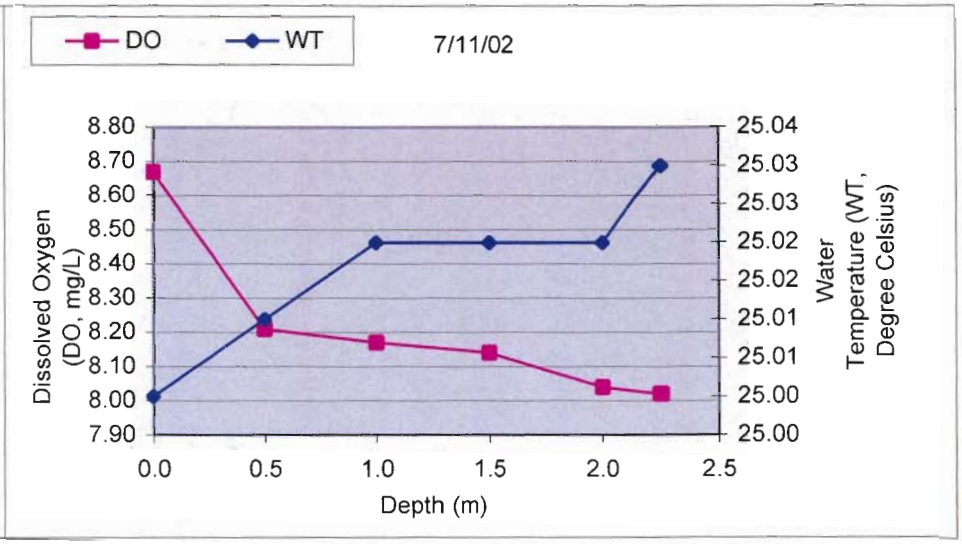
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS



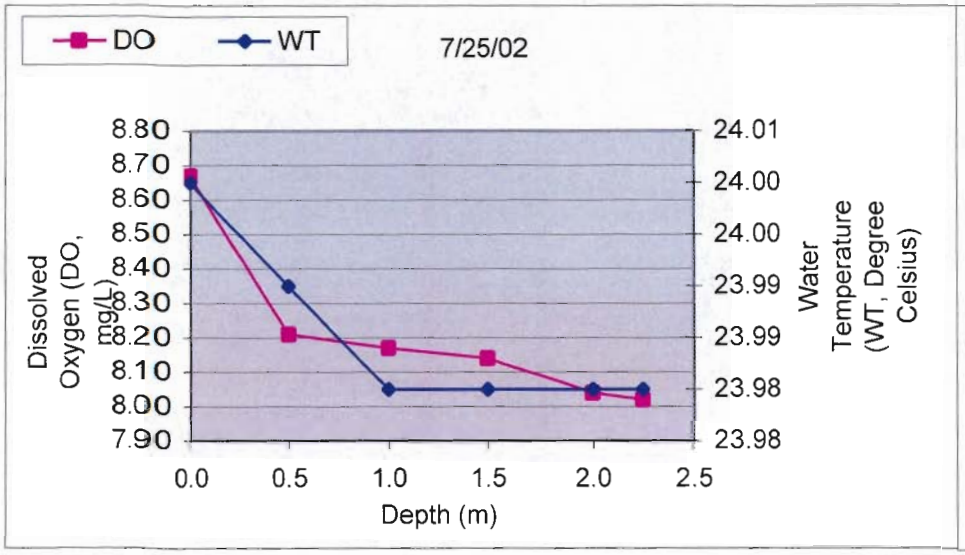


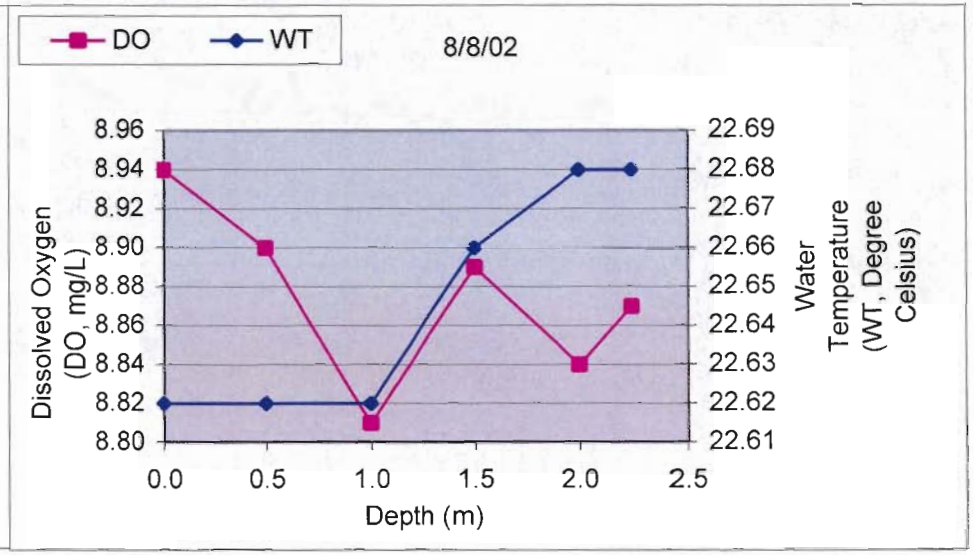


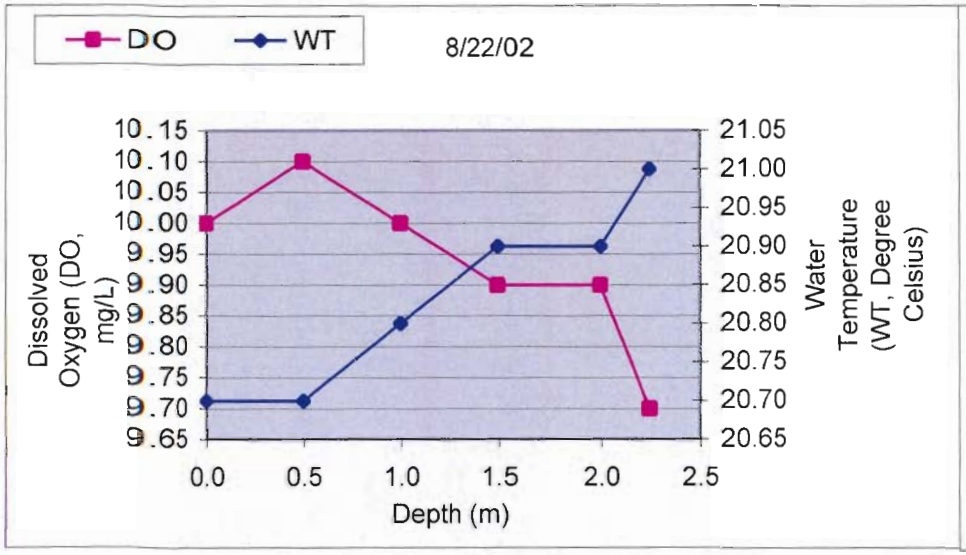
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

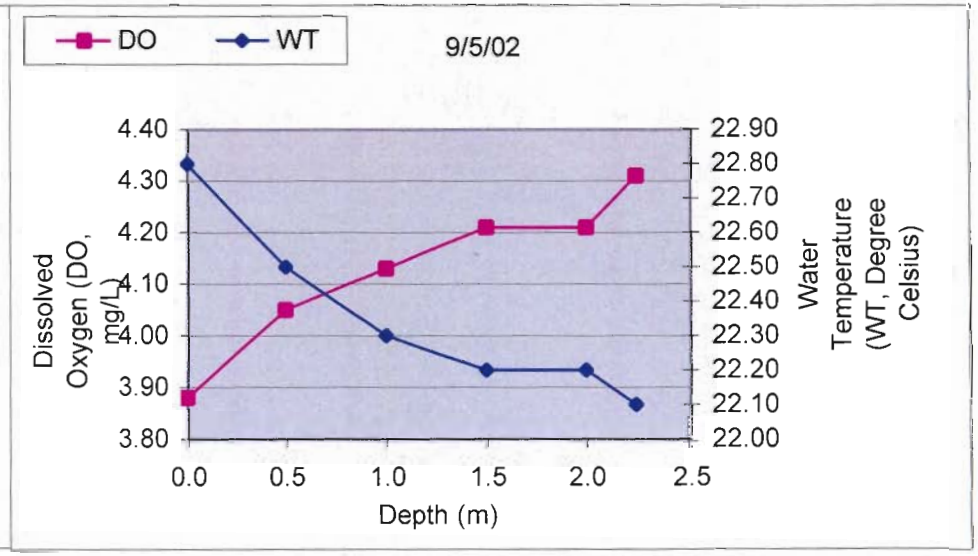
DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





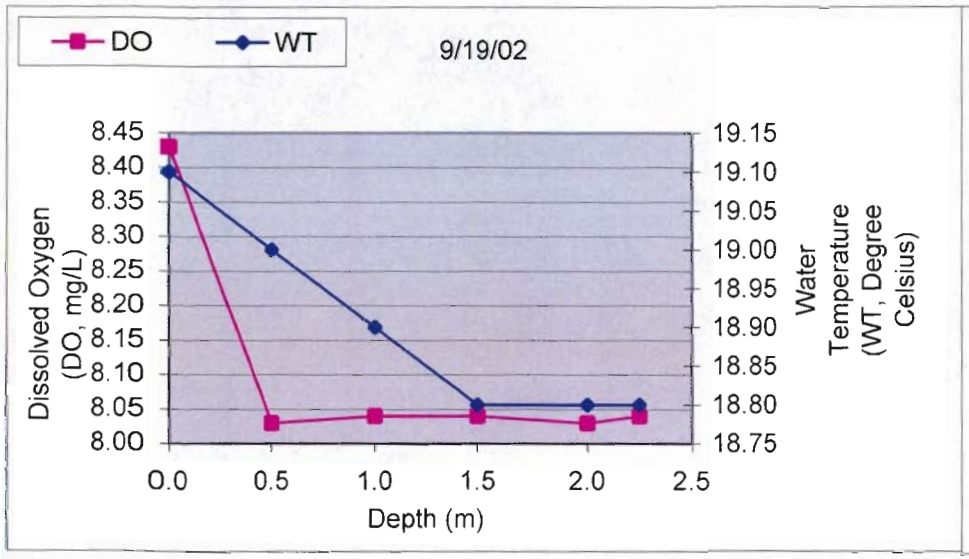


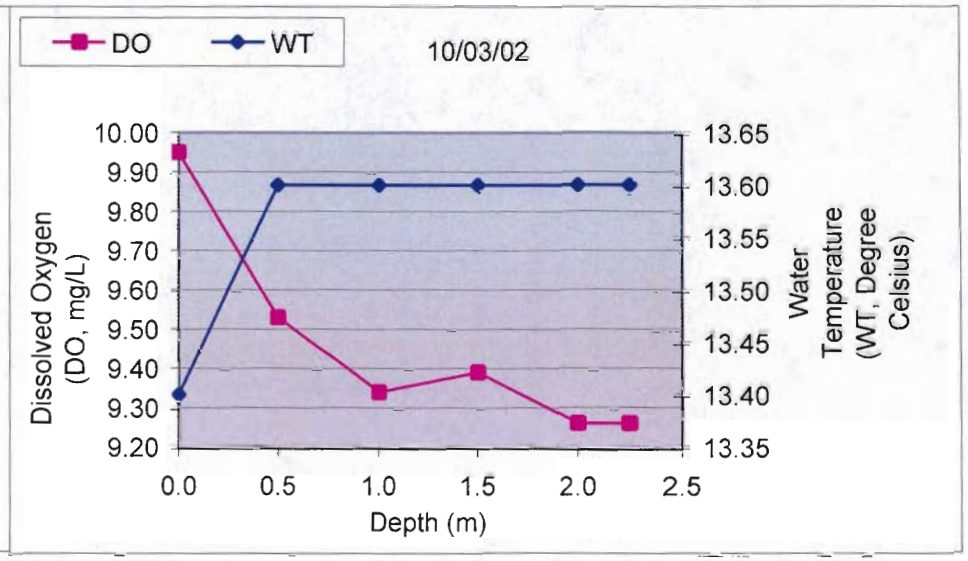


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER

WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS





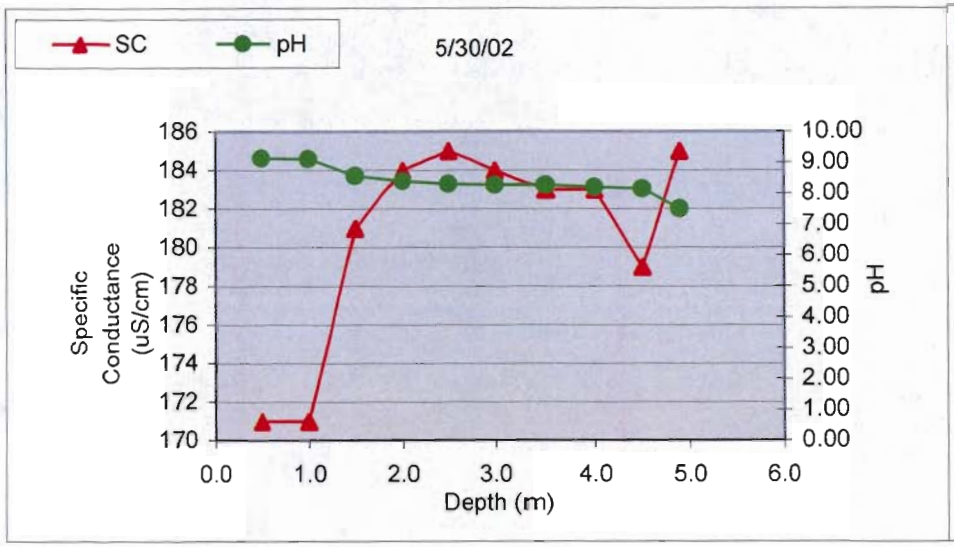
GRAPHS:

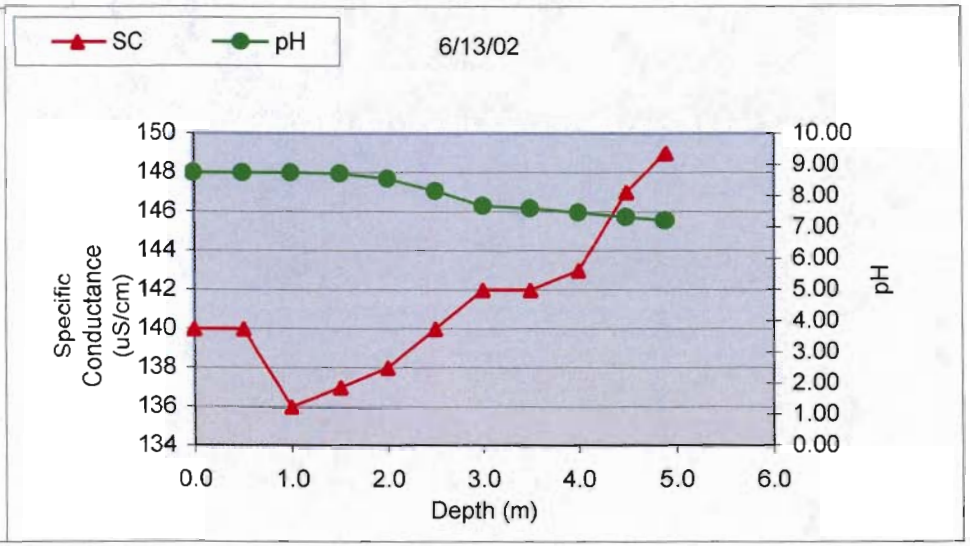
pH & Specific Conductance

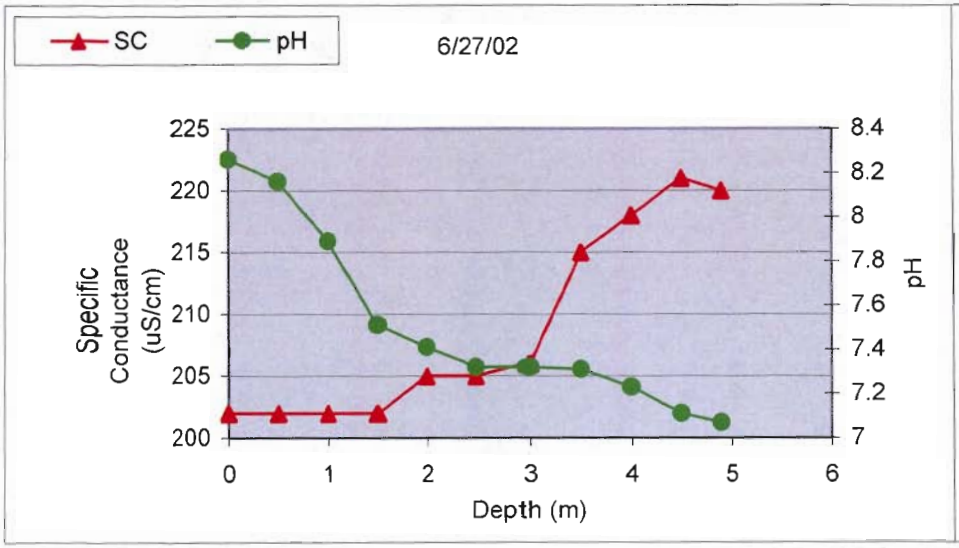
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

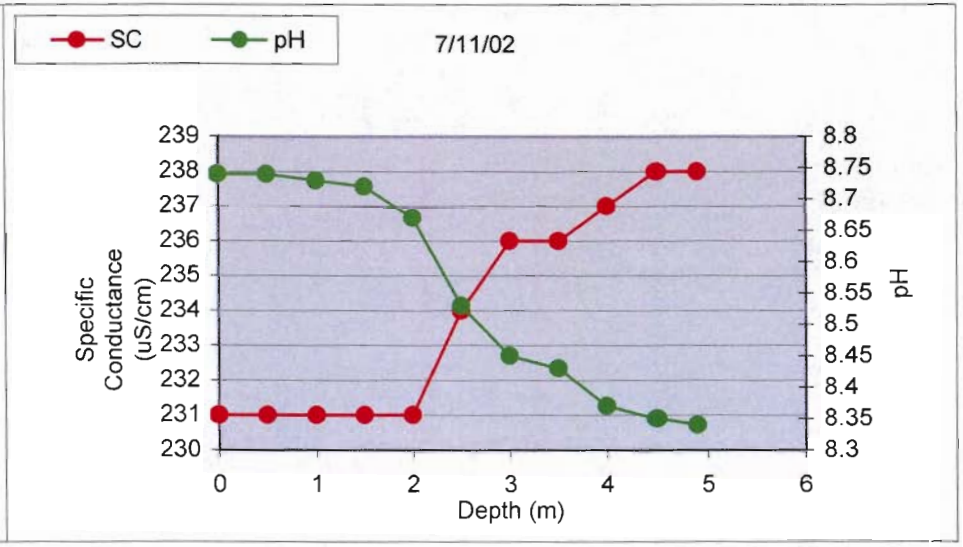
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





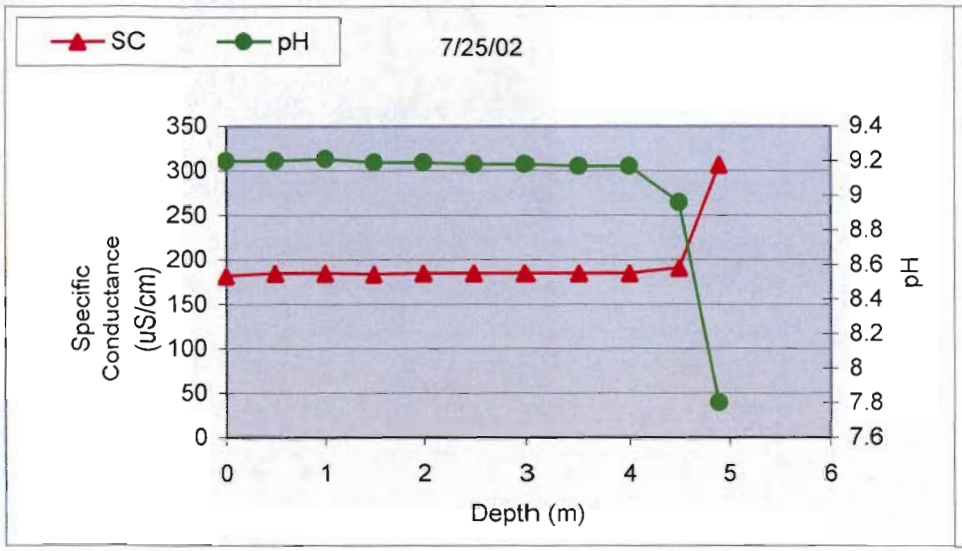


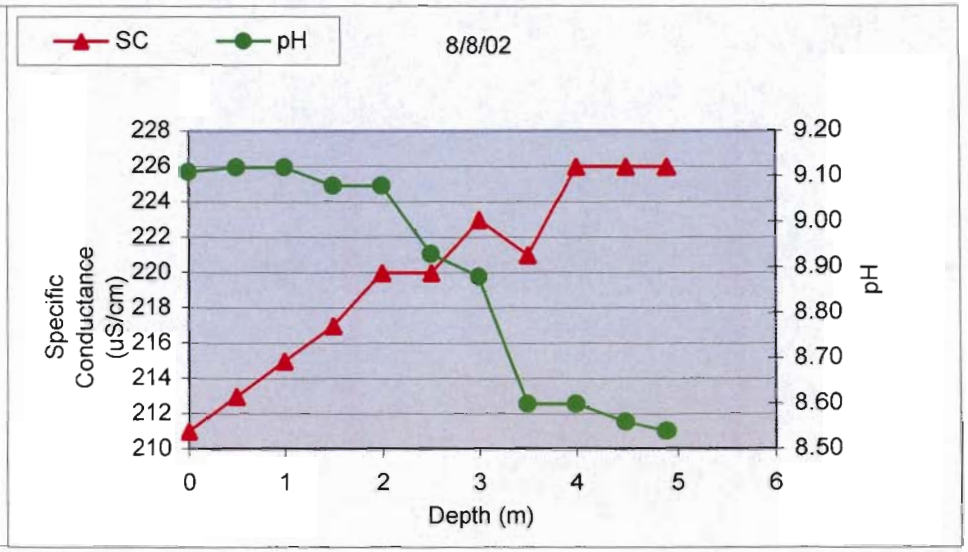


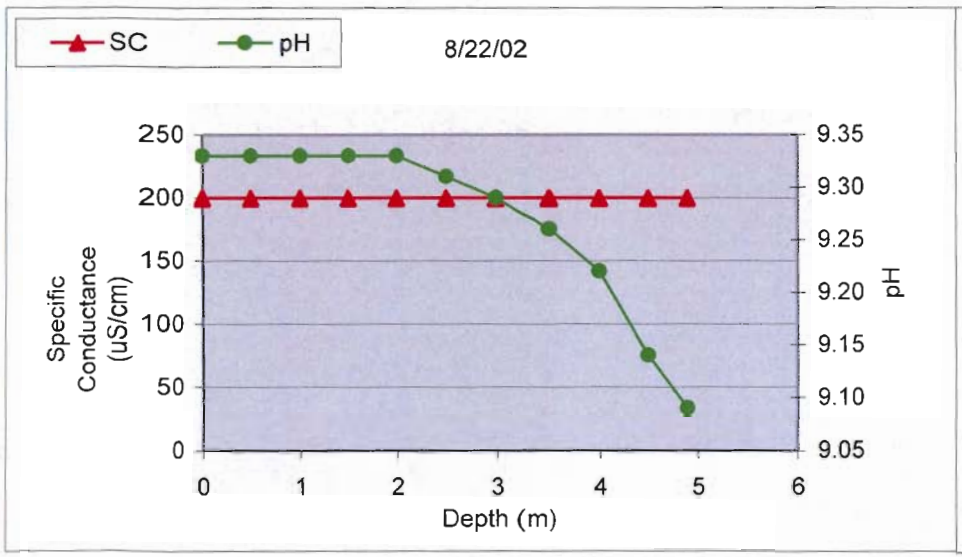
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

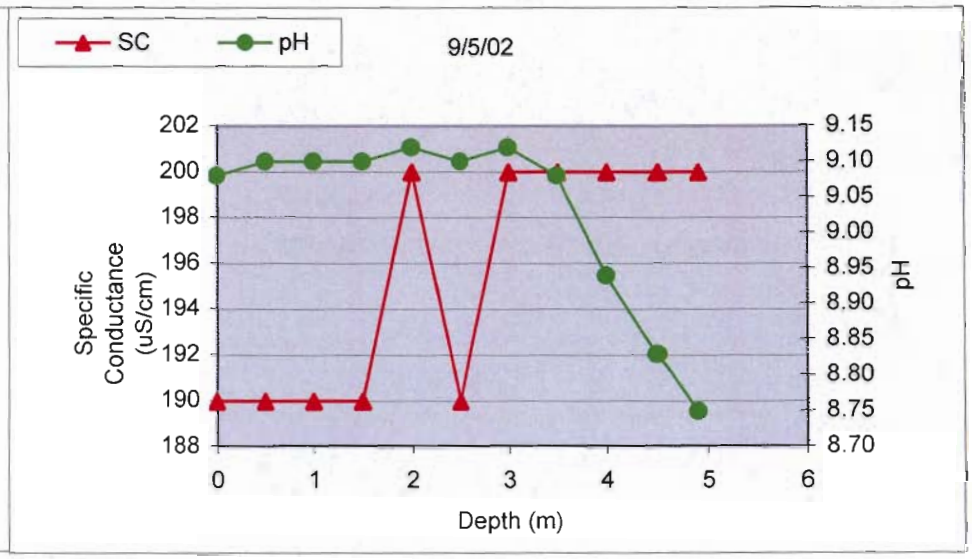
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





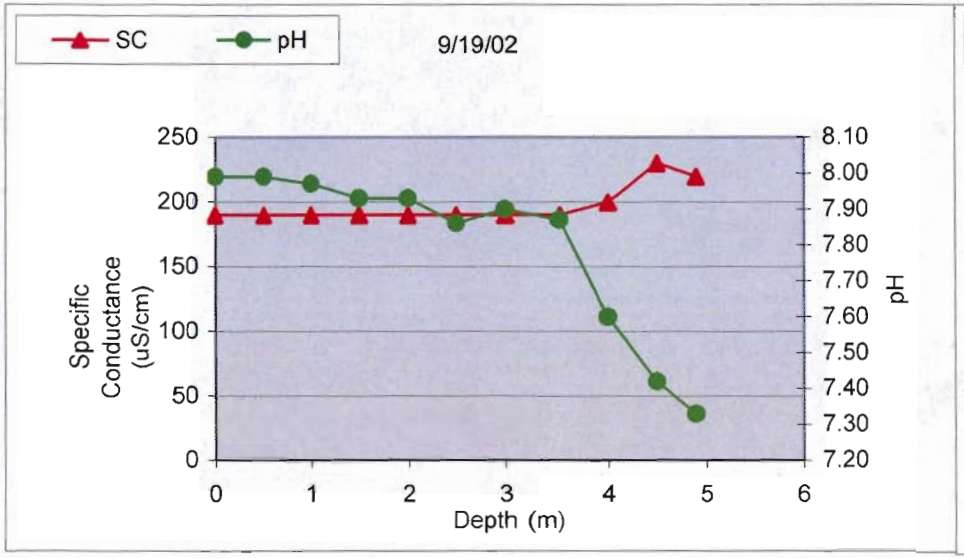


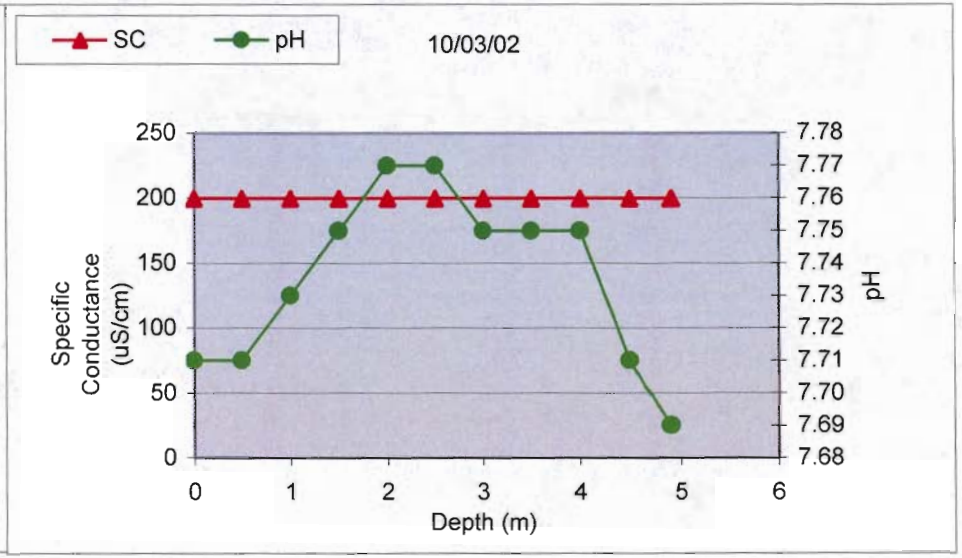


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-1

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS

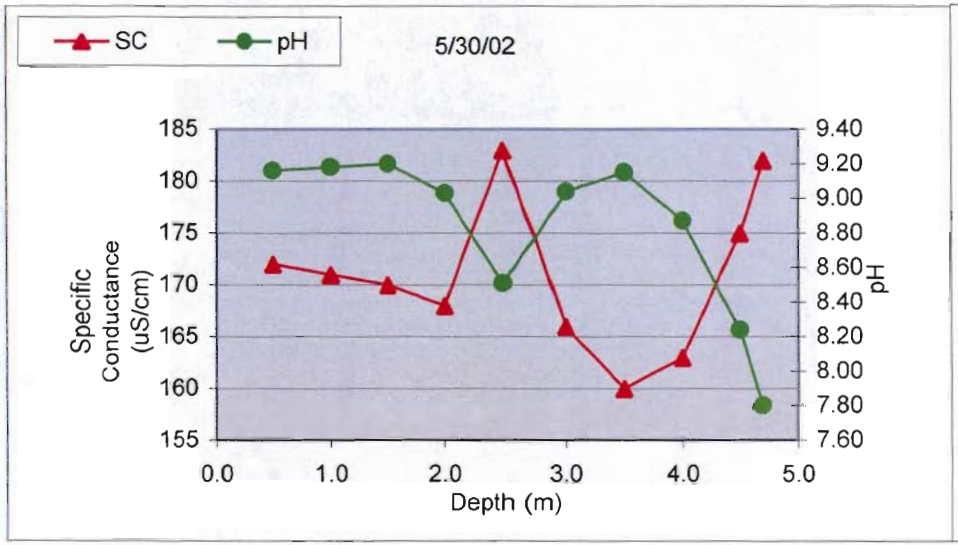


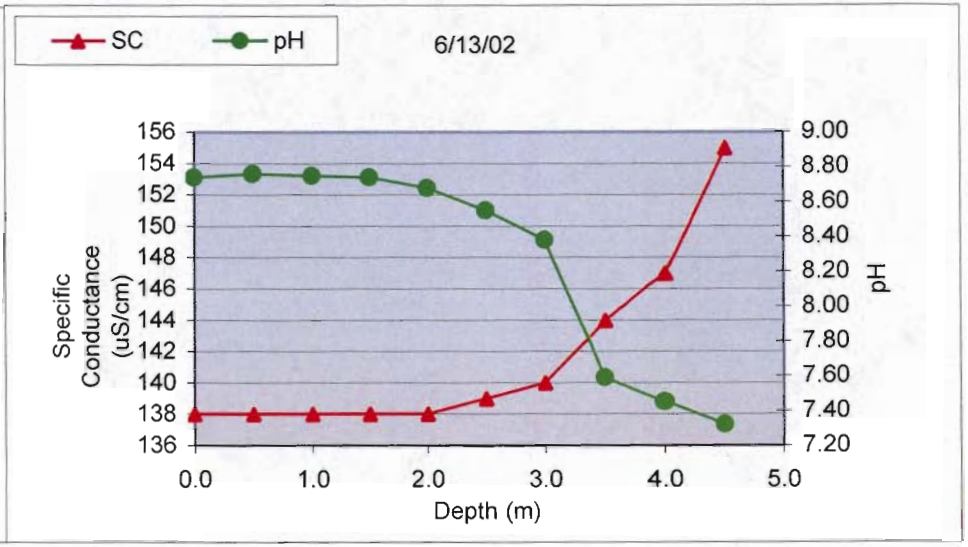


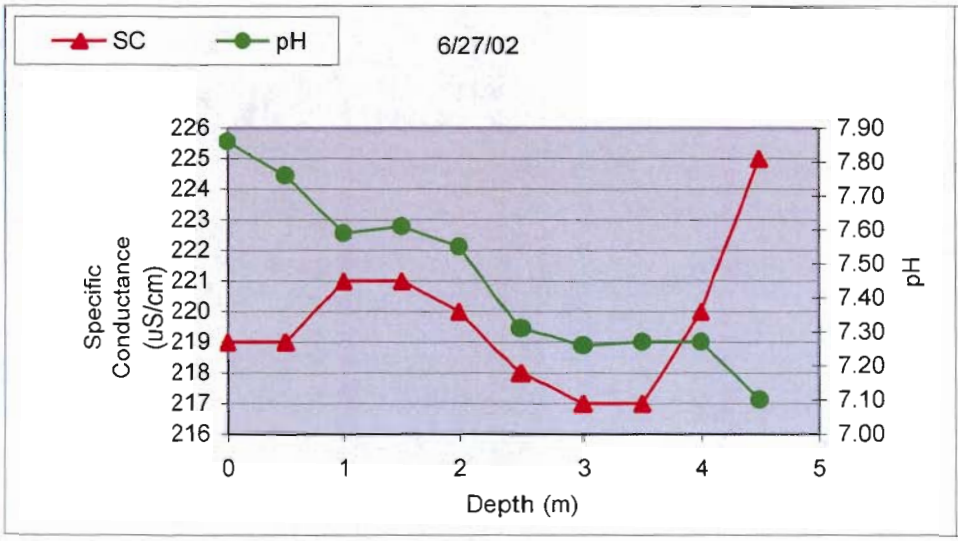
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

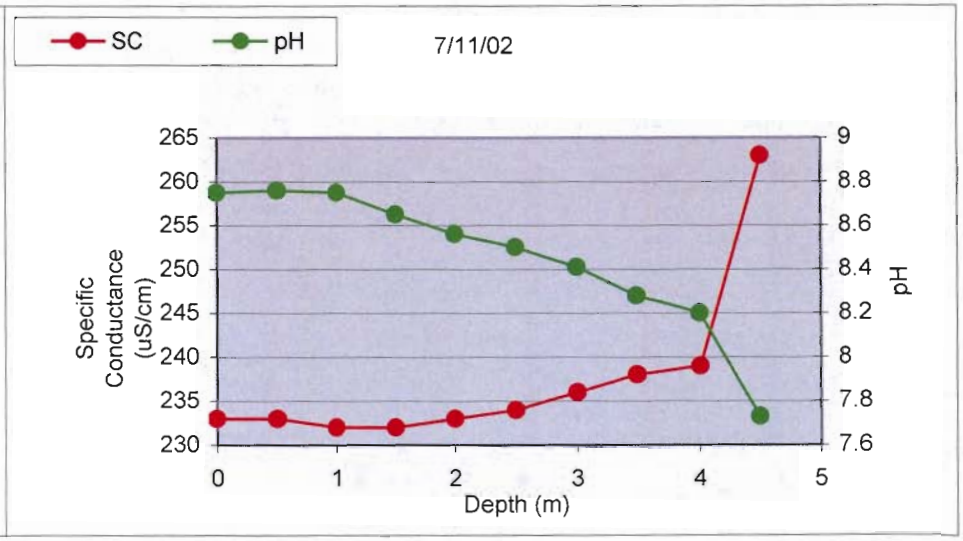
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





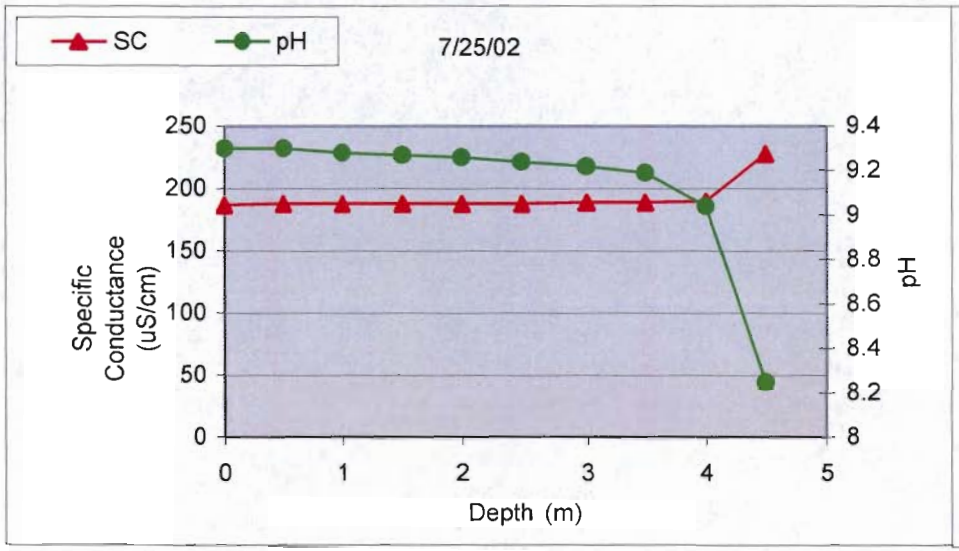


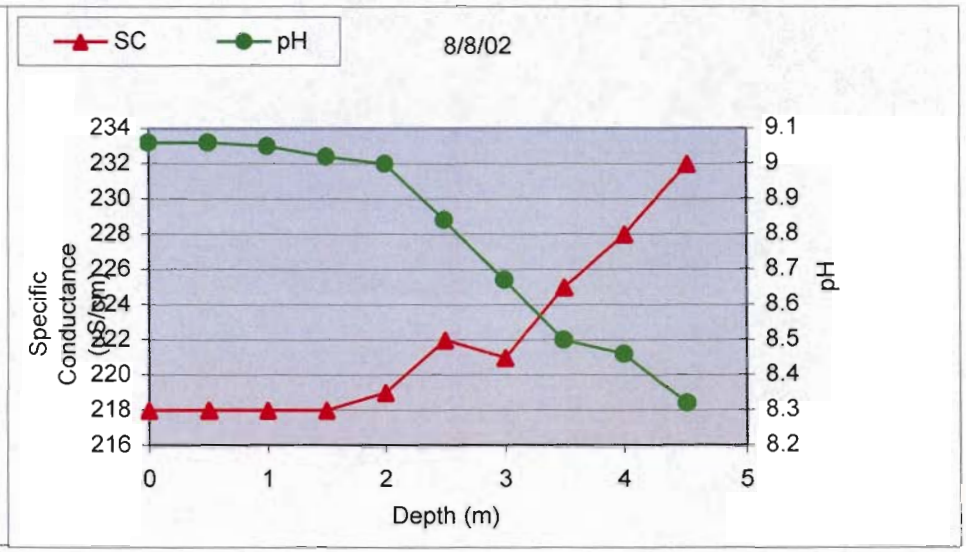


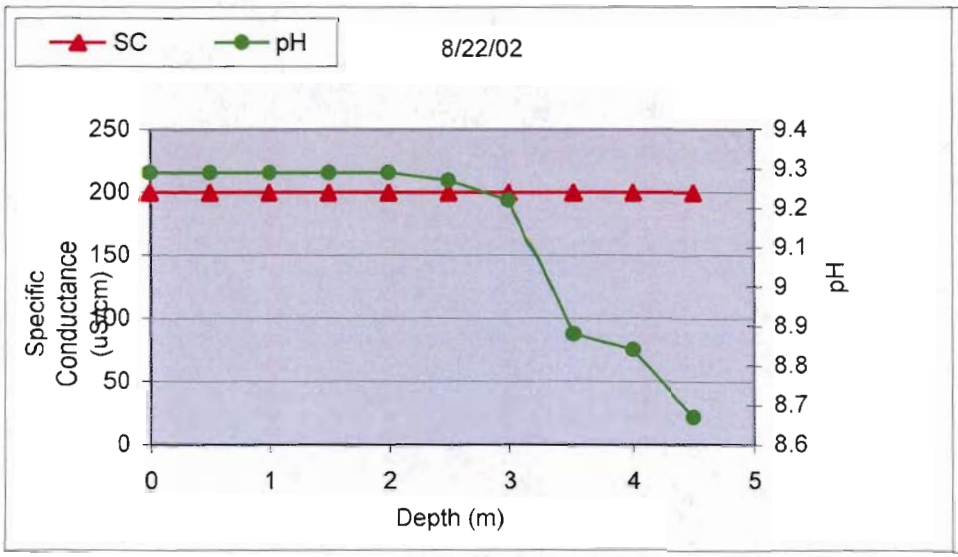
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

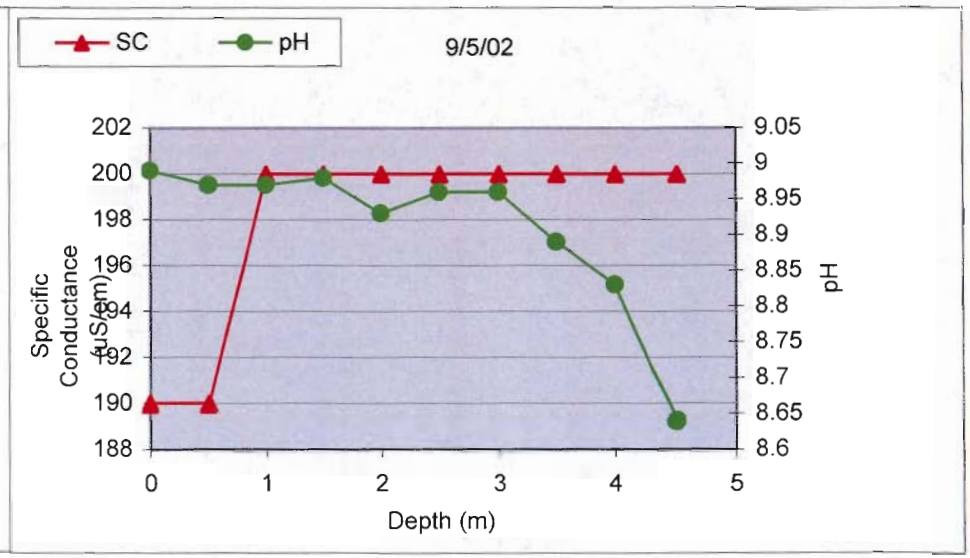
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





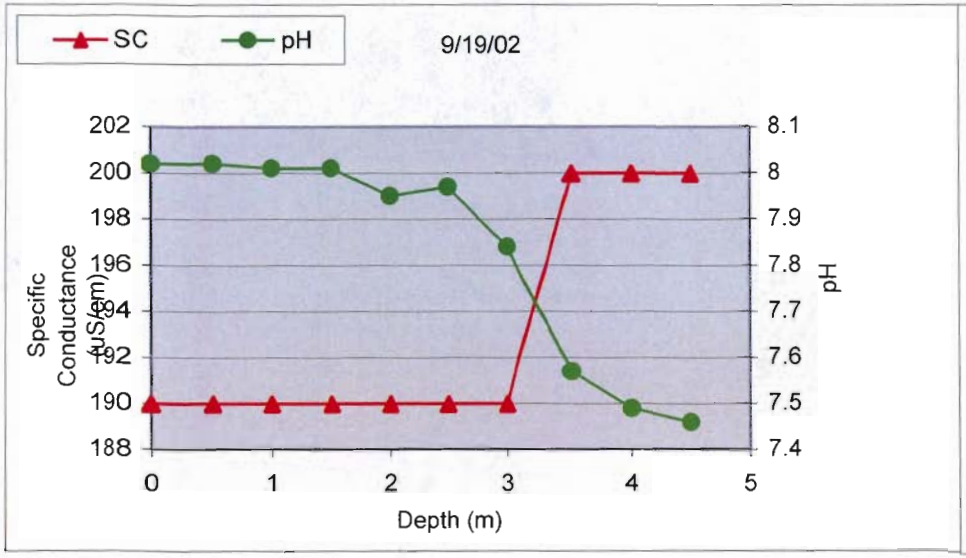


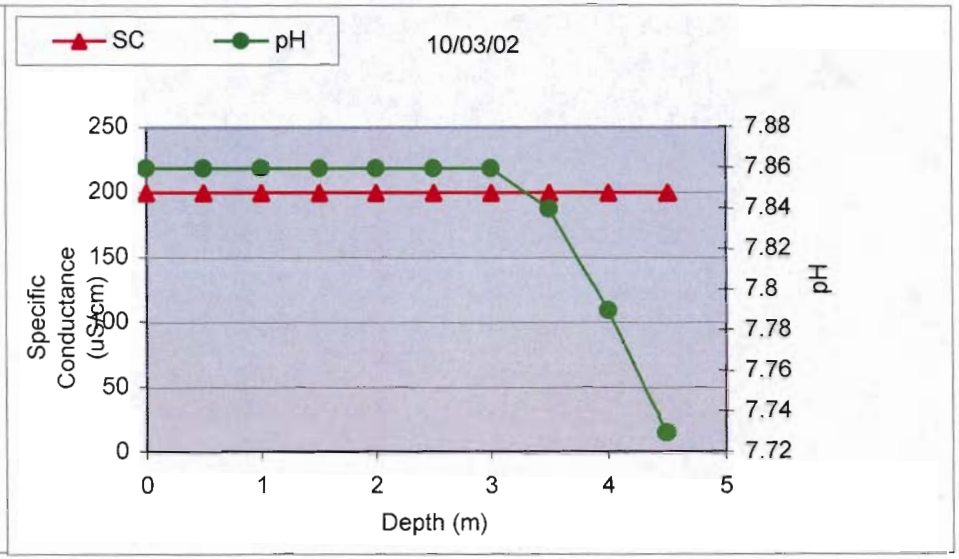


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-2

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS

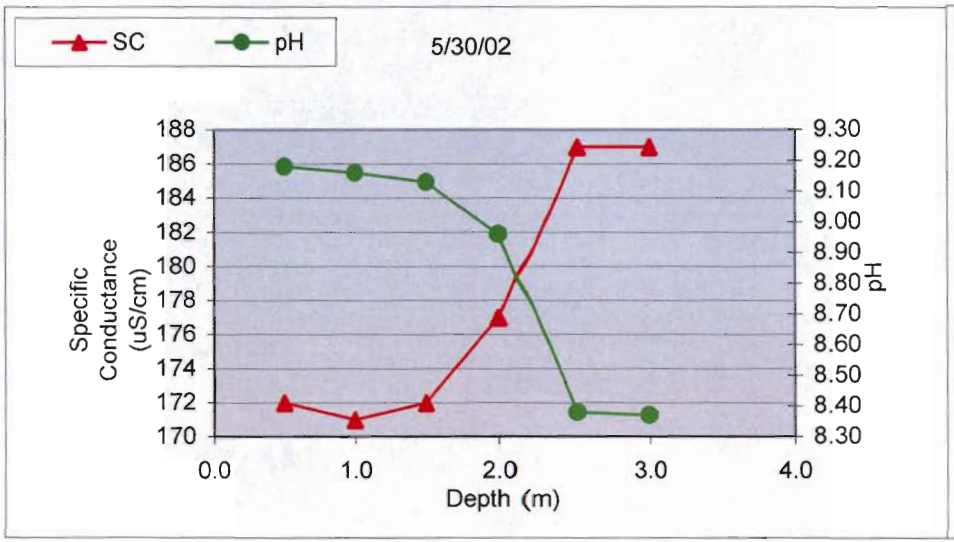


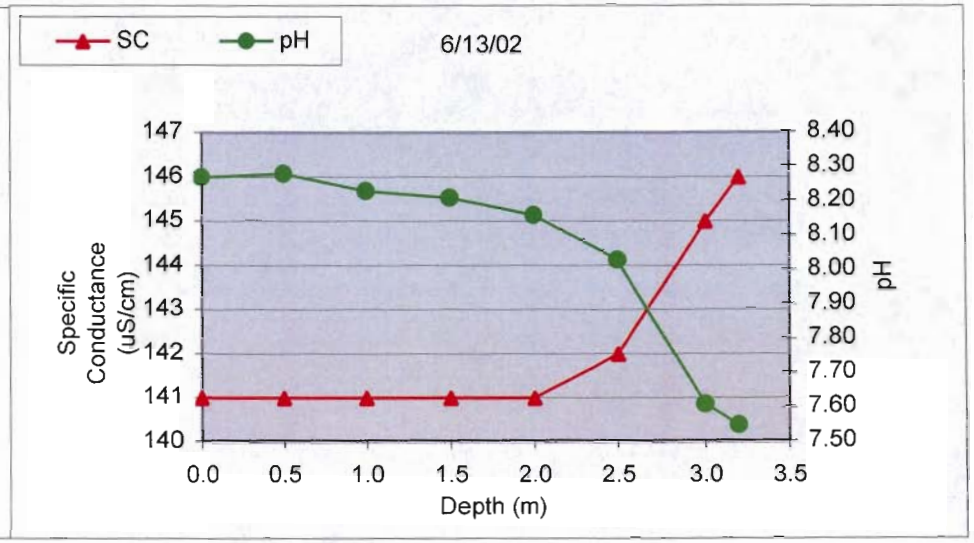


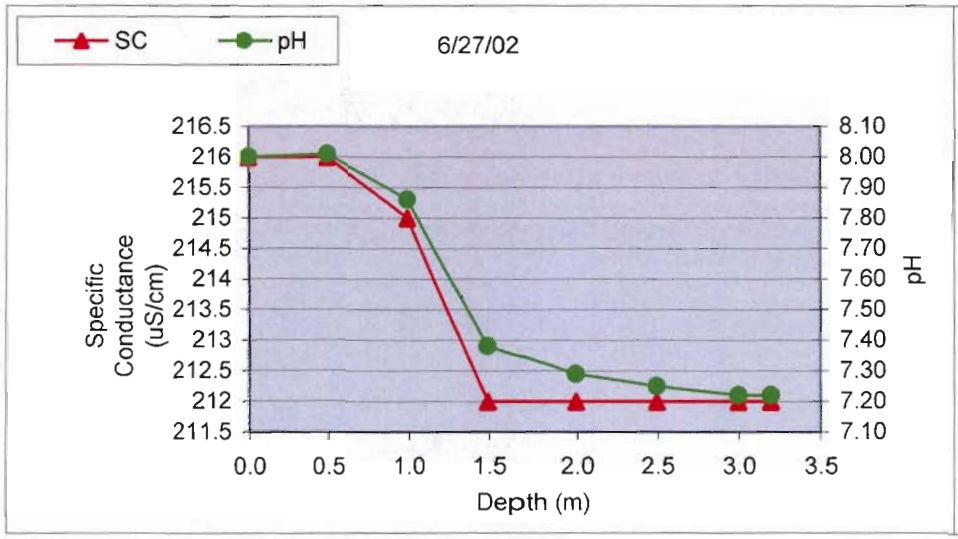
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

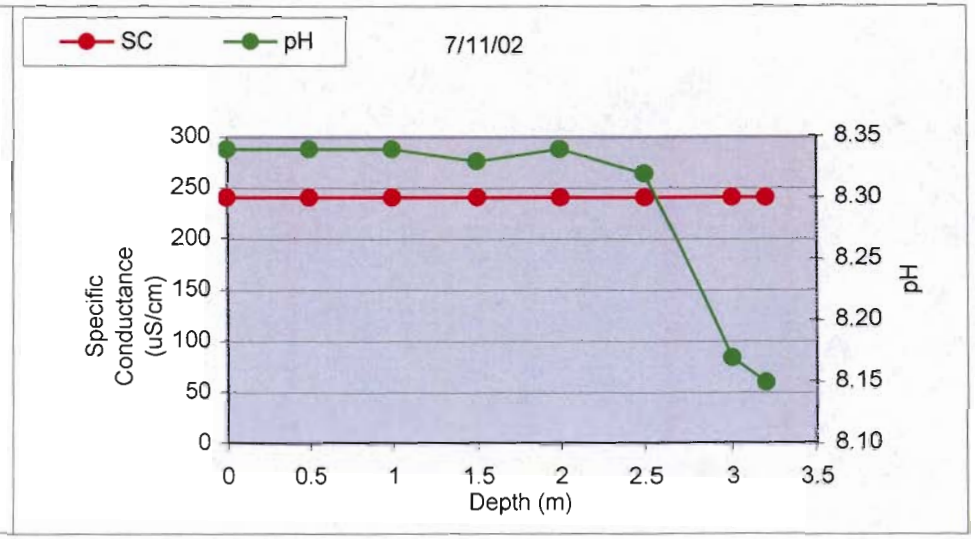
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





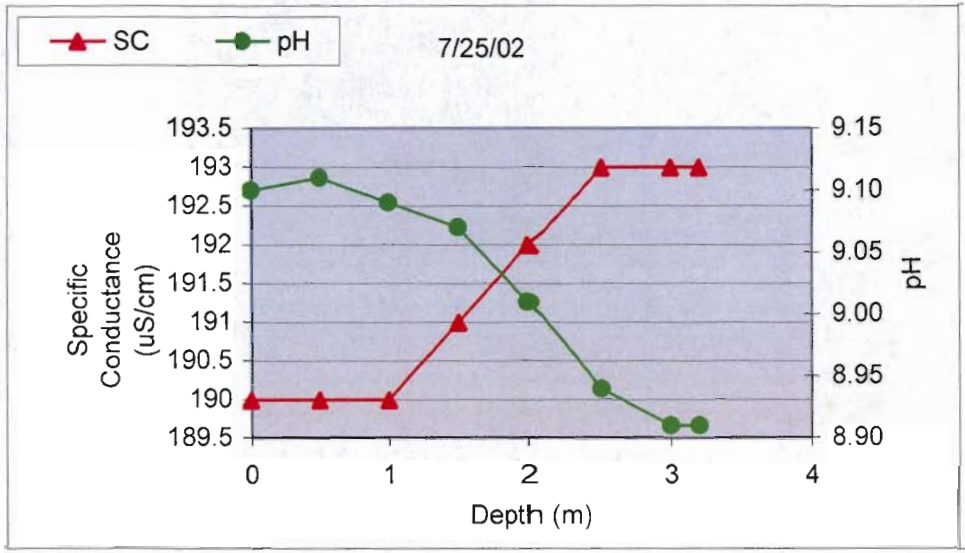


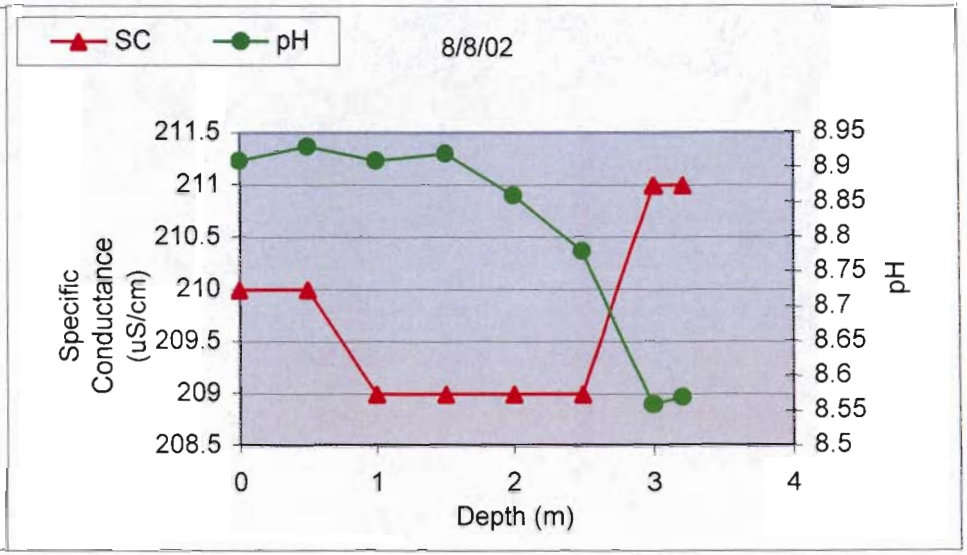


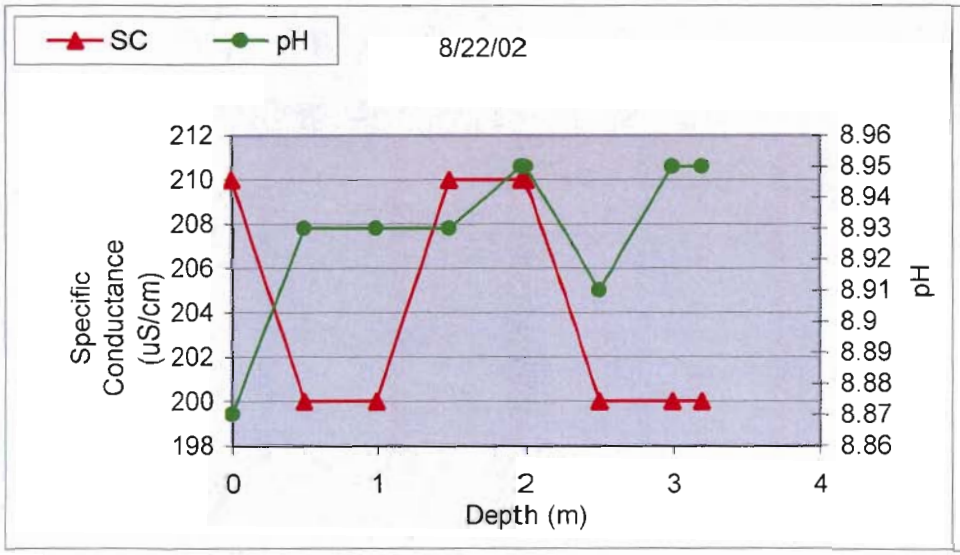
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

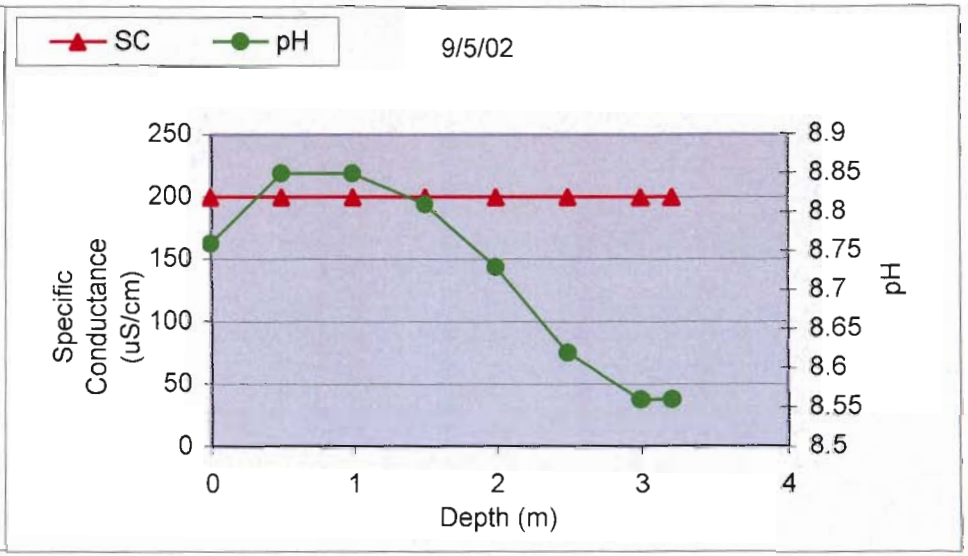
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





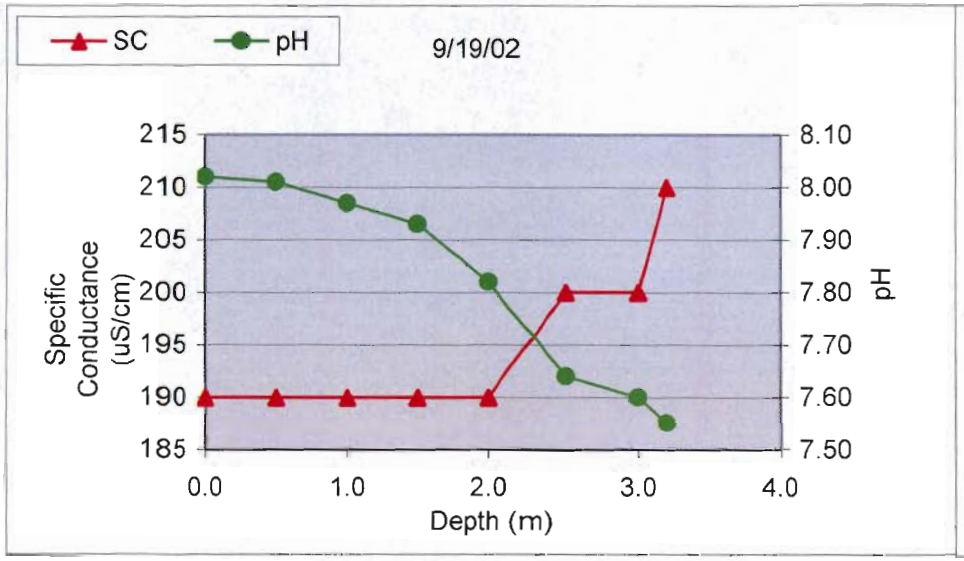


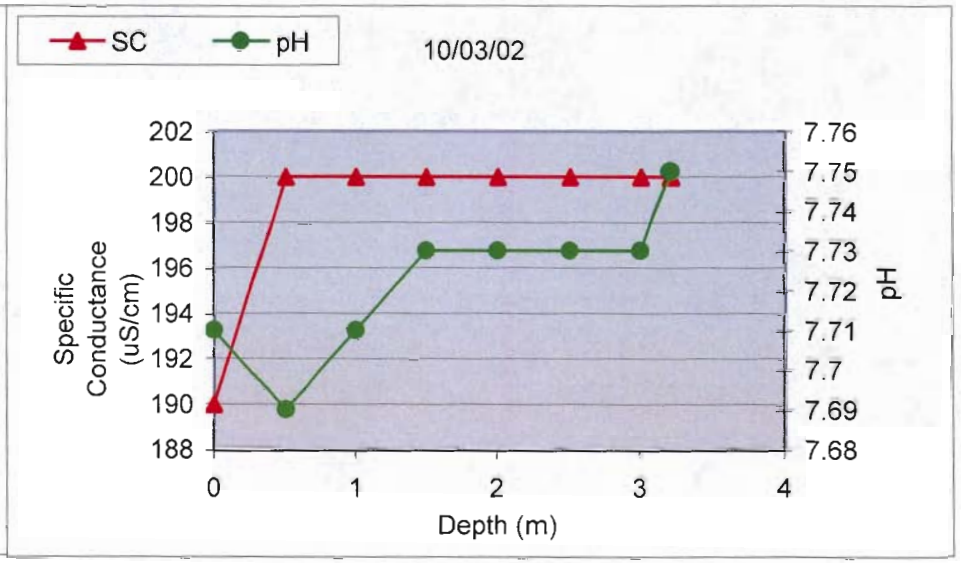


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-3

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS

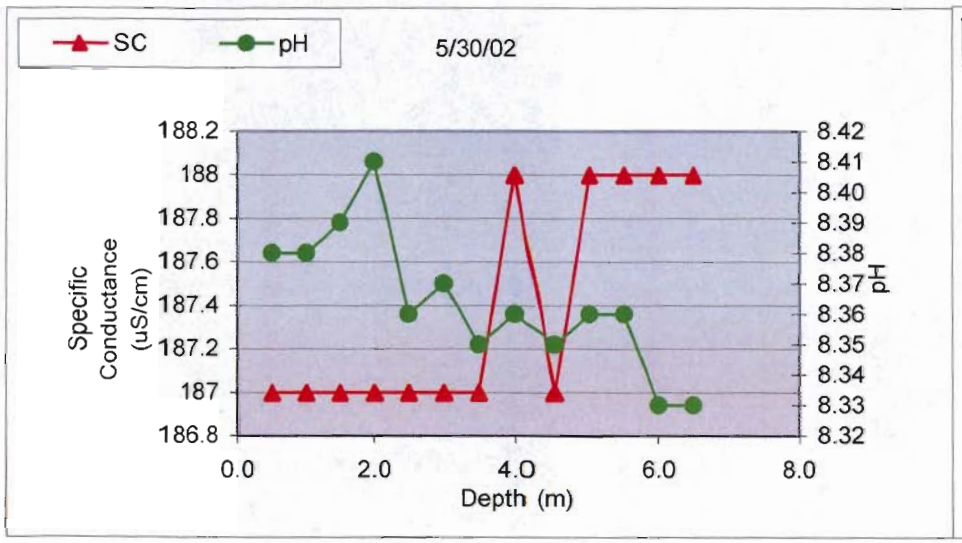


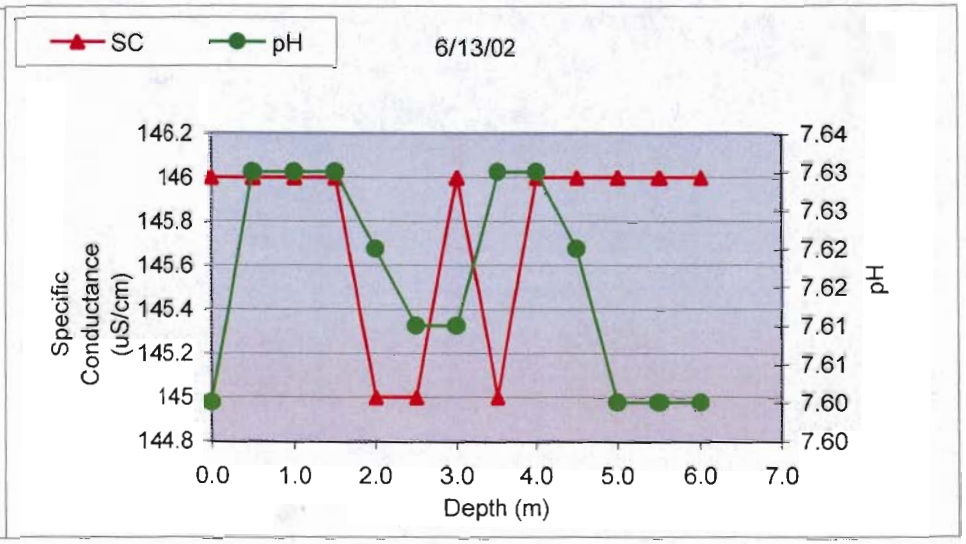


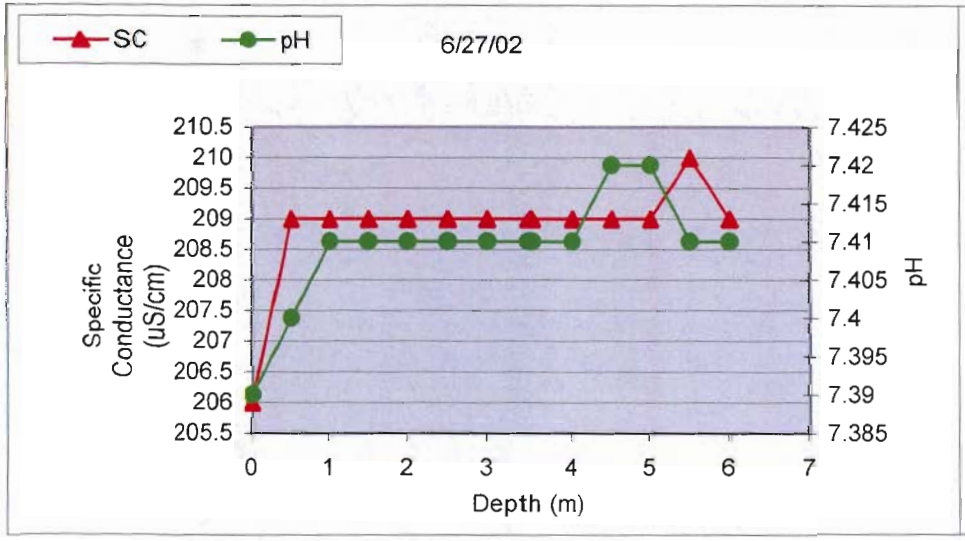
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

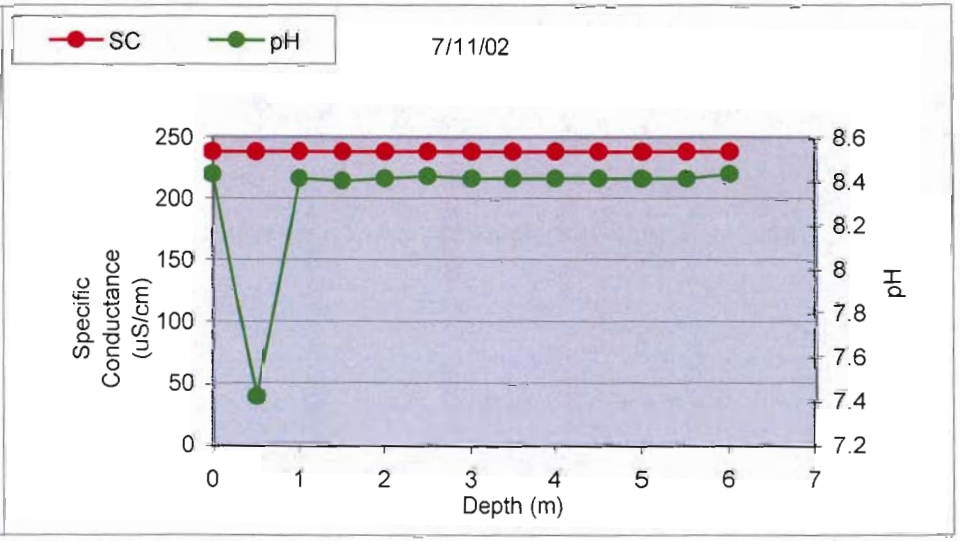
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





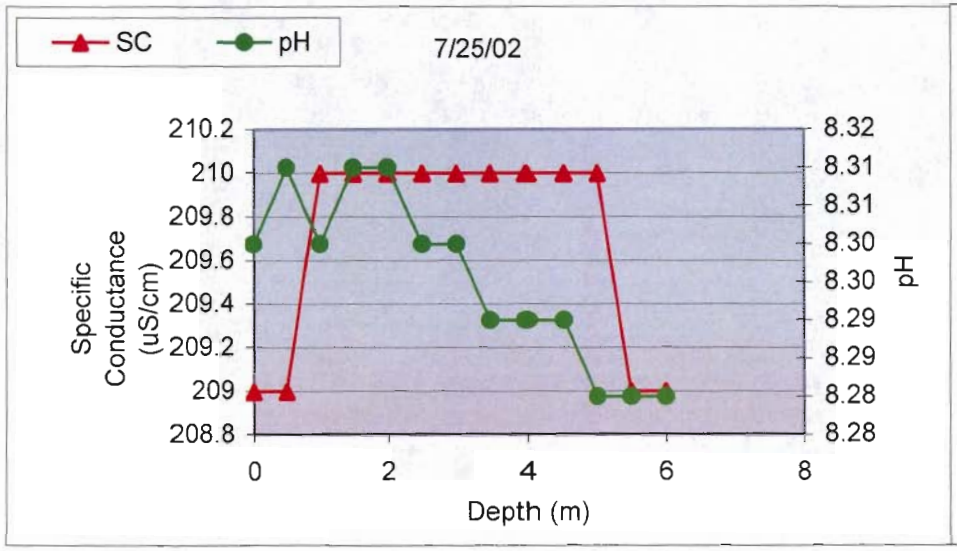


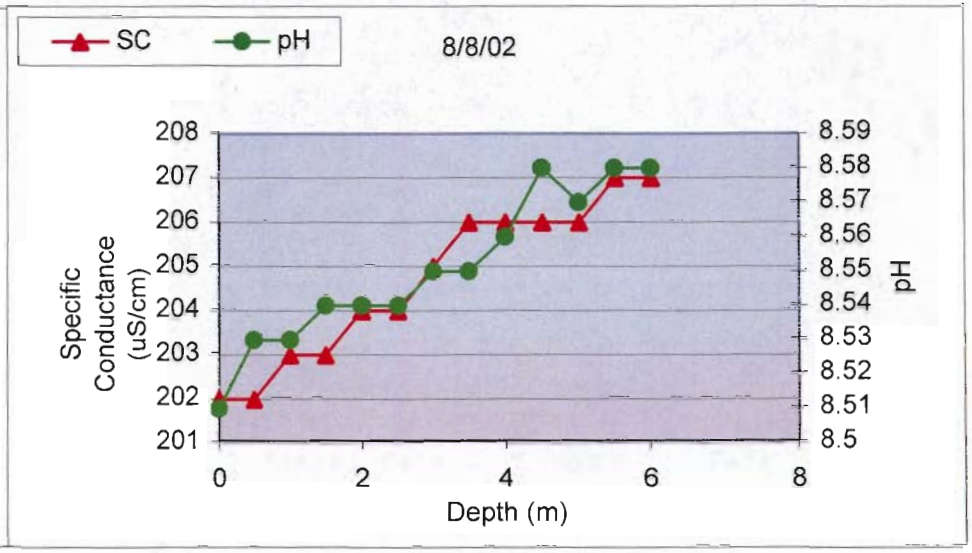


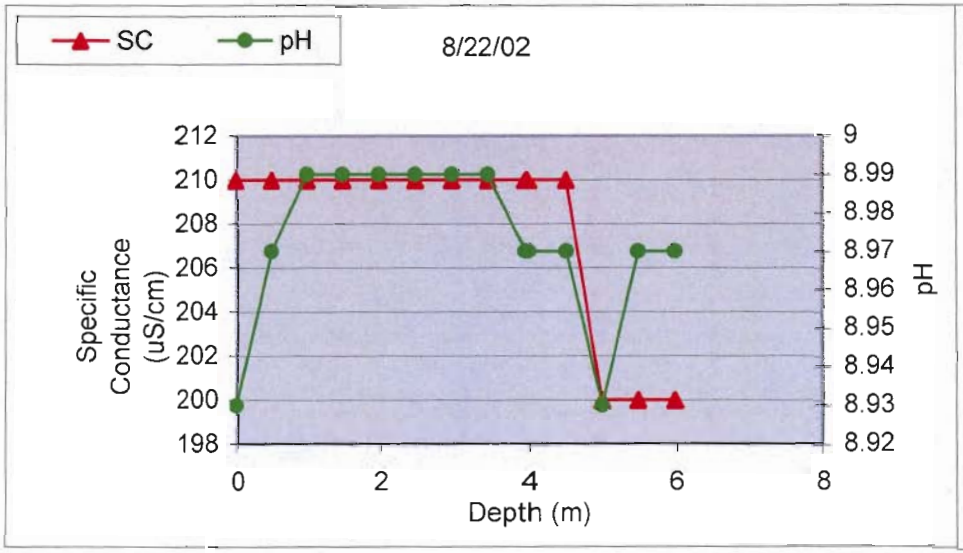
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

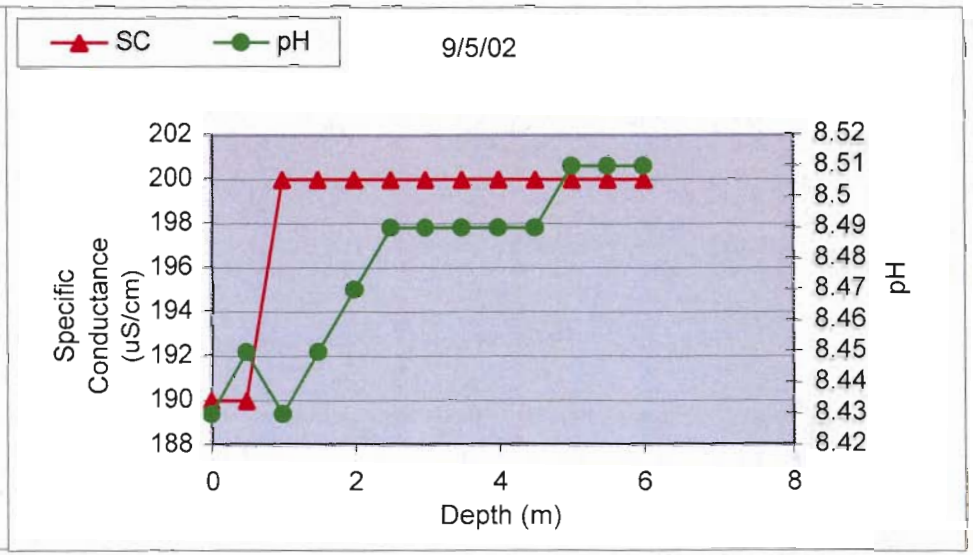
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS





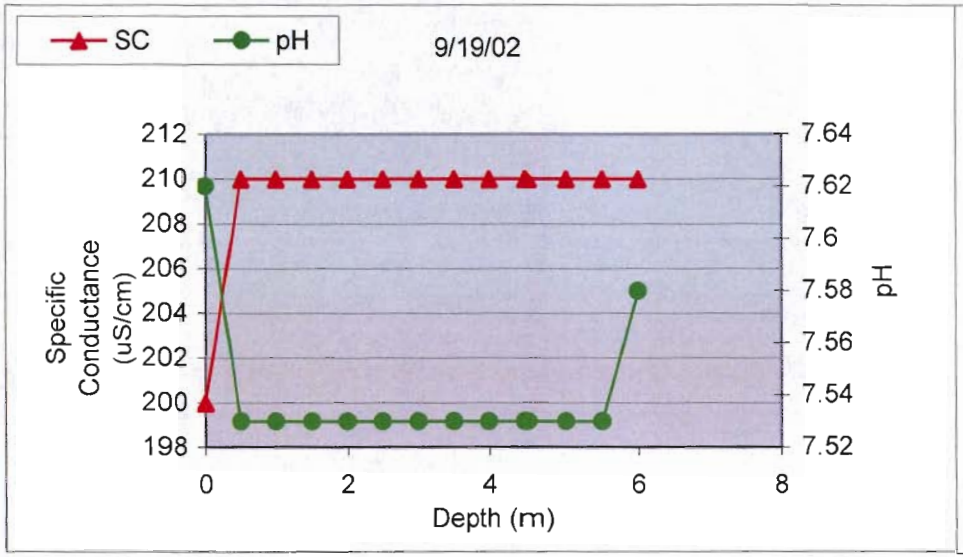


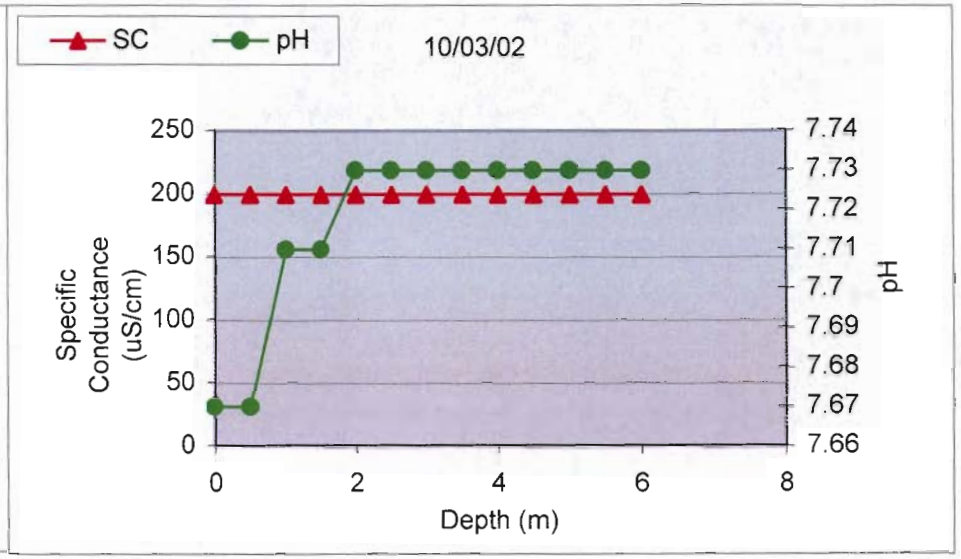


City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-4

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS

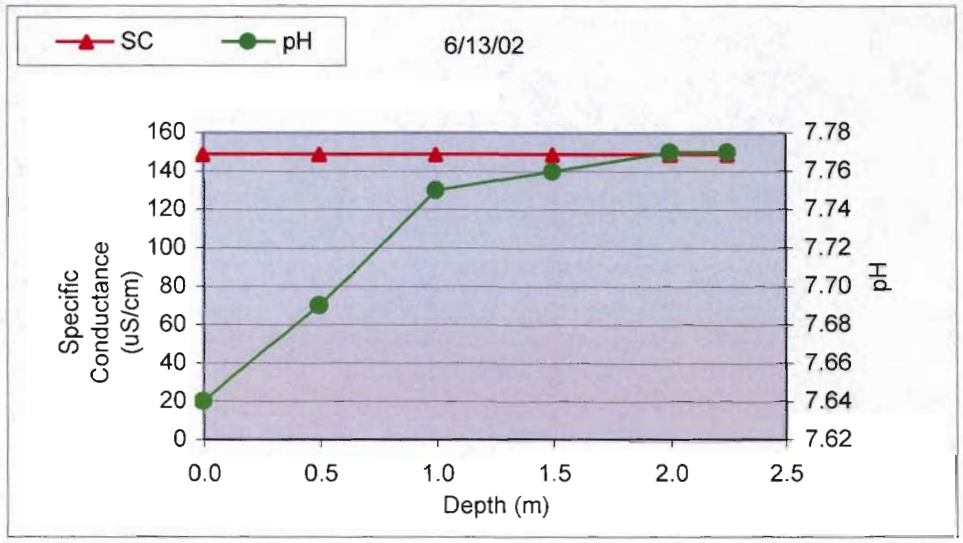


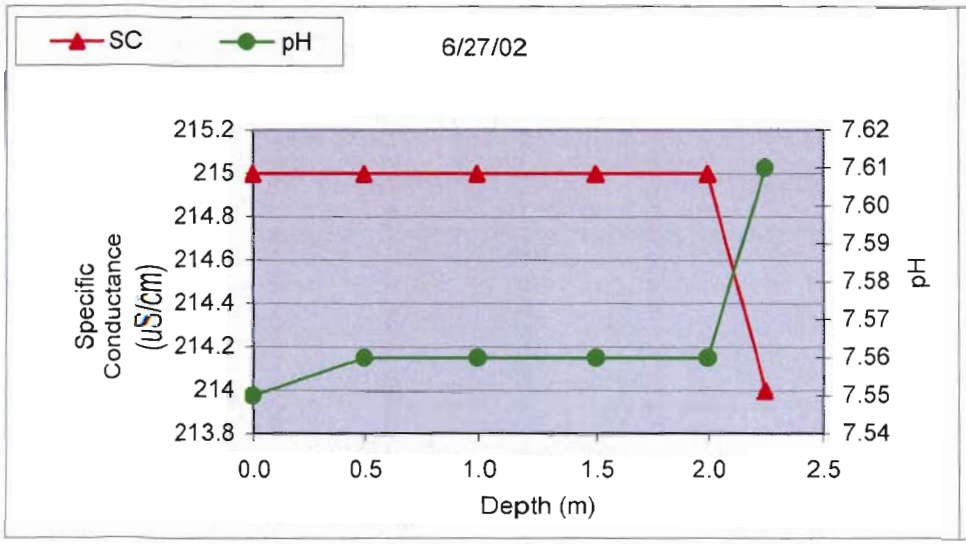


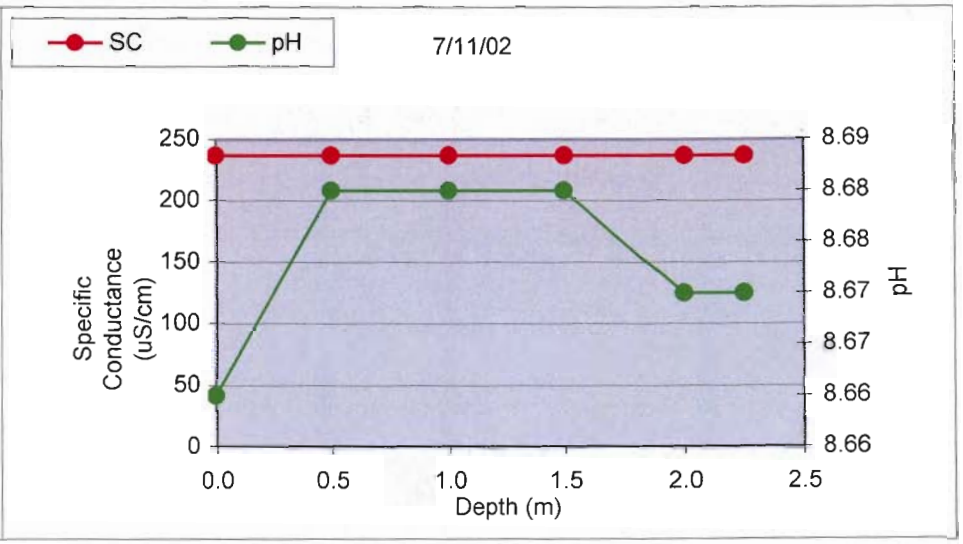
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS



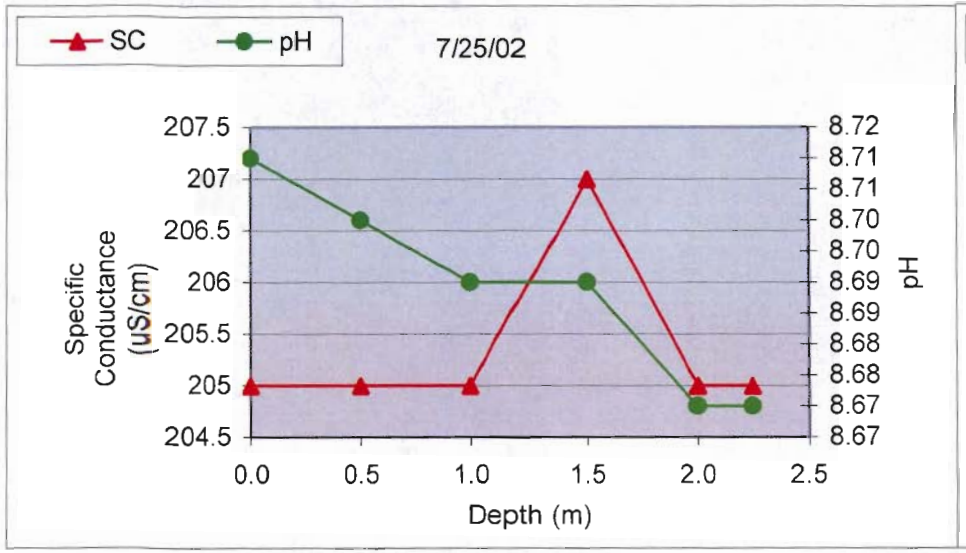


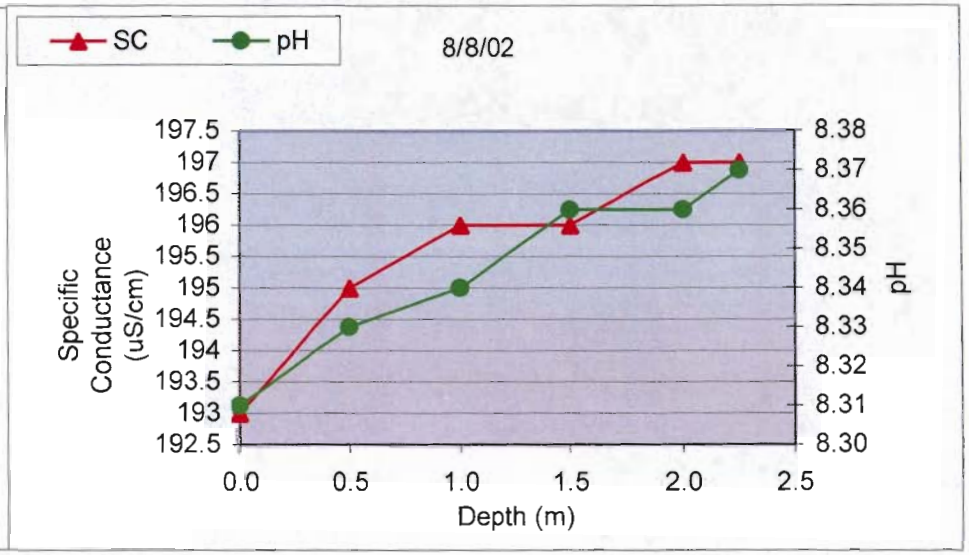


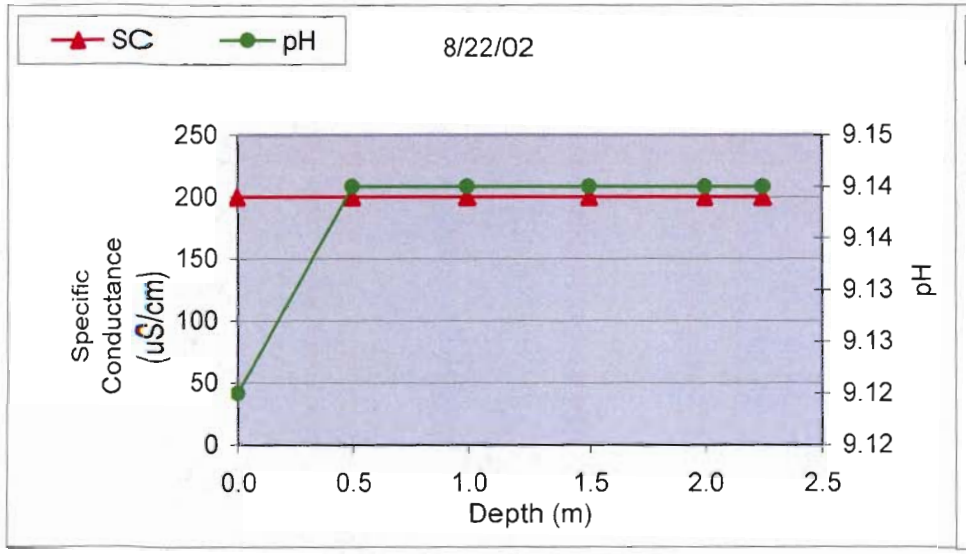
City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

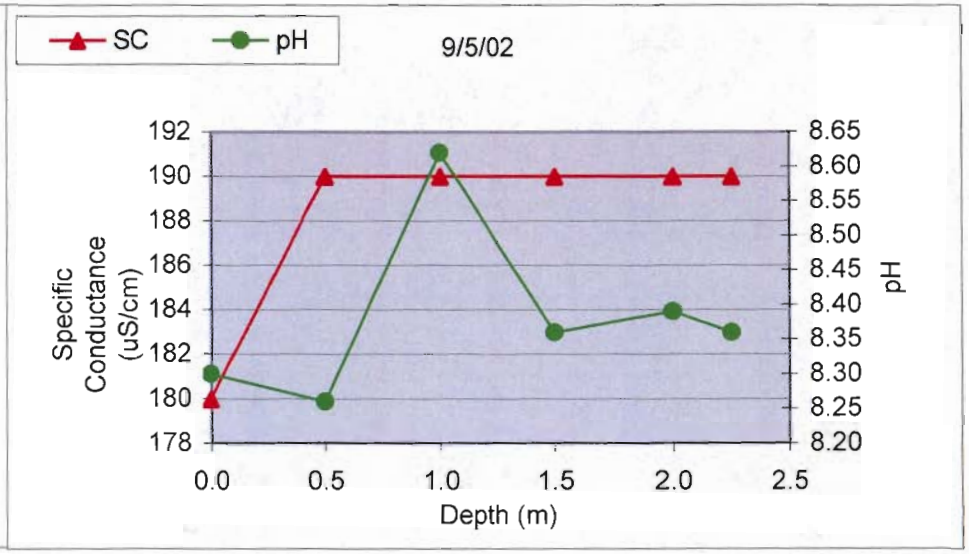
pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS









City of Menomonie: 2002 Lake Menomin Lake Planning Management Grant LM-5

pH, IN STANDARD UNITS

SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER @ 25 DEGREE CELSIUS