2010 Water Quality Monitoring Report

CRWD

Prepared for

Clearwater River Watershed District

January 2011



2010 Water Quality Monitoring Report



Wenck File #0002-145

Prepared for:

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1.0 Introduction

The Clearwater River Watershed District (CRWD) has conducted a stream, precipitation, and lake monitoring program since 1980 (Appendix A). Ongoing monitoring is critical to establish baseline water quality and hydrologic data and to assess long-term water quality trends within the CRWD. Lake water quality has generally has improved dramatically since the early 1980s, and in stream nutrient and sediment loads were reduced as the result of the CRWD's Chain of Lakes Restoration Project and other District initiatives (Appendix B and C). However, some water bodies do not meet state water quality standards for designated uses (recreation or drinking water for example).

The CRWD, in partnership with the Minnesota Pollution Control Agency (MPCA), began a Total Maximum Daily Load (TMDL) study in 2003 to address the District's impaired waters. The TMDL process establishes the amount of a given pollutant that the water body can assimilate while still meeting its designated uses. The TMDL studies are nearing final approval and the required nutrient, bacteria and oxygen demand load reductions have been quantified. The CRWD has identified a suite of implementation strategies in the watershed needed to meet water quality goals for impaired waters and to protect water quality of all CRWD waters.

The monitoring program going forward will:

- 1. Track progress towards water quality goals for impaired waters,
- 2. Fill data gaps identified in the TMDLs, and evaluate water quality through annual monitoring program,
- Continue to provide baseline water quality data and calibration data sets to refine TMDL load reductions, and
- Track long-term trends in all CRWD waters monitored ensuring early detection of declining trends.

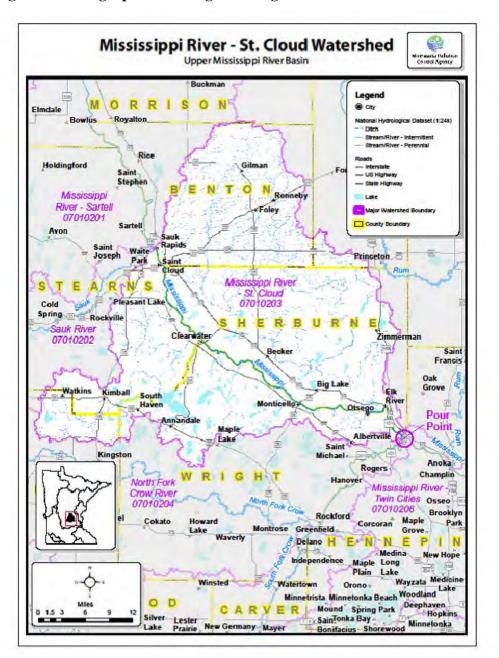
As shown in Table 1.1, the TMDLs are complete and were approved by the MPCA. Further, the CRWD developed the required CRWD Watershed-wide Implementation Plan which was approved by the MPCA in May of 2009. Following the completion of the TMDLs, the CRWD undertook a revision of its Watershed Management Plan to reflect the recommendations in the TMDL and expand on them. TMDL reports can be found at the MPCA website at http://www.pca.state.mn.us/water/tmdl. The Watershed Management Plan will be available at the CWRD web site upon completion.

Water	Impairment and Impaired Use	TMDL Status
Clear Lake (47-0095)	Nutrients, aquatic life and	EPA Approved.
Lake Betsy (47-0042)	recreation	
Union Lake (86-0298)		
Scott Lake (86-0297)		
Lake Louisa (86-0282)	-	
Lake Marie (73-0014)	-	
The Clearwater River,	Dissolved oxygen and bacteria,	
Clear Lake to Lake Betsy	aquatic life & recreation	
Lake Caroline (86-0281)	Nutrients, aquatic life and	EPA Approved.
Lake Augusta (86-0284)	recreation	
Swartout Lake (86-0208)		
Lake Albion (86-0212)		
Henshaw Lake (86-0213)		
The Clearwater River,	Dissolved oxygen, aquatic life	Under consideration at MPCA
Grass Lake to the	and recreation	for de-listing as data collected
Mississippi		did not support the presence of
		an impairment.

 Table 1.1 Impaired Waters in CRWD

Another TMDL effort is underway for the larger 8-digit hydrologic unit code (HUC) 07010203, which includes CRWD as well as the Sauk and Elk River watersheds (Figure 1.1). This process began in 2009 under the MPCA's new approach to TMDLs called the watershed approach. The

watershed approach is a 10-year rotation for assessing waters of the state on the level of Minnesota's major watersheds (8-digit HUCs). This process is scheduled to be completed in 2013, is being led by the Elk River Watershed Association (ERWSA) and may result in new impairments and TMDLs within the CRWD based on indices of biotic integrity. Future funding for TMDL related efforts will also largely be controlled by this process; as such it is important for CRWD to remain strongly involved in this process.





To meet lake water quality goals, nutrient loads must be managed from both watershed sources and internal nutrient cycling sources. Several of the watershed management strategies identified for lakes will also assist with meeting bacteria and dissolved oxygen goals for the Clearwater River. Projects and programs to achieve water quality goals were identified in the CRWD Watershed-wide Implementation Plan and are expanded upon in the CRWD's Watershed Management Plan which has been submitted to BWSR for approval.

The CRWD has applied for grants in 2009 and 2010 to fund eight of the projects/ programs identified. The CRWD received grants for four of the projects including two stream restorations, one stormwater reclamation and reuse project as well as a stream channel/ wetland restoration of the Kingston Wetland. Projects and their status are described in Section 5 of this report.

The 2010 CRWD monitoring plan is found in Appendix A, and summarized below:

- Fourteen lakes were monitored in 2010. Additional sampling efforts in 2010 included better characterization of internal nutrient cycling by measuring the anoxic period explicitly through collection of additional temperature and dissolved profile data on selected lakes as well as collecting lake bottom samples to be analyzed for phosphorus and iron. The lakes monitored by CRWD in 2010 included Albion Lake, Lake Augusta, Lake Betsy, Lake Caroline, Cedar Lake, Clear Lake, Clearwater Lake West, Henshaw Lake, Lake Louisa, Lake Marie, Pleasant Lake, Scott Lake, Swartout Lake, and Union Lake.
- Lake sediment cores were collected from Lake Augusta and Scott Lake to measure release rates to quantify internal nutrient cycling.
- Long-term Clearwater River monitoring stations CR-28.2 located upstream of Lake Betsy and CR 10.5 located at the Grass Lake Dam were sampled as well as Warner Creek near its inflow to Clearwater Lake at WR-0.2. Two inlet streams that flow into Clear Lake were also sampled in 2010.

 Citizen Precipitation Recorders (CPRs) maintained precipitation records in Watkins, Kimball, and Annandale. Citizen volunteers also measured Secchi depths in CRWD lakes in 2010.

Figure 1.2 shows the monitoring locations. Figure 1.3 shows locations of impaired water bodies in the CRWD.

Monitoring continued in the Cedar Lake subwatershed in 2010 to track progress on the Cedar Chain of Lakes Improvement Project #06-1. Samples were collected from Albion Lake, Cedar Lake, Henshaw Lake, and Swartout Lake as well as from selected tributary streams in the subwatershed. Vegetation surveys were also conducted on Swartout and Henshaw Lakes.

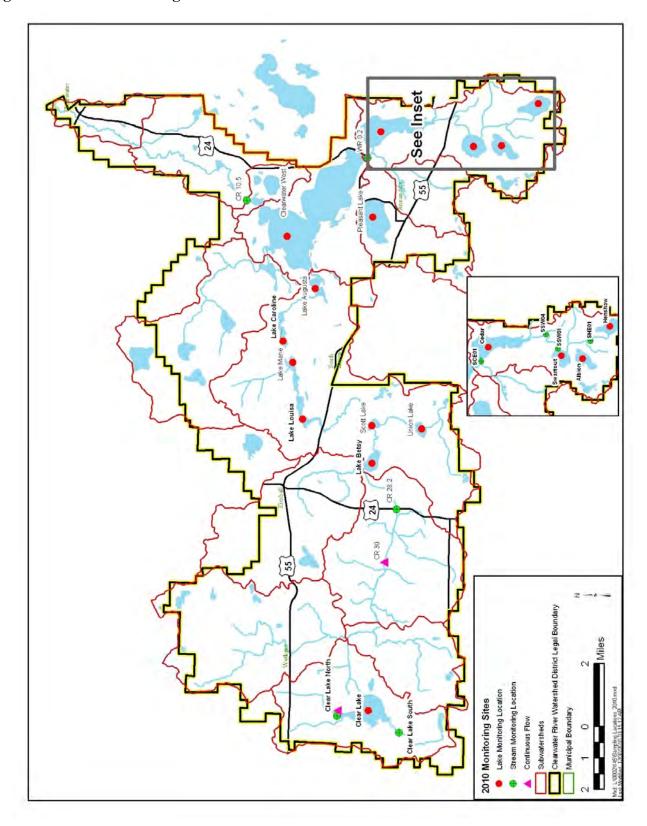


Figure 1.2 2010 Monitoring Locations

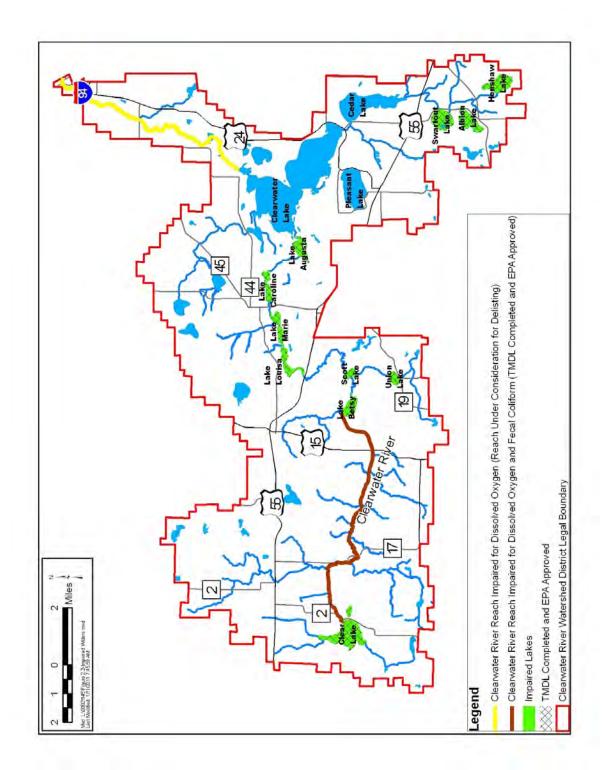


Figure 1.3 Impaired Water Bodies in CRWD

2.1 **PRECIPITATION**

Total annual precipitation during 2010 was four to eight inches above normal throughout the District. Precipitation was well above normal during the months of June, August, September, and December. Spring precipitation was slightly below normal but runoff from snowmelt was high. Table 2.1 summarizes 2010 precipitation levels and Appendix D contains summary charts for each station and the precipitation records for the CRWD.

	2010 St. Cloud (Saint Cloud WSO Airport)	1971-2000 Normal (St. Cloud)	2010 Watkins (Meeker)	2010 Kimball (Meeker)	1971-2000 Normal (Litchfield)	2010 Annandale/ Corinna (Wright)	1971- 2000 Normal (Cokato)
January	0.72	0.76	0.61	0.48	0.79	0.55	0.93
February	0.77	0.59	0.95	1.16	0.67	0.93	0.70
March	1.21	1.50	1.54	1.30	1.55	1.58	1.69
April	1.43	2.13	1.12	0.73	2.35	1.52	2.33
Мау	2.05	2.97	2.25	3.39	3.37	2.15	3.30
June	4.92	4.51	6.96	5.97	4.89	6.60	4.62
July	3.15	3.34	2.60	3.16	4.02	2.83	4.04
August	6.36	3.93	5.94	5.43	3.67	5.06	4.00
September	7.16	2.93	5.78	8.51	2.92	5.94	2.78
October	2.59	2.24	2.88	2.89	2.15	2.50	2.23
November	1.02	1.54	1.11	0.85	1.50	0.78	1.73
December	2.46	0.69	2.62	2.69	0.68	2.50	0.71
Total	33.84	27.13	34.36	36.56	28.56	32.94	29.06

 Table 2.1 Clearwater River Watershed District 2010 Precipitation Records and Normals (inches)

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Below Normal Precipitation Above Normal Precipitation

2.2 RUNOFF AND DISCHARGE

In 2010, spring precipitation was slightly below normal but coincided with snowmelt to cause high flows in the Clearwater River in March. Above average precipitation in August and September led to high flows again in late summer and fall.

Runoff over the upper watershed was 7.9 inches at CR 28.2 and 13 inches at CR10.5 in the lower watershed, which was much larger in 2010 compared to the long term average runoff at CR 10.5 of 7.7 inches.

Average flows at CR 28.2 and CR10.5 were 54.6 cfs and 217.5 cfs respectively. Table 2.2 summarizes the runoff volumes and average flows for the monitoring stations. Table B-1 in Appendix B compares the long-term precipitation to runoff for the CRWD as recorded at CR 10.5. Figure B-1 in Appendix B compares historic annual runoff and precipitation in the CRWD.

Station	Tributary Sub-watershed Area (acres)	Runoff Volume (ac-ft)	Runoff Over Watershed (inches)	Average Flow (cfs)
CR 10.5	99,200	107,870	13.0	217.54
CR 28.2	33,977	22,370	7.9	54.60
WR0.2	12,667	2,835	2.7	5.60
CLN	1,055	1,089	12.4	2.37
CLS	1,404	808	6.9	1.76

Table 2.2 2010 Runoff Volume and Average Flow

Total runoff over the watershed was higher in 2010 than in recent years as shown in Table B-2 in Appendix B. However, the majority of the runoff occurred in June, September, and the end of October. There was little runoff in the watershed during most of the summer until August, September, and October, when precipitation events initiated another high flow event. Monitoring efforts were expanded in 2010 to add continuous monitoring at two sites, which allowed for better quantification of seasonal runoff.

Continuous Flow Sites

In 2010, two sites were monitored continuously. Rating curves were established for stations CR30.0, located just upstream of the Kingston Wetland, and at CLN, located on a tributary stream on the north side of Clear Lake. Figures 2.1 and 2.2 show the continuous flow record between late spring and early fall at each site.

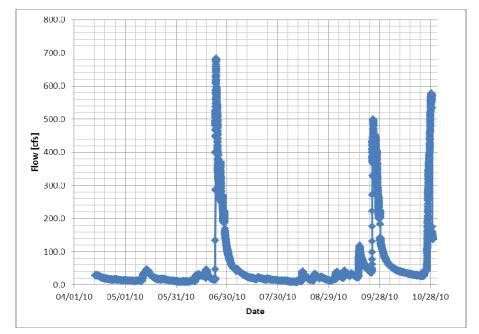
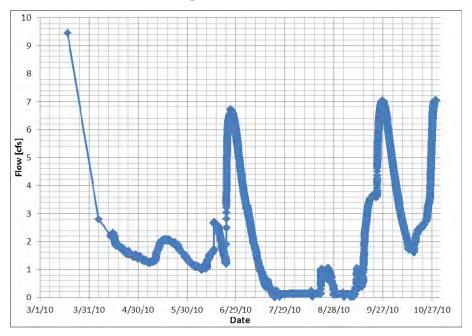


Figure 2.1 Continuous Flow Monitoring at CR30.0

Figure 2.2 Continuous Flow Monitoring at Clear Lake North (CLN)



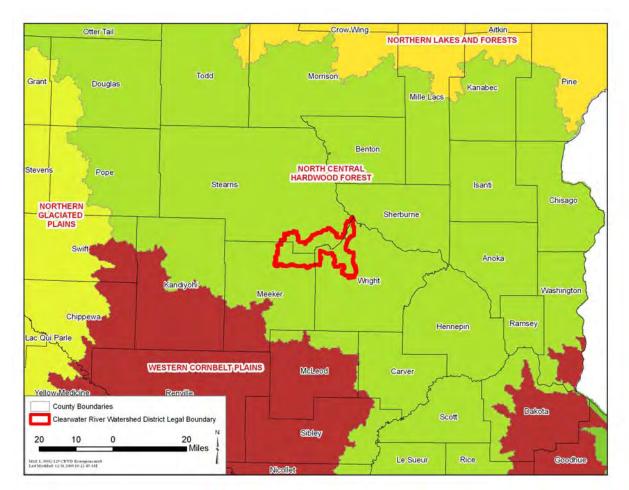
Flow monitoring began in early April at CR30.0 after large spring runoff events. This data was used to determine the continuous flow at CR28.2 to better predict the nutrient loading at that monitoring station.

Continuous monitoring began at CLN in early April. This data was used to determine the continuous flow rate at CLN and CLS, which is located on a tributary stream on the south side of Clear Lake, as well as the nutrient loading at both locations.

3.0 Water Quality

3.1 STREAM WATER QUALITY

CRWD lies in the NCHF Ecoregion but is close to the border with the Western Corn Belt Plains (WCBP) Ecoregion as demonstrated in Figure 3.1. The watersheds tributary to stations CLN, CLS, and CR28.2 have characteristics similar to the nearby WCBP ecoregion. For this reason, typical concentrations from both ecoregions are provided for comparison to mean concentrations at CRWD stream monitoring stations (Table 3.1).





Monitoring Location	2010 Flow-Weighted Mean TP (μg/L)
CR 10.5	32
CR 28.2	258
WR0.2	95
CLN	333
CLS	303
NCHF Ecoregion Typical Range	60-150
WCBP Ecoregion Typical Range	160-330

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Table 3.1 2010 CRWD Mean Concentrations and Ecoregion Typical Range

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Monitoring Location	2010 Flow-Weighted Mean TSS (mg/L)
CR 10.5	1.1
CR 28.2	3.5
WR0.2	5.5
CLN	1.3
CLS	4.7
NCHF Ecoregion Typical Range	4.8-16
WCBP Ecoregion Typical Range	10-61

3.1.1 Phosphorus Concentrations and Phosphorus Loads

Baseline total phosphorus (TP) concentrations in the Clearwater River remain low as compared with conditions monitored in the early 1980s. Flow-weighted mean total phosphorus concentrations at CR 28.2, just upstream of Lake Betsy, ranged from 740 to 920 μ g/L in the early 1980s. The concentration was down to 258 μ g/L in 2010, which is lower than concentrations seen in the early 1980s, but higher than in some recent years.

The TP load at CR 28.2 in 2010 was 23,955 lbs, higher than TP loads in recent years, but still far below the high TP loads observed in the early 1980s. The increased TP load in 2010 is due primarily to high flow events following the large storm events in June, September, and the end of October. Figure 3.2 shows the historical phosphorus load and flow-weighted mean concentration at CR 28.2.

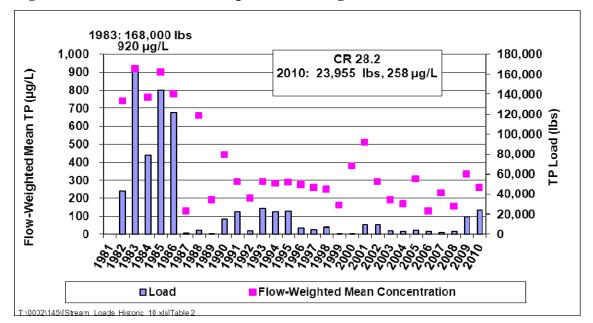


Figure 3.2 Historical Total Phosphorus Loading and Mean Concentration at CR 28.2

Flow-weighted mean TP concentrations and phosphorus loads at CR 10.5 were calculated using flows over the dam calculated using stage measurements taken at the dam and an equation for flow over the weir. The estimated mean phosphorus concentration at CR 10.5 in 2010 was 32 μ g/L and the estimated total phosphorus load was 9,149 lbs (Figure 3.3). While this is higher than loads observed in recent years, the load is well below historic levels.

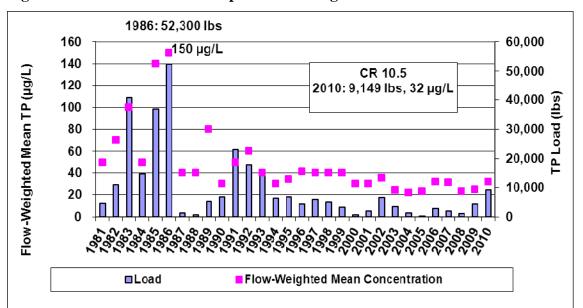


Figure 3.3 Historical Total Phosphorus Loading and Mean Concentration at CR 10.5

In 2010, the flow-weighted mean TP concentration at WR 0.2 was 95 μ g/L and the total phosphorus loads was 685 lbs at WR 0.2 (Figure 3.4), similar to concentrations and loads observed in recent years.

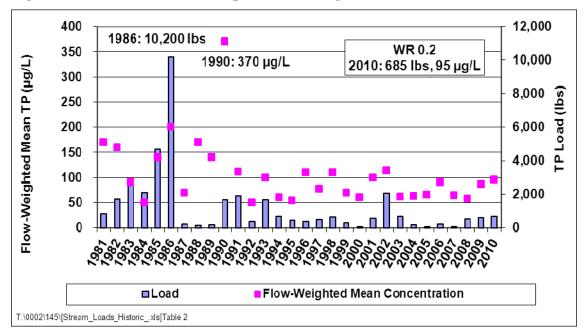


Figure 3.4 Historical Total Phosphorus Loading and Mean Concentration at WR-0.2

As demonstrated in Table 3.1 and Figure 3.5, flow-weighted mean phosphorus concentrations at WR0.2 and CR 10.5 were close to, or within, the typical range for both the NCHF Ecoregion. CR28.2, CLN, and CLS were within the range of the WCBP Ecoregion.

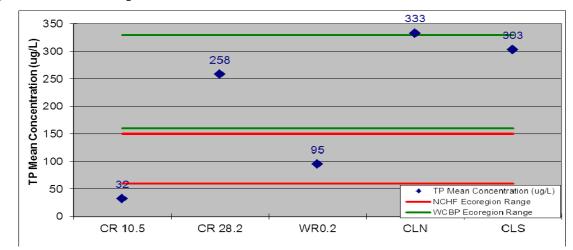


Figure 3.5 2010 Phosphorus Mean Concentrations in the District

As demonstrated in Table 3.2 phosphorus loading rates varied throughout the watershed. The loading rate from the upper watershed monitoring stations, CR 28.2, CLN, and CLS were 0.705 lbs/acre, 0.901 lbs/acre, and 0.295 lbs/ acre, respectively. This was higher than loading rates observed at lower watershed stations CR10.5 and WR0.2, which were 0.092 lbs/acre and 0.054 lbs/acre, respectively. Loading rates for the upper most portion of the watershed likely are the truest measurement of watershed phosphorus export as loading data collected downstream reflects the sedimentation of phosphorus in District Lakes.

Site	Watershed Area (acres)	Phosphorus Load (Ibs)	Phosphorus Loading Rate (Ibs/acre)
CR10.5	99,200	9,149	0.092
CR28.2	33,977	23,955	0.705
WR0.2	12,667	685	0.054
CLN	1,055	951	0.901
CLS	1,404	414	0.295

 Table 3.2
 2010 Phosphorus Loading Rates by Tributary Watershed

Soluble reactive phosphorus (SRP) (the dissolved form of phosphorus readily used by algae) was also monitored in 2010. Table 3.3 shows the ratio of the flow-weighted means of SRP to total phosphorus (TP) as a percentage at each monitoring site.

Table 3.3	Comparison	of SRP	to TP

<u>Site</u>	% of TP as SRP
CR10.5	45%
CR28.2	75%
WR0.2	23%
CLN	83%
CLS	50%

SRP made up the majority of TP at stations CR28.2 and CLN, 75% and 83%, respectively. The high ratio at CR28.2 and CLN indicate the export of soluble phosphorus from the large wetlands upstream of both of these stations. These values are within the ranges of those observed historically, with the higher percentage of SRP likely due to low flow during late summer in

2010. The values potentially indicate the export of soluble phosphorus from wetlands in the upper watershed. Expanded monitoring upstream of these wetlands would help to verify the export of soluble phosphorus from the wetlands. Such monitoring is part of the work plan for the Kingston Wetland Feasibility Study and Restoration Project described in Section 5.

3.1.2 Total Suspended Solids

Samples were also analyzed for total suspended solids (TSS) in 2010. Mean concentrations of TSS are compared to typical Ecoregion concentrations in Figure 3.6. Mean concentrations were near or the below typical concentrations in the NCHF Ecoregion at all sites. The water clarity at these stations is expected to be good.

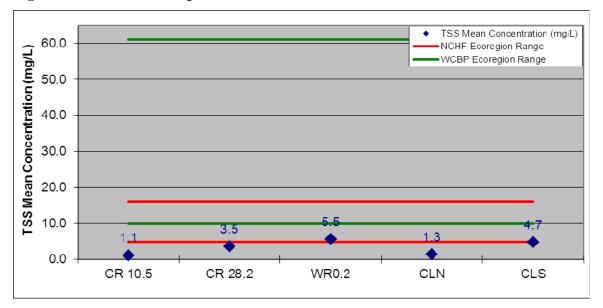


Figure 3.6 2010 Total Suspended Solids Mean Concentrations in the District

3.1.3 Additional Parameters

Dissolved oxygen was also measured at each stream monitoring location and concentrations are compared to the MPCA standard for impairment of 5 mg/L in Figure 3.7. Concentrations were below the impairment standard at all stations except CR10.5 and WR0.2, which were only impaired in the early part of August. The data collected at CR28.2 reflect the conclusions drawn in the TMDL, that low- flow DO violations occur downstream of Kingston Wetland and are driven primarily by wetland sediment oxygen demand (SOD). Stations CLN and CLS are also

located on ditches flowing through wetland areas, so low DO is also likely due to wetland SOD. DO data is collected to track progress towards TMDL implementation.

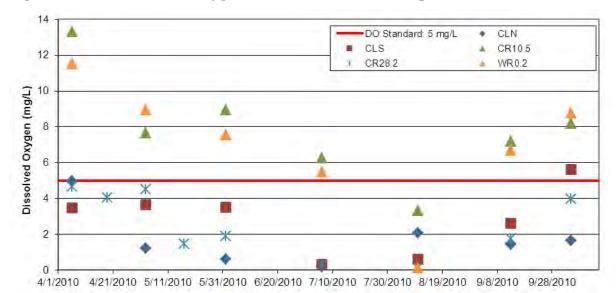


Figure 3.7 2010 Dissolved Oxygen Concentrations and Comparison to Standard

Measurements of most probable number (MPN) of colony forming units (CFU) per 100 mL of E. coli were taken at two stream locations as a surrogate measurement of fecal coliform. Data was collected at CR 28.2 to track TMDL implementation progress. Data was collected by CRWD at CR0.1 at the request of the MPCA. Table 3.4 shows the monthly geometric means of E. coli at stations CR0.1 and CR28.2.

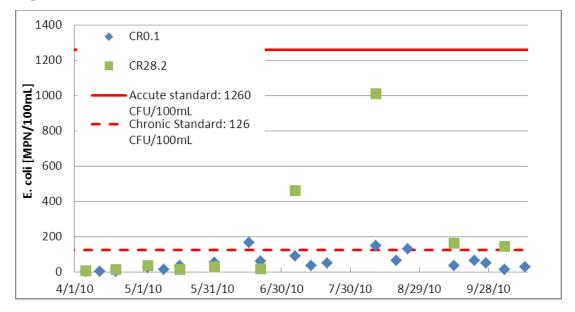
 Table 3.4 E. coli Monthly Geometric Means

<u>CR0.1</u>	E. coli Geometric Mean MPN/100mL	# of Measurements
April	2	3
May	22	3
June	81	3
July	55	3
August	117	4
September	49	3
October	17	3

<u>CR28.2</u>	E. coli Geometric Mean MPN/100mL	# of Measurements
April	10	2
May	23	2
June	22	2
July	461	1
August	1011	1
September	162	1
October	145	1

CR0.1 did not exceed the Minnesota monthly chronic standard of 126 CFU/100mL during any of the months E. coli was measured. CR28.2 exceeded chronic standard during the months of July through October, with a spike of 1,011 MPN/100 mL in the month of August. However, the number of samples taken at each site was below the recommended five per calendar month. No measurements at either site exceeded the acute standard of 1260 CFU/100mL. Figure 3.8 shows the E. coli measurements during 2010.

Figure 3.8 2010 E. coli Measurements



Additional stream water quality data is found in Appendix B, including summaries of historical phosphorus loads, stream flows, and flow-weighted mean concentrations.

3.2 LAKE WATER QUALITY

CRWD sampled fourteen lakes in 2010. Parameters analyzed in 2010 include surface total phosphorus, soluble reactive phosphorus, chlorophyll-a, and a field reading of Secchi depth. Surface samples characterize lake water quality. Samples for total phosphorus, soluble reactive phosphorus, and total iron were collected near the lake bottom. Water temperature and dissolved oxygen profiles were also collected at each lake to better characterize the period of anoxia and to help quantify internal loading.

3.2.1 2010 Monitoring Results

Water quality of the lakes monitored in 2010 was generally comparable to monitoring data collected in recent years. Summer average (June 1 to September 30) values were compared with the MCPA eutrophication standards for phosphorus, chlorophyll-a, and Secchi disk depth, based on Ecoregion and lake type. The MPCA uses separate standards for shallow (less than 15 foot maximum depth or 80% of lake area less than 15 feet deep) and deep lakes (greater than 15 foot maximum depth). The appropriate standards for lakes monitored in the CRWD, which is in the North Central Hardwood Forest Ecoregion, are shown in Table 3.5. The MPCA standards are also used as the TMDL goals for summer average concentrations and Secchi depth in District lakes.

	Total Phosphorus	Chlorophyll-a	Secchi Depth		
Lake Category	μg/L	μg/L	meters (not less than)		
Shallow Lakes	60	20	1		
Deep Lakes	40	14	1.4		
Source: Minnesota Pollution Control Agency					

Figures 3.9 and 3.10 compare the average total phosphorus concentrations in lakes sampled in 2010 to the TMDL goal.

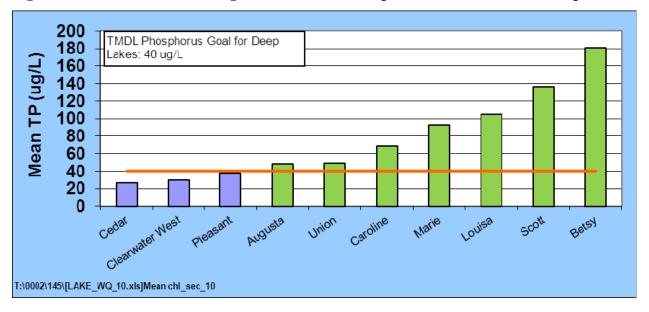
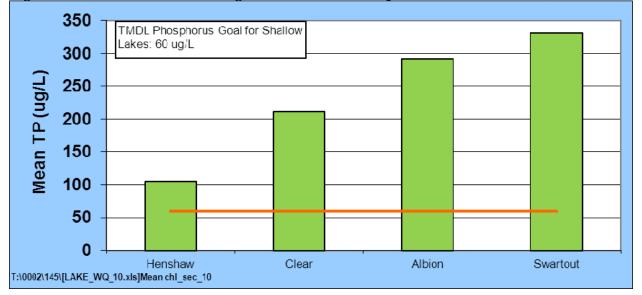


Figure 3.9 2010 Summer Average Total In-Lake Phosphorus Concentrations (Deep Lakes)

Figure 3.10 2010 Summer Average Total In-Lake Phosphorus Concentrations (Shallow Lakes)

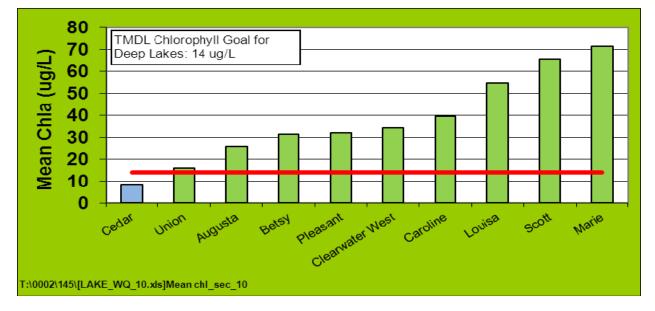


Based on the 2010 monitoring data for each lake, Albion, Augusta, Betsy, Caroline, Clear, Henshaw, Louisa, Marie, Scott, Swartout, and Union Lakes were above the TMDL goal for total phosphorus. In general, summer average phosphorus concentrations were higher in some lakes in 2010 than historically, likely due to increased nutrient loads from increased runoff in the watershed. Summer average concentrations also may have been higher due to the September monitoring event occurring after some lakes began to mix and bottom phosphorus was incorporated into the surface. Summer average phosphorus concentrations were notably higher in 2010 than recent years in Albion, Caroline, and Union Lakes.

Figures 3.11 and 3.12 compare the most recent summer average chlorophyll-a concentrations for fourteen CRWD lakes to the appropriate chlorophyll-a TMDL goal. All but one of lakes monitored had chlorophyll-a concentrations above the TMDL goal.

Summer average chlorophyll-a concentrations in 2010 were likely higher because of large storm events in June and September, which led to large runoff, increasing nutrient loading to the lakes.

Figure 3.11 2010 Summer Average Chlorophyll-a Concentrations (Deep Lakes)



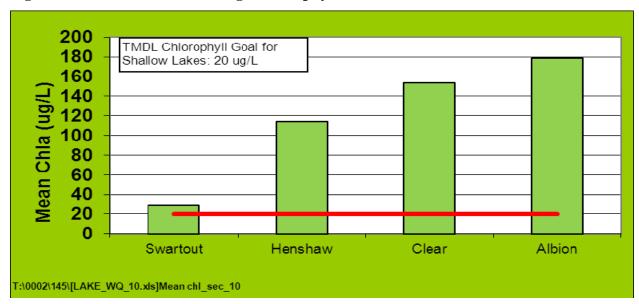
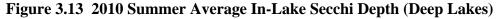


Figure 3.12 2010 Summer Average Chlorophyll-a Concentrations (Shallow Lakes)

Figures 3.13 and 3.14 compare the 2010 Secchi disk depth for fourteen CRWD lakes to the appropriate Secchi TMDL goal. The most recent average Secchi depths demonstrate that Albion, Betsy, Clear, Henshaw, Louisa, Marie, Scott, and Union Lakes are below the TMDL goal for Secchi depth. Summer average Secchi depths were notably lower than in recent years in Albion and Union Lakes, most likely due to summer algal blooms.



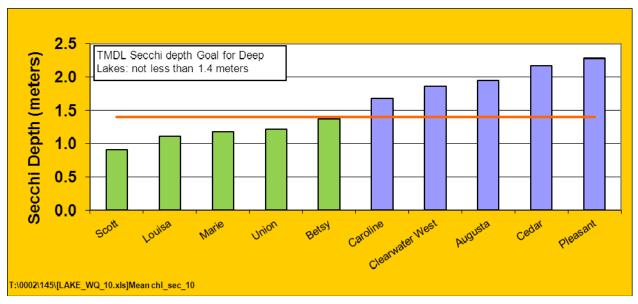




Figure 3.14 2010 Summer Average In-Lake Secchi Depth (Shallow Lakes)

Water quality observed in lakes monitored during 2010 (Table 3.6) is within ranges seen in recent years with the exception of a few measurements that fell outside the historical range means.

Table 3.6 2010 Mean In-Lake Total Phosphorus, Chlorophyll-a, and Secchi Depth, and Historical Ranges

	Total Phosphorus ug/L Chlorop		hyll-a ug/L	Secchi De	ecchi Depth (meters)	
Lake	2010 Mean	Historical Range Mean	2010 Mean	Historical Range Mean	2010 Mean	Historical Range Mean
Albion	292	130-296	179	60-204	0.4	0.5-1.2
Augusta	48	28-300	26	4-73	1.9	1.1-1.9
Betsy	181	120-700	32	4-170	1.4	0.5-2.4
Caroline	68	36-300	40	3-55	1.7	0.8-1.9
Cedar	26	19-58	9	3-20	2.2	1.1-3.0
Clear	211	80-307	153	17-134	0.3	0.3-1.2
Clearwater West	30	25-160	34	4-77	1.9	1.4-2.6
Henshaw	105	90-390	114	25-178	0.4	0.2-0.9
Louisa	105	33-440	55	4-101	1.1	0.6-1.5
Marie	93	69-360	72	4-153	1.2	0.6-2.3
Pleasant	38	15-51	32	4-12	2.3	2.0-3.0
Scott	137	82-660	66	3-223	0.9	0.5-1.9
Swartout	330	200-421	29	144-832	1.9	0.2-1.0
Union	49	25-88	16	7-39	1.2	1.0-2.3

Above TMDL Goal

T:\0002\145\[LAKE_WQ_10.xls]Historical Table

Table 3.7 compares CRWD lakes to MPCA impairment standards and identifies phosphorus trends in each lake. Overall, based on the most recent monitoring data for all lakes within CRWD, water quality in most lakes is generally good and appears to be remaining stable or improving. However, water quality does not meet TMDL goals in 11 lakes.

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Lake	Last Monitored Phosphorus Tre		Use
Albion	2010	Recent Increasing Trend	Impaired
Augusta	2010	Recent Stable Trend	Full Use*
Bass	2009	Stable Trend	Full Use
Betsy	2010	Recent Increasing Trend	Impaired
Caroline	2010	Recent Stable Trend	Impaired
Cedar	2010	Recent Stable Trend	Full Use
Clear	2010	Stable to Decreasing Trend	Impaired
Clearwater East	2009	Recent Stable Trend	Full Use
Clearwater West	2010	Recent Stable Trend	Full Use
Grass	2009	Decreasing Trend	Full Use
Henshaw	2010	Recent Decreasing Trend	Impaired
Little Mud	2009	Decreasing Trend	Full Use
Louisa	2010	Recent Stable Trend	Impaired
Marie	2010	Recent Stable Trend	Impaired
Nixon	2009	Recent Stable Trend	Full Use
Otter	2009	Stable Trend	Full Use
Pleasant	2010	Stable Trend	Full Use
School Section	2009	Stable Trend	Full Use
Scott	2010	Stable to Decreasing Trend	Impaired
Swartout	2010	Stable to Increasing Trend	Impaired
Union	2010	Decreasing Trend	Full Use
Wiegand	2009	Decreasing Trend	Full Use

 $T:\label{eq:constraint} T:\label{eq:constraint} 0002\145\[LAKE_WQ_10.xls]Summary$

*TMDL Impaired

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Lake report cards are included in Appendix C. Citizen Secchi depths are found in Appendix E.

Water quality lab reports are in Appendix F, and field notes are in Appendix G.

4.1 INTRODUCTION

The Cedar Chain of Lakes Restoration Project #06-1 began in 2007 as a response to a petition by lake shore residents to address the declining water quality and severe algae blooms in Cedar Lake. The goal of the project was to reduce the phosphorus load to Cedar Lake to 1,000 lbs and the in-lake summer average phosphorus concentration in Cedar Lake to 20 ug/L. An additional goal of the project was to further reduce phosphorus loading from upstream lakes by reducing the carp population of the lakes.

Several projects were implemented in 2007-2010 to reduce in lake phosphorus concentrations in Swartout, Albion, Henshaw, and Cedar Lakes. The projects that have been implemented include watershed BMPs such as tile inlet buffers and buffer strips, rough fish management activities, and the construction of the Segner Pond treatment wetland.

An evaluation of the Cedar Lake Project #06-1 was conducted in November 2009. The evaluation determined that further activities will be necessary to fully meet project goals and recommended the implementation of additional activities as needed.

The evaluation recommended that the following activities, as well as others to be identified through further evaluation may be required:

- Eliminate ISTS discharges;
- Aggressive curly leaf pondweed control;
- Removal of cormorants on Swartout Lake;
- Carp population reduction;
- Fish migration barriers between Albion and Swartout, and Henshaw and Swartout Lakes;

- Install fish barriers between Highway 55 and Cedar Lake, and Swartout Lake outlet at CR 6 to prevent upstream migration;
- Treat Swartout wetland outlet to remove phosphorus;
- Increase residence time on wetland between Swartout and Highway 55;
- Watershed best management practices;
- Buffer tile lines, ditches and streams;
- Lake shore management in Cedar, Swartout, Albion and Henshaw Lakes
- Ecological management of Henshaw, Albion and Swartout Lakes;
- Isolate Swartout Lake;
- Isolate wetland treatment system in the Highway 55 wetland;
- Install sedimentation basins;
- Promote Ag BMPS (P Testing and fertilizer application);
- Replace tile intakes with filters;
- Tile intake buffers;
- Buffer tributaries;
- Buffer stream banks
- Tile discharge management;
- Riparian pasture/grazing management;
- Lakeshore septic upgrade;
- Lakeshore restoration (shore land erosion);
- Shallow Lakes Management Plans;
- Public outreach; and
- Other activities as indicated by future project monitoring and evaluation.

4.2 MONITORING

As part of the evaluation of Project #06-1, monitoring was also recommended to continue in 2010. Cedar Lake, Swartout Lake, Albion Lake, and Henshaw L**a**ke were monitored four times from June to September in 2010 as part of the project. Tributary streams to the lakes were also monitored while they were flowing at five locations in 2010.

4.2.1 Lake Monitoring

Cedar Lake

As shown on the Cedar Lake Report Card in Appendix C, the 2010 summer average total phosphorus concentration was below the TMDL goal concentration and was within the range seen in recent years. Total phosphorus and chlorophyll-a concentrations were lower than they were in 2009, even though runoff was generally greater across the watershed in 2010. Secchi depth was also improved in the lake from recent years.

While overall water quality appears to be stable or slightly improving in Cedar Lake, lake shore residents notified CRWD of a severe algal bloom in May 2010. The algal blooms resulted in reduced water clarity in the lake that continued through early July. The photo below shows a mass of blue-green algae that had accumulated on the western shoreline of the lake on May 19, 2010.



Cedar Lake Algal Bloom-May 19, 2010

A sample of the algae was collected and sent to a laboratory for analysis. The analysis determined that the algae bloom was comprised primarily of three different species of the cyanophyta division of algae (blue-green algae). While some blue green algae species may produce dangerous blooms that may be toxic or harmful to animals and humans, the three species

identified in the sample are species that do not typically produce toxic or harmful blooms. This algal bloom was similar to other blooms that occurred early in the season in previous years on Cedar Lake. These blooms are likely due to a pulse of nutrients to the lake that are incorporated by the algae. The pulse of nutrients may be from external runoff to the lake. Another possibility is that the source of the nutrient pulse is from the senescence of curly-leaf pondweed, which is present in small areas of the lake.

By early August, lake water clarity had improved and lake residents noted that the late summer water clarity was the best they had seen in recent years. Secchi disk data collected by CRWD and lakeshore residents substantiate these observations, as lake water clarity generally improved later in the monitoring season in 2010.

Although internal loading of phosphorus is not suspected to make up a significant portion of the phosphorus load in Cedar Lake, it is likely that there is some internal loading of phosphorus in the lake. Elevated concentrations of phosphorus near the lake bottom indicate potential for internal loading. Temperature and dissolved oxygen profile data indicate that the lake is stratified during most of the time period from June to November.

It is suspected that curly leaf pondweed may also contribute to internal loading in the lake by making phosphorus from buried lake sediment available in the water column during the growing season. Small areas of the lake containing curly leaf pondweed have been treated in recent years in an attempt to control the spread of the plant in the lake.

Cedar Lake was also sampled four times from June to September by a lake shore resident as part of a volunteer lake monitoring program. As shown in Table 4.1, the 2010 summer averages for total phosphorus, chlorophyll-a, and Secchi depth were very similar from both monitoring programs.

	Date	Total Phosphorus (ug/L)	Chlorophyll-a (ug/L)	Secchi Depth (m)
	6/16/10 7:10	40	10	2.1
	7/7/10 6:15	24	3	1.2
	8/17/10 7:14	17	11	2.9
CRWD Sampling	9/21/10 7:30	24	10	2.4
Results	2010 Average	26	9	2.2
	6/27/2010	33	12	3.7
	7/24/2010	20	5	1.5
	8/22/2010	28	7	2.1
Volunteer Lake	9/26/2010	29	10	3.0
Sampling Results	2010 Average	28	9	2.6
T:\0002\146\Cedar_2010 Comparison\Table				

Table 4.1 2010 Cedar Lake Monitoring Data

Swartout Lake

Summer average phosphorus concentrations remained well above TMDL goals in Swartout Lake in 2010 but were slightly lower than seen in previous years. Chlorophyll-a concentrations were only slightly above TMDL goals and were well below the long term range for the lake. Secchi disk depth was dramatically improved in 2010, as the summer average met the TMDL goal and the Secchi disk could be seen on the bottom of the lake in 11.5 feet of water during an early summer monitoring event.

The increase in water clarity is most likely due to an extensive fish kill that occurred in the late winter that dramatically reduced the rough fish, especially carp, population in the lake. Photos below show the large numbers of dead fish at the Swartout Lake outlet around ice out for the lake. A lake survey conducted by the MN DNR on April 21, 2010 found only four species of fish and no carp, indicating that the winterkill was extensive. With a reduced carp and rough fish population causing less disturbance to bottom sediments, the water clarity improved and also allowed for improved submergent vegetation growth in the lake in 2010.

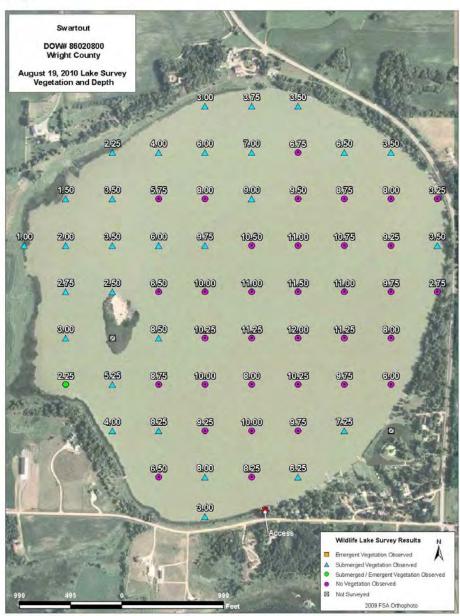


Swartout fish kill – spring 2010.

A vegetation survey conducted with the MN DNR on August 19, 2010 found submergent vegetation growing at 30 of 64 sample points across the lake. The submergent vegetation included 11 species with sago pondweed, muskgrass, and coontail being the most common species observed. Figure 4.1 shows the water depth and submergent vegetation coverage as inventoried in 2010. In general, submergent vegetation was found at nearly all sample points that were less than seven feet deep. For comparison, in 2005 there was not any submergent vegetation found at any of the 64 sample points.



Survey Map



The dramatic improvement in water clarity and submergent vegetation growth due to decreased rough fish populations in 2010 are an indication of the role that rough fish play in decreasing water quality in shallow lakes, especially in Swartout Lake. The reduction in the carp population in Swartout Lake in 2010 allowed for a drastic improvement to the ecological health of the lake.

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In 2010, large numbers of white pelicans, double crested cormorants, and various other shorebirds were noted to be nesting on the island in Swartout Lake. Lake shore residents had concerns about the foul odors emanating from the island and the potential for water quality issues in the lake from bird wastes. Two site visits were conducted to document and approximate the numbers of birds on the island and to collect samples to be analyzed for bacteria and total phosphorus near the island and in the center of the lake for comparison. Water quality parameters from the two sample events are summarized in Table 4.2 below.

Sampling Location	Date	Total Phosphorus (ug/L)	Ortho Phosphorus (ug/L)	Ammonia Nitrogen (mg/L)	E. coli (MPN/100 mL)
Near Island	8/2/2010	581	126	0.135	597.4
Mid Lake	8/2/2010	366	129	<0.02	14.4
Near Island	9/21/2010	291	55	0.02	9.8
Mid Lake	9/21/2010	251	41	<0.02	5.2

 Table 4.2
 2010 Swartout Island Monitoring

The results from the August 2 sample event show that total phosphorus, ammonia nitrogen, and E. coli concentrations were significantly higher in the sample collected near the island. Results from the September 21 sample event indicate that total phosphorus concentrations were only slightly higher near the island and ammonia nitrogen and E. coli concentrations were similar at both sampling locations. These monitoring results indicate that bird wastes from the island running into the lake may elevate total phosphorus, ammonia, and E. coli concentrations directly adjacent to the island, but do not likely impact the overall lake.

An attempt was made to quantify the estimated impact of the nesting colony of birds on the total phosphorus load to Swartout Lake. In order to calculate this estimate, literature values for the phosphorus content in bird wastes were multiplied by the estimated population of birds on the island. Using this method, it was estimated that the potential load of phosphorus to the lake was approximately 9.5 lbs. This would represent a very small portion (0.12%) of the total phosphorus load to the lake, which is estimated to be 7,982 lbs. Even though elevated phosphorus concentrations were observed near the island during one of the sample events, it is

likely that the export of phosphorus from the island to the lake is diluted quickly as it mixes with the lake and does not represent a significant phosphorus source to the lake.

Albion Lake

In recent years, summer average phosphorus and chlorophyll-a concentrations in Albion Lake had decreased and water clarity had improved since the start of the Project. In 2010, summer average phosphorus and chlorophyll-a concentrations increased while water clarity decreased.

Although there were no fish population assessments conducted in Albion Lake in 2010, the apparent decreased water quality in Albion Lake may be related to an increase in rough fish populations in the lake. As shown in the Albion Lake Report Card in Appendix C, 2010 water quality was similar to 2006, when a MN DNR fish population assessment documented carp and other rough fish in the lake.

Henshaw Lake

Summer average phosphorus concentrations remained above the TMDL goal in Henshaw Lake in 2010, but were on the low end of the historical range for the lake. Summer average chlorophyll-a concentrations increased from 2009 while Secchi depth decreased.

A vegetation inventory conducted on the lake by the MN DNR on August 18, 2010 found submergent aquatic vegetation at only 12 of 53 sample points with sago pondweed and muskgrass the most common species observed. Figure 4.2 shows the submergent vegetation coverage and depth as inventoried. It is likely that turbid water and resuspension of sediments limits vegetation growth in Henshaw Lake.





Survey Map

While an extensive winterkill occurred on nearby Swartout Lake in 2010, a fish inventory conducted by the MN DNR April 16, 2010 found high densities of young carp and bullheads in Henshaw Lake, indicating that Henshaw Lake did not extensively winterkill. The presence of a large population of rough fish in the lake likely contributed to the apparent decline in water quality in Henshaw Lake in 2010.

The 2010 monitoring results and apparent connection of lake water quality to the status of fish communities in Swartout, Albion, and Henshaw Lakes further prove that when addressing impairments in shallow lakes it is also necessary to address the health of the biological communities in the lake. To improve the quality of shallow lakes, it is beneficial to restore the health of biological communities in the lake, including fish, plants, and zooplankton. Ideally, shallow lake management plans incorporating water level management to promote vegetation growth, and more drastic fish community management strategies, such as lake drawdowns or the application of Rotenone to promote rough fish kills, would be implemented. However, efforts to implement these strategies have been met with limited success so the implementation strategies have been limited thus far to rough fish barriers and harvesting, and watershed BMPs. Fish barriers that have been installed in the Cedar Lake Watershed are shown on Figure 4.3.

Stream Monitoring

Five tributary streams in the Cedar Lake subwatershed were also monitored in 2010. Locations of the monitored tributary streams are shown on Figure 4.3. Overall, stream flow in these tributaries was higher in 2010 than in recent years due to a large runoff from snowmelt in early spring and above normal precipitation during summer and fall. Most of the tributary streams were flowing for longer periods in 2010 than in the past years that the streams were monitored. The calculated phosphorus loads, average phosphorus concentrations, and runoff at each stream location monitored from 2007-2010 are shown below in Table 4.3.

	Mean	TP Conce	entration (ug/L)	TP Load (lbs)				Runoff (in)			
Site	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
SCE01	38	28	34	32	121	199	136	160	1.6	3.6	2	2.47
SHE01	283	222	195	153	81	247	61	198	1.2	4.5	1.3	5.27
SSW01	232	159	276	225	98	698	602	839	0.7	7	3.5	5.95
SSW02	96	301	345	267	292	858	739	624	0.5	4.7	3.5	3.83
SSW04	58	201	265	251	870	1011	512	1149	1.2	4	1.5	3.66

Table 4.3Tributary Stream Data 2007-2010

Overall, total phosphorus concentrations were lower at these monitoring locations than in previous years. However, as a result of the higher stream flow and higher runoff at each of the sites throughout the season, total external phosphorus loading to Cedar Lake and the other upper watershed lakes was slightly higher at most locations in 2010 than in the previous years since 2007.

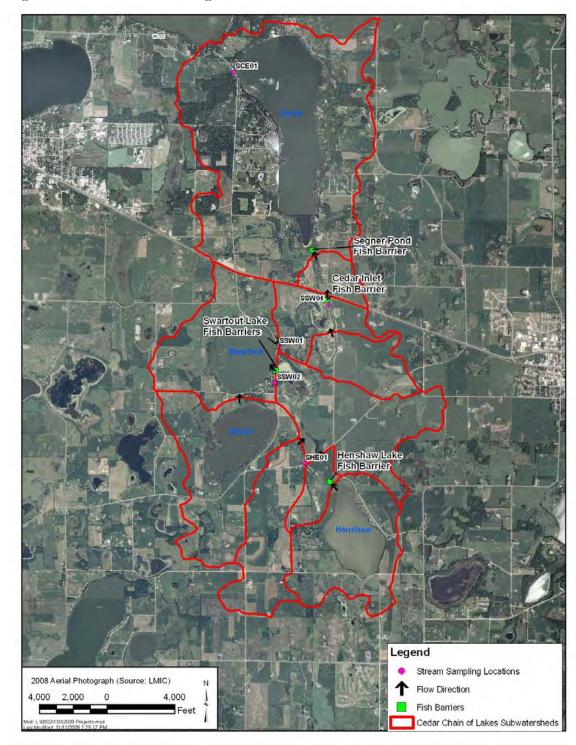


Figure 4.3 Stream Monitoring Locations

The overall external phosphorus load to Cedar Lake, as measured at monitoring site SSW04, was 1,149 lbs in 2010, slightly higher than the project goal of 1000 lbs. However, even with the higher external phosphorus load from the upper watershed, summer average phosphorus concentrations did not increase in Cedar Lake in 2010. This is an indication that a proportion of the phosphorus load to Cedar Lake is removed as the water is diverted into Segner Pond before entering the lake. Therefore, it appears that the Project has been effective in recent years in reducing the external load of phosphorus to Cedar Lake and maintaining the water quality in Cedar Lake.

The CRWD TMDL addresses water quality impairments in lakes and streams and identifies load reduction goals necessary to meet water quality standards. The CRWD Watershed-wide Implementation Plan was developed and approved by the MPCA in May of 2009. The 10-year plan identifies strategies and sets priorities to meet water quality goals in impaired waters.

The plan identifies the upper watershed as a high priority for implementing both capital and programmatic BMPs. Because of the flow-through nature of the Clearwater Chain of Lakes, the water quality in lakes upper watershed lakes like Clear Lake and Lake Betsy are primary drivers of water quality in downstream lakes like Clearwater Lake. The loads from these upper watershed lakes and their tributary watersheds are the primary driver of impairments in lakes further downstream. Clear Lake, Lake Betsy, and the tributary watersheds are targeted for intensive BMPs to not only improve water quality in those lakes, but to also reduce the load to downstream water bodies. All lakes will eventually be targeted, but the greatest impact will be made by initially focusing the efforts on improvements in the upstream end of the District and working downstream.

In 2010, the District implemented several BMPs identified in the CRWD Watershed-wide Implementation Plan to achieve water quality goals. In addition to implementing BMPs, supplemental water quality and hydrologic monitoring was conducted in accordance with recommendations of the implementation plan throughout the District to fill data gaps and better focus the implementation efforts. Upstream watersheds tributary to Clear Lake and Lake Betsy and other impaired lakes were the primary focus of additional monitoring. Additional monitoring tasks are described in Section 5.1.8 and Section 5.1.9.

5.1 TMDL IMPLEMENTATION PROJECTS AND PROGRAMS

Through the process of implementation, priority projects and programs are identified and implemented. In 2009, five priority projects were developed to the concept stage in order to apply for grants. Three additional projects were developed in 2010. Table 5.1 provides summary information for these projects and selected projects are described in more detail below.

To date, the CRWD has won three of the seven grants for which it has applied. The CRWD won a grant in partnership with the City of Kimball to construct a stormwater reclamation and reuse facility in the city limits to protect Willow Creek (a trout stream) and to reduce nutrient loads to Lake Betsy. The CRWD also secured two Minnesota Conservation Corps grants to restore two sections of stream in the upper watershed.

The grant application process and background work needed to secure these grants is under review.

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) (\$/lb)	Expense	Status
		Hold for grant funds: Land was acquired
		for this project. An initial grant application
		for \$351,906 scored highly but was not
		selected due to amount requested.
		Conducted additional feasibility work and
		completed another grant application which
		was not awarded. Will continue to seek
\$811/lb	\$645,882	grant funding for implementation.
		Implemented. Secured grant funds and
		partner contribution from the City of
		Kimball. Construction of the project was
		substantially completed November 2009.
		Final plantings and site stabilization
		scheduled for Spring 2011. Follow up
\$444/lb	\$114,000	monitoring will be required.
		Implemented in 2010 on approximately
		1,000 acres. District funds were used.
		Grant applications have been unsuccessful
\$295/lb	\$177,000	to date.
		Additional data was collected to
		characterize internal load in 2009 and
		2010. Future grant applications are
\$525/lb	\$315,000	scheduled for 2011.
		CRWD is working towards securing an
		easement for the project. Monitoring data
\$128/lb	\$75,000	was collected in 2010.
	. ,	A \$404,300 grant was secured for this
		project. The workplan is under review with
		the EPA. We are scheduled to begin
\$375/lb	\$739,000	monitoring in 2011.
	\$65,275	Implemented in 2010. CRWD secured a
on	,	\$28,875 grant for the project from
ed		Conservation Corps Minnesota. Work was
		completed along 2,800 linear feet of
nt		streambank. Opportunities to continue this
		work will be explored in 2011.
on		·
	ial Estimated Cost of TP Reduction (\$/Ib) \$811/Ib \$811/Ib \$444/Ib \$295/Ib \$525/Ib \$525/Ib \$128/Ib d on ted \$375/Ib	Cost of TP Reduction (\$/Ib) Estimated Expense \$ \$ <tr< td=""></tr<>

 Table 5.1 Priority Implementation Projects

5.1.1 Watkins Impoundment

The proposed project is the construction of an impoundment on a 20-acre CRWD-owned parcel of land northeast of the city to treat runoff discharged from the city's storm drainage system. The impoundment would be created by constructing an earthen dike across the creek that runs west to east across the parcel. Two subwatersheds totalling 740 acres of urban and agricultural land

drains through this creek to a nearby ditch. A sheet pile weir with a V-notch outlet point would control discharge from the impoundment. The impoundment is sized to store runoff from the 0.5 inch event, which would provide an annual nutrient removal efficiency of 25%. The impoundment would also potentially provide some removal of bacterial load from the agricultural land and biological oxygen demand currently stressing the Clearwater River.

The filter consists of 3/4 inch to 3 inch diameter limestone wrapped in geotextile fabric and staked in place at the outlet of the structure. As the water passes through the filter, the phosphorus comes in contact with and binds to the calcium in the limestone, and is removed from the water.

No grant funds were awarded for this project. In 2010, CRWD worked towards securing the land and conceptual design, and will continue to seek grant funding for this project.

5.1.2 City of Kimball

This project targets phosphorus removal for Lake Betsy and protection of the Willow Creek trout habitat by infiltrating the 1.5-inch storm event off 428 acres in and around the City of Kimball. Stormwater runoff from the City of Kimball drains untreated into Willow Creek, a trout stream. Willow Creek is tributary to Lake Betsy, which is impaired by excess nutrients.

It is estimated that this project will reduce phosphorus discharged to Willow Creek and Lake Betsy by 244 pounds annually, or about 3 percent of the 8,300 pound annual load reduction required for Lake Betsy. Kimball is one of two urban areas tributary to Lake Betsy, making it a targeted area for load reduction in the TMDL.

A grant was awarded for this project in 2009 and construction began on the project in 2010, with substantial completion of construction that year. Final stabilization will occur in the spring of 2011 when the project will come on line. The project consisted of a shallow basin to collect stormwater for irrigation of a near-by baseball field and infiltration to recharge shallow groundwater. The project also included limestone check dams and a rain garden. Education and

outreach curriculum centered around the project will be developed and implemented by the school district with support of CRWD staff.

5.1.3 Fertilizer Field Trial

The proposed soil testing and fertilizer application field trial includes systematic soil tests on up to 10,000 acres of critical cropland to determine the proper amount of fertilizer to be applied to each field. The applicator will use GPS to apply the correct amount of fertilizer in each grid of the fields based on the results of the soil tests.

This project began in 2010 on a selected 1,000 acres of land in the western portion of the watershed district tributary to Clear Lake and Lake Betsy. Monitoring results from initial soil testing and fertilizer application in 2010 have not yet been received. Analysis of the data will be used to recommend additional parcels for testing in 2011.

Monitoring will be conducted at drain tile outlets from selected fields. Samples will also be collected from two tile outlets in fields that are not a part of the field trial to be used as background data for comparison. The results will be publicized to encourage wider application of this technique.

This field trial will demonstrate the feasibility and utility of systematic soil testing in reducing fertilizer application and thus phosphorus load in agricultural runoff. This technology can be implemented throughout the agricultural areas of the state to cut down on fertilizer costs and reduce runoff of nutrients into adjacent water bodies.

The outcomes of the field trial are a reduction in phosphorus from fertilizer exported to impaired waters from cropland, and a quantification, evaluation, and publication of the load reduction achieved.

5.1.4 Lake Betsy Hypolimnetic Withdrawal

This proposed project would pump nutrient-rich water from the lake hypolimnion and use it to irrigate a nearby farm field. Intensive monitoring will be completed to evaluate the effectiveness of the BMP in reducing internal load. Lake inflows and outflows will be monitored for flow and quality, while weekly temperature and dissolved oxygen profiles and bi weekly nutrient profiles will be taken to evaluate impact on lake water quality. Volume and timing of withdrawals will be tracked to estimate load reduction.

The proposed project will assess the cost-effectiveness of lake hypolimnetic withdrawal and irrigation as an internal phosphorus load management BMP, and evaluate its transferability to lakes in the Clearwater River Watershed District and elsewhere.

While this project was not implemented in 2010, monitoring efforts have continued on Lake Betsy to better quantify internal nutrient loading in the lake and better determine the feasibility of this proposed project.

5.1.5 Clear Lake V-Notch Weir

The proposed project will impound water by installing a V-notch weir on a Clear Lake tributary stream south of the lake. This will allow phosphorus to settle out of agricultural runoff before discharging to Clear Lake. The targeted load reduction for this project is 600-800 pounds of phosphorus annually. The phosphorus load removed through the proposed project represents a significant component of the required load reduction from watershed sources to Clear Lake. The V-notch imoundment will catch water from smaller runoff events while allowing controlled overflow of stormwater during larger storm events.

While this proposed project was not constructed in 2010, the District made progress on the project in 2010 by working towards securing an easement on the property and collecting monitoring data. Monitoring data in 2010 indicated that a large proportion of the total phosphorus consists of soluble phosphorus. Since the proposed weir construction will only reduce the particulate phosphorus component in water temporarily detained by the weir, it would

be beneficial to implement additional features of the project to reduce the soluble phosphorus as well.

5.1.6 Kingston Wetland Restoration

The purpose of the Kingston Wetland Feasibility Studay and Restoration Project is to design and implement a restoration of the dissolved oxygen impaired Clearwater River and its 460 acre riparian Kingston Wetland to improve main channel dissolved oxygen concentrations in a DO impaired reach of the Clearwater River, reduce the seasonal export of soluble phosphorus to impaired lakes, and improve stream and wetland habitat.

Improvements in DO will be achieved by mitigating sediment oxygen demand in the wetland complex. The project also targets a 1,970 lb/year phosphorus reduction to downstream lakes by preventing soluble phosphorus export from the riparian wetland.

Monitoring will be conducted before and after the project is implemented.

A grant in the amount of \$404,300 was awarded for this project in 2010. Monitoring and project design is scheduled to begin in 2011 as soon as the contract is executed with the MPCA.

5.1.7 Clearwater River Channel Stabilization

The purpose of this project is to stabilize the channel and bank in a reach of the Clearwater River that has an extensive tree canopy that does not allow for any ground vegetatation, which has caused sloughing and incision of the channel banks. The outcomes of the project are to stop soill loss from the bank area by restoring vegetation, stop soil loss from the channel by installing bank toe protection and grade control, and installing grade control structures that will aerate water.

It is estimated that the project will reduce sediment transport in the stream from 147 tons/year to 10 tons/year which will also result in an associated reduction in phosphorus load. The project will also aid in reareating the channel which will increase dissolved oxygen concentrations in the

stream. Some of the stream stabilization efforts will be in conjunction with pasture management to target bacteria load reductions as well as phosphorus load reductions.

The CRWD applied for and was awarded a grant in the amount of \$28,875 from Conservation Corps Minnesota in 2010 to complete this work. The CRWD contributed matching funds for equipment purchase, design, coordination, and construction oversight.

The Conservation Corps crews began work in 2010 and were responsible for thinning trees, building and installing brush bundles, fabricating grade control structures from felled logs, live stake harvesting and installation, seeding slopes, and installing erosion control fabric along approximately 2,800 linear feet in the project area. The CRWD will explore opportunities to continue this work in 2011. Figure 5.1 shows the project area as well as photos of the streambank following completion of the work.





5.1.8 Expanded Monitoring

Additional monitoring tasks were performed in 2010 in order to better quantify internal loading of nutrients in CRWD lakes, to fill data gaps identified in the TMDL study, and to better calibrate water quality models. These monitoring efforts will assist in designing BMPs and load reduction projects, making implementation more efficient and effective.

5.1.9 Expanded Lake Water Quality Monitoring

Samples were collected near the bottom at each of the monitored lakes and analyzed for total phosphorus, soluble reactive phosphorus, and total iron. A summary of surface and bottom phosphorus concentrations, bottom iron concentrations, and a DO/temperature profile at each lake for each monitoring date is found in Appendix H.

Analysis of these parameters in bottom samples is helpful in estimating internal nutrient cycling in lakes. In-lake nutrient cycling is an important component of the whole lake nutrient budget. Phosphorus builds up in lake-bottom sediments due to increases in phosphorus load export from the tributary watershed.

Lake profile data, in which temperature and dissolved oxygen were recorded at 1 meter increments in each lake helps to identify the period of stratification in lakes. This data also allows quantification of the period of anoxia, defined as dissolved oxygen levels less than 2 mg/L, in each lake. Internal loading can be a result of sediment anoxia, where weakly bound phosphorus is released into the water column in a form readily available for phytoplankton production.

Table 5.2 provides a summary of conditions in CRWD lakes which can be used to determine the potential for in-lake nutrient cycling in each lake sampled in 2010. Generally, lakes which have high bottom phosphorus concentrations and periods of anoxia from stratification are susceptible to internal nutrient cycling.

Lake Name	Surface Summer Average TP (µg/L)	Surface Summer Average OP (µg/L)	Bottom Summer Average TP (μg/L)	Bottom Summer Average OP (μg/L)	Lake Stratification Pattern
Albion	292	22	230	22	Mixed
Augusta	48	17	470	416	Strongly Stratifies
Betsy	181	112	1480	1244	Weakly Stratifies
Caroline	68	26	1645	1500	Strongly Stratifies
Cedar	26	21	167	183	Strongly Stratifies
Clear	211	48	238	153	Polymictic
Clearwater West	30	19	121	70	Strongly Stratifies
Henshaw	105	22	110	21	Mixed
Louisa	105	40	1323	1215	Strongly Stratifies
Marie	93	32	1200	1099	Stratifies
Pleasant	38	17	184	145	Stratifies
Scott	137	80	286	202	Polymictic
Swartout	330	214	365	233	Polymictic
Union	49	16	1079	1031	Stratifies

 Table 5.2
 2010 Summer Average Concentrations and Lake Stratification Patterns

Lake stratification patterns identified in Table 5.2 vary between water bodies. Lake stratification can drive anoxia, which can drive internal loading in deeper lakes. Identifying the stratification and anoxic period can guide design of efforts to reduce internal loading.

Mixed and Polymictic: In mixed water bodies, water temperature is fairly uniform from top to bottom in the lake. As a result, oxygen enriched water from near the surface is able to mix throughout the water column, and anoxia is typically not present. Polymictic lakes are lakes that develop a weak stratification and mix periodically throughout the growing season. As a result of the frequent mixing, anoxic conditions would likely occur infrequently.

Stratified: In stratified lakes a warm surface layer forms during summer months and the lake maintains a cooler lower layer in the lake and prevents mixing between the two layers. This does not allow oxygen enriched water to reach the bottom layer and anoxia can develop below the thermocline.

Lakes with high bottom phosphorus concentrations that experience anoxic conditions during periods when the lake is stratified have a high potential for internal loading. Lakes with the highest bottom concentrations of phosphorus in 2010 include Betsy, Caroline, Louisa, Marie, and Union. Based on the presence of high bottom phosphorus concentrations, lake stratification patterns and associated periods of anoxia during a given year, these lakes have a high potential for internal loading. Shallow lakes such as Henshaw, Albion and Swartout can load internally throughout the season based on disturbance of bottom sediments from wind and rough fish.

As shown on the Lake Report Cards in Appendix C, the bottom phosphorus concentrations in most lakes generally increases throughout the summer. This is especially evident in Betsy, Caroline, Augusta, Louisa, Marie, and Union Lakes. The bottom phosphorus concentrations in these lakes typically decrease after mixing with the entire water column during fall turnover.

5.2 INTERNAL LOAD ESTIMATION

One TMDL implementation plan recommendation was to verify the predicted high internal loads in some District lakes by measuring release rates and to better characterize the anoxic factor through collecting more temperature and DO profile measurements during the growing season annually. The anoxic factor can change annually with weather conditions, especially in shallow polymictic lakes.

In March 2010, sediment cores were collected at Augusta and Scott Lakes. The sediment cores were analyzed for phosphorus content and the phosphorus release rate under oxic and anoxic conditions from each lake was quantified. Similar sampling and analysis was conducted at Betsy and Clear Lakes in 2009.

The analysis of the sediment phosphorus content allows for the phosphorus to be characterized into two categories, redox-sensitive and biologically labile phosphorus, and refractory phosphorus. Redox-sensitive and biologically labile phosphorus is the form of phosphorus that is subject to recycling in the lake while refractory phosphorus is strongly bound and does not

readily cycle back into the lake. Data from the analysis of the sediment cores collected in 2010 and 2009 is summarized in Table 5.3.

	Phosphorus Rate (mg/m		Total Phosphorus	Redox- sensitive and	Percentage of redox- sensitive	Refractory P	
Lake	Oxic	Anoxic	(mg/g)	biologically labile P (mg/g)	and biologically labile P	(mg/g)	
Augusta (2010)	Not detected	4.50	1.098	0.583	53.1%	0.540	
Scott (2010)	Not detected	30.00	1.237	0.635	51.3%	0.665	
Betsy (2009)	Not detected	19	1.419	0.753	53.1%	0.694	
Clear (2009)	Not detected	2.4	1.462	0.353	24.1%	0.861	

 Table 5.3 CRWD Lake Sediment Analysis Summary

As observed in Betsy and Clear Lakes in 2009, phosphorus release was not detected from sediments under oxic conditions for either Augusta or Scott Lake. The sediment core analysis indicates that the phosphorus release rate from bottom sediments under anoxic conditions in Scott Lake is much higher than the release rate from Augusta Lake sediments. Analysis of the phosphorus content shows that the phosphorus content is similar in both lakes and the percentage of redox-sensitive and biologically labile phosphorus is also similar in both lakes. These results indicate that under anoxic conditions, internal loading of phosphorus can potentially result in a significant loading of phosphorus to both lakes.

The additional data collected on Augusta and Scott Lakes allows for the estimation of internal phosphorus loading in each lake. The measured release rates used in conjunction with additional temperature and DO profiles to define the summer stratification period were used to characterize internal loading. Similar data was collected in 2009 from Betsy and Clear Lake. Table 5.4 shows the predicted internal load and annual load allocations for Augusta, Scott, Betsy, and Clear Lakes as identified in the 2009 CRWD Lake Nutrient TMDL, the 2010 estimated internal phosphorus loads in the four lakes, as well as the 2009 estimated internal phosphorus load in Betsy and Clear Lakes. Some variability in the annual internal phosphorus load from year to year is expected, and is caused by variability in the depth of stratification and area of anoxia in the lakes.

Lake	Predicted Internal Load* (Ibs/year)	Annual Phosphorus Load Allocation* (Ibs/year)	Annual Phosphorus Internal Load Allocation* (Ibs/year)	2009 Estimated Internal Phosphorus Load (Ibs/year)	2010 Estimated Internal Phosphorus Load (Ibs/year)				
Augusta	880	4,109	697		506				
Scott	59	2,535	59		1,120				
Betsy	7,080	2,868	354	1,354	1,849				
Clear	8,364	1,250	21	76	142				
*From CR\	*From CRWD Lake Nutrient TMDLs, 2009								

Tabla 5 /	Prodicted and	I Fetimatad	Internal Pho	sphorus Loads
1 able 5.4	Predicted and	i Esimaleu	Internal Pho	sphorus Loaus

The 2010 estimated internal phosphorus load in Lake Augusta was less than the modeled predicted internal load average and was less than the TMDL annual phosphorus internal load allocation for the lake. The 2010 estimated internal phosphorus load in Scott Lake was significantly higher than both the modeled average and the TMDL annual phosphorus internal load allocation for the lake. The result is that the TMDL predicted a much lower internal phosphorus load to Scott Lake than what was measured in 2010.

While the 2009 estimated internal phosphorus loads in Lake Betsy and Clear Lake appeared to be less than the modeled average they still are above the TMDL annual phosphorus internal load allocation for each lake.

Summaries of these lakes, including Lake Report Cards summarizing general lake information, historical and current water quality, and identifying TMDL goals are found in Appendix C.

- Annual precipitation was above normal at monitored locations in 2010, and was above normal in most months. Significant precipitation events occurred throughout the year, especially in August, September, and October.
- Runoff over the watershed at CR 28.2 was 7.9 inches, and at CR 10.5 was 13.0 inches.
 The higher than normal runoff in both portions of the watershed is due primarily to high flow events following snow melt and significant precipitation events throughout the year.
- 3. The Clearwater River phosphorus load was estimated at 9,149 pounds at CR 10.5, higher than loads in recent years due to increased runoff from above average precipitation, but similar to historical averages in years with similar precipitation. The upper watershed load at CR 28.2 was 23,955 pounds, which was significantly higher than loads measured in recent years due to increased runoff. Flow-weighted average concentrations were 32 μ g/L and 258 μ g/L at CR 10.5 and CR28.2, respectively. These concentrations were lower than historical averages at both sites and similar to concentrations seen in recent years.
- 4. Soluble phosphorus makes up a majority of total phosphorus at monitoring stations downstream of wetlands, indicating the export of soluble phosphorus from the wetlands. Expanded monitoring upstream of these wetlands would help to verify the export of soluble phosphorus from the wetlands. Projects implemented to reduce phosphorus should also contain a component to reduce soluble phosphorus if possible.

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- 5. With the exception of the 11 lakes that are impaired in the watershed, the water quality of CRWD lakes is generally good. Water quality has generally improved or remained stable in the majority of the lakes in the CRWD in recent years.
- 6. Additional lake monitoring efforts conducted in 2010 confirm the impact of internal loading of nutrients in some CRWD lakes, as evidenced by monitoring data showing high bottom phosphorus concentrations and high phosphorus release rates from lake sediments. Monitoring data indicates that lakes especially susceptible to internal nutrient loading include Albion, Swartout, Henshaw, Augusta, Caroline, Louisa, Marie, Betsy, Scott, and Union. CRWD will continue to evaluate potential actions identified in the CRWD Watershed-wide Implementation Plan that address internal loading.
- 7. Continued monitoring as part of Project #06-1 indicates that external phosphorus loads to Cedar Lake were near project goals, even during a year with higher than normal runoff over the watershed. However, summer average phosphorus concentrations in Cedar Lake remain above the Project goal of 20 µg/L, indicating that additional load reductions, additional actions, and time are necessary to meet lake water quality goals.
- 8. The 2010 monitoring results in Swartout, Albion, and Henshaw Lakes made apparent the connection of lake water quality to the status of fish communities in these lakes. The development of shallow lake management plans incorporating measures such as water level management to promote vegetation growth and more drastic fish community management strategies, such as lake drawdowns or the application of Rotenone to promote rough fish kills would likely benefit these lakes.
- 9. The installation of two continuous stream flow monitoring sites and the continued additional frequency of monitoring at stream locations in 2010 allowed for an accurate estimation of runoff and phosphorus loading in CRWD. Additional lake monitoring efforts, including collecting bottom phosphorus and iron concentrations, collecting temperature and dissolved oxygen profiles more frequently, and conducting sediment phosphorus release studies led to better quantification of internal loading in District lakes

in 2010. The CRWD should consider continuing the additional monitoring efforts in 2011 to more effectively design and implement load reduction projects.

- In 2010, the CRWD made progress towards water quality goals established in the TMDLs by:
 - implementing additional monitoring which filled data gaps identified in the TMDL and which will assist in final design of capital improvement projects and targeting BMPs;
 - ✤ applying for and securing grant dollars for three projects;
 - ✤ implementing three projects identified in 2009, including:
 - beginning a targeted fertilizer application reduction project in the upper watershed,
 - completing construction on a stormwater reclamation and reuse project in the City of Kimball, and
 - completing a streambank restoration and stabilization project on the Clearwater River,
 - continuing to seek grant funding, monitoring, and securing land for additional projects including:
 - Watkins impoundment,
 - o Lake Betsy hypolimnetic withdrawal, and
 - Clear Lake v-notch weir
 - 11. In 2011, the CRWD plans to continue progress towards TMDL goals by:
 - continuing additional monitoring efforts to track effectiveness and improve efficiencies of implementation projects,
 - beginning monitoring and project design for the Kingston Wetland Restoration and Feasibility Study,
 - continuing to apply for grant dollars to fund other CRWD projects,

2010 Water Quality Monitoring Program

MEMORANDUM

TO:	Clearwater River Watershed District Board of Managers
FROM:	Norman C. Wenck Engineer for the District
DATE:	February 10, 2010
RE:	Proposed 2010 Water Quality Monitoring Program

Introduction

The Clearwater River Watershed District conducts its annual water quality monitoring at selected lakes and locations on streams. The District's proposed 2010 program is intended to provide data from sites throughout the District.

The 2010 proposed lake monitoring follows the long-term plan as shown in Table 1 and Figure 1. The proposed stream monitoring sites together with laboratory and field parameters are shown in Table 2.

Lake Monitoring

It is recommended that the District's 2010 lake monitoring include the 10 lakes shown on Table 1, including Clearwater West, Augusta, Louisa, Caroline, Scott, Marie, Betsy, Pleasant, Clear, and Union. It is also recommended that surface and bottom water samples be collected at all of the sampled lakes. The proposed stations and the parameters to be monitored are shown on Table 2. Citizens also monitor approximately 10 lakes for secchi depth. Cedar, Albion, Henshaw, and Swartout Lakes will also be monitored as part of the Cedar, Albion, Swartout, Henshaw Improvement Project #06-1.

Stream Monitoring

The Clearwater River will be monitored twice a month from April-June and once a month from July-October at station CR28.2. The Clearwater River will also be monitored once a month from April-October at station CR 10.5 at Grass Lake. Warner Creek will be monitored once a month from April-October at WR 0.2. Two major inlets to Clear Lake will also be monitored in 2009 at stations Clear Lake North and Clear Lake South. These stations will be monitored for water quality and flow. Water quality parameters are total phosphorus, ortho phosphorus, and total suspended solids. CR 28.2 will also be monitored for *E. coli* bacteria. Tributary streams in the Cedar Lake subwatershed will also be monitored as part of Project #06-1.

Level Monitoring

It is recommended that the District install staff gauges at the outlets of Clear, Cedar, and Grass Lakes and enlist the help of lake residents to read the gauges on a weekly basis.

Estimated Cost

This proposed basic program is estimated to cost \$24,500 plus an estimated additional 240 hours of CRWD staff time.

Recommended Supplemental Monitoring

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In addition to the basic program, it is recommended that supplemental monitoring efforts be considered in 2010. The proposed supplemental monitoring efforts would allow the District to track the success of individual projects or to investigate specific water quality concerns.

Supplemental Monitoring Task 1: Collect additional temperature/dissolved oxygen profiles from selected lakes in the District to better characterize the anoxic factor in lakes.

It is recommended that the District collect profile data twice monthly starting in early May until the lake is stratified in Clear, Cedar, Betsy, Scott, and Augusta Lakes. Profiles should also be collected twice monthly starting in September until the lakes are mixed. Since the lakes are already being sampled monthly from June to September, this additional task would add four to six visits to each lake. This task would take approximately 40 to 60 hours of CRWD staff time to complete plus \$1,000 for data management and reporting.

Supplemental Monitoring Task 2: Collect lake bottom sediment samples to quantify phosphorus release rates in selected District Lakes.

It is recommended that the District collect lake sediment samples from Scott and Augusta Lakes in 2010 to expand on monitoring performed in 2009. The cost of this task is approximately \$3,500 per lake.

Supplemental Monitoring Task 3: Maintain continuous flow measurements at two locations in the watershed.

It is recommended that the District install pressure transducers at two sites, the north inlet to Clear Lake and at monitoring station CR 31.8, to measure continuous flows and better characterize runoff in these areas of the watershed. The approximate cost of this task, including equipment purchase is \$4,800.

Equipment Purchase

The equipment used to gauge stream flow is in need of replacement. New equipment would improve the efficiency of data collection and improve the quality of the data. The cost of a new digital velocity meter to be used in stream flow gauging is approximately \$3,200.

Summary

The proposed monitoring program continues the program in place since 1981, coordinates with other programs, and reflects input from the Board and citizens. Please feel free to call me at 763-479-4201 or Rebecca Kluckhohn at 763-479-4224 with any questions or comments that you may have.

LAKE STATIONS ⁽¹⁾	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	2003	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Clearwater Lake:														
Clearwater East	Х	Х	Х	Х	Х	Х	Х	Х	DNR		Х		Х	
Clearwater West	Х	Х	Х	Х	Х	Х	Х	Х	DNR	Х		Х	Х	Х
Main Stem Lakes:														
Augusta	Х		Х		Х		Х		DNR		Х		Х	Х
Louisa	Х		Х		Х		Х		TMDL/ DNR	TMDL	Х		Х	х
Caroline		Х				Х		Х	DNR	Х		Х	Х	Х
Scott		Х	Х			Х		Х		Х		Х	Х	Х
Marie		Х		Х		Х		Х	DNR	Х		Х	Х	Х
Betsy	Х		Х		Х		Х		Х		Х		Х	Х
Other Lakes:														
Cedar			Х		Х		Х	Х	Х	Х		X(2)	X(2)	X(2)
Pleasant	Х		Х	Х				Х	MPCA		Х	X(3)	Х	х
School Section	Х		Х	Х				Х			Х		Х	
Nixon	Х		Х		Х			Х			Х	Х	Х	
Otter	Х		Х		Х			Х			Х		Х	
Bass		Х	Х		Х				MPCA/ DNR	Х		X(3)	Х	
Clear		Х	Х	Х			Х		Х			Х	Х	х
Union		Х	Х			Х			MPCA			Х	Х	х
Henshaw		Х	Х			Х			Х		Х	X(2)	X(2)	X(2)
Little Mud			Х			Х				х			X	
Wiegand			Х			Х			Х				Х	
Swartout			Х				Х		Х	Х		X(2)	X(2)	X(2)
Albion			Х				Х		Х	х		X(2)	X(2)	X(2)
Grass			Х				Х		DNR			x	x	
Number of Lakes														
Monitored W/														
CRWD Funding	9	9	20	6	9	9	10	10	7	10	9	14	22	14
Note:	⁽¹⁾ Lake s	electio	n basec	l on tot	tal lake	size ra	nking	scores ((Lake Priority	Rankiı	1g, 199	0)		
	(2) Part of						-							
				-										

TABLE 1
PROPOSED LONG-TERM WATER QUALITY MONITORING PLAN FOR CRWD LAKES

⁽³⁾ Added to assess trends

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TABLE 2
Proposed 2010 CRWD Monitoring Plan Summary

Category	2010 Schedule	Station	Parameters
	June 1-5, July 6- 10, August 3-7,	The CRWD will monitor Clearwater (West), Augusta, Louisa, Caroline, Scott, Marie,	Field: Secchi depth, DO and temperature profiles
Lakes:	September 7-11	Betsy, Pleasant, Clear, and Union Lakes. Cedar, Albion, Swartout, and Hensaw Lakes	Lab: surface samples for total
		will be monitored under Project No. 06-1	phosphorus, ortho phosphorus, and chlorophyll-a Bottom samples for total phosphorus, ortho phosphorus, and total iron.
			Citizen Secchi: 10 sites not listed here
	Twice monthly	CR 28.2	Field: flows, DO and temperature
Streams:	April-June, monthly July- October	017 20.2	Lab: total phosphorus, ortho phosphorus, total suspended solids, E. coli
otreams.	Monthly April- October	CR 10.5	Field: flows, DO and temperature Lab: total phosphorus, ortho phosphorus, total suspended solids,
	Monthly April- October	WR0.2	Field: flows, DO and temperature Lab: total phosphorus, ortho phosphorus, total suspended solids,
	Monthly April- October	Clear Lake Inlet North	Field: flows, DO and temperature Lab: total phosphorus, ortho phosphorus, total suspended solids,
	Monthly April- October	Clear Lake Inlet South	Field: flows, DO and temperature Lab: total phosphorus, ortho phosphorus, total suspended solids,
	Weekly	River Stage at CR10.5, lake Level at Clear Lake, Cedar Lake	

Precipitation: Daily Corinna, Kimball, Watkins

Project #06-1		Tributaries Field: DO, temperature, conductivity, pH; Lab: total phosphorus, ortho phosphorus, TSS
		Lakes Field: Secchi, DO, temperature profiles Lab: surface: total phosphorus, ortho phosphorus, chlorophyll-a bottom: total phosphorus, ortho phosphorus, total iron

Historical Mean Flow and Phosphorus Loading

APPENDIX B Table B-1 Historical Mean Flow and Phosphorus Loading

Clearwater River Watershed District

2010 Annual Report

				Flow-Weighted Average			
				Total Phosphorus			
Station		Average Stream		Concentration	Total Phosphor		
Main Stem:	Year	(cu m/sec)	(cfs)	(mg/l)	(kg)	(lb)	μg/l
CR 28.2	1981 (1)			1.400			1,400
(1 . 1 .	1981	0.02	22.0	0.540	10 500	12 500	7 40
(Actual River	1982 (1)	0.93	32.8	0.740	19,700	43,500	740
Mile 27.2)	1983	2.62	92.6	0.920	76,000	168,000	920 760
	1984 1985	1.49 2.32	52.6 81.9	0.760 0.900	35,700 65,500	78,800 144,000	900
	1986	3.20	113	0.780	55,200	122,000	780
	1987	0.11	3.90	0.130	460	1,020	130
	1988	0.09	3.12	0.660	1,850	4,080	660
	1989	0.02	0.72	0.190	120	260	190
	1990	0.51	18.0	0.440	7,040	15,500	440
	1991	1.11	39.1	0.290	10,200	22,500	290
	1992	0.26	9.30	0.200	1,660	3,650	200
	1993	1.28	45.2	0.290	11,600	25,600	290
	1994	1.17	41.2	0.280	10,100	22,300	280
	1995 1996	1.15 0.33	40.4 11.7	0.288 0.274	10,400 2,860	22,900 6,300	288 274
	1990	0.33	9.36	0.274	2,800	4,790	260
	1998	0.41	14.4	0.250	3,190	7,020	250
	1999	0.08	2.78	0.160	400	870	160
	2000	0.02	0.72	0.380	240	530	380
	2001 (4),(5)	0.27	9.46	0.510	4,309	9,500	510
	2002	0.47	16.50	0.291	4,290	9,460	291
	2003	0.28	9.92	0.190	1,710	3,770	190
	2004	0.48	17.04	0.166	1,248	2,751	166
	2005 (6)	1.11	39.28	0.306	1,862	4,105	306
	2006	0.31	11.10	0.130	1,328	2,928	130
	2007 2008	0.14 0.64	5.02 22.53	0.228 0.155	767 1,333	1,692 2,938	228 155
	2008	1.15	40.60	0.333	7,982	2,938	333
	2010	1.55	54.60	0.258	10,866	23,955	258
CR 10.5	1981 (1)	1.15	40.6	0.050	2,060	4,550	50
	1982 (1)	2.20	77.8	0.070	4,990	11,000	70
	1983	5.64	199	0.100	18,500	40,800	100
	1984	4.28	151	0.050	6,620	14,600	50
	1985	3.88	137	0.140	16,700	36,800	140
	1986	5.52	195	0.150	23,700	52,300	150
	1987	0.46	16.2	0.040	600	1,320	40
	1988 1989	0.23 0.97	7.95 34.2	0.040 0.080	260 2,340	580 5,150	40 80
	1989	3.77	133	0.030	3,060	6,750	30
	1990	6.68	236	0.050	10,500	23,200	50
	1992	4.16	147	0.060	8,090	17,800	60
	1993	5.01	177	0.040	6,330	14,000	40
	1994	2.92	103	0.030	2,850	6,290	30
	1995	2.83	100	0.034	3,040	6,710	34
	1996	1.53	54.2	0.041	1,970	4,350	41
	1997	2.06	72.8	0.040	2,690	5,940	40
	1998	1.78	63.0	0.040	2,330	5,120	40
	1999 2000	1.25	44.1	0.040 0.030	1,520	3,350	40 30
	2000 2001 (4),(5)	0.31 0.90	10.8 31.7	0.030	280 850	610 1,873	30
	2001 (4),(5)	2.46	87.0	0.030	2,950	6,500	30
	2002	2.11	74.6	0.033	1,590	3,500	24
	2005	1.66	58.8	0.022	639	1,409	22
	2005 (6)	3.05	107.6	0.023	59	130	23
	2006 (6)	1.76	62.2	0.032	1,263	2,785	32
	2007	0.97	34.1	0.031	933	2,057	31
	2008	1.27	44.8	0.023	452	997	23
	2009	3.99	141.0	0.025	1,949	4,297	25
	2010	6.16	217.5	0.032	4,150	9,149	32

APPENDIX B Table B-1 Historical Mean Flow and Phosphorus Loading

Clearwater River Watershed District

2010 Annual Report

				Flow-Weighted Average Total Phosphorus			
Station		Average Stream	n Flow	Concentration	Total Phosphor	us Load	
Main Stem: Tributaries:	Year	(cu m/sec)	(cfs)	(mg/l)	(kg)	(lb)	µg/l
WR 0.2 (2)	1981 (1)	0.07	2.60	0.170	390	860	170
	1982 (1)	0.23	8.20	0.160	780	1,720	160
	1983	0.47	16.50	0.090	1,270	2,800	90
	1984	0.60	21.20	0.050	950	2,100	50
	1985	0.48	17.10	0.140	2,130	4,700	140
	1986	0.86	30.40	0.200	4,630	10,200	200
	1987	0.04	1.50	0.070	100	230	70
	1988	0.01	0.40	0.170	60	130	170
	1989	0.03	1.19	0.140	80	180	140
	1990	0.06	2.28	0.370	750	1,660	370
	1991	0.26	9.22	0.111	860	1,900	111
	1992	0.11	4.02	0.050	170	370	50
	1993	0.24	8.59	0.100	760	1,670	100
	1994	0.18	6.34	0.060	320	700	60
	1995	0.12	4.27	0.054	210	460	54
	1996	0.05	1.78	0.110	180	380	110
	1997	0.09	3.15	0.077	220	480	77
	1998	0.09	3.11	0.110	290	650	110
	1999	0.06	2.03	0.070	130	280	70
	2000 (3)	0.01	0.44	0.060	25	56	60
	2001 (4),(5)	0.08	2.88	0.100	257	567	100
	2002	0.26	9.17	0.114	930	2,060	114
	2003	0.16	5.79	0.062	320	710	62
	2004	0.07	2.6	0.063	78	172	63
	2005	0.58	20.6	0.066	22	48	66
	2006	0.06	2.1	0.090	102	224	90
	2007	0.03	0.9	0.064	34	76	64
	2008	0.31	11.1	0.058	246	542	58
	2009	0.15	5.3	0.087	273	602	87
	2010	0.16	5.6	0.095	311	685	95

NOTES:

Flow values are time-weighted averages unless otherwise noted.

Total phosphorus values are flow- and time-weighted averages unless otherwise noted.

(1) Values in 1981 and 1982 are arithmetic means

(2) Station WR 0.2 was designated Station WC 0.2 in 1981-1983

(3) Phosphorus values in 2000 are flow-weighted and adjusted per log-log regression on flow so as to correspond to annual mean flows.

(4) 2001 Flow and total phosphorus values are arithmetic averages.

(5) 2001 total phosphorus loads estimated from arithmetic averages of flow and total phosphorus values.

(6) Values in 2005 and 2006 were calculated using supplemental flow data from CSAH 40 near Clearwater

T:\0002\145\[Stream_Loads_Historic_10.xls]Precip_Runoff Data

Appendix B-TABLE B-2

YEARLY PRECIPITATION AND RUNOFF TOTALS

Clearwater River Watershed District

				Maine				Area-Weighted		Runoff
YEAR	Watkins	Kingston		Prairie		Corinna		Precipitation Average		(inches)
1981								19.76	(1)	3.6
1982								24.58	(1)	6.8
1983	46.54			42.32		35.02		41.78		17.4
1984	32.23	30.13		32.37		36.07		32.95		13.3
1985	40.72	39.49		45.28				42.22		12.0
1986	40.02	35.63		39.68		33.40		37.26		16.0
1987	18.97	15.40		19.41		16.16		17.52		1.4
1988	16.57	18.98		15.96		15.01		16.48		0.7
1989	22.13	22.68		21.80		16.96		20.68		3.0
1990	40.35	39.18		41.36		32.18		37.94		11.7
1991	41.30	45.11		43.41		36.28		41.01		20.7
1992	23.06	18.41		20.47		24.35		22.01		12.9
1993	40.17	35.27	(2)	37.54	(2)	33.33		36.71		15.5
1994	34.77			30.13		30.26		31.98		9.0
1995	33.80			33.65		28.66		32.21		8.8
1996	31.31			24.32	(2)	26.13	(2)	27.59		4.8
1997	24.18			21.90		27.37		24.43		6.3
1998	30.03			29.39		27.43	(2)	29.05		5.5
1999	22.08			22.31	(2)	27.71		23.84		3.9
2000	23.83			20.56		19.91		21.22		1.0
2001	31.00			33.56		29.57		31.28		2.8
2002	37.50			40.27		44.72		40.57		7.6
2003	22.63			21.34		26.77	(2)	23.02		6.5
2004	33.58			33.58		31.67		33.10		2.8
2005	32.30	(2)				41.47		36.89		8.6
2006	20.95					23.38		22.17		4.2
2007	26.58					27.82		27.20		3.0
2008	26.19					25.00		25.58		2.0
2009	28.86					27.65		28.26		7.6
2010	34.36					32.94		33.65		13.1
							Mean	29.43		7.7
						Std	Dev.	7.6		5.4

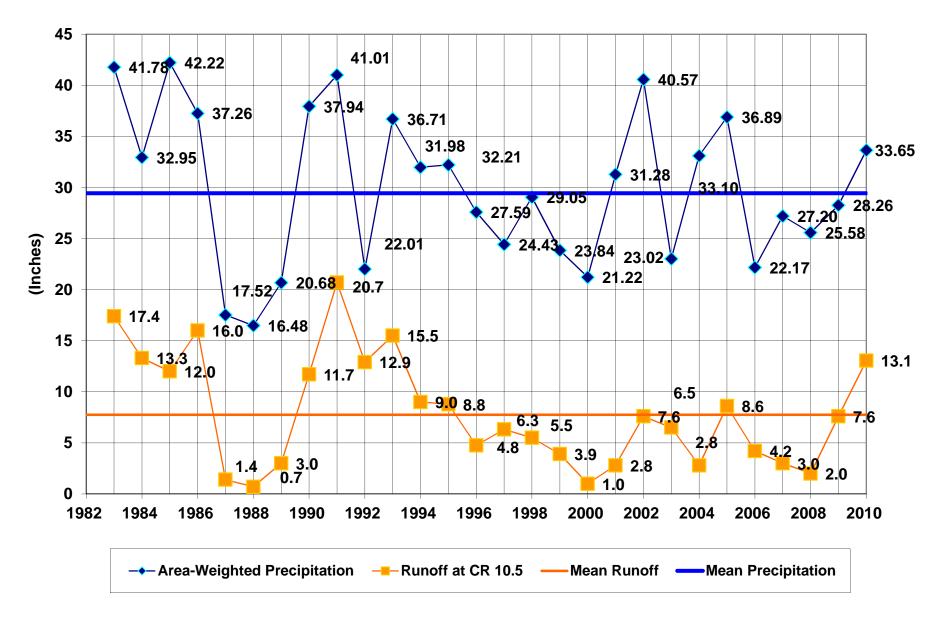
NOTES:

Whole watershed runoff is based on time-weighted average flow at Clearwater Lake outlet (station CR 10.5), and total drainage area of 155 square miles.

- (1) Data for single gauge in east-central part of watershed (Camp Heritage on Lake Caroline).
- (2) Average values of other stations in District were used to fill in missing data.

T:\0002\145\[Stream_Loads_Historic_10.xls]Precip_Runoff Data

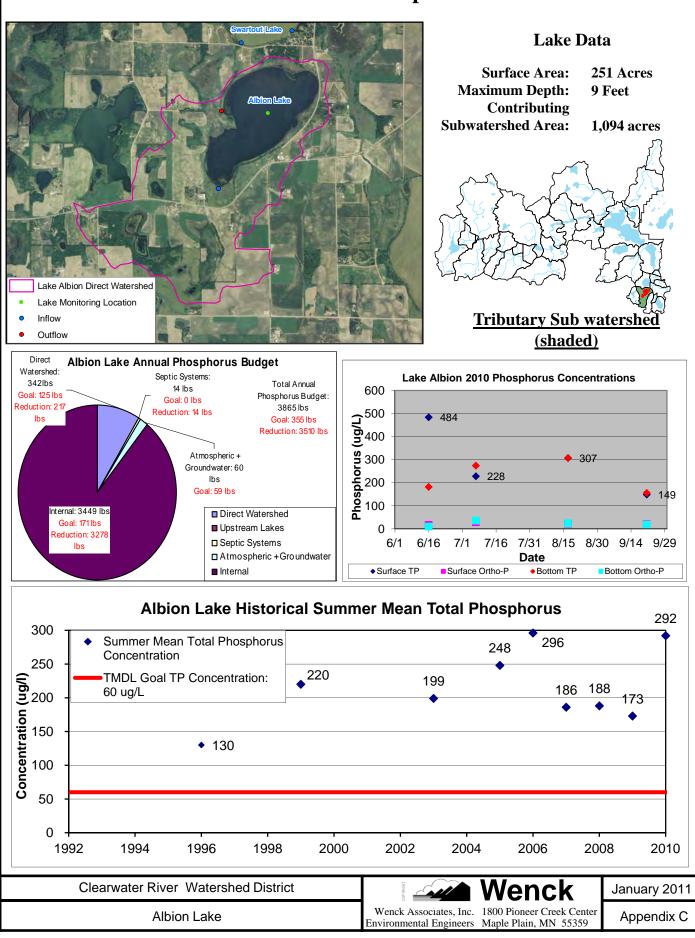
Appendix B Figure B- 1 Clearwater River Watershed District 2010 Annual Report



Appendix C

2010 Lake Report Cards

2010 Albion Lake Report Card

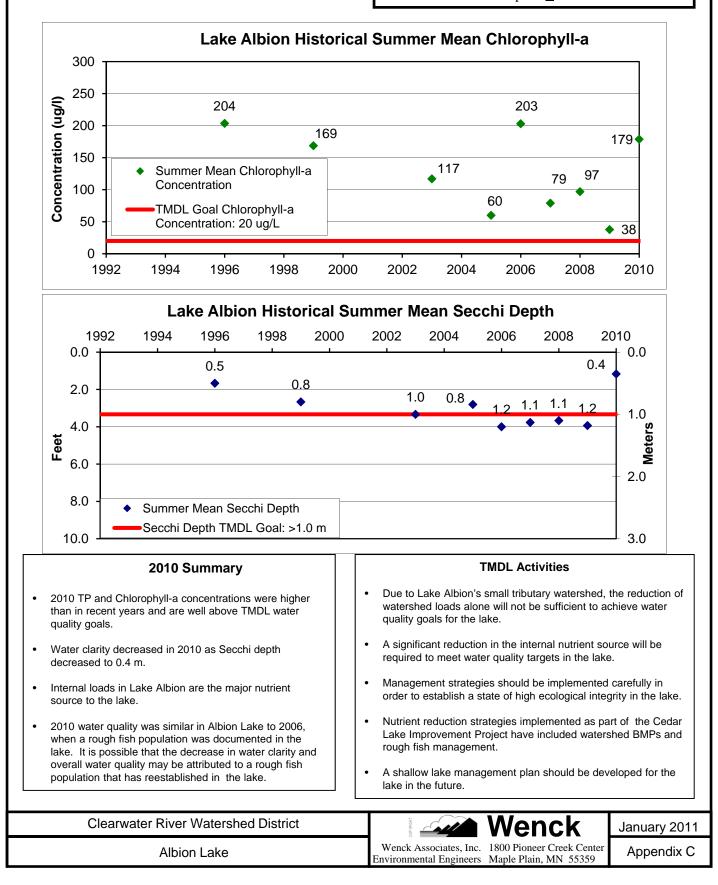


Albion Lake

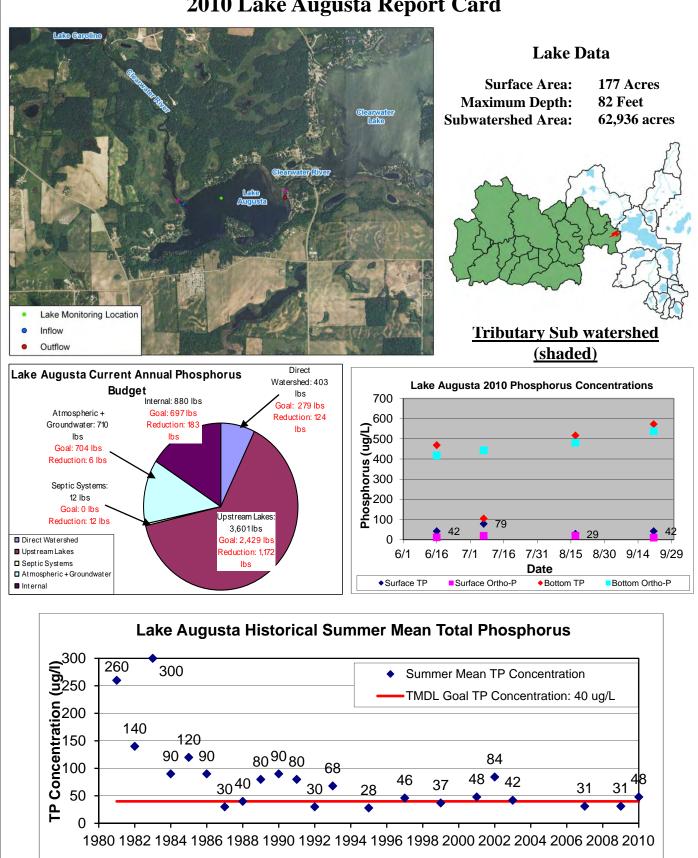
2010 Lake Report Card

MPCA Standards for Shallow Lakes in the North Central Hardwood Forest:

Total Phosphorus (TP): \leq 60 ug/L Chlorophyll-a: \leq 20 ug/L Secchi Depth: > 1.0 meter



2010 Lake Augusta Report Card



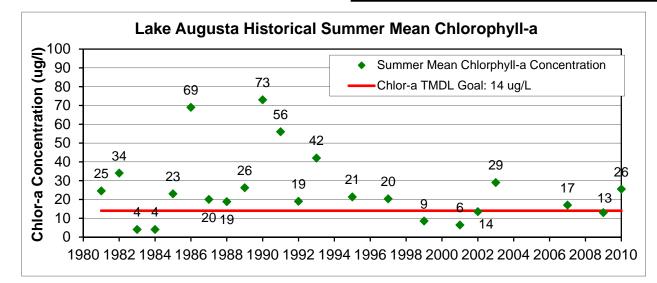
Clearwater River Watershed District 'enck January 2011 Wenck Associates, Inc. 1800 Pioneer Creek Center Lake Augusta Appendix C Environmental Engineers Maple Plain, MN 55359

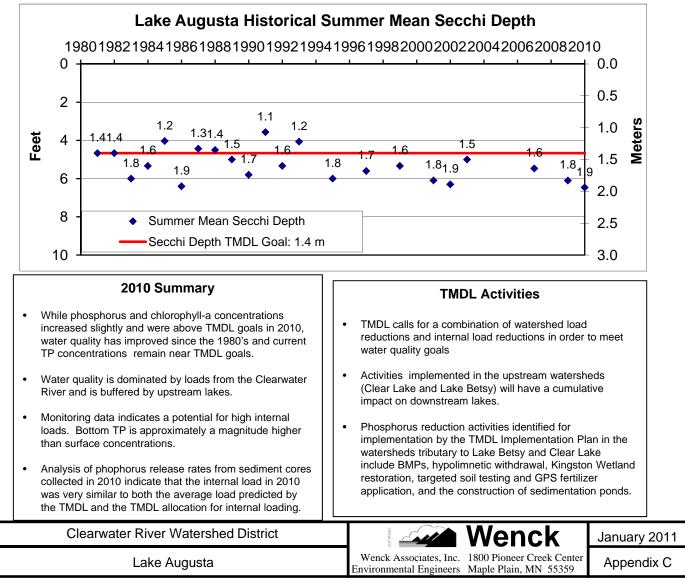
Lake Augusta

2010 Lake Report Card

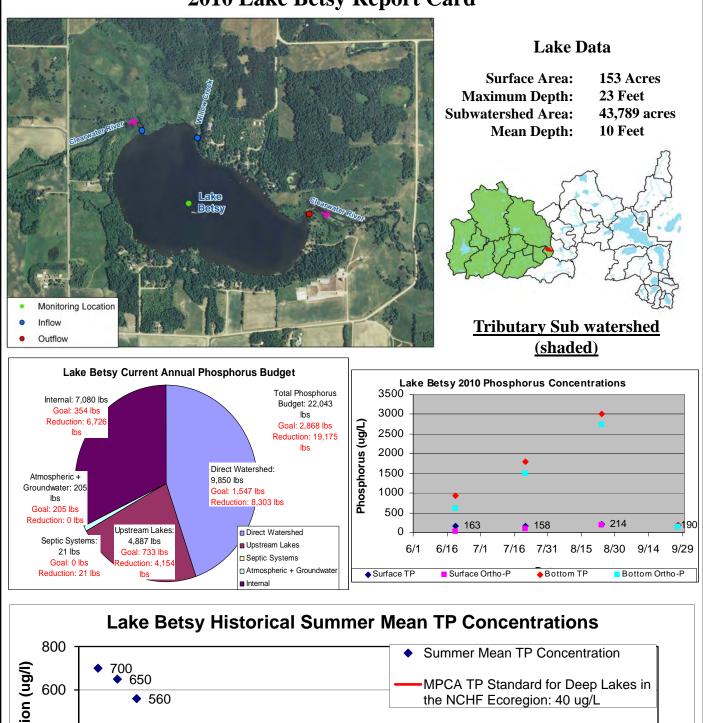
MPCA Proposed Deep Lake Standards for the North Central Hardwood Forest:

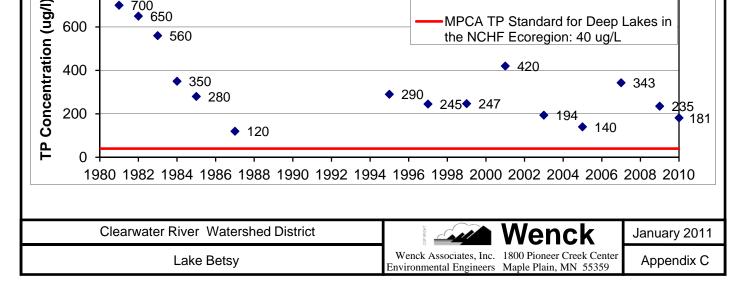
Total Phosphorus (TP): ≤ 40 ug/L Chlorophyll-a: ≤ 14 ug/L Secchi Depth: ≥ 1.4 meter





2010 Lake Betsy Report Card



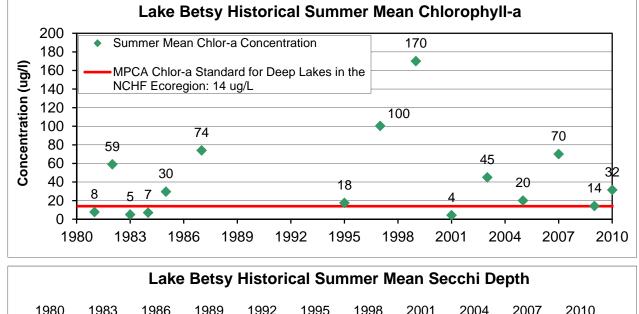


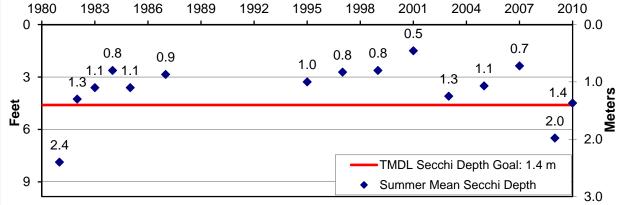
Lake Betsy

2010 Lake Report Card

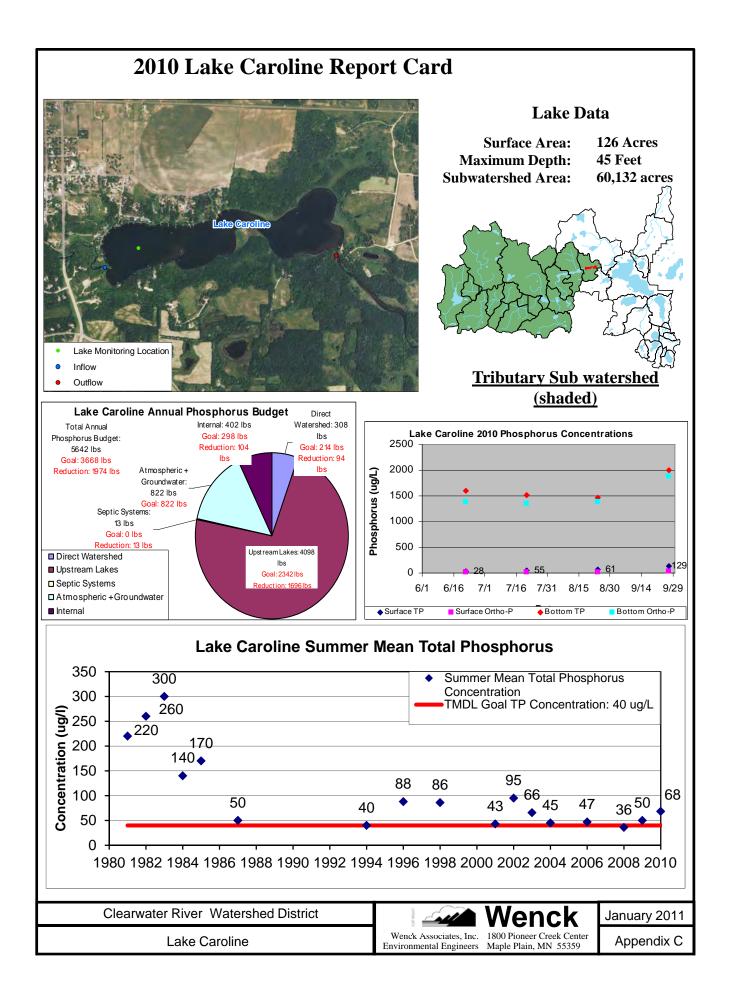
MPCA Proposed Deep Lake Standards for the North Central Hardwood Forest: Total Phase homes (TP): < 40 ug/l

Total Phosphorus (TP): $\leq 40 \text{ ug/L}$ Chlorophyll-a: $\leq 14 \text{ ug/L}$ Secchi Depth: ≥ 1.4 meter





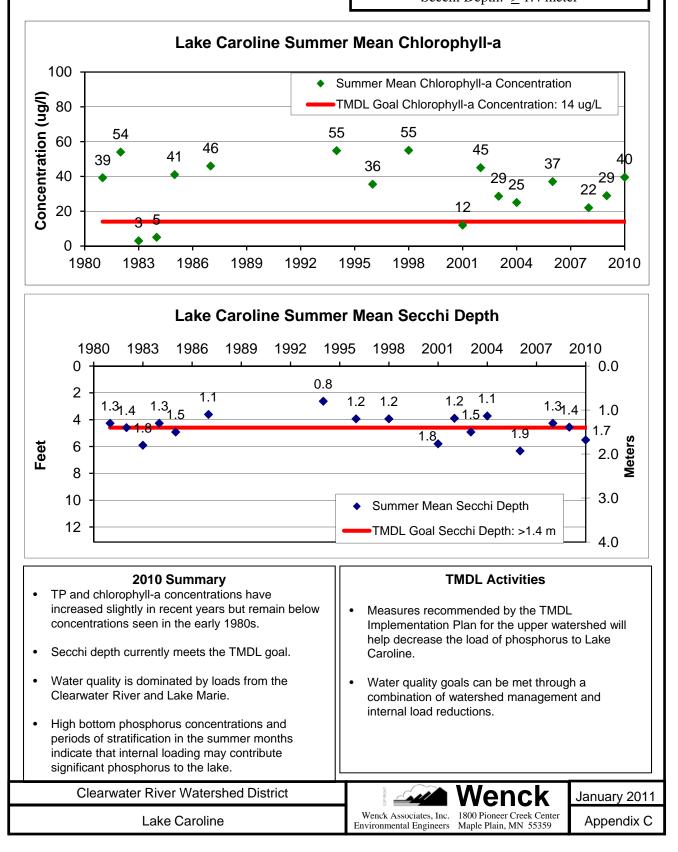
 2010 Summary Recent TP concentrations have been decreasing and remain below that of the early 1980's but are still well above the TMDL goals. Chlorophyll-a and Secchi depth are near or at state standards. Water quality is dominated by loads from Clearwater River. Phosphorus release rates from sediment were measured in 2009 and internal loading was quantified in 2009 and 2010. While the internal load of phosphorus was below the TMDL modeled average during both years, it remained well above the TMDL allocation for internal load to the lake. 	 TMDL Activities TMDL calls for significant phosphorus reductions in watershed runoff and internal loading in order for Lake Betsy to meet state standards. The TMDL Implementation Plan identifies activities to be implemented in the watershed tributary to Lake Betsy, including BMPs, hypolimnetic withdrawal (potential 480 lb reduction), Kingston Wetland restoration (potential 1,970 lb reduction) and targeted soil testing and GPS fertilizer application (potential 600 lb reduction). Implementation activities in the watershed in 2010 included the construction of a sedimentation basin in Kimball, streambank restoration, and GPS fertilizer application and testing.
Clearwater River Watershed District	January 2011
Lake Betsy	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359 Appendix C



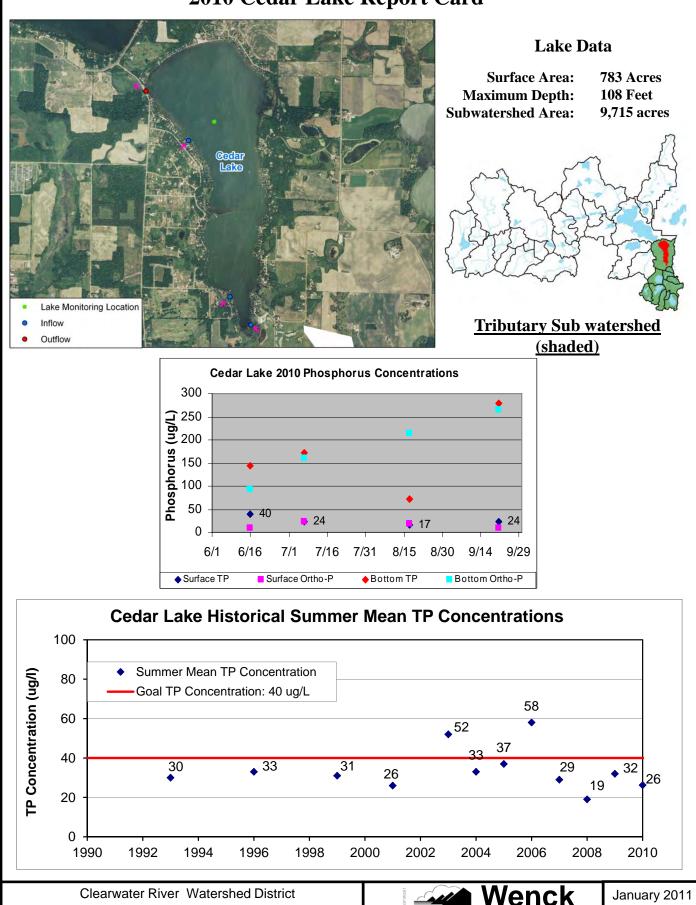
Lake Caroline

2010 Lake Report Card

MPCA Proposed Deep Lake Standards for the North Central Hardwood Forest: Total Phosphorus (TP): ≤ 40 ug/L Chlorophyll-a: ≤ 14 ug/L Secchi Depth: > 1.4 meter



2010 Cedar Lake Report Card



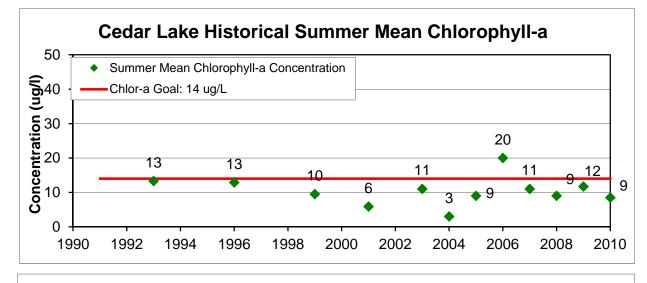
 Cedar Lake
 Wenck Associates, Inc. Environmental Engineers
 1800 Pioneer Creek Center Maple Plain, MN 55359

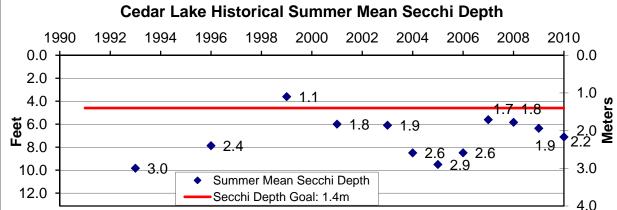
Appendix C

Cedar Lake

2010 Lake Report Card

MPCA Proposed Deep Lake Standards for the North Central Hardwood Forest: Total Phosphorus (TP): ≤ 40 ug/L Chlorophyll-a: ≤ 14 ug/L Secchi Depth: > 1.4 meter



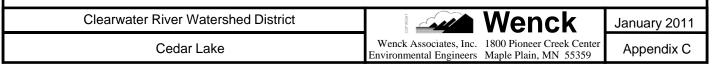


2010 Summary

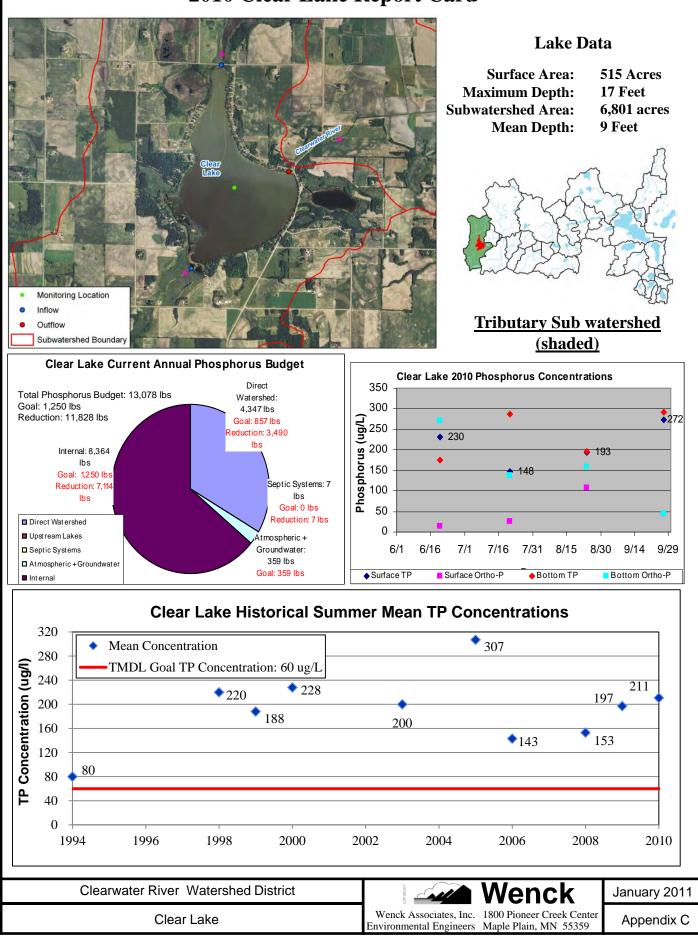
- Phosphorus and chlorophyll –a concentrations are below TMDL goals and have remained stable or improved since the start of Project #06-1 in 2007.
- Phosphorus concentrations remain above the goal of 20 ug/L set by Project#06-1.
- Although periodic algal blooms are common early in the summer, overall water clarity remains good in the lake, as Secchi depth is better than the TMDL goal.
- The primary source of phosphorus is from the upper watersheds and Swartout, Albion, and Henshaw Lakes.

TMDL Activities

- Since 2007, the Cedar Lake Restoration Project has implemented fish barriers, buffers, tile inlet replacement, and the construction of Segner Pond, a wetland treatment basin.
- The goal of the project is to reduce the phosphorus load to Cedar Lake from the upper watershed.
- Measures recommended by the TMDL Implementation Plan for the impaired Swartout, Albion, and Henshaw Lakes will serve to improve water quality in Cedar Lake.
- Curly leaf pondweed was treated in small areas of the lake in 2010.



2010 Clear Lake Report Card

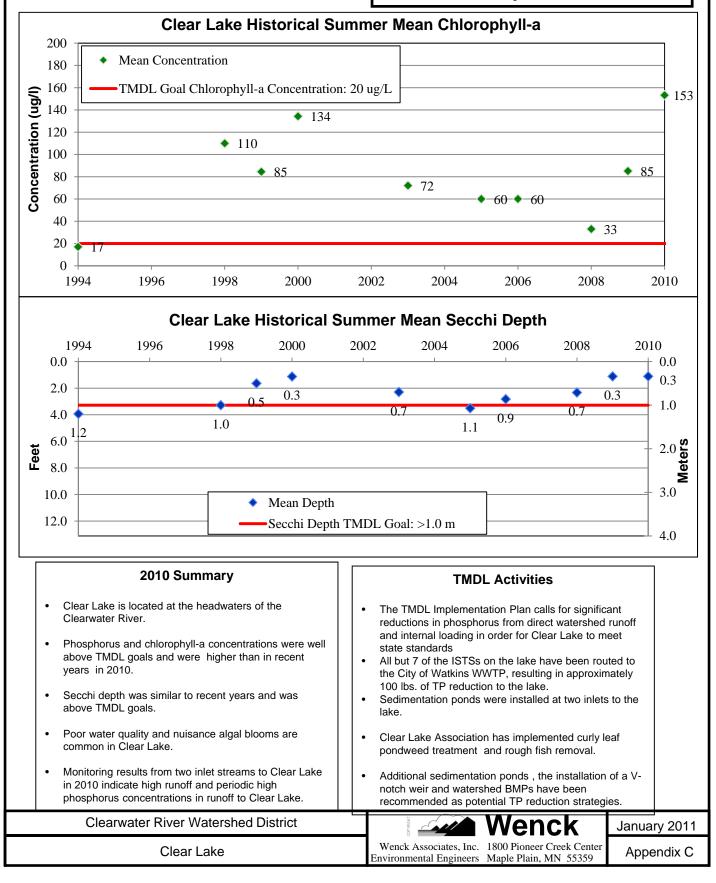


Clear Lake

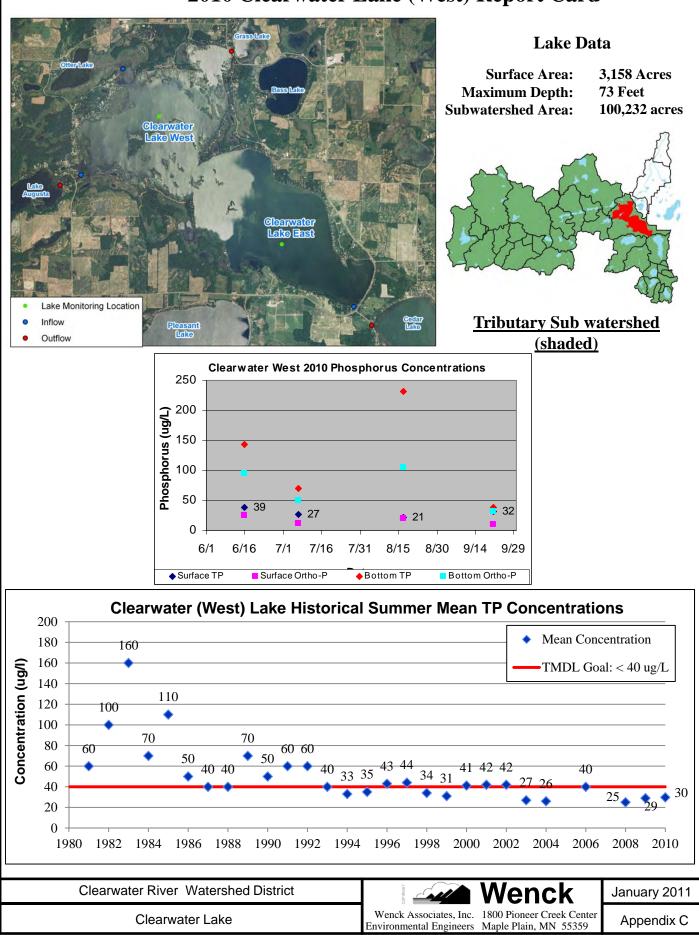
2010 Lake Report Card

MPCA Shallow Lake Standards for the North Central Hardwood Forest:

> Total Phosphorus (TP): ≤ 60 ug/L Chlorophyll-a: ≤ 20 ug/L Secchi Depth: ≥ 1.0 meter



2010 Clearwater Lake (West) Report Card

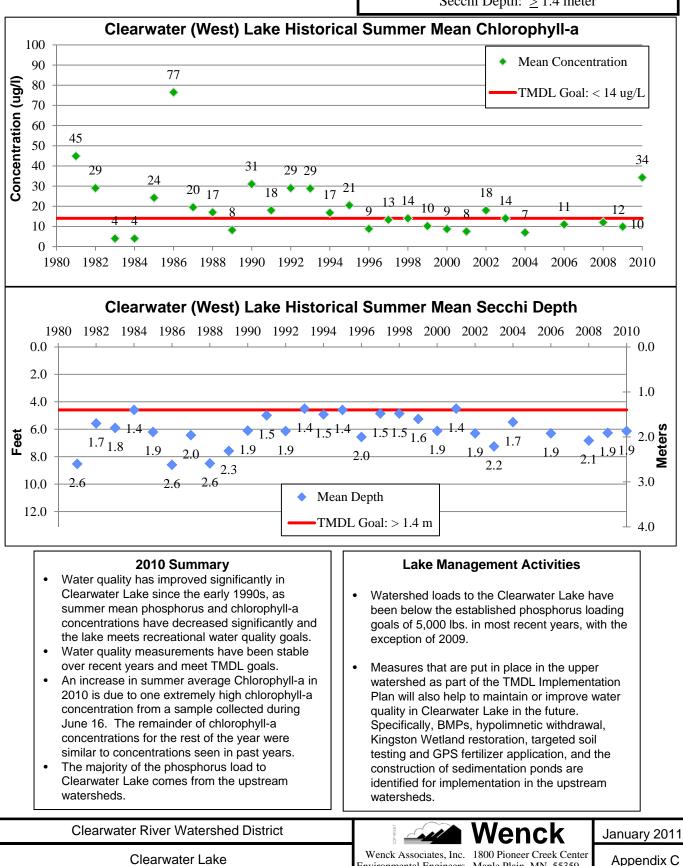


Clearwater Lake West

2010 Lake Report Card

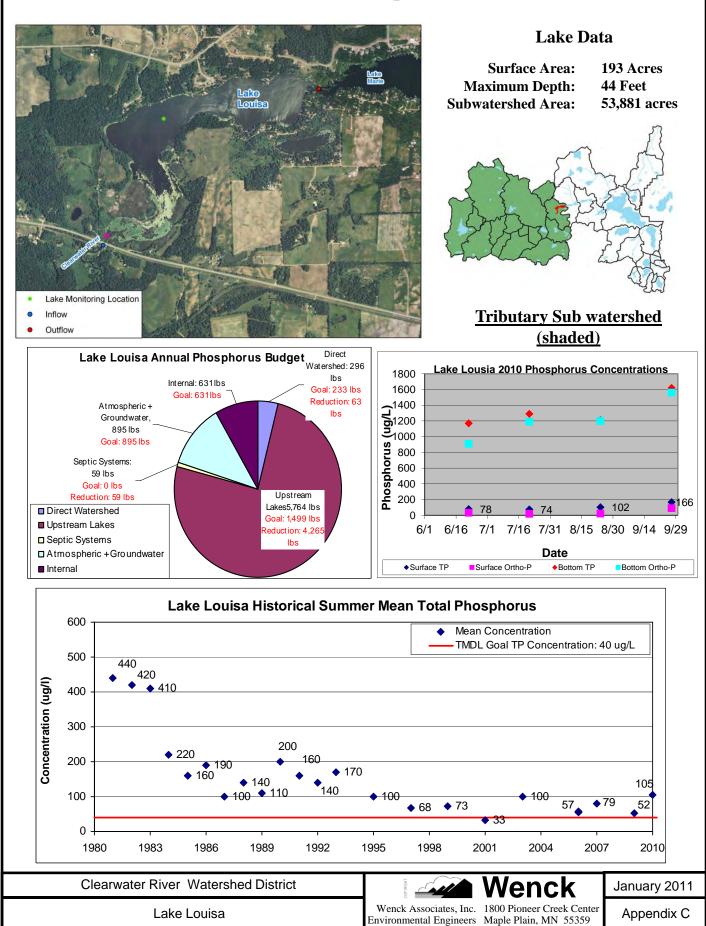
MPCA Standards for Deep Lakes in the North **Central Hardwood Forest:**

Total Phosphorus (TP): < 40 ug/LChlorophyll-a: < 14 ug/LSecchi Depth: ≥ 1.4 meter



Environmental Engineers Maple Plain, MN 55359

2010 Lake Louisa Report Card

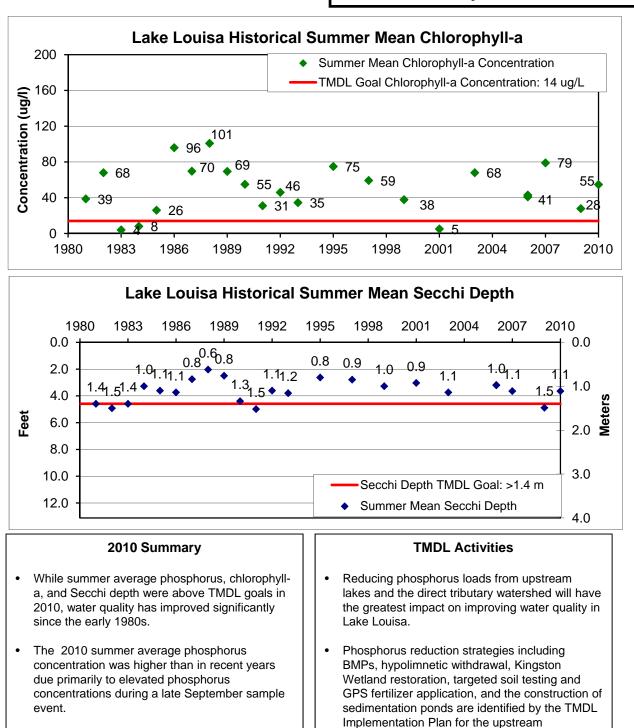


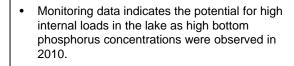
Lake Louisa

2010 Lake Report Card

MPCA Standards for Deep Lakes in the North Central Hardwood Forest:

Total Phosphorus (TP): $\leq 40 \text{ ug/L}$ Chlorophyll-a: $\leq 14 \text{ ug/L}$ Secchi Depth: ≥ 1.4 meter





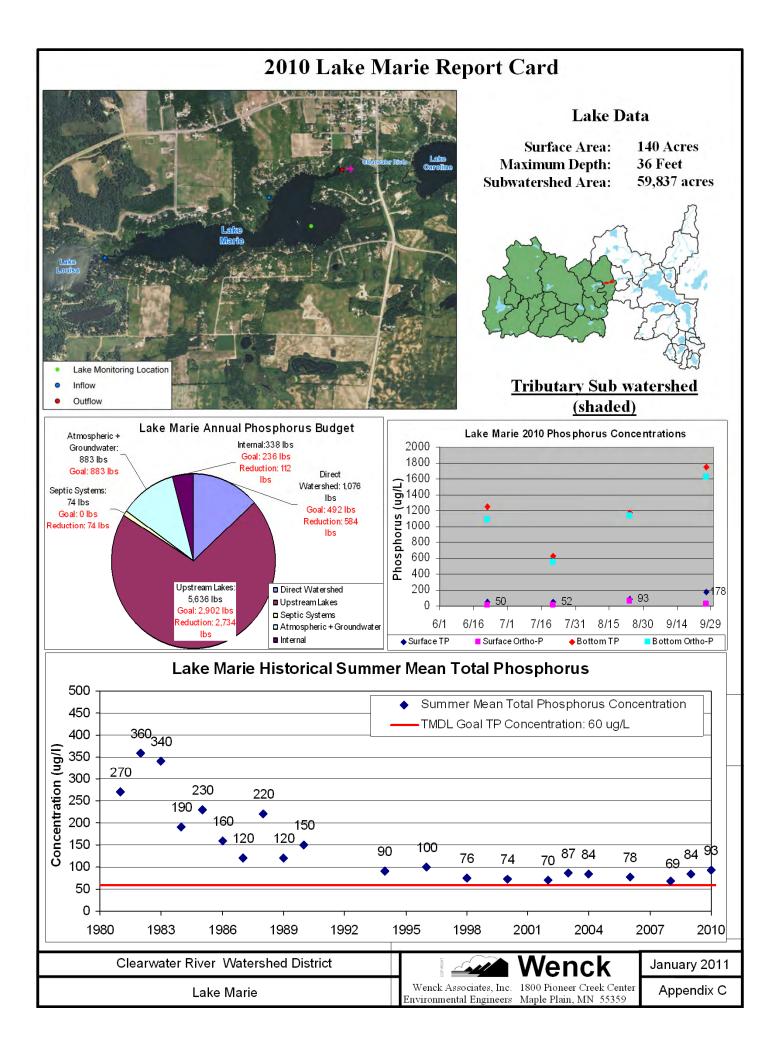
 Lake management strategies have included rough fish removal since 1984 and aerators from 1985 to 1995.

Wenck Associates, Inc. 1800 Pioneer Creek Center

Environmental Engineers Maple Plain, MN 55359

watersheds

Lake Louisa

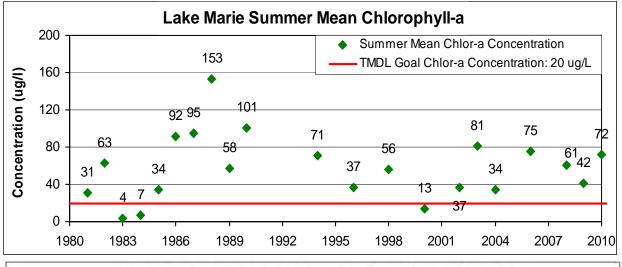


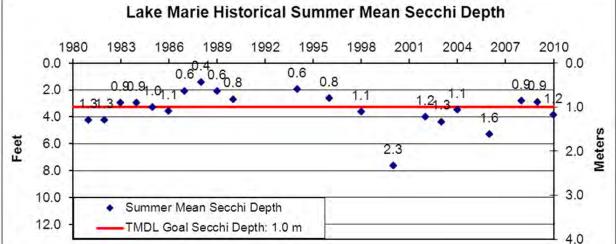
Lake Marie

2010 Lake Report Card

MPCA Standards for Shallow Lakes in the North Central Hardwood Forest:

Total Phosphorus (TP): \leq 60 ug/L Chlorophyll-a: \leq 20 ug/L Secchi Depth: > 1.0 meter





2010 Summary

-Water quality has improved significantly and phosphorus and chlorophyll-a concntrations have remained relatively stable since the early 1990s.

-Summer mean phosphorus and chlorophyll-a concentrations increased from 2009 and did not meet TMDL goals in 2010. Phosphorus concentrations measured during the September monitoring event were extremely hig, most likely due to the sample event occurring after the lake's water column began to mix, bringing water with high phosphorus concentration from the bottom of the lake to the surface.

-Monitoring data demonstrates high bottom phosphorus concentrations, which indicates the potential for high internal loads in the lake.

Clearwater River Watershed District

Lake Marie

TMDL Activities

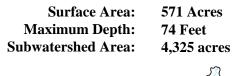
- The reduction of phosphorus loads from upstream lakes and the direct tributary watershed will have the greatest impact on improving lake water quality.
- Lake management strategies have included rough fish removal since 1984 and aeration from 1985 to 1995.
- Phosphorus reduction activities identified for implementation by the TMDL Implementation Plan in the upstream watersheds tributary to Lake Betsy and Clear Lake include BMP's, hypolimnetic withdrawal, Kingston Wetland restoration, soil testing and GPS fertilizer application, and the construction of sedimentation ponds.

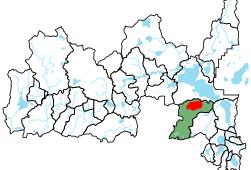
Wenck Associates, Inc. Environmental Engineers Maple Plain, MN 55359 January 2011

2010 Pleasant Lake Report Card

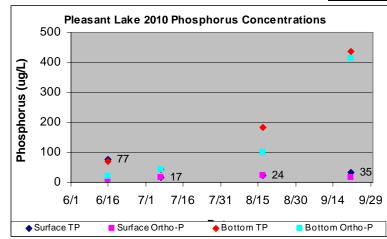


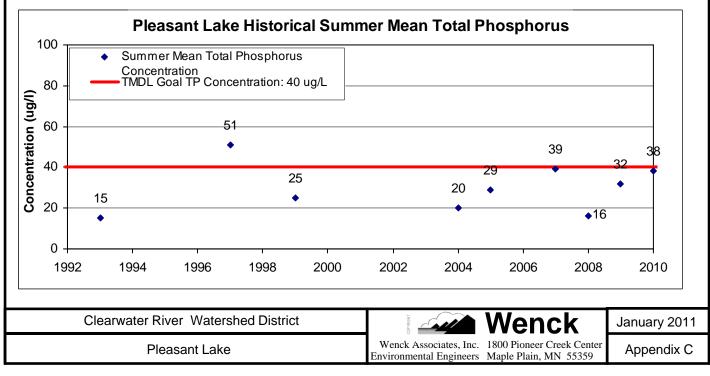
Lake Data





Tributary Sub watershed (shaded)



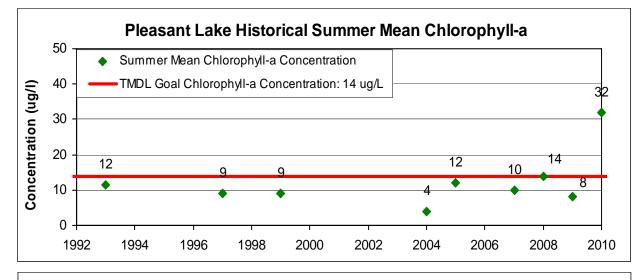


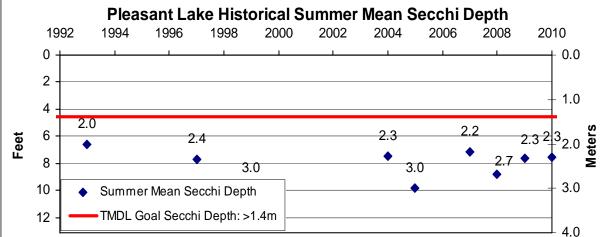
Pleasant Lake

2010 Lake Report Card

MPCA Proposed Deep Lake Standards for the North Central Hardwood Forest: Total Phosphorus (TP): < 40 ug/L

Chlorophyll-a: $\leq 14 \text{ ug/L}$ Secchi Depth: $\geq 1.4 \text{ meter}$





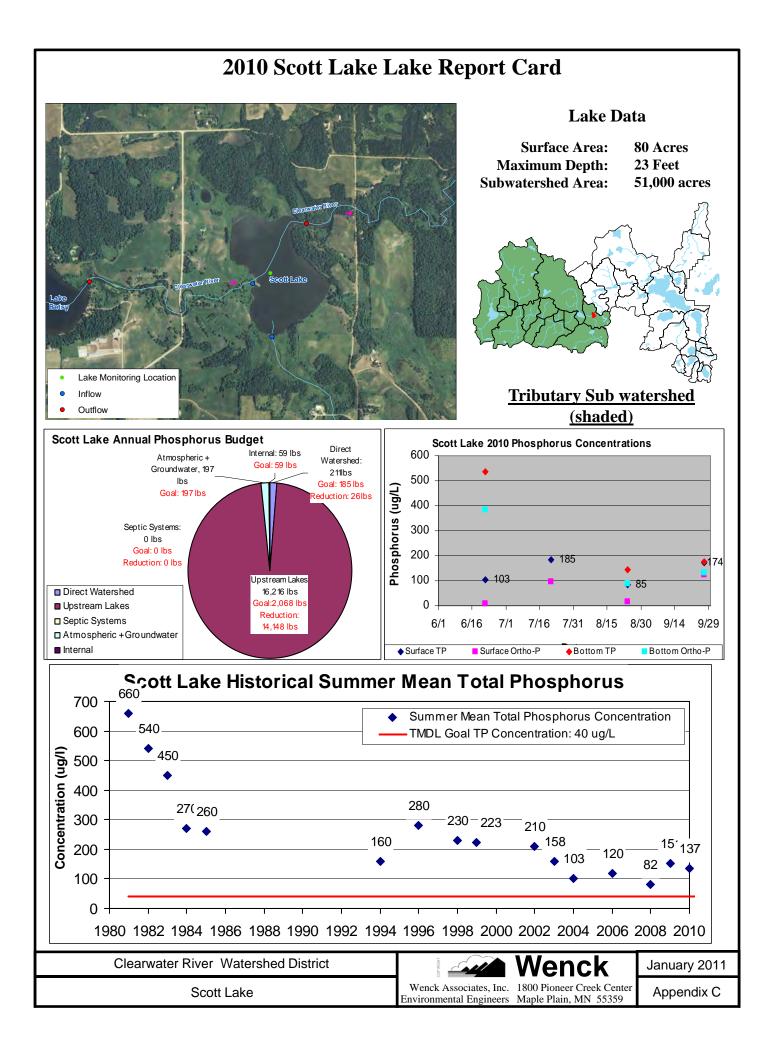
2010 Summary

- Current water quality is good in Pleasant Lake as phosphorus concentrations and secchi depths have met TMDL goals since 1993.
- The 2010 chlorophyll-a summer average concentration was higher than normal based on one extremely high concentration from a September 21 sample event. Concentrations from all other monitoring events in 2010 were near the long term average concentration for Pleasant Lake. (The average chlorophyll-a concentration without the September value was 12 ug/L.)

Water Quality Improvement Activities

• Good land management practices adjacent to the lakeshore, the upstream watershed, and in the City of Annandale will help to maintain the good water quality in Pleasant Lake.

Clearwater River Watershed District Pleasant Lake
Wenck Associates, Inc. Environmental Engineers
Maple Plain, MN 55359

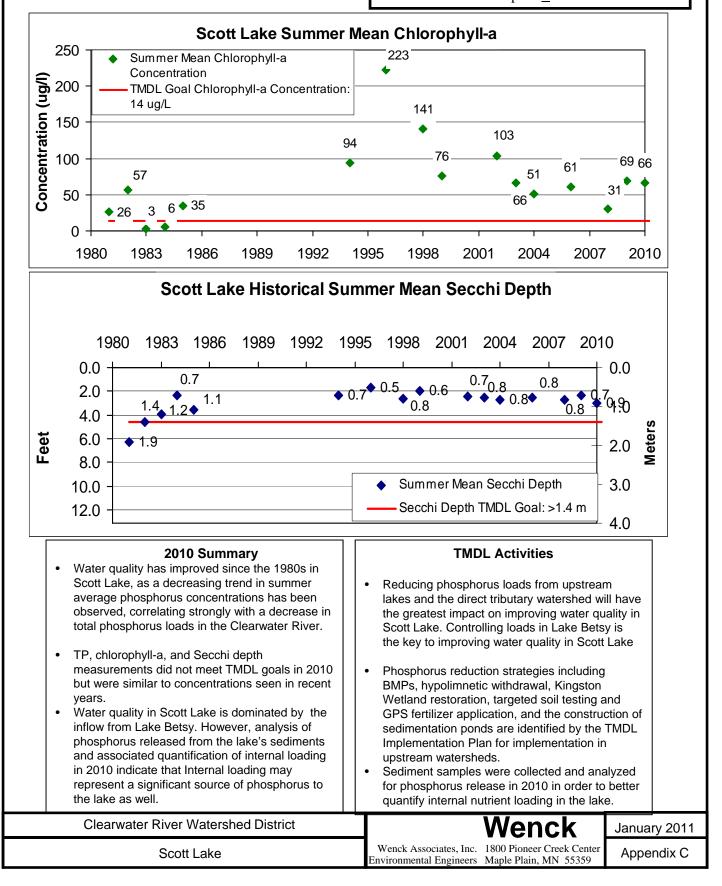


Scott Lake

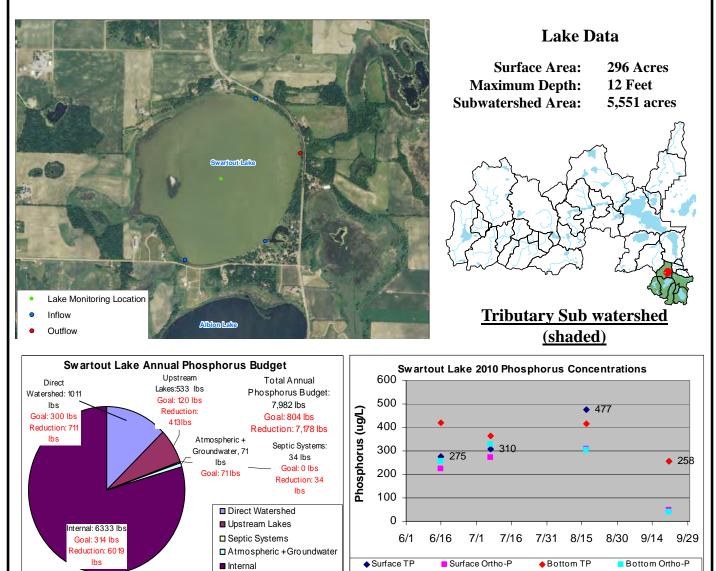
2010 Lake Report Card

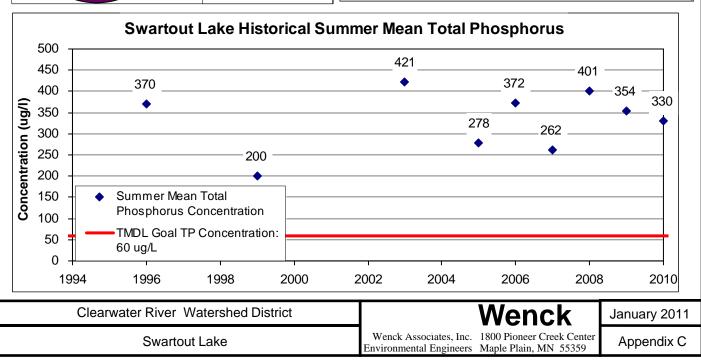
MPCA Standards for Deep Lakes in the North Central Hardwood Forest: Total Phosphorus (TP): < 40 ug/L

Chlorophyll-a: ≤ 14 ug/L Secchi Depth: > 1.4 meter



2010 Swartout Lake Report Card



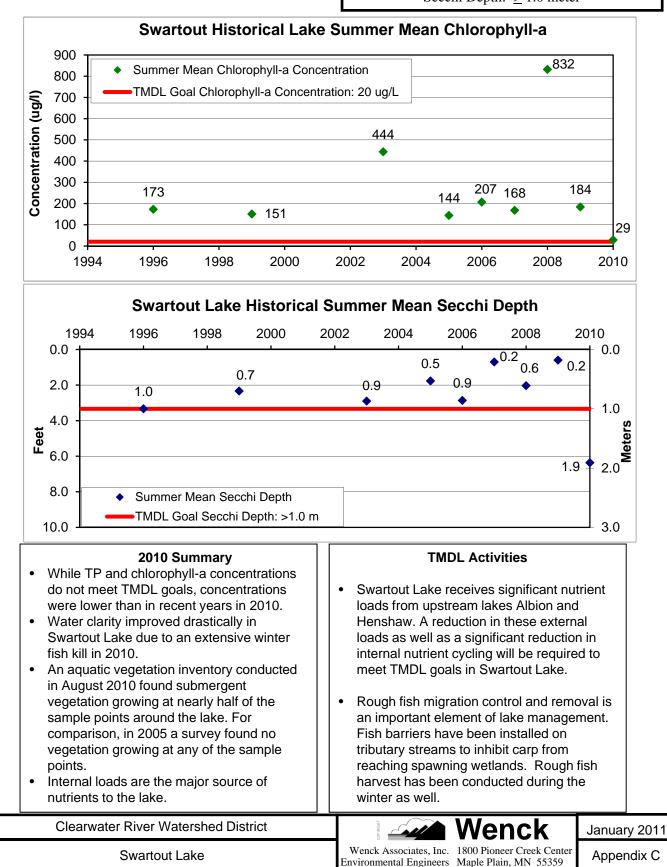


Swartout Lake

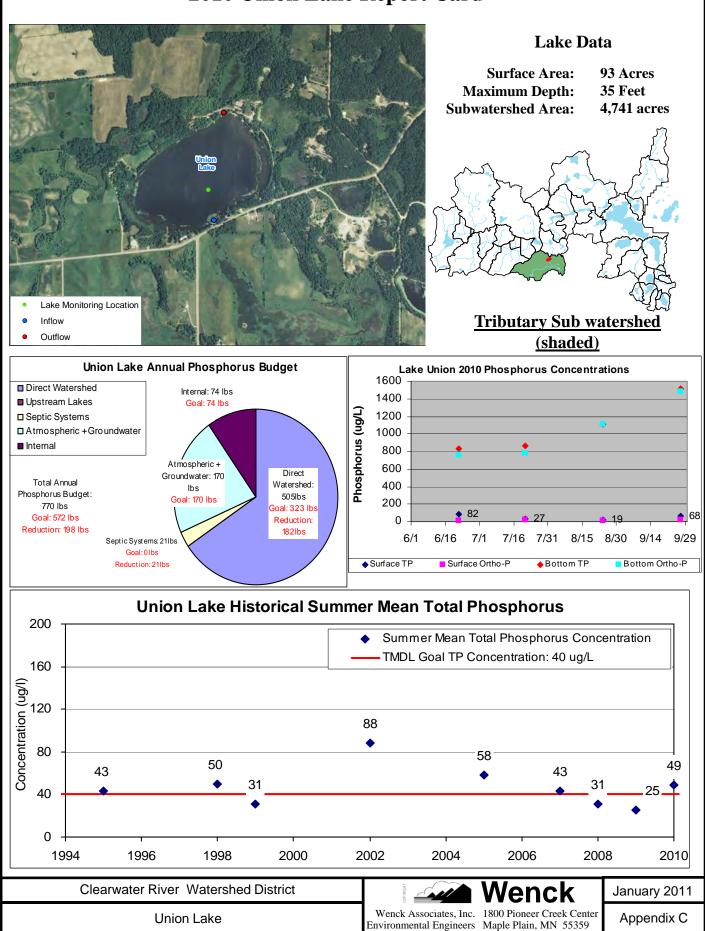
2010 Lake Report Card

MPCA Standards for Shallow Lakes in the North Central Hardwood Forest:

Total Phosphorus (TP): \leq 60 ug/L Chlorophyll-a: \leq 20 ug/L Secchi Depth: > 1.0 meter



2010 Union Lake Report Card

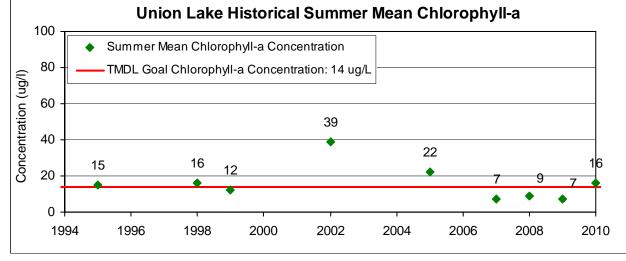


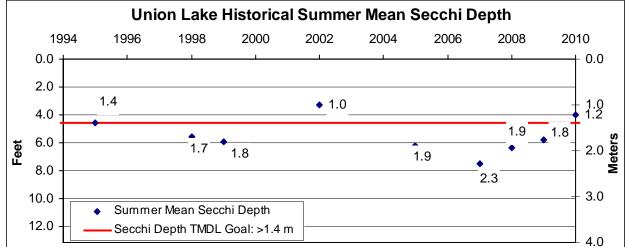
Union Lake

2010 Lake Report Card

MPCA Standards for Deep Lakes in the North Central Hardwood Forest:

Total Phosphorus (TP): $\leq 40 \text{ ug/L}$ Chlorophyll-a: $\leq 14 \text{ ug/L}$ Secchi Depth: ≥ 1.4 meter





2010 Summary

- Water quality in Union Lake is relatively good in comparison to Scott Lake downstream, which is primarily due to the small tributary watershed.
- While TMDL goals for TP, chlorophyll-a, and Secchi depth have been met in recent years for the lake, goals were not met in 2010.
- Overall, in-lake phosphorus concentrations have declined since 2002.

TMDL Activities Watershed loads appear to be the only reduction necessary for Union Lake to meet its water quality goals.

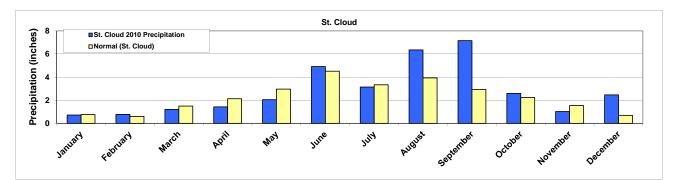
- Reducing phosphorus loads from upstream lakes and the direct tributary watershed will have the greatest impact on improving water quality in Union Lake.
- Phosphorus reduction strategies including BMPs, hypolimnetic withdrawal, targeted soil testing and GPS fertilizer application, and the construction of sedimentation ponds are identified by the TMDL Implementation Plan for implementation in upstream watersheds.

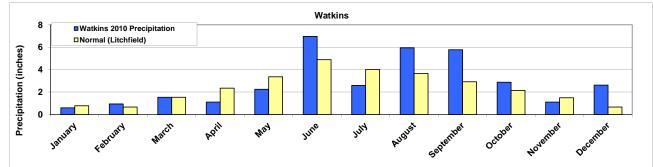
Clearwater River Watershed District	Wenck	January 2011
Union Lake	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Appendix C

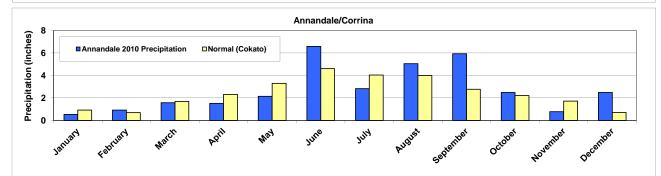
Appendix D

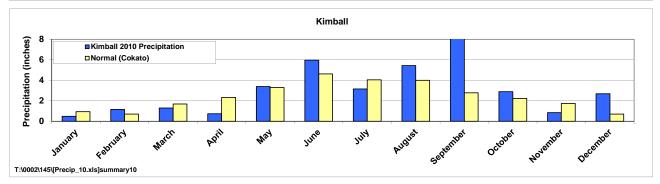
Citizen Precipitation Records

Appendix D Figure 1 Clearwater River Watershed District 2010 Annual Report









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Name (	Sal	YK	lei	1				na	ne /	Nee	<u>Ner</u>	
Address	310	ÓM	Pel		Township Forest Prairie							
emuli	11		ins	MA ES	-389			Te	lephone h	10. 1320	176	4-2
24.00	UR AMO		13	REMARKS:	Gauge	e type (C	Check One):			111-11		
Rain,	Snow	Snow	Giv	e times and comments about events.	çylindər	4	poing bucket			ig diamete tich depth		
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	Water	rshed Ma	anageme	ent Organizations	Year M	onth	Ob Time	County Township Range Section
Name (	Gal	YK	leil	)		_		County name Meeker Township Forest Prairie
Address	310	5 M	o e K	er Ave	S			name Forest Prairie
email	W	100 A 100 A 100 A	ns	MA. 55	389			Telephone No. (320) 764-264
24-HC	UR AMO			REMARKS:	Gauge	type	(Check One):	catch opening diameter/size (inches)
Rain, Metad Snow,	Snow	Snow		times and comments about events.	cylinder . test tube	H.	tipping bucket weighing	maximum catch depth (inches) board/ruler/post used for snowyes
Etc. (Ins. & Hdths)	Tenus)	Ground (Inches)	(Tempo iten	erature and Phenology ns are very useful).	wedge	1	Other	board/fule//post used for showyos
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	Minne	sota Boa	rd of Water Soil R	esources	100	5	2 00 am	14	7 1 21 3203
and a soll		Wat	arshed Districts	Ľ	Year Mc	onth	Ob Time	Cou	inty Township Range Section
	Water	shed Ma	nagement Orga	lizations					County Meeker
Name (	Sar	YK	lein	1	1000				Township and Dan 'a'
Address	310	M	oeken	Ase.					
email	U)	otk:	ns Ma.	.55	389				Telephone No. (320) 764-26
24-HOL	IR AMOL		REMARI	S:	Gauge	type (C	Check One): ipping bucket		catch opening diameter/size (inches)
Rain,	Snow (Ins. &	Snow On	Give times and about eve	nts.	cylinder _	7	weighing		maximum catch depth (inches) board/ruler/post used for snowyes
Etc. (Ins. B. Hdths)	Tenths)	Ground (Inches)	(Temperature and items are very	useful).	wedge		Other		
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Card of Boll		Wat	ershed	Districts	Year M	onth	Ob Time	County Township Range Sec
-	Water	shed Ma	anagem	ent Organizations	Year w	Unut	00 11110	
Name (	Gal	VK	lei	1				Township Forest Prain
Address	211	5 M	ook	er Ase	S			name Forest Pran
email	11		'ns	MA 55	-389			Telephone No. (320) 764-
	UR AMO		-	REMARKS:	Gauge		Check One):	catch opening diameter/size (inches
Rain,	Snow	Snow	LI DAMAGE	times and comments	cylinder	× "	pping bucket weighing	maximum catch depth (inches)
Etc. (Ins. & Hoths)	(Ins. & Tenths)	On Ground (Inches)	(Temp ite	erature and Phenology ms are very useful).	test tube wedge		Other	board/ruler/post used for snowy
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Name	Water	rshed M	anagei	ment Organizations	1681 10			County Marchan
	Sal	YK	lei	0	100 C	_		Township
Address	310	M	00	Ker Hue	S.			Township Forest Prairie
email	W	atk	ins	MA55	-389			Telephone No. (320) 764-26
24-110	UR AMO			REMARKS:	Gaug	a type	(Check One):	catch opening diameter/size (inches)
Rain, Main 9 Day	Snow (Ins. &	Snow On		e times and comments about events.	cylinder		tipping bucket weighing	maximum catch depth (inches)
Etc. (Ins. & Hoths)	Terilliu)	Ground (Inches)	(Torr it	ams are very useful).	wedge		Other	board/ruler/post used for snowyes
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	Minne	sota Boa	rd of Wa	ter Soll Resources	100	8	9.00 am pm	471213203
and a sol	Motor		ershed I	Districts	Year N	lonth	Ob Time	County Township Range Section
Name	Valer		/					Township name Forest Prairie
(	Dar	YK	lei		0			Township Encest Prairie
Address	310	) M	00K	er Ave	5			Telephone No. (320) 764-26
email	W	atki	'ns	Mn. 55	389			
24-HOI	JR AMO		Give	REMARKS: times and comments	Gaug	e type	(Check One): tipping bucket	catch opening diameter/size (inches)
Rain, Mated Snow,	Snow (Ins. &	Snow On	clive times and comments about events. (Temperature and Phenology items are very useful).		test tube wedge		weighing	maximum catch depth (inches) board/ruler/post used for snowyes
Etc. (Ins. & Hoths)	Tentrs)	Ground (Inchas)					Other	
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1000 million	Water	shed Ma	anagem	ent Organizations				County Meeker
Name (	Sal	YK	lei	0				Township + 0
Address	211	Ó M	POK	Ker Ave	5			Township Forest Prairi
email	W	th	ins	Ma 55	389			Telephone No. (320) 764-2
	UR AMO			REMARKS:	Gau	e type	(Check One):	catch opening diameter/size (inches)
Rain,	Snow	Snow	Give times and comments about events. (Temperature and Phenology		cylinder tipping bucket test tube weighing wedge Other			maximum catch depth (inches)
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ame (	Sal	VK	leil	0			County Meeker Township Forest Prairie		
ddress	011	M	- OK	Ker Ase	2		name Forest Prairie		
mall	310			M. ES	389		Telephone No. (320) 764-2645		
	W		ins	REMARK8:	Gauge ty	pe (Check One):	catch opening diameter/size (inches)		
24-HOU Rain,	Snow	Snow	Give	times and comments	cylinder	tipping bucket	maximum catch depth (inches)		
Mone bette	ed Snow (Ins. & On c. (Ins. Tenths) Ground		(Temp iter	about events. perature and Phenology ms are very useful).	test tube wedge	weighing Other	board/ruler/post used for snow yesN		
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a sol				I Districts	Year M	onth	Ob Time (	County Township Range Section
	Water	BUBO Ma	ulagen	nem organizatione	i secono de			name Meeker
ame (	Sar	YK	lei	0				Township most Posining
ddress	316	) M	00	Ser Ase	S			
mail	111		ns	Ma 55	389			Telephone No. (320) 764-2645
	UR AMO		113	REMARKS:	Gauge		(Check One):	catch opening diameter/size (inches)
Rain,	Snow	Snow	Giv	e times and comments about events.	cylinder	4	tipping bucket	maximum catch depth (inches)
te. (Ins.	(ins. & Tenths)	On Ground	(Tem	ems are very useful).	test tube wedge	-	weighing Other	board/ruler/post used for snowyesn
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lame	C		1	' a	1		71.0	County Meeker
ddress	Gal	YA	le		-			Township
001689	310	o m	00	Ker Hue				Township Forest Prairie
mall	W	atki	'ns	Mn. 55	389			Telephone No. (320) 764-264
24-HC	UR AMO	UNTS	0	REMARKS:	Gauge type (Check One):			catch opening diameter/size (inches)
Rain, ated Snow	Snow (Ins. &	Snow		ve times and comments about events.	cylinder test tube	+	tipping bucket weighing	maximum catch depth (inches)
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DEFASTILENT OF HARDALL REBOURD	B				Year Mor	and the second sec	County Township Range Section
Name	VI	No	LOT	NE		Name RIGHT	Township Name <i>にっ</i> ア 」 <i>い</i> ル ル
Address	0.	120	1/.	1 0		2 1	55502 Telephone No.
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	DUR AMO	Snow	Giv	REMARKS: e times and comments		pe (Check One):	catch opening diameter/size (inches)
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State Clinichology Office, 429 Bontang Hall, University of Minnesola, 1991 Upper Baland Circle, St. Paul, MN 55108-8028

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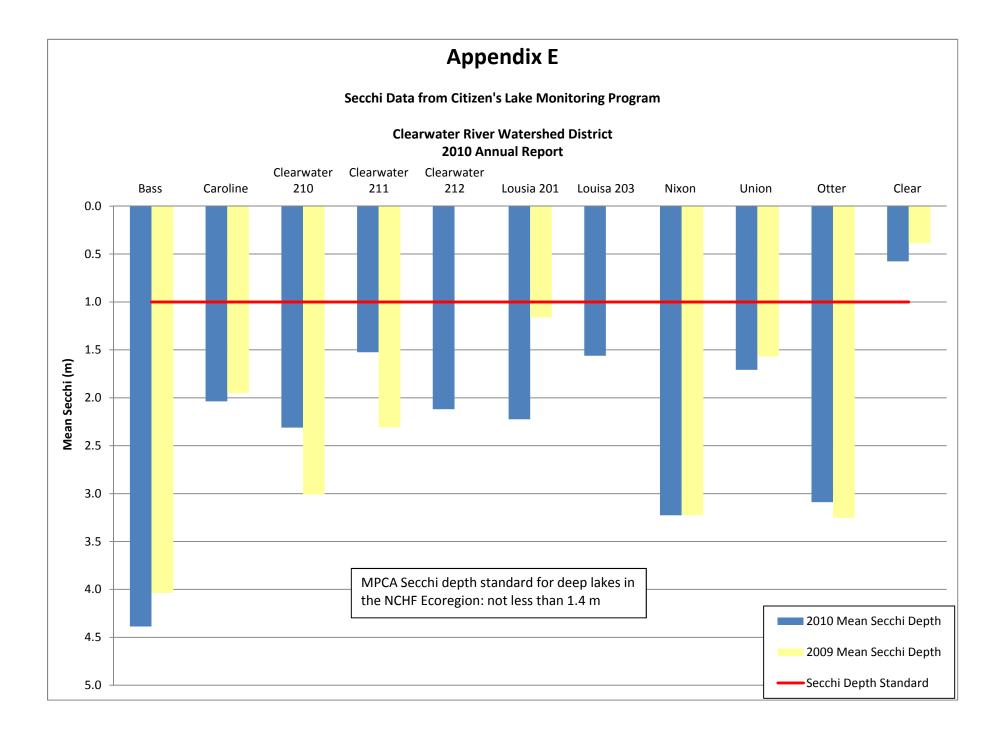
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# Appendix E

# Secchi Data from Citizen's Lake Monitoring Program



# 2010 Water Quality Laboratory Reports and Data



333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-115	<u>Project Name</u> P06-1 Lakes	Sample Loc LAL(Top	ation		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 8:50 AM	Albion	Date Rec 6/17/2	the second se	Time Received 7:15 AM	<u>Temp</u> 7	
PARAMETER (ME	DAT	FE & TIME A	ANALYZED	RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/1/2010	1.1	0.484 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)		6/17/2010	1150	0.0175 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)		7/2/2010		8 µg/L		С

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

8/23/10



333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Project Name P06-1 Lakes	Sample-Location LAL Bottom		<u>Sampled By</u> Dennis Loewen		
<u>Time Sampled</u> 8:52 AM			Time Received 7:15 AM	<u>Temp</u> 7	
THOD, REPORTING LIMIT)	DATE & TIME A	D RESULTS	BY	BOTTLE	
PA 365.3, 0.005 mg/L)	6/30/2010		0.182 mg/L		A
A 365.1, 0.01 mg/L)	6/17/2010	1303	0.0101 mg/L	EM	в
, 50 μg/L)	6/29/2010	1731	150 μg/L		С
	P06-1 Lakes <u>Time Sampled</u> 8:52 AM THOD, REPORTING LIMIT) PA 365.3, 0.005 mg/L) A 365.1, 0.01 mg/L)	P06-1 Lakes         LAL Bottom <u>Time Sampled</u> <u>Date Rece</u> 8:52 AM         6/17/20           THOD, REPORTING LIMIT)         DATE & TIME A           PA 365.3, 0.005 mg/L)         6/30/2010           A 365.1, 0.01 mg/L)         6/17/2010	P06-1 LakesLAL BottomTime Sampled 8:52 AMDate Received 6/17/2010THOD, REPORTING LIMIT)DATE & TIME ANALYZEPA 365.3, 0.005 mg/L)6/30/2010A 365.1, 0.01 mg/L)6/17/2010	P06-1 LakesLAL BottomDennis LoewenTime Sampled 8:52 AMDate Received 6/17/2010Time Received 7:15 AMTHOD, REPORTING LIMIT)DATE & TIME ANALYZED 6/30/2010RESULTSPA 365.3, 0.005 mg/L)6/30/20100.182 mg/LA 365.1, 0.01 mg/L)6/17/201013030.0101 mg/L	P06-1 LakesLAL BottomDennis LoewenTime Sampled 8:52 AMDate Received 6/17/2010Time Received 7:15 AMTemp 7THOD, REPORTING LIMIT)DATE & TIME ANALYZED 6/30/2010RESULTSBYPA 365.3, 0.005 mg/L)6/30/20100.182 mg/LA 365.1, 0.01 mg/L)6/17/201013030.0101 mg/LEM

Notes:

Total Phosphorus done by MN Lab # 027-035-135 T. Iron Tested by MN Lab # 027-053-137

> The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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8123/10

## Water Laboratories Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10G-054435			Sampled By Dennis Loewen		
Time Sampled 7:40 AM	ex television of the second		Time Received 12:57 PM	<u>Temp</u> 5	
THOD, REPORTING LIMIT)	DATE & TIME	ANALYZE	D RESULTS	BY	BOTTLE
PA 365.3, 0.005 mg/L)	7/20/2010		0.228 mg/L		A
365.1, 0.01 mg/L)	7/7/2010	1653	0.0287 mg/L	EM	в
	7/21/2010		176 µg/L		С
	435 Time Sampled	435       Alb Top <u>Time Sampled</u> <u>Date Re</u> 7:40 AM       7/7/2         THOD, REPORTING LIMIT)       DATE & TIME         PA 365.3, 0.005 mg/L)       7/20/2010         A 365.1, 0.01 mg/L)       7/7/2010	435       Alb Top <u>Time Sampled</u> Date Received         7:40 AM       7/7/2010         THOD, REPORTING LIMIT)       DATE & TIME ANALYZE         PA 365.3, 0.005 mg/L)       7/20/2010         A 365.1, 0.01 mg/L)       7/7/2010       1653	435         Alb Top         Dennis Loewen <u>Time Sampled</u> 7:40 AM <u>Date Received</u> 7/7/2010 <u>Time Received</u> 12:57 PM           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           PA 365.3, 0.005 mg/L)         7/20/2010         0.228 mg/L           A365.1, 0.01 mg/L)         7/7/2010         1653         0.0287 mg/L	435         Alb Top         Dennis Loewen <u>Time Sampled</u> 7:40 AM <u>Date Received</u> 7/7/2010 <u>Time Received</u> 12:57 PM <u>Temp</u> 5           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS         BY           PA 365.3, 0.005 mg/L)         7/20/2010         0.228 mg/L           A365.1, 0.01 mg/L)         7/7/2010         1653         0.0287 mg/L

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-055	Project Name 435	Sample Location Alb Bottom	2	Sampled By Dennis Loewen		
Date Sampled 7/7/2010	Time Sampled 7:40 AM	<u>Date Recei</u> 7/7/201		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	NALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3. 0.005 mg/L)	7/20/2010		0.274 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.036 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	7/26/2010	1432	87.0 µg/L		С

Notes:

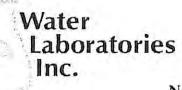
T. Phosphorus tested by MN Lab # 027-035-135

T Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

435	Alb Top		<u>Sampled By</u> Dennis Loewen		
		and the second se	Time Received 12:15 PM	<u>Temp</u> 2	
D, REPORTING LIMIT)	DATE & TIME	ANALYZE	D RESULTS	BY	BOTTLE
65.3, 0.005 mg/L)	8/23/2010		0.307mg/L		A
.1, 0.01 mg/L)	8/19/2010	0832	0.0226 mg/L	EM	в
H, 1µg/L)	9/7/2010		443 µg/L		С
	ne <u>Sampled</u> 8:53 AM <b>D, REPORTING LIMIT)</b> 65.3, 0.005 mg/L) 5.1, 0.01 mg/L) H, 1µg/L)	ne Sampled         Date Re           8:53 AM         8/17/           D, REPORTING LIMIT)         DATE & TIME           65.3, 0.005 mg/L)         8/23/2010           6.1, 0.01 mg/L)         8/19/2010	Date Received           8:53 AM         8/17/2010           D, REPORTING LIMIT)         DATE & TIME ANALYZE           65.3, 0.005 mg/L)         8/23/2010           6.1, 0.01 mg/L)         8/19/2010         0832	Date Received 8:53 AM         Time Received 8/17/2010         Time Received 12:15 PM           D, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           65.3, 0.005 mg/L)         8/23/2010         0.307mg/L           6.1, 0.01 mg/L)         8/19/2010         0832         0.0226 mg/L	Date Received 8:53 AM         Time Received 8/17/2010         Time Received 12:15 PM         Temp 2           D, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS         BY           65.3, 0.005 mg/L)         8/23/2010         0.307mg/L           6.1, 0.01 mg/L)         8/19/2010         0832         0.0226 mg/L

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By:_ 11 Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/8/10

Water Laboratories Inc. 333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-092	<u>Project Name</u> 435	Sample Location Alb Bottom Date Received 8/17/2010		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/17/2010	<u>Time Sampled</u> 8:53 AM			Time Received 12:15 PM	<u>Тетр</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	ВҮ	BOTTLE
fotal Phosphorus (EPA 365.3, 0.005 mg/L)		8/23/2010		0.307 mg/L		A
Drthophosphate (EPA 365.1, 0.01 mg/L)		8/19/2010	0832	0.0246 mg/L	EM	в
Total Iron (ЕРА 6010, 50 µg/L)		8/27/2010	1454	72.7 µg/L		С

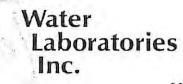
Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NC02/8/10



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#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

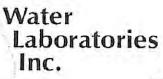
Lab File NumberProject NameW10I-116435		Sample Location Albion Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	<u>ime Sampled</u> 8:59 AM	Date Received 9/21/2010	Time Received 1:25 PM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZEI	O RESULTS	вү	BOTTLE
Fotal Phosphorus (EPA 365.3, 0.005 mg/L) Orthophosphate (EPA 365.1, 0.01 mg/L)		9/28/2010 O. 149	0.0⊄5mg/L 0.021 mg/L	* EM	A B
		9/22/2010 1003			
Chlorophyll A (SM 10200 H, 1µg/L)		10/7/2010	88 µg/L	*	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

12/5/10



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-117 435		Sample Location Sampled By Albion Bottom Dennis Loewen				
Date SampledTime Sampled9/21/20108:59 AM				Time Received 1:25 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZEI	D RESULTS	вү	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.156 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/22/2010	1003	0.019 mg/L	EM	в
Total Iron (EPA 6010	. 50 μg/L)	10/11/2010	1200	83.6 µg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

1×02/8/10



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10F-109205Date SampledTime Sampled6/16/201011:09 AM		DF-109 205 LAu Top <u>mpled Time Sampled</u> <u>Augu Stag</u> <u>Date Received</u>		<u>Sampled By</u> Dennis Loewen			
					Time ReceivedTemp7:15 AM7		
PARAMETER (ME	THOD, REPORTING LIMIT)	DAT	FE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		6/30/2010		0.042 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)		6/17/2010	1150	0.0114 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)		7/2/2010		3 µg/L		С

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AP8/25/10



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-110 205		Sample Location LAu Bottom	Complete DI			
Date Sampled 6/16/2010	Time Sampled 11:15 AM	<u>Date Receir</u> 6/17/20 ⁻		Time Received 7:15 AM	<u>Temp</u> 7	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/1/2010		0.469 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.418 mg/L	EM	в
Total Iron (EPA 6010	. 50 μg/L)	6/29/2010	1717	ND μg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-060	100		<u>Sampled By</u> Dennis Loewen			
Date SampledTime Sampled7/7/201010:22 AM		Date Received 7/7/2010		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	7/22/2010		0.079 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	7/7/2010	1653	0.0189 mg/L	EM	в
Chlorophyll A (SM 10)	200 H, 1µg/L)	7/21/2010		66 µg/L		С

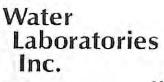
#### Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/4/10



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.) P.O Box 481, Annandale, MN 55302	WAR AND	1000	
Lab File Number Project Name W10G-061 435	Sample Location Aug Bottom	Sampled By Dennis Loewen	
Date SampledTime Sampled7/7/201010:22 AM	Date Received 7/7/2010	Time Received 12:57 PM	<u>Temp</u> 5
PARAMETER (METHOD, REPORTING LIMIT)	DATE & TIME ANALYZE	D RESULTS	BY BOTTLE
Total Phosphorus (EPA 365.3, 0.005 mg/L)	7/22/2010	(0.105 mg/L	AMAARE A
Orthophosphate (EPA 365.1, 0.01 mg/L)	7/7/2010 1653	0.443 mg/L	EM B
Total Iron (EPA 6010, 50 μg/L)	7/26/2010 1446	128 µg/L	C

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-097	Project Name 205	Sample Location Aug Top	<u>Sampled By</u> Dennis Loewer	Idswi	tched
Date Sampled 8/17/2010	Time Sampled 11:05 AM	Date Receive 8/17/2010	) 12:15 PM	d Lid <u>Temp</u> Botom Sim	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANA		) BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010	0.517 mg/L	V	A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	8/19/2010 (	0.020mg/L*	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010	15 μg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

* *Run again on 9/16/10 (pass holding time) to verify data.

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By:

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027 141-110

12/8/10



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10H-098 205		Sample Location Aug Bottom		<u>Sampled By</u> Dennis Loewen		
Date SampledTime Sampled8/17/201011:13 AM		<u>Date Rec</u> 8/17/2	The second second	Time Received 12:15 PM Lid 2	Switchzed	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	NALYZE		BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		L0.029-mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	8/19/2010	0832	0.481 mg/L *	EM	в
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1510	ND μg/L		С

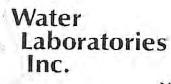
Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

* *Run again on 9/16/10 (pass holding time) to verify data.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



NCO/12/8/10

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Date SampledTime SampledDate ReceivedTime Received9/21/201011:20 AM9/21/20101:25 PM	<u>Temp</u> 6		
PARAMETER (METHOD, REPORTING LIMIT) DATE & TIME ANALYZED RESULTS	ΒΥ	BOTTLE	
Total Phosphorus (EPA 365.3, 0.005 mg/L) 9/30/2010 0.042 mg/L		A	
Orthophosphate (EPA 365.1, 0.01 mg/L) 9/22/2010 1003 < 0.01 mg/L	EM	в	
Chlorophyll A (SM 10200 H, 1μg/L) 10/7/2010 18 μg/L	•	С	

#### Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-125Project Name 205Date Sampled 9/21/2010Time Sampled 11:20 AMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location Augusta Bottom	Sumpled by				
		Date Received 9/21/2010 DATE & TIME ANALYZED		Time ReceivedTem1:25 PM6			
				D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/30/2010		0.573 mg/L	*	A	
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/22/2010	1003	0.538 mg/L	EM	в	
Total Iron (EPA 6010	. 50 μg/L)	10/11/2010	1156	64.4 µg/L	**	C	

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Nº2/14/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-129	<u>Project Name</u> 205	Sample Loc LBe Top	ation		<u>Sampled By</u> Dennis Loewen			
Date Sampled 6/20/2010 Time Sampled 1:50 PM					Time ReceivedTemp8:30 AM4			
PARAMETER (MET	HOD, REPORTING LIMIT)	DAT	E & TIME A	ANALYZE	D RESULTS	BY	BOTTLE	
Total Phosphorus (EP	PA 365.3, 0.005 mg/L)		6/30/2010		0.163 mg/L		A	
Orthophosphate (EPA	365.1, 0.01 mg/L)	(	6/22/2010	1031	0.020 mg/L	EM	в	
Chlorophyll A (SM 102	200 H, 1µg/L)	1	7/2/2010		38 µg/L		С	

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-130 205		Sample Location LBe Bottom		<u>Sampled By</u> Dennis Loewen		
Date SampledTime Sampled6/20/20101:55 PM		Date Received 6/21/2010		Time ReceivedTemp8:30 AM4		
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AI	NALYZEI	O RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	6/30/2010		0.924 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	6/22/2010	1031	0.607 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	6/29/2010		811 μg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

AD/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-162	<u>Project Name</u> 205	Sample Location BelsyTop		Sampled B Dennis Loe			
Date Sampled 7/21/2010	<u>Time Sampled</u> 8:23 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	<u>ceived</u>	Temp 5		
PARAMETERS, M	METHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		0.158 mg/L	*	A
Orthophosphate (EP	A 365.1, 0.01 mg/L)		7/22/2010	0901	0.101 mg/L	EM	B
Chlorophyll A (SM 10	200 H, 1µg/L)		<u>B/11/2010</u>		27 µg/L	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

×2/25/10



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-163	Project Name 205	Sample LocationBelsy BottomDate Received7/21/20102:15 PM		<u>Sampled B</u> Dennis Loe			
Date Sampled 7/21/2010	<u>Time Sampled</u> 8:23 AM			Temp 5			
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
<u>Total Phosphorus (El</u>	PA 365.3, 0.005 mg/L)		7/27/2010		<u>1.80 mg/L</u>	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L)		7/22/2	7/22/2010	0901	1.49 mg/L	EM	B
Total Iron (EPA 200.7	<u>, 50 µg/L)</u>		3/2/2010	<u>1641</u>	<u>875 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

AN 2/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-162			Sampled B Dennis Loe				
Date SampledTime Sampled7/21/20108:23 AMPARAMETERS, METHOD, REPORTING LIMIT		Date Received 7/21/2010			Temp 5		
		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/29/2010		0.158 mg/L	±	A
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1μg/L)		7/	7/22/2010	0901	0.101 mg/L	EM	B
			3/11/2010		<u>27 µg/L</u>	*	C

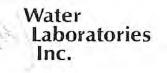
Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By:___ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/8/10



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-163Project Name 205Date Sampled 7/21/2010Time Sampled 8:23 AMPARAMETERS, WETHOD, REPORTING LIMIT		Sample Location Belsy Bottom			Sampled By Dennis Loewen		
		Date Received 7/21/2010	<u>ceived</u>	<u>Temp</u> 5			
		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		1.80 mg/L	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L)		7/22/2010	7/22/2010	0901	1.49 mg/L	EM	B
Total Iron (EPA 200.7, 50 µg/L)		<u>8/2/2010</u> <u>1641</u>		875 µg/L	<u></u>	<u>C</u>	

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137



Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

<u>Lab File Number</u> <u>Project Name</u> W10H-133 205		Sample Location Betsy Top	Sampled By Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 8:16 AM	Date Received 8/24/2010	Time Received 12:30 PM	Temp 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	9/2/2010	0.214mg/L		A
Orthophosphate (EPA	X 365.1, 0.01 mg/L)	8/25/2010 1059	0.179 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010	41 µg/L		С

#### Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

12/8/



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-134			Sample Location Betsy Bottom			
Date Sampled 8/24/2010Time Sampled 8:16 AMPARAMETER (METHOD, REPORTING LIMIT)		<u>Date Recei</u> 8/24/20	Time Received 12:30 PM	<u>Temp</u> 2		
		DATE & TIME AM	O RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		3.0 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		8/25/2010	1059	2.73 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1525	464 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-150	Project Name 205	Sample Location Betsy Top	Sampled By Dennis Loewen		
Date SampledTime Sampled9/27/20108:56 AM		<u>Date Received</u> 9/27/2010	Time Received 1:10 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANAL	YZED RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	0.190 mg/L	*	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010 10	31 0.146 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010	20 µg/L	*	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-151			D D		<u>Sampled By</u> Dennis Loewen		
Date Sampled Time Sampled 9/27/2010 8:56 AM PARAMETER (METHOD, REPORTING LIMIT)		<u>Date Recei</u> 9/27/20	Time Received 1:10 PM	<u>Temp</u> 6			
		DATE & TIME AN	RESULTS	BY	BOTTLE		
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010		0.194 mg/L	*	A	
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/28/2010	0958	0.148 mg/L	EM	в	
Total Iron (EPA 6010	50 µg/L)	10/11/2010	1214	223 µg/L	+	С	

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/40/10

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Water

Inc.

P.O Box 481, Annandale, MN 55302

Laboratories

Lab File Number W10F-161Project Name 205 LAKESDate Sampled 6/22/2010Time Sampled 12:50 PMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location LCa Top		Sampled By Dennis Loewen		
		Caroline <u>Date Rece</u> 6/22/20	Time Received 3:00 PM	<u>Temp</u> 8		
		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (El	[⊃] A 365.3, 0.005 mg/L)	6/30/2010		0.028 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/24/2010	1131	< 0.01 mg/L	EM	В
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		7 µg/L		С

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

A 2125/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-162Project Name 205 LAKESDate Sampled 6/22/2010Time Sampled 12:55 PMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location LCa Bottom		<u>Sampled By</u> Dennis Loewen		
		<u>Date Rece</u> 6/22/20	Time Received 3:00 PM	<u>Temp</u> 8		
		DATE & TIME A	D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	6/30/2010		1.60 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		6/24/2010	1131	1.38 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	6/29/2010	1821	144 μg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

APINSTIO

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-168	Project Name 205	Sample Location Caroline Top			Sampled By Dennis Loewen		
Date SampledTime Sampled7/21/201011:46 AM		Date ReceivedTime Rec7/21/20102:15 PM					
PARAMETERS, M	PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	ВΥ	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		0.055 mg/L	*	A
Drthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		7/2	7/22/2010	2010 0901	0.0172 mg/L	EM	B
			<u>8/11/2010</u>		14 µg/L	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

AD 8/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

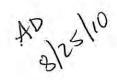
P.O Box 481, Annandale, MN 55302

Lab File Number W10G-169	<u>Project Name</u> 205	Sample Location Caroline Bottom		Sampled B Dennis Loe			
Date SampledTime Sampled7/21/201011:46 AMPARAMETERS, METHOD, REPORTING LIMIT		Date Received 7/21/2010					
		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/27/2010		<u>1.51 mg/L</u>	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L)		7/2	7/22/2010	0901	1.35 mg/L	EM	B
otal Iron (EPA 200.7, 50 µg/L)		3	<u>8/2/2010</u> <u>1655</u>		<u>93.0 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137



Report Submitted By: 18 Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-168	<u>Project Name</u> 205	Sample Location Caroline Top		<u>Sampled B</u> Dennis Loe			
Date SampledTime Sampled7/21/201011:46 AM		Date ReceivedTime Received7/21/20102:15 PM			<u>Temp</u> 5		
PARAMETERS, N	PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (Ef	<u>PA 365.3, 0.005 mg/L)</u>	7/27/2010			0.055 mg/L	*	A
<u>Orthophosphate (EPA 365.1, 0.01 mg/L)</u> Chlorophyll A (SM 10200 H, 1µg/L)			7/22/2010	<u>0901</u>	0.0172 mg/L	EM	B
		8/11/2010			<u>14 µg/L</u>		<u>C</u>

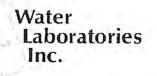
Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

(08) N2014/10



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10G-169205		Sample Location Caroline Bottom			Sampled By Dennis Loewen		
Date Sampled 7/21/2010	<u>Time Sampled</u> 11:46 AM	Date Received 7/21/2010	Time Received 2:15 PM		Temp 5		
PARAMETERS, N	PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)	7/27/2010			<u>1.51 mg/L</u>	*	A
<u>Orthophosphate (EPA 365.1, 0.01 mg/L)</u> otal Iron (EPA 200.7, 50 µg/L)			7/22/2010	0901	1.35 mg/L	EM	B
		12	8/2/2010	<u>1655</u>	<u>93.0 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

(OP) NCD

Report Submitted By: 10 Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



> NCO 12/5/10

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10H-143205		Sample Location Caroline Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 11:16 AM	Date Received 8/24/2010	Time Received 12:30 PM	Temp 2	BOTTLE
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALY	ZED RESULTS	BY	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010	0.061 mg/L		A
Orthophosphate (EP/	4 365.1, 0.01 mg/L)	8/25/2010 1059	9 < 0.01 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010	89 µg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-144	Project Name 205	Sample Location Caroline Bottom		Sampled By Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 11:16 AM	Date Received 8/24/2010		Time Received 12:30 PM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		1.47 mg/L		A
Orthophosphate (EP	A 365.1, 0.01 mg/L)	8/25/2010	1059	1.39 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1558	105 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

12/5/10



> NCO 12/5

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

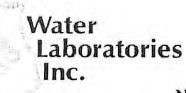
P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-158 205				Sampled By Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 11:27 AM	Date Received 9/27/2010		ne Received 1:10 PM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	0	).129mg/L	*	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010 10	031 0	).034 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010	4	8 μg/L	•	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-159 205		• · · · · · ·		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 11:27 AM	Date Received 9/27/2010		Time Received 1:10 PM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTL
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	10/7/2010		2.00 mg/L	*	A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/28/2010	1031	1.88 mg/L	EM	в
Total Iron (EPA 6010,	. 50 μg/L)	10/9/2010	0038	223 µg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

NCO 12/4/1

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10F-111P06-1 Lakes				<u>Sampled By</u> Dennis Loewen			
Date Sampled 6/16/2010	Time Sampled 7:10 AM	Date Recei 6/17/20			<u>Time Received</u> 7:15 AM	<u>Temp</u> 7	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		6/30/2010		0.040 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	1.09	6/17/2010	1303	< 0.01 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)		7/2/2010		10 µg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

AD125/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10F-112P06-1 Lakes		Sample Location LCE Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 7:20 AM	Date Received 6/17/2010		Time Received 7:15 AM	<u>Temp</u> 7	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		ВҮ	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		0.144 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.0935 mg/L	EM	в
Total Iron (EPA 6010	, 50 µg/L)	6/29/2010	1722	ND μg/L		C

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-050 435				<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/7/2010	Time Sampled 6:15 AM	Date Received 7/7/2010		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/20/2010		0.024 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.024 mg/L	EM	В
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		3 µg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-051Project Name 435Date Sampled 7/7/2010Time Sampled 6:15 AMPARAMETER (METHOD, REPORTING LIMIT)		Cedar Bottom D		<u>Sampled By</u> Dennis Loewen		
				Time Received 12:57 PM	Temp 5	
				D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/20/2010		0.173 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.160 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	7/26/2010	1423	ND µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

12/8/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141 110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10H-087 435		Sample Location Cedar Top		Sampled By Dennis Loewen		
Date Sampled 8/17/2010	Time Sampled 7:14 AM	Date Received 8/17/2010		Time Received 12:15 PM	Temp 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		0.017 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	8/19/2010	0832	0.018 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010		11 µg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-088Project Name 435Date Sampled 8/17/2010Time Sampled 7:24 AMPARAMETER (METHOD, REPORTING LIMIT)		0 1 0 1			
		Date Received 8/17/2010			
		DATE & TIME ANALYZED		BY	BOTTLE
PA 365.3, 0.005 mg/L)	8/23/2010		0.072 mg/L		А
365.1, 0.01 mg/L)	8/19/2010	0832	0.215 mg/L*	EM	в
50 µg/L)	8/27/2010	1437	ND µg/L		Ċ
	435 <u>Time Sampled</u> 7:24 AM <b>THOD, REPORTING LIMIT)</b> PA 365.3, 0.005 mg/L) 365.1, 0.01 mg/L)	435         Cedar Bottom           Time Sampled         Date Record           7:24 AM         8/17/2           THOD, REPORTING LIMIT)         DATE & TIME A           PA 365.3, 0.005 mg/L)         8/23/2010           x365.1, 0.01 mg/L)         8/19/2010	435Cedar BottomTime Sampled 7:24 AMDate Received 8/17/2010THOD, REPORTING LIMIT)DATE & TIME ANALYZEDPA 365.3, 0.005 mg/L)8/23/2010365.1, 0.01 mg/L)8/19/20108/19/20100832	435         Cedar Bottom         Dennis Loewen           Time Sampled 7:24 AM         Date Received 8/17/2010         Time Received 12:15 PM           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           PA 365.3, 0.005 mg/L)         8/23/2010         0.072 mg/L           365.1, 0.01 mg/L)         8/19/2010         0832         0.215 mg/L*	435Cedar BottomDennis LoewenTime Sampled 7:24 AMDate Received 8/17/2010Time Received 12:15 PMTemp 2THOD, REPORTING LIMIT)DATE & TIME ANALYZED 8/23/2010RESULTSBYPA 365.3, 0.005 mg/L)8/23/20100.072 mg/L 0.01 mg/L)8/19/20100.8320.215 mg/L*EM

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

*Run again on 9/16/10 (pass holding time) to verify data.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

NCO 12/6/12

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

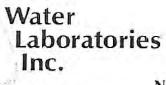
P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-110 435		O 1 T		<u>Sampled By</u> Dennis Loewen		
<u>Date Sampled</u> 9/21/2010	Time Sampled 7:30 AM	Date Received 9/21/2010		Time Received 1:25 PM	<u>Temp</u> 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.024 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/22/2010	1003	< 0.01 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010		10 µg/L		С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-111 435		Sample Location Cedar Bottom	Journa DI			
Date Sampled 9/21/2010	Time Sampled 7:30 AM	<u>Date Rece</u> 9/21/20		Time Received 1:25 PM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	ВΥ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.280 mg/L		A
Orthophosphate (EP	A 365.1. 0.01 mg/L)	9/22/2010	1003	0.264 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	10/11/2010	1124	ND µg/L	**	С

NCO

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-127 205		LCL Top	LCL Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/20/2010	Time Sampled 12:46 PM	Clear	Date Rec 6/21/2		Time Received 8:30 AM	<u>Temp</u> 4	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	1.1.1	6/30/2010		0.230 mg/L		A
Orthophosphate (EP)	A 365.1, 0.01 mg/L)	10	6/22/2010	1031	0.014 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)		7/2/2010		173 µg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-128	<u>Project Name</u> 205	Sample Location LCL Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/20/2010	Time Sampled 12:51 PM	Date Received 6/21/2010		Time ReceivedTemp8:30 AM4		BOTTLE
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	6/30/2010		0.175 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	6/22/2010	1031	0.271 mg/L	EM	в
Total Iron (EPA 6010,	50 μg/L)	6/29/2010		140 µg/L		Ċ

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-160	<u>Project Name</u> 205	Sample Location Clear Top		Sampled By Dennis Loewen			
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:48 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS, M	IETHOD, REPORTING LIMIT	DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.148 mg/L</u>	*	<u>A</u>
Orthophosphate (EP	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	0.0268 mg/L	EM	B
Chlorophyll A (SM 10	200 H, 1µg/L)		<u>B/11/2010</u>		<u>103 µg/L</u>	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-161	Project Name 205	Sample Location Clear Bottom			<u>Sampled By</u> Dennis Loewen <u>Temp</u> 5		
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:48 AM	Date ReceivedTime Received7/21/20102:15 PM					
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010	1.1	0.287 mg/L	*	Α
Orthophosphate (EP)	<u>A 365.1. 0.01 mg/L)</u>		7/22/2010	0901	0.138 mg/L	EM	B
Total Iron (EPA 200.7	7 <u>, 50 μg/L)</u>	4	8/2/2010	<u>1636</u>	<u>195 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-160	Project Name 205	Sample Location Clear Top			<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:48 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	<u>e Received Temp</u> 5 PM 5			
PARAMETERS, N	RAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.148 ma/L</u>	*	A
Orthophosphate (EP/	<u>A 365.1, 0.01 mg/L)</u>	- C	7/22/2010	0901	0.0268 mg/L	EM	B
Chlorophyll A (SM 10	<u>200 Н, 1µg/L)</u>		<u>B/11/2010</u>		<u>103 µg/L</u>	2	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO NCO

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

NCO

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

<u>Lab File Number</u> W10G-161	Project Name 205	Sample Location Clear Bottom			<u>Sampled B</u> Dennis Loe		
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:48 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)		7/29/2010	2.9	0.287 mg/L	*	Α
Orthophosphate (EPA	<u>365.1, 0.01 mg/L)</u>	6	7/22/2010	0901	0.138 mg/L	EM	В
Total Iron (EPA 200.7	<u>, 50 µg/L)</u>	1	3/2/2010	<u>1636</u>	<u>195 µg/L</u>	**	<u>C</u>

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

Lab File Number W10H-131	Project Name 205	Sample Location Clearwater Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 9:13 AM	Date Received 8/24/2010	<u>d Time Received</u> 12:30 PM	Temp 2	
PARAMETER (METHOD, REPORTING LIMIT)		) DATE & TIME ANAL	DATE & TIME ANALYZED RESULTS		BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)	9/2/2010	0.193 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	8/25/2010 10	059 0.107 mg/L	EM	в
Chlorophyll A (SM 10)	200 Н. 1µg/ <b>L)</b>	9/7/2010	137 µg/L		С
				1	<del>ෆ</del>

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141 110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck A P.O Box 481, Anr	ssociates, Inc.) nandale, MN 55302	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	lea	Lake		
Lab File Number W10H-132	Project Name 205	Sample Location Clearwater Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	<u>Time Sampled</u> 9:13 AM	Date Received 8/24/2010		Time Received 12:30 PM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		0.197 mg/L		A
Orthophosphate (EPA	Orthophosphate (EPA 365.1, 0.01 mg/L)		1059	0.159 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1520	95.8 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-152Project Name 205Date Sampled 9/27/2010Time Sampled 9:49 AMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location Clear Top	<u>Sampled By</u> Dennis Loewen		
		<u>Date Received</u> 9/27/2010	Time Received 1:10 PM	Temp 6	BOTTLE
		DATE & TIME ANAL	YZED RESULTS	BY	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	0.272 mg/L	+	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010 10	31 0.045 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010	200 µg/L	• 0	С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-153 205		Sample LocationSampled ByClear BottomDennis Loewen				
Date Sampled 9/27/2010	<u>Time Sampled</u> 9:49 AM	<u>Date Recei</u> 9/27/20		Time Received 1:10 PM	<u>Temp</u> 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010		0.292 mg/L	*	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010	1031	0.045 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	10/11/2010	1219	308 µg/L	**	С

NC0 12/8/

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-107 205		Sample Location LCLW Top Clearwater WRST		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 10:32 AM	<u>Date Receiv</u> 6/17/201		Time Received 7:15 AM	Temp 7	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	ВҮ	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	6/30/2010		0.039 mg/L	-	A
Orthophosphate (EPA	\ 365.1, 0.01 mg/L)	6/17/2010	1150	0.0244 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/2/2010		99 µg/L		С

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

AV 25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-108 205			Sampled By Dennis Loewen		
Time Sampled 10:37 AM			<u>Time Received</u> 7:15 AM	<u>Temp</u> 7	
THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
PA 365.3, 0.005 mg/L)	6/30/2010		0.144 mg/L		A
A 365.1, 0.01 mg/L)	6/17/2010	1150	0.0950 mg/L	EM	в
, 50 μg/L)	6/29/2010	1712	57.7 μg/L		С
	205 Time Sampled	205         LCLW Bottom <u>Time Sampled</u> <u>Date Rece</u> 10:37 AM         6/17/24           THOD, REPORTING LIMIT)         DATE & TIME A           PA 365.3, 0.005 mg/L)         6/30/2010           A 365.1, 0.01 mg/L)         6/17/2010	205         LCLW Bottom <u>Time Sampled</u> <u>Date Received</u> 10:37 AM         6/17/2010           THOD, REPORTING LIMIT)         DATE & TIME ANALYZE           PA 365.3, 0.005 mg/L)         6/30/2010           A 365.1, 0.01 mg/L)         6/17/2010         1150	205         LCLW Bottom         Dennis Loewen <u>Time Sampled</u> <u>Date Received</u> <u>Time Received</u> 10:37 AM <u>Date Received</u> <u>Time Received</u> <b>THOD, REPORTING LIMIT) DATE &amp; TIME ANALYZED RESULTS</b> PA 365.3, 0.005 mg/L)         6/30/2010         0.144 mg/L           A 365.1, 0.01 mg/L)         6/17/2010         1150         0.0950 mg/L	205LCLW BottomDennis LoewenTime Sampled 10:37 AMDate Received 6/17/2010Time Received 7:15 AMTemp 7THOD, REPORTING LIMIT)DATE & TIME ANALYZED 6/30/2010RESULTSBYPA 365.3, 0.005 mg/L)6/30/20100.144 mg/L 6/17/2010EM

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

AD 210

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-062 435		Sample Location CLW Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/7/2010	Time Sampled 10:00 AM	<u>Date Receiv</u> 7/7/2010		Time Received 12:57 PM	Temp 5	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	7/22/2010		0.027mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	7/7/2010	1601	0.0123 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		10 µg/L		С

12/5/10

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-063	<u>Project Name</u> 435	Sample Location CLW Bottom		Sampled By Dennis Loewen		
Date Sampled 7/7/2010	Time Sampled 10:00 AM	<u>Date Rece</u> 7/7/20		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (MET	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
otal Phosphorus (Ef	PA 365.3, 0.005 mg/L)	7/22/2010		0.070mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	7/7/1016	1653	0.0499 mg/L	EM	в
fotal Iron (EPA 6010,	50 µg/L)	7/26/2010	1451	ND µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-095	<u>Project Name</u> 205	Sample Location Clearwater Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/17/2010	Time Sampled 10:39 AM	<u>Date Receiv</u> 8/17/201		Time Received 12:15 PM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		0.021mg/L		А
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	8/19/2010	0832	0.0204 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010		8 µg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10H-096 205		Sample Location Clearwater Bottom		<u>Sampled By</u> Dennis Loewen	and the second se		
Date Sampled 8/17/2010	Time Sampled 10:46 AM	<u>Date Receiv</u> 8/17/201	and the second se	Time Received 12:15 PM	<u>Temp</u> 2		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		0.232 mg/L		A	
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	8/19/2010	0832	0.105 mg/L	EM	в	
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1504	255 µg/L		С	

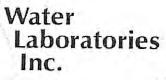
12/8/17

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-122 205		Sample Location Clearwater West Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	Time Sampled 10:56 AM	Date Received 9/21/2010	Time Received 1:25 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZE	D RESULTS	ВУ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/30/2010	0.032 mg/L	*	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/22/2010 1003	< 0.01 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010	20 µg/L	*	С

12/4

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-123 205		Sample Location Clearwater West Botto		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	<u>Time Sampled</u> 10:56 AM	<u>Date Recei</u> 9/21/20		Time Received 1:25 PM	<u>Temp</u> 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/30/2010		0.039 mg/L	*	A
Orthophosphate (EPA	X 365.1, 0.01 mg/L)	9/22/2010	1003	0.031 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	10/11/2010	1151	82.1 µg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-113	Project Name P06-1 Lakes	Sample Location LHe Top Henshaw	Sampled By Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 8:10 AM	Date Received 6/17/2010	Time Received 7:15 AM	<u>Temp</u> 7	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALY	ZED RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010	0.096 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	6/17/2010 115	0 0.0187 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/2/2010	59 μg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

25/10



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-114	Project Name P06-1 Lakes	Sample Location LHe Botton		Sampled By Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 8:12 AM	Date Rec 6/17/2	the state of the second state and	Time Received 7:15 AM	<u>Temp</u> 7	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	6/30/2010		0.096 mg/L	η	A
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.0176 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	6/29/2010	1726	69.9 µg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

AD 125/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-052	<u>Project Name</u> 435	Sample Location Hen top		<u>Sampled By</u> Dennis Loewen		
<u>Date Sampled</u> 7/7/2010	Time Sampled 7:10 AM	<u>Date Rece</u> 7/7/20		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	7/20/2010		0.074 mg/L		A
Orthophosphate (EP	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.022 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		58 µg/L		С

NC0

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Project Name 435	Sample Location Hen Bottom		<u>Sampled By</u> Dennis Loewen		
Time Sampled 7:10 AM			Time Received 12:57 PM	<u>Temp</u> 5	
THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
PA 365.3, 0.005 mg/L)	7/20/2010		0.107 mg/L		A
365.1, 0.01 mg/L)	7/7/2010	1653	0.0270 mg/L	EM	в
50 μg/L)	7/26/2010	1428	157 μg/L		C
	435 Time Sampled	435         Hen Bottom <u>Time Sampled</u> Date Rece           7:10 AM         7/7/20           THOD, REPORTING LIMIT)         DATE & TIME A           PA 365.3, 0.005 mg/L)         7/20/2010           A 365.1, 0.01 mg/L)         7/7/2010	435         Hen Bottom <u>Time Sampled</u> <u>Date Received</u> 7:10 AM         7/7/2010           THOD, REPORTING LIMIT)         DATE & TIME ANALYZE           PA 365.3, 0.005 mg/L)         7/20/2010           A 365.1, 0.01 mg/L)         7/7/2010         1653	435         Hen Bottom         Dennis Loewen           Time Sampled 7:10 AM         Date Received 7/7/2010         Time Received 12:57 PM           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           PA 365.3, 0.005 mg/L)         7/20/2010         0.107 mg/L           A 365.1, 0.01 mg/L)         7/7/2010         1653         0.0270 mg/L	435         Hen Bottom         Dennis Loewen <u>Time Sampled</u> 7:10 AM <u>Date Received</u> 7/7/2010 <u>Time Received</u> 12:57 PM <u>Temp</u> 5           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS         BY           PA 365.3, 0.005 mg/L)         7/20/2010         0.107 mg/L           A 365.1, 0.01 mg/L)         7/7/2010         1653         0.0270 mg/L

12/8/10

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-089	<u>Project Name</u> 435	<u>Sample Location</u> Hen Top	Sampled By Dennis Loewen		
Date Sampled 8/17/2010	Time Sampled 8:09 AM	Date Receive 8/17/2010		Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANA	LYZED RESULTS	ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010	0.141mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	8/19/2010 0	832 0.0235 mg/L	EM	в
Chlorophyll A (SM 10	200 H. 1µg/L)	9/7/2010	124 µg/L		С

12/0

#### Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-090	<u>Project Name</u> 435	Sample Location Hen Bottom		Sampled By Dennis Loewen		
Date Sampled 8/17/2010	Time Sampled 8:09 AM	<u>Date Rec</u> 8/17/2		Time Received 12:15 PM	Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
otal Phosphorus (El	PA 365.3, 0.005 mg/L)	8/23/2010		0.132 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	8/19/2010	0832	0.0197 mg/L	EM	в
otal Iron (EPA 6010,	50 μg/L)	8/27/2010	1442	183 µg/L		С
					L,	2/8/1

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-114	Project Name 435	Sample Location Henshaw Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	Time Sampled 8:20 AM	<u>Date Rec</u> 9/21/2		Time Received 1:25 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME 4	NALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	9/28/2010	The second	0.109 mg/L	Wo	A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/22/2010	1003	0.022 mg/L	EM	в
Chlorophull A (SM 10	200 H, 1µg/L)	10/7/2010		214 µg/L		С

NCT

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

12/9

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-115	<u>Project Name</u> 435	Sample Location Henshaw Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010				Time Received 1:25 PM	<u>Temp</u> 6	
PARAMETER (MET	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	9/28/2010		0.106 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	9/22/2010	1003	0.021 mg/L	EM	в
Total Iron (EPA 6010,	50 μg/L)	10/11/2010	1133	130 µg/L	EM	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-157	Project Name 205 LAKES	Sample Loc LLo Top	ation_		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010	Time Sampled 12:01 AM	Louisa	Date Rec 6/22/2		<u>Time Received</u> 3:00 PM	<u>Temp</u> 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DAT	E & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)		6/30/2010		0.078 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	(	6/24/2010	1131	0.031 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)		7/21/2010		41 µg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

ABUSHO

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-158	<u>Project Name</u> 205 LAKES	Sample Location LLo Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010	Time Sampled 12:06 PM	Date Reco 6/22/2		Time Received 3:00 PM	<u>Temp</u> 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		1.17 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/24/2010	1131	0.909 mg/L	EM	в
Total Iron (EPA 6010,	. 50 μg/L)	6/29/2010	1811	ND μg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

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**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-164	Project Name 205	Sample Location Louisa Top	-		Sampled By Dennis Loe	-	
Date Sampled 7/21/2010	Time Sampled 11:04 AM	Date Received 7/21/2010	Time Re 2:15 PM	<u>ceived</u>	Temp 5		
PARAMETERS, M	IETHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/27/2010		0.074 mg/L	*	Α
Orthophosphate (EPA	<u> 365.1, 0.01 mg/L)</u>		/22/2010	0901	0.0182 mg/L	EM	B
Chlorophyll A (SM 10	200 H. 1µg/L)		8/11/2010		<u>30 µg/L</u>	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-165	<u>Project Name</u> 205	Sample Location	L		<u>Sampled B</u> Dennis Loe	- de	
Date Sampled 7/21/2010	Time Sampled 11:04 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS, M	METHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
otal Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/27/2010		1.29 mg/L	4	A
Orthophosphate (EP/	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	1.19 mg/L	EM	B
otal Iron (EPA 200.7	7 <u>, 50 μg/L)</u>		3/2/2010	1646	<u>155 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Date Sampled 7/21/2010Time Sampled 11:04 AMDate Received 7/21/2010Time Received 2:15 PMTemp 5PARAMETERS, METHOD, REPORTING LIMITDATE & TIME ANALYZEDRESULTS	/en	
PARAMETERS, METHOD, REPORTING LIMIT DATE & TIME ANALYZED RESULTS		
	BY	BOTTLE
Total Phosphorus (EPA 365.3, 0.005 mg/L) 7/27/2010 0.074 mg/L	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L) 7/22/2010 0901 0.0182 mg/L	EM	B
Chlorophyll A (SM 10200 H, 1μg/L)         8/11/2010         30 μg/L	t.	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

COPY NCO 12/8/11



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Date SampledTime SampledDate ReceivedTime ReceivedTemp7/21/201011:04 AM7/21/20102:15 PM5	n	
PARAMETERS, METHOD, REPORTING LIMIT DATE & TIME ANALYZED RESULTS	BY	BOTTLE
Total Phosphorus (EPA 365.3, 0.005 mg/L) 7/27/2010 1.29 mg/L	*	Δ
Orthophosphate (EPA 365.1, 0.01 mg/L) 7/22/2010 0901 1.19 mg/L	EM	B
<u>Total Iron (EPA 200.7, 50 μg/L)</u> 8/2/2010 1646 155 μg/L	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

NCD 12/8/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

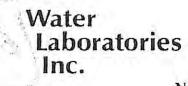
Lab File Number W10H-139	Project Name 205	Sample Location Louisa Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 10:30 AM	Date Received 8/24/2010	Time Received 12:30 PM	Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZI	ED RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010	0.102 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	8/25/2010 1059	0.021 mg/L	EM	в
Chlorophyll A (SM 10	200 H. 1µg/L)	9/7/2010	106 µg/L		С

NCO 12/4

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-140	<u>Project Name</u> 205	Sample Location Louisa Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	Time Sampled 10:30 AM	Date Rec 8/24/2		Time Received 12:30 PM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		1.21 mg/L		A
Orthophosphate (EPA	4 365.1, 0.01 mg/L)	8/25/2010	1059	1.20 mg/L	EM	в
	50 µg/L)	8/27/2010	1548	77.1 µg/L		С

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Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-154	Project Name 205	Sample Location Louisa Top		Sampled By Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 10:42 AM	<u>Date Rece</u> 9/27/20		Time Received 1:10 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZEI	RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	10/4/2010		0.166mg/L	*	A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/28/2010	1031	0.090 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010		42 µg/L		С

NCO 12/48/10

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-155 205		Sample Location Louisa Bottom		<u>Sampled By</u> Dennis Loewen		
<u>Date Sampled</u> 9/27/2010	Time Sampled 10:42 AM	Date Received T 9/27/2010		Time Received 1:10 PM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/7/2010		1.62 mg/L		A
Orthophosphate (EP)	A 365.1, 0.01 mg/L)	9/28/2010	1031	1.56 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	10/11/2010	1350	194 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

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NCD 12/5/1X

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# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-159	Project Name 205 LAKES	Sample Location LMa Top	-	<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010Time Sampled 12:22 PMPARAMETER (METHOD, REPORTING LIMIT)			Date Received 6/22/2010		Temp 8	
		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	6/30/2010		0.050 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/24/2010	1131	0.014 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		21 μg/L		С

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AD 125/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-160Project Name 205 LAKESDate Sampled 6/22/2010Time Sampled 12:27 PMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location LMa Bottom				
		Date Received 6/22/2010		Time Received 3:00 PM	<u>Temp</u> 8	
		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	6/30/2010		1.25 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/24/2010	1131	1.09 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	6/29/2010	1816	149 µg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-166	Project Name 205	Sample Location Marie Top	L		Sampled By Dennis Loewen		
Date Sampled 7/21/2010	<u>Time Sampled</u> 11:26 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	<u>ceived</u>	Temp 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		0.052 mg/L	*	A
Drthophosphate (EPA 365.1, 0.01 mg/L)		2	7/22/2010	010 0901	0.0182 mg/L	EM	B
Chlorophyll A (SM 10	200 H. 1µg/L)	1	3/11/2010		14 µg/L	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-1/10



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-167	Project Name 205	Sample Location Marie Bottom	1		Sampled By Dennis Loewen		
Date Sampled 7/21/2010	<u>Time Sampled</u> 11:26 AM	Date ReceivedTime Received7/21/20102:15 PM		Temp 5			
PARAMETERS, METHOD, REPORTING LIMIT		DAT	DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		0.621 mg/L	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L)			7/22/2010	0901	0.544 mg/L	EM	B
otal Iron (EPA 200.7, 50 µg/L)			8/2/2010	1651	<u>110 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-166	<u>Project Name</u> 205	<u>Sample Location</u> Marie Top			Sampled By Dennis Loewen		
Date Sampled 7/21/2010	<u>Time Sampled</u> 11:26 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	<u>ceived</u>	<u>Temp</u> 5		
PARAMETERS, N	METHOD, REPORTING LIMIT	DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		0.052 mg/L	-	A
Drthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H. 1µg/L)		7/22/	/22/2010	<u>0901</u>	0.0182 mg/L	EM	B
		<u>B/11/2010</u>		14 µg/L	*	C	

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-1/10

NCO 12/18/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-167			Sample Location Marie Bottom			Sampled By Dennis Loewen	
Date Sampled 7/21/2010	Time Sampled 11:26 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/27/2010		0.621 mg/L	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L)		1	7/22/2010	<u>2010 0901</u>	0.544 mg/L	EM	B
Total Iron (EPA 200.7	7, 50 μg/L)		3/2/2010	<u>1651</u>	110 µg/L	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

(7) N20 12/18



12/4/10

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

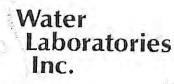
P.O Box 481, Annandale, MN 55302

Lab File Number W10H-141	<u>Project Name</u> 205	Sample Location Marie Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled       Time Sampled         8/24/2010       10:42 AM         PARAMETER (METHOD, REPORTING LIMIT)		Date Received 8/24/2010		Time Received 12:30 PM	<u>Temp</u> 2	
		DATE & TIME ANALYZED		RESULTS	ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		0.093 mg/L		A
Orthophosphate (EP	A 365.1, 0.01 mg/L)	8/25/2010	1059	0.0645 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010		139 µg/L		С

#### Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-142Project Name 205Date Sampled 8/24/2010Time Sampled 10:42 AMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location Marie Bottom		<u>Sampled By</u> Dennis Loewen		
			Date Received Tim 8/24/2010		<u>Temp</u> 2	BOTTLE
		DATE & TIME ANALYZED		RESULTS	BY	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		1.18 mg/L		A
Orthophosphate (EPA	365.1, 0.01 mg/L)	8/25/2010	1059	1.14 mg/L	EM	в
Γotal Iron (EPA 6010, 50 μg/L)		8/27/2010	1553	152 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

NCO 12/4/10

Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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> NCO 12/4/17

#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

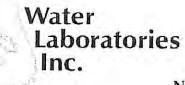
Lab File Number W10I-156	Project Name 205	Sample Location Marie Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled       Time Sampled         9/27/2010       11:00 AM         PARAMETER (METHOD, REPORTING LIMIT)		Date Received 9/27/2010	Time Received 1:10 PM	Temp 6	
		DATE & TIME ANALYZ	ED RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	0.178 mg/L	*	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010 1031	0.031 mg/L	EM	в
Chlorophyll A (SM 10	200 H. 1µg/L)	10/7/2010	112 µg/L	٠	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-157 205		Sample Location Marie Bottom			±		
Date Sampled 9/27/2010	Time Sampled 11:00 AM	Date Received 9/27/2010		Time Received 1:10 PM	<u>Тетр</u> 6		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/7/2010		1.75 mg/L	*	A	
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010	1031	1.62 mg/L	EM	в	
Total Iron (EPA 6010	, 50 μg/L)	10/9/2010	0031	225 µg/L	**	C	

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/5



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-105	<u>Project Name</u> 205	Sample Location		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010	<u>Time Sampled</u> 9:54 AM	Pleasant <u>Date Received</u> 6/17/2010		Time Received 7:15 AM	Temp 7	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	6/29/2010		0.077 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.0116 mg/L	EM	в
Chlorophyll A (SM 10200 H, 1µg/L)		7/2/2010		18 µg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-106	<u>Project Name</u> 205	Sample Location LPL Bottom			ampled By ennis Loewen		
Date Sampled       Time Sampled         6/16/2010       10:00 AM         PARAMETER (METHOD, REPORTING LIMIT)		Date Rece 6/17/2	Time Received 7:15 AM	Temp 7	BOTTLE		
		DATE & TIME A	D RESULTS	BY			
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		0.070 mg/L		A	
Orthophosphate (EPA 365.1, 0.01 mg/L)		6/17/2010	1150	0.0192 mg/L	EM	в	
Total Iron (EPA 6010, 50 μg/L)		6/28/2010	1355	119 µg/L		С	

Notes:

Total Phosphorus tested by MN Lab # 027-035-135

T. Iron tested by MN Lab # 027-053-137

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-058Project Name 435Date Sampled 7/7/2010Time Sampled 9:03 AM		Sample Location PI Top	<u>outilities</u> by			
		<u>Date Recei</u> 7/7/201	Time Received 12:57 PM	<u>Temp</u> 5		
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED			BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/22/2010 0		0.017 mg/L	EM	A B
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		7/7/2010	1653	0.017 mg/L		
		7/21/2010		5 µg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

12/8

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-059			Sample Location         Sampled By           PL Bottom         Dennis Loewen			
Date SampledTime Sampled7/7/20109:03 AM		Date ReceivedTime Received7/7/201012:57 PM			<u>Temp</u> 5	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)			0.045 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.045 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	7/26/2010	1441	131 µg/L		C

Notes:

T Phosphorus tested by MN Lab # 027-035-135

T Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/6/10



> NCO 12/4/1

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-099	Project Name 205	Sample Location Pleasant Top	<u>Sampled By</u> Dennis Loewen		
Date Sampled       Time Sampled         8/17/2010       9:50 AM         PARAMETER (METHOD, REPORTING LIMIT)		Date Received 8/17/2010	Time Received 12:15 PM	<u>Temp</u> 2	
		DATE & TIME ANAL'	YZED RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010	0.024mg/L		A B C
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		8/19/2010 083	32 0.0237 mg/L	EM	
		9/7/2010	13 μg/L		

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110 \



12/6

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

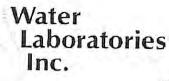
Lab File Number W10H-100	<u>Project Name</u> 205	Sample Location Pleasant Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/17/2010Time Sampled 9:56 AMPARAMETER (METHOD, REPORTING LIMIT)		<u>Date Recei</u> 8/17/20	Time Received 12:15 PM	Temp 2	BOTTLE	
		DATE & TIME AN	RESULTS	BY		
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		0.184 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		8/19/2010	0832	0.100 mg/L	EM	в
Гotal Iron (EPA 6010, 50 µg/L)		8/27/2010	1515	351 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Date SampledTime SampledDate ReceivedTime Received9/21/201010:14 AM9/21/20101:25 PM		
	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT) DATE & TIME ANALYZED RESULTS	BY	BOTTLE
Total Phosphorus (EPA 365.3, 0.005 mg/L) 9/28/2010 0.035 mg/L	*	A
Orthophosphate (EPA 365.1, 0.01 mg/L) 9/22/2010 1003 0.017 mg/L	EM	в
Chlorophyll A (SM 10200 H. 1μg/L) 10/7/2010 92 μg/L		С

#### Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

12/8

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

> NCO 12/4/10

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-121	Project Name 205	Sample Location Pleasant Bottom	Outipica by			
Date SampledTime Sampled9/21/201010:14 AM		<u>Date Receiv</u> 9/21/201	Time Received 1:25 PM	<u>Temp</u> 6		
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	9/28/2010 0.436 mg/L		0.436 mg/L	*	Α
Orthophosphate (EPA 365.1, 0.01 mg/L) Total Iron (EPA 6010, 50 μg/L)		9/22/2010	1003	0.414 mg/L	EM	в
		10/11/2010	1336	565 μg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Water

Inc.

P.O Box 481, Annandale, MN 55302

Laboratories

Lab File Number W10F-153			Sample Location LSC Top Scott <u>Date Received</u> 6/22/2010		<u>Sampled By</u> Dennis Loewen		
Date Sampled       Time Sampled         6/22/2010       11:08 AM         PARAMETER (METHOD, REPORTING LIMIT)					<u>Time Received</u> 3:00 PM	<u>Temp</u> 8	BOTTLE
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZED			D RESULTS	BY	
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	(	6/30/2010		0.103 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		6/24/2010 1131 7/21/2010		1131	< 0.01 mg/L	EM	в
				122 μg/L		С	

Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Water

Inc.

P.O Box 481, Annandale, MN 55302

Laboratories

Lab File Number W10F-154	<u>Project Name</u> 205 LAKES			<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010Time Sampled 11:13 AMPARAMETER (METHOD, REPORTING LIMIT)		Date ReceivedTime Received6/22/20103:00 PM			<u>Temp</u> 8	
		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		0.537 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		6/24/2010	1131	0.383 mg/L	EM	в
Total Iron (EPA 6010	50 μg/L)	6/29/2010	1807	111 µg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

125/10

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Report Submitted By:

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-159	<u>Project Name</u> 205	Sample Location		Sampled By Dennis Loewen			
Date Sampled 7/21/2010	Time Sampled 6:30 AM	Date ReceivedTime Received7/21/20102:15 PM		ceived	<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	ВΥ	BOTTLE	
Total Phosphorus (Ef	PA 365.3, 0.005 mg/L)		7/29/2010		0.185 mg/L	*	Δ
Orthophosphate (EPA 365.1, 0.01 mg/L)		7/22/2010 0901		0901	0.0976 mg/L	EM	B
Chlorophyll A (SM 10	<u>200 Н, 1µg/L)</u>		3/11/2010		<u>68 µg/L</u>	<u>*</u>	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-159 205		Sample Location Scott Top			Sampled By Dennis Loewen		
Date SampledTime Sampled7/21/20106:30 AM		Date Received 7/21/2010			<u>Temp</u> 5		
PARAMETERS,	PARAMETERS, METHOD, REPORTING LIMIT				RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.185 mg/L</u> 0.0976 mg/L	: EM	A
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		7/22/2	7/22/2010	0901			B
		<u>8/11/2010</u>		<u>68 µg/L</u>	•	C	

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110

(09) NCO 12/8/10



> Ne0 12/45

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

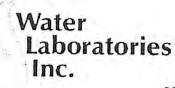
Lab File Number W10H-135	Project Name 205	Sample Location Scott Top	eattpied by			
Date SampledTime Sampled8/24/20106:57 AM		<u>Date Receiv</u> 8/24/201	Time Received 12:30 PM	Temp 2		
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)			0.085mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		8/25/2010	1059	0.018 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010		43 μg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: CHMM Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-136Project Name 205Date Sampled 8/24/2010Time Sampled 6:57 AMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location Scott Bottom		<u>Sampled By</u> Dennis Loewen		
		<u>Date Recei</u> 8/24/20 ⁻		Time Received 12:30 PM		
		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	9/2/2010		0.144 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L) Total Iron (EPA 6010, 50 μg/L)		8/25/2010	1059	0.088 mg/L	EM	в
		8/27/2010	1530	ND μg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

NCO 12/6/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-11b

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

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# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-146 205		Sample Location Scott Top	Sampled By Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 7:38 AM	Date Received 9/27/2010	Time Received 1:10 PM	<u>Temp</u> 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZEI	D RESULTS	ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	0.174mg/L	*	A
Orthophosphate (EP/	4 365.1, 0.01 mg/L)	9/28/2010 1031	0.124 mg/L	EM	в
Chlorophyll A (SM 10200 H, 1µg/L)		10/7/2010	30 µg/L		С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

> NLO 12/4/1

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number       Project Name         W10I-147       205         Date Sampled       Time Sampled         9/27/2010       7:38 AM         PARAMETER (METHOD, REPORTING LIMIT)		Sample Location Scott Bottom		<u>Sampled By</u> Dennis Loewen			
		<u>Date Recei</u> 9/27/20		Time ReceivedTemp1:10 PM6			
		DATE & TIME ANALYZED RESUL		RESULTS	BY	BOTTLE	
Fotal Phosphorus (El	PA 365.3, 0.005 mg/L)	10/4/2010		0.178 mg/L	*	A	
Опћорћоѕрћаtе (ЕРА 365.1, 0.01 mg/L) Гоtal Iron (ЕРА 6010, 50 µg/L)		9/28/2010	1031	0.134 mg/L	EM	в	
		10/11/2010	1205	189 µg/L	8-1	С	

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-117	Project Name P06-1 Lakes	Sample Location LSW Top Swartout Lake	<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010	Time Sampled 9:11 AM	Date Received 6/17/2010	Time Received 7:15 AM	Temp 7	BOTTLE
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALY	TIME ANALYZED RESULTS		BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/1/2010	0.275 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		6/17/2010 130	3 0.224 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	7/2/2010	3 µg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-118	<u>Project Name</u> P06-1 Lakes	Sample Location LSW Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/16/2010		<u>Date Rec</u> 6/17/2		Time Received 7:15 AM	Temp 7	A
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED RESULTS		ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/1/2010		0.421 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L)		6/17/2010	1303	0.258 mg/L	EM	в
Total Iron (EPA 6010	, 50 μg/L)	6/29/2010	1735	97.7 μg/L		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

125



12/8/10

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W 10G-056	Project Name 435	Sample Location Swartout Top		<u>Sampled By</u> Dennis Loewen			
<u>Date Sampled</u> 7/7/2010	Time Sampled 8:15 AM	Date Received 7/7/2010		Time Received 12:57 PM	Temp 5	BOTTLE	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED RESULTS		RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/22/2010		0.310 mg/L		A	
Orthophosphate (EPA 365.1, 0.01 mg/L)		7/7/2010	1653	0.272 mg/L	EM	в	
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		7 µg/L		С	

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-057 435		Sample Location Swartout Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/7/2010	Time Sampled 8:15 AM	Date Received 7/7/2010		Time Received 12:57 PM	<u>Temp</u> 5	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED RESULTS		BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	7/22/2010		0.366 mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L) Total Iron (EPA 6010, 50 μg/L)		7/7/2010	1653	0.330 mg/L	EM	в
		7/26/2010	1437	80.7 μg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135 T Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

17.18



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-001	Project Name (435)	Sample Location SWART 1		Sampled By DENNIS LOEWEN		
Date Sampled 8/2/2010	Time Sampled 1:40 PM	<u>Date Rec</u> 8/2/20	- and the second se	Time Received 2:40 PM	<u>Temp</u> 12	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME	ANALYZEI	D RESULTS	RESULTS BY	
Nitrite+Nitrate (EPA 3	353.2, 0.1 mg/L)	8/3/2010	1335	< 0.1 mg/L	MS	A
TKN (EPA 351.2, 0.2	mg/L)	8/23/2010	1537	2.74 mg/L	EM	в
Ammonia (EPA 350.1	, 0.02 mg/L)	8/24/2010	1209	0.135 mg/L	EM	в
Total Phosphorus (EF	PA 365.3, 0.005mg/L)	8/12/2010		0.581mg/L	*	в
Orthophosphate (EPA	300.0 Rev 2.1, 0.05 mg/L)	8/4/2010		0.126 mg/L		A
E. Coli (Quanti- Tray	1.0 MPN/100mL)	8/2/2010	1550	579.4 MPN/100mL	КК	С

Notes:

* * T. Phosphorus and Orthophosphate analyzed by MN# 027-035-135

12:0

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-002	Project Name (435)	Sample Location SWART 2		Sampled By DENNIS LOEWEN			
Date Sampled 8/2/2010	Time Sampled 1:30 PM	Date Rec 8/2/2		Time Received 2:40 PM	<u>Temp</u> 12		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME	ANALYZEI	D RESULTS	BY	BOTTLE	
Nitrite+Nitrate (EPA :	353.2, 0.1 mg/L)	8/3/2010	1335	< 0.1 mg/L	MS	A	
TKN (EPA 351.2, 0.2	mg/L)	8/23/2010	1537	2.19 mg/L	EM	в	
Ammonia (EPA 350.1	, 0.02 mg/L)	8/24/2010	1209	< 0.02 mg/L	EM	в	
Total Phosphorus (EF	PA 365.3, 0.005mg/L)	8/12/2010		0.366 mg/L	٠	В	
Orthophosphate (EPA	300.0 Rev 2.1, 0.05 mg/L)	8/4/2010		0.129 mg/L		A	
E. Coli (Quanti- Tray	1.0 MPN/100mL)	8/2/2010	1550	14.4 MPN/100mL	КК	С	

Notes:

* T. Phosphorus and Orthophosphate analyzed by MN# 027-035-135

12/50

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



NLA.+

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10H-093 435		Sample Location Swart Top	Sampled By Dennis Loewen		
	<u>Time Sampled</u> 9:17 AM	Date Received 8/17/2010	Time Received 12:15 PM	Temp 2	A
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZ	ED RESULTS	ВҮ	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010	0.477mg/L		A
Orthophosphate (EPA 365.1, 0.01 mg/L) Chlorophyll A (SM 10200 H, 1µg/L)		8/19/2010 0832	0.310 mg/L	EM	в
		9/7/2010	101 μg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

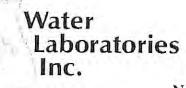
Lab File Number Project Name W10H-094 435		Sample Location Swart Bottom		<u>Sampled By</u> Dennis Loewen			
Date Sampled 8/17/2010	Time Sampled 9:17 AM	<u>Date Rece</u> 8/17/20	and the second se	Time Received 12:15 PM	<u>Temp</u> 2		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/23/2010		0.418 mg/L		A	
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	8/19/2010	0832	0.304 mg/L	EM	в	
Total Iron (EPA 6010	, 50 μg/L)	8/27/2010	1459	ND µg/L		С	

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



pc0

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10I-112435		Sample Location Swartout Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	Time Sampled 9:20 AM	<u>Date Receiv</u> 9/21/201		Time Received 1:25 PM	<u>Temp</u> 6	BOTTLE
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.258 mg/L	*	A
Orthophosphate (EP	A 365.1, 0.01 mg/L)	9/22/2010 100	1003 0.049 mg/L	0.049 mg/L	EM	в
Chlorophyll A (SM 10200 H, 1µg/L)		10/7/2010		3 µg/L	6.	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



12/4/10

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-113	Project Name 435	Sample Location Swartout Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/21/2010	Time Sampled 9:20 AM	<u>Date Receiv</u> 9/21/201		Time Received 1:25 PM	<u>Temp</u> 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.255 mg/L		A
Orthophosphate (EP)	A 365.1, 0.01 mg/L)	9/22/2010	1003	0.040 mg/L	EM	в
Total Iron (EPA 6010	. 50 μg/L)	10/11/2010	1129	55.3 µg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street

# **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Water

Inc.

P.O Box 481, Annandale, MN 55302

Laboratories

<u>Lab File Number</u> W10F-151	Project Name 205 LAKES	Sample Location LUn Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010	Time Sampled 10:23 AM	<u>Date Rec</u> 6/22/2		Time Received 3:00 PM	<u>Temp</u> 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		0.082 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	6/24/2010	1131	0.01 mg/L	EM	В
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010		11 μg/L		С

#### Notes:

Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

Pt. Box 338 EV River, MN 55330 Phime: (783) 441-7509 Fair: (763) 441-9176 Et all: h2lolao@spacestar.net Web Site: www.waterlabs.net

33 East Main Street

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Water

Inc.

P.O Box 481, Annandale, MN 55302

Laboratories

Lab File Number W10F-152	<u>Project Name</u> 205 LAKES	Sample Location LUn Bottom		<u>Sampled B</u> Dennis Los en		
Date Sampled 6/22/2010	Time Sampled 10:28 AM	<u>Date Rece</u> 6/22/20	and hereine was	Time Free Net: 3:10 First	<u>Temp</u> 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALVZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	6/30/2010	1 No. 6 State (1999) 489437	0.883 m".	8//1/ NO 100/18/19/2016/19/2	A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	6/24/2010	1131	0.754 roc/.	EM	в
Total iron (EPA 6010	, 50 μg/L)	6/29/2010	1602	70.8 ug/.		С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethal Marmaria 1 atia



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-157	Project Name 205	Sample Location Union Top	<u>1</u>		Sampled B Dennis Loe	-	
Date Sampled 7/21/2010	<u>Time Sampled</u> 7:37 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS, M	METHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		0.027 mg/L	*	A
Orthophosphate (EP)	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	0.0191 mg/L	EM	B
Chlorophyll A (SM 10	200 H. 1µg/L)		8/11/2010		<u>9 µg/L</u>	*	<u>C</u>

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-158	<u>Project Name</u> 205	Sample Location	1		<u>Sampled B</u> Dennis Loe		
Date Sampled 7/21/2010	<u>Time Sampled</u> 7:37 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS,	IETHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		0.863 mg/L	*	A
Orthophosphate (EP)	<u>A 365.1. 0.01 mg/L)</u>		7/22/2010	0901	0.780 mg/L	EM	B
Total Iron (EPA 200.)	7 <u>, 50 μg/L)</u>		8/2/2010	1632	<u>125 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

AD 2/25/10

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

# Water Laboratories Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-157	Project Name 205	Sample Location Union Top	<u>)</u>		<u>Sampled B</u> Dennis Loe		
Date Sampled 7/21/2010	Time Sampled 7:37 AM	Date Received 7/21/2010	Time Rei 2:15 PM	ceived	Temp 5		
PARAMETERS,	METHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		0.027 mg/L	*	A
Orthophosphate (EP)	A 365.1, 0.01 mg/L)		7/22/2010	0901	0.0191 mg/L	EM	B
Chlorophyll A (SM 10	200 H. 1µg/L)		B/11/2010		<u>9 µg/L</u>	*	C

Notes:

* Total Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCO 12/4/10

# Water Laboratories Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

<u>Lab File Number</u> W10G-158	Project Name 205	Sample Location	1		<u>Sampled B</u> Dennis Loe		
Date Sampled 7/21/2010	Time Sampled 7:37 AM	Date Received 7/21/2010	<u>Time Re</u> 2:15 PM	ceived	Temp 5		
PARAMETERS,	METHOD, REPORTING LIMIT	DAT	E & TIME A	NALYZED	RESULTS	BY	BOTTLE
Iotal Phosphorus (El	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.863 mg/L</u>	t:	Α
Orthophosphate (EP	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	0.780 mg/L	EM	B
Total Iron (EPA 200.3	7 <u>, 50 µg/L)</u>		8/2/2010	1632	<u>125 µg/L</u>	**	C

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

** T. Iron Tested by MN Lab # 027-053-137

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-137	Project Name 205	Sample Location Union Top		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	<u>Time Sampled</u> 7:34 AM	<u>Date Receiv</u> 8/24/201		Time Received 12:30 PM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		0.019 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	8/25/2010	1059	< 0.01 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	9/7/2010		11 μg/L		С

Notes:

T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

12/4/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

Water Laboratories Inc. 333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-138	<u>Project Name</u> 205	Sample Location Union Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/24/2010	<u>Time Sampled</u> 7:34 AM	<u>Date Receiv</u> 8/24/201		Time Received 12:30 PM	Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	IALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/2/2010		1.11 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	8/25/2010	1059	1.11 mg/L	EM	В
Total Iron (EPA 6010	. 50 μg/L)	8/27/2010	1543	134 µg/L		С

Notes:

T. Phosphorus tested by MN Lab # 027-035-135

T. Iron Tested by MN Lab # 027-053-137

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

Water Laboratories Inc. 333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

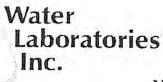
Lab File Number W10I-148	Project Name 205	Sample Location Union Top		ampled By ennis Loewen		
Date Sampled 9/27/2010	Time Sampled 8:18 AM	<u>Date Receive</u> 9/27/2010		ime Received 1:10 PM	<u>Temp</u> 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANA	LYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/4/2010	19	0.068 mg/L		A
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	9/28/2010 1	031	0.020 mg/L	EM	в
Chlorophyll A (SM 10	200 H, 1µg/L)	10/7/2010		33 µg/L	٠	С

Notes:

*T. Phosphorus and Chlorophyll a tested by MN Lab # 027-035-135

120

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-149	Project Name 205	Sample Location Union Bottom		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 8:18 AM	<u>Date Rece</u> 9/27/20		Time Received 1:10 PM	<u>Temp</u> 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	RESULTS	BY	BOTTLE
otal Phosphorus (El	PA 365.3, 0.005 mg/L)	10/7/2010		1.51 mg/L		A
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	9/28/2010	1031	1.48 mg/L	EM	в
fotal Iron (EPA 6010,	50 μg/L)	10/11/2010	1210	270 µg/L	**	С

Notes:

*T. Phosphorus tested by MN Lab # 027-035-135

**T. Iron Tested by MN Lab # 027-053-137

2016

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

# RAUN INTERTEC

11001 Hampshire Ave. S. Minneapolis, MN 55438 952.995.2000 Phone 952.995.2020 Fax

Wenck Associates, Inc.	Client Ref: [none]	Work Order #: 1001282
1800 Pioneer Creek Center P.O. Box 249	Client Contact: Mr. Wes Boll	Project Mgr: Steven J. Albrecht
Maple Plain, MN 55359-0249	PO Number:	Account ID: W02540

#### CR 28.2 1001282-01 (Water) 3/18/10 9:30

#### **Classical Chemistry Parameters**

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Orthophosphate as P	0.23	0.012	mg/L	2	B0C0317	3/19/10	3/19/10	EPA 365.3	
Phosphorus, Total as P	0.28	0.010	mg/L	1	B0C0365	3/24/10	3/26/10	EPA 365.3	

\$2/24/10



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#### **NON-POTABLE WATER TEST REPORT**

#### WENCK ASSOCIATES (CRWD)

Lab File Number W10D-022	Project Name 0002-129	<u>Sample L</u> CR 28.2	ocation		<u>led By</u> IIS LOEWEN		
Date Sampled 4/6/2010	<u>Time Sampled</u> 8:55 AM	<u>Date Received</u> 4/6/2010	Time Received 10:30 AM	<u>d Ter</u>			
PARAMETERS, M	ETHOD, REPORTING	i LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
TSS.	(USGS I-3765-85)	. (1.0 mg/L)	4/8/2010	1410	2.0mg/L	KK	B
Orthophosphate,	(EPA 365.1 Rev 2.0	), (0.01 mg/L)	4/7/2010	<u>1218</u>	0.0543 mg/L	EM	B

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

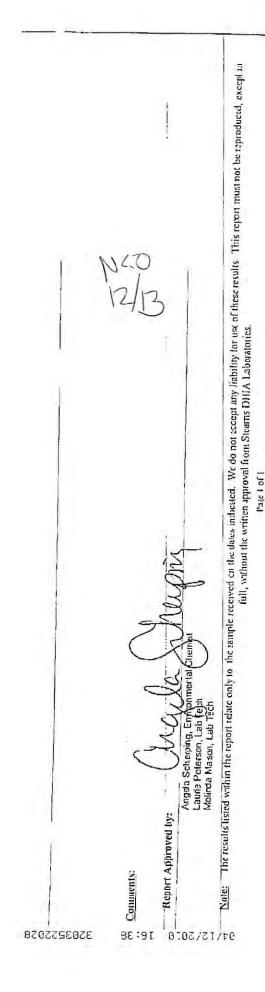
PAGE 04/06

Stearns DHIA Laboratories MN.-ab 10# 027-145-378

**Report of Analysis** 

825 12h SI. So, P O Bcx 227, Sauk Centre, MY 56378-0227 320.552 2028 Prione 800.369.2697 Tali Frae 320.352.6163 Fax Ermait: Ermait: stearnishtialab@stearnsthialab.com

Name:	WATER LABORATORY INC PO BOX 388 ELK RIVER, MN 55330		Sample ID/Invoice #: 076878 Account #: 004188 Internal ID#: 90919 Sample Type: Water Cliant Connel III. 111200	oice #: m.	076878 004188 90919 Water			
Report Date: Date:	4/12/2010 4/12/2010		Sample Date: Sampler: Receipt Date: Receipt Temp:	i	4/6/2010 8:55 AM D.L. 4/6/2010 11:55 AM	M		
	Analyte	Approved Method	Reporting Si Limit F	Sample Result	Units	Sample Prep Date/Time	Anzlysis Date/Time	Analyst
10 4								
E. COI	E. COLI (QUARIT- Iray)	Colilert Quanti-Tray	1	7.4	MPN/100mL	4/06/2010 12:50	MPN/100mL  4/06/2010 12:50 4/06/2010 12:55	COLUMN 1
Phosph	Pliosphorous, Total	EPA 365.3	0.005	0.166	l/om		00 C0 010C/001F	_



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### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-093	Project Name	Sample CR 28.2	Location		ampled By ENNIS LOEWEN		
Date Sampled 4/19/2010	<u>Time Sampled</u> 8:41 AM	Date Received 4/19/2010	<u>Time Receive</u> 9:50 AM	d	Temp 7		
PARAMETERS, M	ETHOD, REPORTING	G LIMIT	DATE & TIME A	NALYZ	ED RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.	<u>0), (0.01 mg/L)</u>	4/22/1010	1545	0.0549 mg/L	EM	A
TSS,	(USGS 1-3765-85)	. (1.0 mg/L)	4/22/1010	1600	2.25 mg/L	EM	A
Total Phosphorus,	(EPA 365.4 Rev.	2.0), (0.1 mg/L)	4/22/2010	0340	0.099 mg/L		B
E. COLI (QUANTI-TF	AY)		4/20/2010	1200	13.5 MPN/100mL	1	C
						7	

#### Notes:

Total Phosphorus and E. coli performed by MN Lab # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director

Althel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-003	Project Name	Sample Location CR 28.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	pled By NIS LOWEN		
Date Sampled 5/3/2010	Time Sampled 7:56 AM	Date Receive 5/3/2010		<u>e Received</u> 10:15 AM	<u>Temp</u> 5	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME	ANALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 m	<u>5/5/2010</u>	1148	0.0519 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mc	<u>/L) 5/6/2010</u>	1630	< 1.0 mg/L	EM	A
Total Phosphorus,	(EPA 365.4 Rev. 2.0), (0.1 mg	<u>(L) 5/6/2010</u>	<u>1615</u>	0.11 mg/L		B
E. COLI	(Quanti-Tray, 1 MPN/100mL)	<u>5/3/2010</u>	<u>1130</u>	34.4 MPN/100mL	<u>EM</u>	<u>C</u>

Notes:

Total Phosphorus done by MN Lab # 027-145-378

The test results are only indicative of the sample tested from the sample point on the date collected.

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

228/2-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-075	Project Name	Sample Location CR 28.2		Sampled By DENNIS LOEWEN		
Date Sampled 5/17/2010	Time Sampled 6:40 AM	Date Rece 5/17/20		Time Received 8:10 AM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray,	1.0 MPN/100mL)	5/17/2010	0930	15.0 MPN/100mL	EM	C
TSS (USGS 1-3765-8	35, 1.0 mg/L)	5/20/2010	1710	<u>1.5 mg/L</u>	EM	B
Orthophosphate (EPA	<u>A 365.1, 0.01 mg/L)</u>	5/20/2010	1603	0.0351 mg/L	EM	B
Total Phosphorus (EF	PA 365.4, (0.05 mg/L)	5/27/2010		0.072 mg/L		A

Notes:

T. Phosphorus analyzed by MN LAB # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

10 ADON

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-003	Project Name	Sample Location CR 28.2		Sampled By DENNIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 8:04 AM	<u>Date Rece</u> 6/1/20		<u>Time Received</u> 10:00 AM	Temp 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
Orthophosphate (EP.	A 365.1, 0.01 mg/L)	6/2/2010	1200	0.140 mg/L	EM	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	6/3/2010	1630	< 1.0 mg/L	EM	А
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/7/2010		0.232 mg/L		в
E. Coli (Quanti-Tray,	1.0 MPN/100mL)	6/1/2010	1220	28.8 MPN/100mL	EM	С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

<u>Project Name</u> 205	Sample Location CR 28.2		Sampled By Dennis Loewen		
Time Sampled 6:45 AM			Time Received 8:30 AM	<u>Temp</u> 4	
THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	ВҮ	BOTTLE
PA 365.3, 0.005 mg/L)	6/30/2010		0.261 mg/L		A
A 365.1, 0.01 mg/L)	6/22/2010	1031	0.186 mg/L	EM	в
35, 1.0 mg/L)	6/24/2010	1500	2.75 mg/L	EM	в
1.0 MPN/100mL)	6/21/2010	1100	16.8 MPN/100mL	EM	С
	205 Time Sampled	205         CR 28.2           Time Sampled 6:45 AM         Date Rec 6/21/2           THOD, REPORTING LIMIT)         DATE & TIME A           PA 365.3, 0.005 mg/L)         6/30/2010           A 365.1, 0.01 mg/L)         6/22/2010           35, 1.0 mg/L)         6/24/2010	205         CR 28.2           Time Sampled 6:45 AM         Date Received 6/21/2010           THOD, REPORTING LIMIT)         DATE & TIME ANALYZE           PA 365.3, 0.005 mg/L)         6/30/2010           A 365.1, 0.01 mg/L)         6/22/2010         1031           35, 1.0 mg/L)         6/24/2010         1500	Z05         CR 28.2         Dennis Loewen           Time Sampled 6:45 AM         Date Received 6/21/2010         Time Received 8:30 AM           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           PA 365.3, 0.005 mg/L)         6/30/2010         0.261 mg/L           A 365.1, 0.01 mg/L)         6/22/2010         1031         0.186 mg/L           35, 1.0 mg/L)         6/24/2010         1500         2.75 mg/L	ZO5         CR 28.2         Dennis Loewen           Time Sampled 6:45 AM         Date Received 6/21/2010         Time Received 8:30 AM         Temp 4           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS         BY           PA 365.3, 0.005 mg/L)         6/30/2010         0.261 mg/L           A 365.1, 0.01 mg/L)         6/22/2010         1031         0.186 mg/L         EM           35, 1.0 mg/L)         6/24/2010         1500         2.75 mg/L         EM

Notes:

Total Phosphorus done by MN Lab # 027-035-135

AD /20/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-018	Project Name 205	Sample Location CR 28.2		Sampled By Dennis Loewen		
Date Sampled 7/6/2010	Time Sampled 7:25 AM	<u>Date Rece</u> 7/6/20 ⁻		Time Received 9:10 AM	<u>Temp</u> 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/20/2010		0.962 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	7/7/2010	1800	7.5 mg/L	EM	в
Orthophosphate (EP)	A 365.1, 0.01 mg/L)	7/7/2010	1601	0.619 mg/L	EM	в
E. Coli (Quanti-Tray,	1.0 MPN/100mL)	7/6/2010	1030	461.1 MPN/100mL	EM	С

Notes:

Total Phosphorus done by MN Lab # 027-035-135

1/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-050	Project Name 205	Sample Location CR 28.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/10/2010	Time Sampled 7:35 AM	<u>Date Rec</u> 8/10/2		Time Received 10:30 AM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME	ANALYZED	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/19/2010		1.74 mg/L	*	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	8/19/2010	1700	32.5 mg/L **	EM	в
Orthophosphate (EP/	A 300.0 Rev 2.1, 0.05 mg/L)			0.602 mg/L+	*	в
E. coli (Quanti-Tray,	1.0 MPN/100mL)	8/10/2010	1350	1011.2MPN/100 ml	кк	С

Notes:

* Total Phosphorus & Orthophosphate done by MN Lab # 027-035-135

**TSS re-run on 8/19/10.

+ Sample analyzed past the holding time.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-048	Project Name 205 STREAMS	Sample Location CR 28.2		Sampled By Dennis Loewen		
Date Sampled 9/13/2010	Time Sampled 8:30 AM	Date Rec 9/13/2		Time Received 11:25 AM	Temp 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.200 mg/L	*	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	9/16/2010	1730	2.0 mg/L	EM	В
Orthophosphate (EP/	A 300.0 Rev 2.1, 0.05 mg/L)	9/14/2010	0841	0.177 mg/L	EM	в
E. Coli (Quanti-Tray,	1.0 MPN/100mL)	9/13/2010	1200	162.4 MPN/100mL	EM	С

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

# Water Laboratories Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P O Box 481, Annandale, MN 55302

<u>Lab File Number</u> W10J-024	<u>Project Name</u> 205 STREAMS	Sample Location CR 28.2		Sampled By Dennis Loewen		
Date Sampled 10/5/2010	Time Sampled 10:50 AM	Date Rec. 10/5/2	and the second se	Time Received 1:35 PM	Temp 4	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3. 0.005 mg/L)	10/14/2010		0.180 mg/L		A
TSS (USGS 1-3765-6	35, 1.0 mg/L)	10/7/2010	1700	7.0 mg/L	EM	в
Orthophosphate (EP	A 300.0 Rev 2.1, 0.05 mg/L)	10/6/2010	1227	0.140 mg/L	EM	В
E. Coli (Quanti-Tray,	1.0 MPN/100mL)	10/5/2010	1400	144.5 MPN/100mL	EM	С

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027 141-110



#### **NON-POTABLE WATER TEST REPORT**

#### WENCK ASSOCIATES (CRWD)

Lab File Number W10D-024	Project Name 0002-129	<u>Sample L</u> CR 10.5			<u>led By</u> IIS LOEWEN		
Date Sampled 4/6/2010	Time Sampled 10:00 AM	Date Received 4/6/2010	Time Received 10:30 AM	<u>d Ter</u> t			
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
TSS,	(USGS 1-3765-85)	. (1.0 mg/L)	4/8/2010	<u>1410</u>	2.75 mg/L	<u>KK</u>	B
Orthophosphate,	(EPA 365.1 Rev 2.0	)) <u>, (0.01 mg/L)</u>	4/7/2010	<u>1218</u>	0.0120mg/L	EM	B

Notes:

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110

880 188 21 21 187 167 2010 10:00 A 2010 11:55 A 2010 11:55 A 2010 11:55 A	
c Approved Method Reporting Sample Units Limit Result EPA 365.3 0.005 0.161 mg/L	2 2
EPA 365.3 0.005 0.167	Sample Prep Analysis Analysi Date/Time Date/Time
	0100/00/1
-0-/13	

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#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

<u>Lab File Number</u> W10E-005	Project Name	ect Name Sample L CR 10.5		Dennis Lowen			
Date Sampled 5/3/2010	<u>Time Sampled</u> 8:51 AM	Date Received 5/3/2010	<u>Time Receiv</u> 10:15 AM	red	<u>Temp</u> 5		
PARAMETERS, M	PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME	DATE & TIME ANALYZED RESULTS		BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.	0), (0.01 mg/L)	5/5/2010	1148	0.0222 mg/L	EM	A
TSS.	(USGS 1-3765-85)	<u>, (1.0 mg/L)</u>	5/6/2010	1630	< 1.0 mg/L	EM	A
Total Phosphorus,	(EPA 365.4 Rev.	2.0), (0.1 mg/L)	5/6/2010	<u>1615</u>	<u>0.056 mg/L</u>		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-005		Sample Location CR 10.5		Sampled By DENNIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 9:18 AM	Date Rec 6/1/2		Time Received 10:00 AM	<u>Temp</u> 3	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME	D RESULTS	BY	BOTTLE	
Orthophosphate (EP.	A 365.1, 0.01 mg/L)	6/2/2010	1200	< 0.01 mg/L	EM	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	6/3/2010	1630	< 1.0 mg/L	EM	A
Total Phosphorus (EPA 365.3, 0.005 mg/L)		6/7/2010		0.033 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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Report Submitted By:

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-020 205		Sample Location CR 10.5		<u>Sampled By</u> Dennis Loewen		
Date SampledTime Sampled7/6/20108:25 AM		<u>Date Rec</u> 7/6/2	Time Received 9:10 AM	<u>Temp</u> 3		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME	D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/20/2010	100	0.034 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	7/7/2010	1800	1.0 mg/L	EM	в
Orthophosphate (EP/	A 365.1, 0.01 mg/L)	7/7/2010	1653	0.0136 mg/L	EM	в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

Wate Labo Inc. CRWD (Wenck As P.O Box 481, Anna	NON-POT SSOCIATES. Inc.)	<u>able w</u>	CR 10,	1	Phone: Fax: Email: h2 Web Site:	88 MN 55330 (763) 441-750 (763) 441-917 olab@spacest www.waterlat	6 ar.net
Lab File Number W10H-052	Project Name 205	Sample L CRI0.5	ocation		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/10/2010	Time Sampled 9:30 AM		Date Rec 8/10/2		Time Received 10:30 AM	<u>Temp</u> 2	
PARAMETER (MET	HOD, REPORTING LIMIT)	D.	DATE & TIME ANALYZED RESULTS			ВҮ	BOTTLE
Total Phosphorus (EP	PA 365.3, 0.005 mg/L)		8/16/2010		0.028 mg/L	*	A
TSS (USGS 1-3765-8	5, 1.0 mg/L)		8/19/2010	1700	< 1.0 mg/L**	EM	в
Orthophosphate (EPA	300.0 Rev 2.1, 0.05 mg/L)		8/12/2010		< 0.05 mg/L+	*	В
						NILT	С

Notes:

* Total Phosphorus & Orthophosphate done by MN Lab # 027-035-135

+ Sample analyzed past the holding time.

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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# Water Laboratories Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-050 205 STREAMS		Sample Location CR 10.5				
Date SampledTime Sampled9/13/201010:15 AM		<u>Date Receiv</u> 9/13/201	Time ReceivedTemp11:25 AM8			
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME AN	D RESULTS	BY	BOTTLE	
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	9/28/2010		0.027 mg/L	*	A
TSS (USGS 1-3765-85, 1.0 mg/L) Orthophosphate (EPA 300.0 Rev 2.1, 0.05 mg/L)		9/16/2010	1730	2.0 mg/L	EM	в
		9/14/2010 0841		< 0.01 mg/L	EM	в

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Th Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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# Water Laboratories Inc.

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#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10J-026205 STREAMS		Sample Location CR 10.5		Sampled By Dennis Loewen		
Date Sampled 10/5/2010	Time Sampled 12:35 PM	<u>Date Rec</u> 10/5/2	Time ReceivedTemp1:35 PM4			
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME #	D RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	10/14/2010		0.022 mg/L		A
TSS (USGS 1-3765-85, 1.0 mg/L)		10/7/2010	1700	1.0 mg/L	EM	в
Orthophosphate (EPA 300.0 Rev 2.1. 0.05 mg/L)		10/6/2010 1227		0 014 mg/L	EM	В

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: In Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027 141-110



#### **NON-POTABLE WATER TEST REPORT**

#### WENCK ASSOCIATES (CRWD)

Lab File NumberProject NameW10D-0250002-129		Sample Location CR 0.1		Sampled By DENNIS LOEWEN		
Date Sampled 4/6/2010	<u>Time Sampled</u> 10:20 AM	Date Received 4/6/2010	Time Received 10:30 AM	<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED RESULTS		LTS BY	BOTTLE	
E COLI (QUANTI-TR	AY)		<u>4/6/2010 1</u>	255 3.1 MPN/1	100mL	A

Notes:

SAMPLE ANALYZED BY MN LAB # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

#### WENCK ASSOCIATES (CRWD)

<u>Lab File Number</u> W10D-057			Sample Location CR 0.1		Sampled By DENNIS LOEWEN		
Date Sampled 4/12/2010	<u>Time Sampled</u> 10:00 AM	Date Received 4/12/2010	Time Received	l <u>Ter</u> (			
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME AI	NALYZED	RESULTS	BY	BOTTLE	
E COLI (QUANTI-TR	AY)		4/13/2010	1235	2 MPN/100mL		A

Notes:

SAMPLE ANALYZED BY MN LAB # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10D-094		Sample CR 0.1	Sample Location CR 0.1			
Date Sampled 4/19/2010	Time Sampled 8:37 AM	Date Received 4/19/2010	Time Received 9:50 AM	<u>Temp</u> 7		
PARAMETERS, METHOD, REPORTING LIMIT			DATE & TIME ANA	LYZED RESULTS	BY	BOTTLE
<u>E. COLI (QUANTI-TF</u>	AY)		4/20/2010 1	200 <u>1 MPN/100mL</u>		A

Notes:

Analysis was performed by MN Lab # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10E-006		Sample Location CR 0.1		Sampled By DENNIS LOEWEN		
Date Sampled 5/3/2010	<u>Time Sampled</u> 9:26 AM	Date Received 5/3/2010	Time Received 10:15 AM	<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT			DATE & TIME ANA	BY	BOTTLE	
<u>E. COLI (QUANTI-TF</u>	RAY, 1MPN/100m/L)		<u>5/3/2010 11</u>	30 23.8 MPN/100mL	<u>EM</u>	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-042	Project Name	<u>Sample L</u> CR DAM	CRON <u>Time Received</u> 8:00 AM	<u>Sampled By</u> K. KLOEPPNER			
Date Sampled 5/10/2010	Time Sampled 6:15 AM	Date Received 5/10/2010		Temp 7	Ð		
PARAMETERS, METHOD, REPORTING LIMIT			DATE & TIME ANAL	LYZED RESULTS		BY	BOTTLE
E. COLI	<u>(QUANTI-TRAY, 1 N</u>	<u>/IPN/100mL)</u>	<u>5/10/2010 101</u>	<u>5 12.4</u>	MPN/100mL	EM	A
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Notes:							
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Report Submitted By: <u>Jul</u> Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-076	Project Name	Sample Location CR 0.1	the second se	<u>oled By</u> NIS LOEWEN		
Date Sampled 5/17/2010	Time Sampled 7:20 AM	Date Received 5/17/2010	-	<u>e Received</u> 8:10 AM	<u>Temp</u> 6	
PARAMETERS, MI	ETHOD, REPORTING LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
E. COLI	(QUANTI-TRAY, 1 MPN/100mL)	5/17/2010	0930	34.4 MPN/100mL	EM	A

Notes:

to tryle

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-006	Project Name	Sample Location CR 0.1	Down Total	<u>oled By</u> NIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 9:45 AM	Date Received 6/1/2010	-	<u>e Received</u> 10:00 AM	<u>Temp</u> 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME 4	ANALYZED	RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	I.0 MPN/100mL)	<u>6/1/2010</u>	<u>1220</u>	55.0 MPN/100mL	<u>EM</u>	Δ

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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Report Submitted By: <u>Charles 1/1</u> Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-053	<u>Project Name</u> 205	Sample Location CR 0.1		Sampled By Dennis Loewen		
Date Sampled 8/10/2010	Time Sampled 9:56 AM	<u>Date Rec</u> 8/10/2		Time Received 10:30 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME	ANALYZEI	D RESULTS	вү	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	8/10/2010	1350	149.1 MPN/100mL	КК	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10J-128	Project Name	Sample Location CR 0.1	<u>Sampled By</u> KK		
Date Sampled 10/20/2010	Time Sampled 9:10 AM	Date Received 10/20/2010	<u>Time Received</u> 9:45 AM	<u>Temp</u> 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZE	D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	10/20/2010 1230	12.4 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110/

Laboratories

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 (763) 441-9176 Fax: Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Water

Inc.

Lab File Number W10F-086	Project Name	Sample Location CLEARWATER DAM	CRO.I	<u>Sampled By</u> KEVIN KLOEPPNER		
Date Sampled 6/16/2010	<u>Time Sampled</u> 7:00 AM	<u>Date Re</u> 6/16,	eceived /2010	Time Received 8:00 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	ANALYZE	D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	6/16/2010	0900	165.2 MPN/100mL	EM	Α

Notes:

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-132	<u>Project Name</u> 205	Sample Location CR 0.1		<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/21/2010	Time Sampled 7:30 AM		<u>eceived</u> /2010	Time Received 8:30 AM	<u>Temp</u> 4	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	6/21/2010	1100	59.4 MPN/100mL	EM	A

Notes:

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-021	Project Name 205	Sample Locat CR 0.1	tion		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/6/2010	Time Sampled 9:00 AM		Date Rec 7/6/2		Time Received 9:10 AM	<u>Temp</u> 3	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZ		ANALYZED	RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	7/	6/2010	1030	90.8 MPN/100mL	EM	A

Notes:

Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110 1



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-082	Project Name	Sample Location Clearwater Dam		Sampled By Kevin Kloepnner		
Date Sampled 7/13/2010	Time Sampled 8:30 AM	Date Rect 7/13/2	eived	Time Received 9:00 AM	<u>Temp</u> 4	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZE		RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	7/13/2010	1120	35.5 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-125	Project Name	Sample Location Clearwater Dam	<u>Sampled By</u> Kevin Kloeppner		
Date Sampled 7/20/2010	Time Sampled 10:30 AM	<u>Date Received</u> 7/20/2010	Time Received 12:15 PM	Temp 4	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANAL	YZED RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	7/20/2010 13	10 50.5 MPN/100mL	EM	А

Notes:

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-114	Project Name	Sample Location Clearwater Dam	CRO.I	<u>Sampled By</u> Kevin Kloeppner		- 1/Ma
Date Sampled 8/19/2010	Time Sampled 11:10 AM		Received /19/2010	Time Received 11:45 AM	Temp 5	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & T	ME ANALYZE	D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	8/19/20	10 1250	65.0 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-122	Project Name	Sample Location Clearwater Dam	0.1	<u>Sampled By</u> Kevin Kloeppner		
Date Sampled 8/24/2010	Time Sampled 7:25 AM	Date Rec 8/24/2	the second s	Time Received 8:00 AM	<u>Temp</u> 5	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME /	ANALYZED	RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	8/24/2010	1245	130.4 MPN/100mL	EM	A

Notes:

VI is Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AD, 1/18/10

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## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

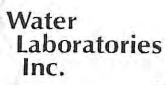
P.O Box 481, Annandale, MN 55302

Lab File Number W10I-126	Project Name	Sample Location Clearwater Dam C.R.O.		Sampled By Sevin Kloeppner		
Date Sampled 9/22/2010	Time Sampled 5:30 AM	<u>Date Rece</u> 9/22/20		<u>Time Received</u> 6:00 AM	Temp 6	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZE		RESULTS	BY	BOTTLE
E. coli (Quanti-Tray,	1.0 MPN/100mL)	9/22/2010	0815	65.9 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10J-091	Project Name	Sample Location CLEARWATER DAM CROI	Sampled By KK		
Date Sampled 10/14/2010	Time Sampled 9:05 AM	Date Received 10/14/2010	<u>Time Received</u> 9:35 AM	Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALYZE	D RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	10/14/2010 1010	27.1 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

18/10



### **NON-POTABLE WATER TEST REPORT**

WENCK ASSOCIATES (CRWD)

Lab File Number W10D-023	Project Name 0002-129	<u>Sample I</u> WR 0.2	ocation	Samp DENN	<u>led By</u> IS LOEWEN		
Date Sampled 4/6/2010	Time Sampled 9:30 AM	Date Received 4/6/2010	Time Received	<u>t Ter</u> t			
PARAMETERS, M	ETHOD, REPORTING		DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
TSS,	(USGS I-3765-85)	(1.0 mg/L)	4/8/2010	1410	6.0 mg/L	<u>KK</u>	B
Orthophosphate,	(EPA 365.1 Rev 2.0	)), (0.01 mg/L)	4/7/2010	<u>1218</u>	<u>0.0166 mg/L</u>	EM	B

Notes:

Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

	LABORATORIES
90/60	PAGE

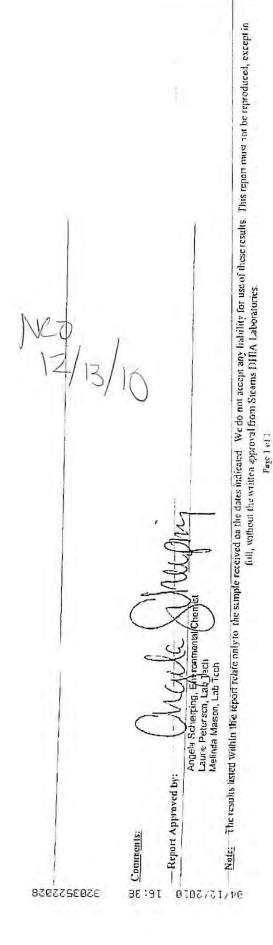
# Stearns DHIA Laboratories MN Lab ID# 027-145-278

825 12th St. So., P O Box 227, Sauk Centre, MN 56378-0227 320.352 2028 Ptome 800.369 2697 Tcil Free 320.352 6163 Fax Ermait: Ermait: sleamsdhialab@slearnsdhialab.com

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ELK RIVER, MN 55330 4/12/2010 4/12/2010	WAILER LABORATORY INC PO BOX 388 ELK RUVER, MN 55330 1/12/2010 1/12/2010	Account #: Account #: Internal ID#: Sample Type Client Sample D: Sample Date: Sampler: Receipt Date: Receipt Temp:	D: 01	0.6879 004188 90920 Water W10D023 4/6/2010 9:30 AM D.L. D.L. 6"C	M	
	Approved Method	Receipt Te	-	6'C		
		kepurung Limit	Result	Units	es e	Sample Prep Date/Time
	EPA 365.3	0.005	0.122	l/att		

X





## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-004	Project Name	Sample WR 0.2	Location	-	Sampled By DENNIS LOWEN		
<u>Date Sampled</u> 5/3/2010	Time Sampled 8:27 AM	Date Received 5/3/2010	Time Receiv 10:15 AM	red	<u>Temp</u> 5		
PARAMETERS, M	ETHOD, REPORTING		DATE & TIME	ANALYZ	ZED RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.	<u>0), (0,01 mg/L)</u>	5/5/2010	<u>1148</u>	0.0257 mg/L	EM	A
TSS,	(USGS 1-3765-85)	<u>, (1.0 mg/L)</u>	5/6/2010	1630	3.25 mg/L	EM	A
Total Phosphorus,	(EPA 365.4 Rev.	2.0), (0.1 mg/L)	5/6/2010	<u>1615</u>	<u>0.084 mg/L</u>		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-004	Project Name	Sample Location WR 0.2		Sampled By DENNIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 8:45 AM	<u>Date Rec</u> 6/1/2		<u>Time Received</u> 10:00 AM	Temp 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME	ANALYZE	D RESULTS	BY	BOTTLE
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/2/2010	1200	< 0.01 mg/L	EM	A
TSS (USGS 1-3765-8	5, 1.0 mg/L)	6/3/2010	1630	3.25 mg/L	EM	А
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/7/2010		0.048 mg/L		В

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-019	Project Name 205	Sample Location WR 0.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/6/2010	<u>Time Sampled</u> 8:00 AM	<u>Date Rece</u> 7/6/20		Time Received 9:10 AM	<u>Temp</u> 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	7/20/2010		0.124 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	7/7/2010	1800	12.5 mg/L	EM	в
Orthophosphate (EP4	A 365.1, 0.01 mg/L)	7/7/2010	1601	0.0279 mg/L	EM	в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-051	<u>Project Name</u> 205	Sample Location WR 0.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/10/2010	Time Sampled 8:45 AM	<u>Date Rece</u> 8/10/20		Time Received 10:30 AM	<u>Temp</u> 2	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	VALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/16/2010		0.096 mg/L	*	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	8/19/2010	1700	9.5 mg/L**	EM	в
Orthophosphate (EP)	A 300.0 Rev 2.1, 0.05 mg/L)	8/12/2010		< 0.05 mg/L+	14.1	В

Notes:

* Total Phosphorus & Orthophosphate done by MN Lab # 027-035-135

**TSS re-run on 8/19/10.

+ Sample analyzed past the holding time.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-049	Project Name 205 STREAMS	Sample Location WR 0.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/13/2010	Time Sampled 9:45 AM	<u>Date Rec</u> 9/13/2		Time Received 11:25 AM	<u>Temp</u> 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	9/28/2010		0.071 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	9/16/2010	1730	2.5 mg/L	EM	в
Orthophosphate (EPA	A 300.0 Rev 2.1, 0.05 mg/L)	9/14/2010	0841	0.0467 mg/L	EM	в

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10J-025	Project Name 205 STREAMS	Sample Location WR 0.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 10/5/2010	Time Sampled 12:15 PM	Date Reco 10/5/20		Time Received 1:35 PM	Temp 4	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3. 0.005 mg/L)	10/14/2010		0.037 mg/L	•	Α
TSS (USGS 1-3765-8	35, 1.0 mg/L)	10/7/2010	1700	2.5 mg/L	EM	в
Orthophosphale (EPA	A 300.0 Rev 2.1. 0.05 mg/L)	10/6/2010	1227	0.025 mg/L	EM	в

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



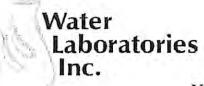
11001 Hampshire Ave. S. Minneapolis, MN 55438 952.995.2000 Phone 952.995.2020 Fax

Wenck Associates, Inc.	Client Ref: [none]	Work Order #: 1001282
1800 Pioneer Creek Center P.O. Box 249	Client Contact: Mr. Wes Boll	Project Mgr: Steven J. Albrecht
Maple Plain, MN 55359-0249	PO Number:	Account ID: W02540

## Clear Lake North 1001282-02 (Water) 3/18/10 10:30

## **Classical Chemistry Parameters**

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Orthophosphate as P	0.41	0.030	mg/L	5	B0C0317	3/19/10	3/19/10	EPA 365.3	
Phosphorus, Total as P	0.44	0.010	mg/L	1	B0C0365	3/24/10	3/26/10	EPA 365.3	



#### **NON-POTABLE WATER TEST REPORT**

WENCK ASSOCIATES (CRWD)

Lab File Number W10D-020	Project Name 0002-129	Sample CLN	Location_		<u>led By</u> IS LOEWEN		
Date Sampled 4/6/2010	Time Sampled 7:00 AM	Date Received 4/6/2010	Time Received	d <u>Ter</u>			
PARAMETERS, MI	ETHOD, REPORTING	LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
TSS.	(USGS I-3765-85)	, (1.0 mg/L)	4/8/2010	<u>1410</u>	<u>1.50 mg/L</u>	<u>KK</u>	B
Orthophosphate,	(EPA 365.1 Rev 2.0	) <u>, (0.01 mg/L)</u>	4/7/2010	<u>1218</u>	0.0553 mg/L	EM	B

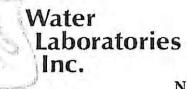
Notes:

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110

		MN Lab ID# CZ7-145-378 Report of Aualysis	MN Lab ID# C27-145-378 Report of Analysis			320.3522028 Phone 800.3692667 Tcl Free 320.3526163 Fax 320.3526163 Fax Email: Email: steamsdhialab@steamschialab.com	320.352.2028 Phone 800.369.2697 Toll Free 320.352.6163 Fex Email: Email: stearnsdhialab@steamschialat stearnsdhialab@steamschialat
Name: Report Date: Date:	WATER LABORATORY INC PO BOX 388 ELK RIVER, MN 55330 4/12/2010 4/12/2010	' INC	Sample ID/Invoice 4: Account #: Internal ID#: Sample Type: Client Sample ID: Saruple Date: Sarupler: Receipt Date: Receipt Tenp:	<ul> <li>4: 076876</li> <li>004188</li> <li>90917</li> <li>Water</li> <li>W10D026</li> <li>4/6/2010 7:00 AM</li> <li>D.L.</li> <li>4/6/2010 11:55 AM</li> </ul>	AM AM		
	Analyte	Approved Method	Reporting Sample Limit Result	e Units	Sample Prep Date/Time	Analysis Date/Time	Analyst
Phosphor	Phosphoreus, Total	EPA 365.3	711.0 200.0	mg/L		4/09/2010 03:30	mum
			) 12/13	NO			
<u>Comments:</u>		(	3/10	1			
Report Approved by:	by: Angea Scherping Environm Laurie Petersor, pab Tech	A MUDIA	)			£	



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-001	Project Name	Sample Location CLN	Sample DENNI	<u>ed By</u> S LOEWEN		
Date Sampled 5/3/2010	Time Sampled 6:45 AM	Date Receive 5/3/2010		<u>Received</u> ):15 AM	<u>Temp</u> 5	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME	ANALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 m	g/L) 5/5/2010	<u>1148</u>	<u>0.197mg/L</u>	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/l	<u>-)</u> <u>5/6/2010</u>	1630	< 1.0 mg/L	EM	Δ
Total Phosphorus,	(EPA 365.4 Rev. 2.0), (0.1 r	mg/L) <u>5/6/2010</u>	<u>1615</u>	<u>0.253 mg/L</u>		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Project Name	<u>Samp</u> CLN	le Location		<u>Sampled By</u> DENNIS LOEWEN		
Time Sampled 7:15 AM				Time Received 10:00 AM	<u>Temp</u> 3	
THOD, REPORTING LIMIT)		DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
A 365.1, 0.01 mg/L)		6/2/2010	1200	0.421 mg/L	EM	A
35, 1.0 mg/L)		6/3/2010	1630	1.86 mg/L	EM	А
PA 365.3, 0.005 mg/L)		6/11/2010		0.548 mg/L		В
	Time Sampled	Time Sampled 7:15 AM THOD, REPORTING LIMIT) A 365.1, 0.01 mg/L) 35, 1.0 mg/L)	Time Sampled         Date Rec.           7:15 AM         6/1/20           THOD, REPORTING LIMIT)         DATE & TIME A           A 365.1, 0.01 mg/L)         6/2/2010           35, 1.0 mg/L)         6/3/2010	Time Sampled         Date Received           7:15 AM         6/1/2010           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED           A 365.1, 0.01 mg/L)         6/2/2010         1200           35, 1.0 mg/L)         6/3/2010         1630	CLN         DENNIS LOEWEN <u>Time Sampled</u> <u>Date Received</u> <u>Time Received</u> 7:15 AM <u>Date Received</u> <u>Time Received</u> THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS           A 365.1, 0.01 mg/L)         6/2/2010         1200         0.421 mg/L           35, 1.0 mg/L)         6/3/2010         1630         1.86 mg/L	CLN         DENNIS LOEWEN           Time Sampled 7:15 AM         Date Received 6/1/2010         Time Received 10:00 AM         Temp 3           THOD, REPORTING LIMIT)         DATE & TIME ANALYZED         RESULTS         BY           A 365.1, 0.01 mg/L)         6/2/2010         1200         0.421 mg/L         EM           35, 1.0 mg/L)         6/3/2010         1630         1.86 mg/L         EM

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories. Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-016	Project Name 205	<u>Samp</u> CLN	le Location		Sampled By Dennis Loewen		
Date Sampled 7/6/2010	Time Sampled 6:18 AM		Date Rec 7/6/20		Time Received 9:10 AM	<u>Тетр</u> З	
PARAMETER (ME	THOD, REPORTING LIMIT)		DATE & TIME A	ANALYZEI	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		7/20/2010		0.739 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		7/7/2010	1800	2.25 mg/L	EM	в
Orthophosphate (EP/	A 365.1, 0.01 mg/L)		7/7/2010	1601	0.505 mg/L	EM	в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-048	Project Name 205	<u>Sampl</u> CLN	e Location		<u>Sampled By</u> Dennis Loewen		
Date Sampled 8/10/2010	<u>Time Sampled</u> 6:34 AM		<u>Date Rec</u> 8/10/2		Time Received 10:30 AM	Temp 2	
PARAMETER (ME	THOD, REPORTING LIMIT)		DATE & TIME A	ANALYZE	RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		8/16/2010		0.355 mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		8/19/2010	1700	10.5 mg/L**	EM	в
Orthophosphate (EPA	A 300.0 Rev 2.1, 0.05 mg/L)		8/12/2010		0.206 mg/L+	*	в

Notes:

* Total Phosphorus & Orthophosphate done by MN Lab # 027-035-135

**TSS re-run on 8/19/10

+ Sample analyzed past the holding time.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10I-046 205 STREAMS		<u>Samp</u> CLN	le Location		<u>Sampled By</u> Dennis Loewen			
	<u>Time Samp</u> 7:00 AM			<u>Date Rec</u> 9/13/2		Time Received 11:25 AM	<u>Temp</u> 8	
10	HOD, REPO	DRTING LIMIT)		DATE & TIME	ANALYZE	D RESULTS	ВҮ	BOTTLE
A 30	A 365.3, 0.00	)5 mg/L)		9/28/2010		0.257 mg/L	*	A
1.	i, 1.0 mg/L)			9/16/2010	1730	1.25 mg/L	EM	в
300	300.0 Rev 2.	1, 0.05 mg/L)		9/14/2010	0841	0.219 mg/L	EM	в
.1.	i, 1.0 mg/L)			9/16/2010		1.25 mg/L		

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AD 1/18/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W 10J-022	Project Name 205 STREAMS	<u>Sampl</u> CLN	e Location		Sampled By Dennis Loewen		
Date Sampled 10/5/2010	Time Sampled 10:30 AM		Date Rec 10/5/2		Time Received 1:35 PM	<u>Temp</u> 4	
PARAMETER (METHOD, REPORTING LIMIT)			DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		10/14/2010		0.173 mg/L	*	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		10/7/2010	1700	< 1.0 mg/L	EM	В
Orthophosphate (EPA	A 300.0 Rev 2.1, 0.05 mg/L)		10/6/2010	1227	0.147 mg/L	EM	в

Notes.

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



11001 Hampshire Ave. S. Minneapolis, MN 55438 952.995.2000 Phone 952.995.2020 Fax

Wenck Associates, Inc.	Client Ref: [none]	Work Order #: 1001282
1800 Pioneer Creek Center P.O. Box 249	Client Contact: Mr. Wes Boll	Project Mgr: Steven J. Albrecht
Maple Plain, MN 55359-0249	PO Number:	Account ID: W02540

## Clear Lake South 1001282-03 (Water) 3/18/10 11:00

#### **Classical Chemistry Parameters**

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Orthophosphate as P	0.17	0.0060	mg/L	1	B0C0317	3/19/10	3/19/10	EPA 365.3	
Phosphorus, Total as P	0.23	0.010	mg/L	1	B0C0365	3/24/10	3/26/10	EPA 365.3	

¥

124/10 p?



## NON-POTABLE WATER TEST REPORT

#### WENCK ASSOCIATES (CRWD)

<u>Lab File Number</u> W10D-021	Project Name 0002-129	Sample CLS	Location		led By IIS LOEWEN		
Date Sampled 4/6/2010	Time Sampled 7:35 AM	Date Received 4/6/2010	Time Receive 10:30 AM	<u>d Ter</u> t			
PARAMETERS, M	ETHOD, REPORTING	LIMIT	DATE & TIME A	ANALYZED	RESULTS	BY	BOTTLE
TSS,	(USGS I-3765-85)	. (1.0 mg/L)	4/8/2010	<u>1410</u>	<u>1.75 mg/L</u>	<u>KK</u>	B
Orthophosphate,	(EPA 365.1 Rev 2.0	) <u>, (0.01 mg/L)</u>	4/7/2010	<u>1218</u>	0.0660mg/L	<u>EM</u>	B

....

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

		Report of Analysis	Report of Aualysis	sis			320.352.2028 Phone 300.353.6163 Fax 320.355.6163 Fax Email: Email: stearnsohialab@stearnsuhiatab.com
W E 24	WATER LA3ORATORY INC PO BOX 386 ELK RIVER, MN 55330 4/12/2010 4/12/2010		Sample ID/Invoice #: Account #: Internal ID#: Sample Type: Clieut Sample ID: Sample Date: Sampler: Receipt Date: Receipt Tenp:	42	076£77 00418R 90918 Water W10(707)1 W16(2010 7:35 AM D.L. 01.L. 6 ⁴ C	AM 5 AM	
- <b>X</b>	Analyte	Approved Method	Reporting	Sample Result	Units	Sample Prep Date/Time	Analysis Analysi DateTlme
rous,	Phosphoreus, Total	EPA 365.3	0.005	0.147			4/09/2010 03:30 mmm
			NCD 12/13				
	Di. n C	· · ·	16				
tteport Approved by:	Approved by: () () () () () Angela Scherping Environmental Oncinist Laurie Peterson, Lab Tech Melinda Mason, Lab Tech	UNULINY Temise					



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10E-002		Sample Location CLS		Sampled By DENNIS LOEWEN		
Date Sampled 5/3/2010	Time Sampled 7:19 AM	Date Received 5/3/2010	-	Time Received 10:15 AM		
PARAMETERS, MI	ETHOD, REPORTING LIMIT	DATE & TIME A	ANALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 m	g/L) <u>5/5/2010</u>	1148	0.159 mg/L	EM	Α
TSS,	(USGS 1-3765-85), (1.0 m	<u>g/L) 5/6/2010</u>	<u>1630</u>	<u>1.5 mg/L</u>	EM	A
Total Phosphorus,	(EPA 365.4 Rev. 2.0), (0.1 m	g/L) <u>5/6/2010</u>	<u>1615</u>	0.114 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

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Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10F-002		<u>Samp</u> CLS	Sample Location_ CLS		Sampled By DENNIS LOEWEN		
Date Sampled 6/1/2010			Date Received 6/1/2010		<u>Time Received</u> 10:00 AM	<u>Temp</u> 3	
PARAMETER (ME			DATE & TIME ANALYZED RESULTS			BY	BOTTLE
Orthophosphate (EP	Orthophosphate (EPA 365.1, 0.01 mg/L)		6/2/2010	1200	0.031 mg/L	EM	A
TSS (USGS 1-3765-85, 1.0 mg/L)			6/3/2010	1630	1.25 mg/L	EM	А
Total Phosphorus (EPA 365.3, 0.005 mg/L)			6/7/2010		0.140 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File NumberProject NameW10G-017205		<u>Samp</u> CLS	Sample Location CLS		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/6/2010	Time Sampled 6:50 AM	Date Received 7/6/2010		<u>Time Received</u> 9:10 AM	<u>Temp</u> 3		
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED RESULTS			BY	BOTTLE
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)		7/20/2010		0.980 mg/L		A
TSS (USGS 1-3765-85, 1.0 mg/L)			7/7/2010	1800	12.5 mg/L	EM	в
Orthophosphate (EPA 365.1, 0.01 mg/L)			7/7/2010	1601	0.329 mg/L	EM	в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AP 8/2-1/10



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10H-049Project Name 205Date Sampled 8/10/2010Time Sampled 7:00 AM		Sample Location CLS				
					Temp 2	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		IE ANALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	8/16/201	0	0.120 mg/L	٠	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	8/19/201	0 1700	1.5 mg/L **	EM	в
Orthophosphate (EPA	300.0 Rev 2.1, 0.05 mg/L)	8/12/201	0	0.053 mg/L+	•	В

Notes:

* Total Phosphorus & Orthophosphate done by MN Lab # 027-035-135

**TSS re-run on 8/19/10.

+ Sample analyzed past the holding time.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-047Project Name 205 STREAMSDate Sampled 9/13/2010Time Sampled 7:40 AM		<u>Samp</u> CLS	le Location		Sampled By Dennis Loewen		
			Date Received 9/13/2010		Time Received 11:25 AM	<u>Temp</u> 8	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	NALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		9/28/2010		0.093 mg/L	٠	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		9/16/2010	1730	3.5 mg/L	EM	в
Orthophosphate (EP/	A 300.0 Rev 2.1, 0.05 mg/L)		9/14/2010	0841	0.0730 mg/L	EM	в

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

8/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10J-023Project Name 205 STREAMSDate Sampled 10/5/2010Time Sampled 10:50 AM		<u>Samp</u> CLS	CLS		<u>Sampled By</u> Dennis Loewen		
					Time Received 1:35 PM	Temp 4	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3. 0.005 mg/L)		10/14/2010		0.081 mg/L	•	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		10/7/2010	1700	2.0 mg/L	EM	в
Orthophosphale (EP#	A 300.0 Rev 2.1, 0.05 mg/L)		10/6/2010	1227	0.071 mg/L	EM	в

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141 110

AD



# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10I-051	Project Name 205 STREAMS	Sample Location CFI 0.2		Sampled By Dennis Loewen		
Date Sampled 9/13/2010	Time Sampled 10:40 AM	C. R.O. 1-3 Date Rec 9/13/2		Time Received 11:25 AM	Temp 8	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZE		RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	9/13/2010	1200	36.9 MPN/100ml	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

1/18/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Anr	andale, MN 55302	(	N			
Lab File Number W10I-160	Project Name	Sample Location CR CR 0.2		<u>Sampled By</u> Dennis Loewen		
Date Sampled 9/27/2010	Time Sampled 12:30 PM	Date Rec 9/27/2		Time Received 1:10 PM	Temp 6	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME /	ANALYZED	RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	1.0 MPN/100mL)	9/27/2010	1330	48.7 MPN/100mL	EM	A

Notes:

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AD 1/18/10

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### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W 10J-027	Project Name 205 STREAMS	Sample Location CR 0.2 (CR Oit	N	Sampled By Dennis Loewen		
Date Sampled 10/5/2010	Time Sampled 1:00 PM	Date Becc 10/5/20		Time Received 1:35 PM	Temp 4	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
E. coli (Quanti-Tray, 1	.0 MPN/100mL)	10/5/2010	1400	15.0 MPN/100mL	EM	A

Notes:

1/1 Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10C-094	Project Name	<u>Sample L</u> SSW01	ocation_	<u>Samp</u> Wes E			
Date Sampled 3/24/2010	Time Sampled 8:15 AM	Date Received 3/25/2010	Time Received 7:00 AM		<u>Temp</u> 2		
PARAMETERS, M	ETHOD, REPORTING	S LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus,	(EPA 365.4 Rev 2.	.0), (0.1 mg/L)	3/29/2010	1426	0.222 mg/L	EM	Δ
TSS.	(USGS 1-3765-85)	. (1.0 mg/L)	3/25/2010	1600	<u>6.0 mg/L</u>	EM	B
Orthophosphate,	(EPA 365,1 Rev 2	2.0), (0.01 mg/L)	3/26/2010	<u>1110</u>	0.058 mg/L	EM	B

Notes:

40/24/10

Sola Report Submitted By:_ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

		mple Location SSW 01				
Date Sampled 5/20/2010	Time Sampled 10:00 AM		Date Received 5/20/2010		<u>Temp</u> 0	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	5/20/2010	<u>1603</u>	0.0106 mg/L	EM	Α
TSS,	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	<u>6.5 mg/L</u>	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 mg	<u>g/L) 5/27/2010</u>		0.053 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

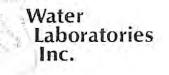
Lab File Number Project Name W10F-089		Sample Location SSW 01		Sampled By WESLEY BOLL		
Date Sampled 6/15/2010	<u>Time Sampled</u> 9:15 AM	Date Received 6/16/2010		<u>Time Received</u> 7:30 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	D RESULTS	BY	BOTTLE	
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.214 mg/L	EM	A
TSS (USGS 1-3765-1	35, 1.0 mg/L)	6/17/2010	1700	1.75 mg/L	EM	А
Total Phosphorus (El	PA 365.3, 0.005 mg/L)	6/29/2010		0.272 mg/L		В

Notes:

Total Phosphorus done by MN Lab # 027-035-135

24/10

Report Submitted By: 2 M M Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-150	Project Name	Sample Location	<u>1</u>		<u>Sampled By</u> Wes Boll		
Date Sampled 7/21/2010	Time Sampled 8:50 AM	Date Received 7/21/2010	<u>Time Received</u> 2:20 PM		<u>Temp</u> 5	ВҮ	
PARAMETERS, M	METHOD, REPORTING LIMIT	DAT	DATE & TIME ANALYZED		RESULTS		BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.412 mg/L</u> 20.0 mg/L	*	Α
TSS (USGS 1-3765-8	<u>35, 1.0 mg/L)</u>		7/22/2010	22/2010 1530		<u>EM</u>	B
Orthophosphate (EPA 365.1, 0 01 mg/L)			7/22/2010	0901	0.198 mg/L	EM	B

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

ADspulio

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Nam W10C-095		Sample Location SSW02		<u>Sam</u> r Wes	oled By Boll		
Date Sampled 3/24/2010	<u>Time Sampled</u> 9:10 AM	Date Received 3/25/2010	<u>Time Received</u> 7:00 AM		<u>mp</u> 2		
PARAMETERS, M	ETHOD, REPORTING		DATE & TIME A	NALYZED	RESULTS	ΒΥ	BOTTLE
Total Phosphorus,	(EPA 365.4 Rev 2	0), (0.1 mg/L)	3/29/2010	1426	<u>0.224 mg/L</u>	EM	A
TSS.	(USGS 1-3765-85)	, (1.0 mg/L)	3/25/2010	1600	1.25 mg/L	<u>EM</u>	B
Orthophosphate,	(EPA 365.1 Rev 2	2.0). (0.01 mg/L)	3/26/2010	<u>1110</u>	0.499 mg/L	EM	B

Notes:

Aspulio

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name Samp W10E-113		mple Location SSW 02				
Date Sampled 5/20/2010	<u>Time Sampled</u> 9:45 AM	Date Received 5/20/2010		Time Received 1:00 PM	<u>Temp</u> O	
PARAMETER (ME	PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	5/20/2010	1603	0.152 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	1.25 mg/L	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 mg	<u>/L) 5/27/2010</u>		<u>0.217 mg/L</u>		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

\$03/2ulio

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-090	Project Name	Sample Location SSW 02		Sampled By WESLEY BOLL		
Date Sampled 6/15/2010	Time Sampled 9:20 AM	<u>Date Rec</u> 6/16/2	and the second se	Time Received 7:30 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.178 mg/L	EM	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	6/17/2010	1700	7.25 mg/L	EM	A
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/29/2010		0.248 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-151		Sample Location	Sample Location SSW 02				
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:10 AM	Date Received 7/21/2010	Time Received 2:20 PM		<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)	1	7/29/2010		0.435 mg/L	*	A
TSS (USGS 1-3765-85, 1.0 mg/L)		7/	7/22/2010	1530	1.25 mg/L	EM	B
Orthophosphate (EP)	A 365.1, 0.01 mg/L)	3	7/22/2010	0901	<u>0.340 mg/L</u>	EM	B

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

AD 8/24/10

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Report Submitted By:

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



11001 Hampshire Ave. S. Minneapolis, MN 55438 952.995.2000 Phone 952.995.2020 Fax

Client Ref: [none]	Work Order #: 1001282
Client Contact: Mr. Wes Boll	Project Mgr: Steven J. Albrecht
PO Number:	Account ID: W02540
SSW04	
	Client Contact: Mr. Wes Boll

1001282-05 (Water)

3/18/10 12:30

### **Classical Chemistry Parameters**

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Orthophosphate as P	0.20	0.0060	mg/L	1	B0C0317	3/19/10	3/19/10	EPA 365.3	
Phosphorus, Total as P	0.27	0.010	mg/L	11	B0C0366	3/25/10	3/26/10	EPA 365.3	

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### Water Laboratories · Teles Inc.

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10C-098	Project Name	Sample SSW04	Location_	<u>Samp</u> Wes B	led By Boll		
Date Sampled 3/24/2010	Time Sampled 10:00 AM	Date Received 3/25/2010	<u>Time Received</u> 7:00 AM	d <u>Ter</u> 2			
PARAMETERS, MI	ETHOD, REPORTING	LIMIT	DATE & TIME A	NALYZED	RESULTS	ВΥ	BOTTLE
Total Phosphorus,	(EPA 365.4 Rev 2.	<u>0). (0.1 mg/L)</u>	3/29/2010	1426	0.170 mg/L	EM	A
TSS,	(USGS 1-3765-85)	<u>, (1.0 mg/L)</u>	3/25/2010	1600	<u>3.0 ma/L</u>	EM	B
Onhophosphate,	(EPA 365.1 Rev 2	<u>2.0), (0.01 mg/L)</u>	3/26/2010	<u>1110</u>	<u>0.100 mg/L</u>	<u>EM</u>	B

Notes:

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Report Submitted By: _______ Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-110	Project Name Sa	mple Location SSW 04		Sampled By WESLEY BOLL		
Date Sampled 5/20/2010	<u>Time Sampled</u> 8:50 AM	<u>Date Receive</u> 5/20/2010		Time Received 1:00 PM	<u>Temp</u> 0	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANA	LYZEC	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	<u>5/20/2010</u> <u>1</u>	603	0.0998 mg/L	EM	A
TSS.	(USGS 1-3765-85), (1.0 mg/L)	<u>5/22/2010</u> <u>1</u>	710	<u>1.25 mg/L</u>	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	<u>a/L) 5/27/2010</u>		0.170 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

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**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

25/10

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-093Project NameDate Sampled 6/15/2010Time Sampled 10:00 AMPARAMETER (METHOD, REPORTING LIMIT)		Sample Location SSW 04				
		Date Received 6/16/2010		Time Received 7:30 AM	<u>Temp</u> 2	BOTTLE
		DATE & TIME ANALYZED		D RESULTS	BY	
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.243 mg/L	EM	A
TSS (USGS 1-3765-8	5, 1.0 mg/L)	6/17/2010	1700	2.25 mg/L	EM	А
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/30/2010		0.349 mg/L		В

Notes:

Total Phosphorus done by MN Lab # 027-035-135

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-154	Project Name	Sample Location	<u>i</u>		Sampled By Wes Boll		
<u>Date Sampled</u> 7/21/2010	<u>Time Sampled</u> 9:45 AM	Date Received         Time F           7/21/2010         2:20 P		<u>ceived</u>	Temp 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED			RESULTS	BY	BOTTLE
otal Phosphorus (E	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.911 mg/L</u>	*	A
<u> </u>			7/22/2010	1530	< 1.0 mg/L	EM	B
Orthophosphate (EP/	A 365.1, 0.01 mg/L)		7/22/2010	0901	0.684 mg/L	EM	B

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

# 8/25/10

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Report Submitted By: 6

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

# NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10C-096	Project Name	Sample SDD01	Location	<u>Samp</u> Wes E	led By Boll		
Date Sampled 3/24/2010	<u>Time Sampled</u> 9:30 AM	Date Received 3/25/2010	Time Received 7:00 AM	l <u>Ter</u> 2	<u>np</u> 2		
PARAMETERS, M	ETHOD, REPORTING	à LIMIT	DATE & TIME A	NALYZED	RESULTS	ВΥ	BOTTLE
Total Phosphorus,	(EPA 365.4 Rev 2.	<u>.0), (0.1 mg/L)</u>	3/29/2010	1426	< 0.1 mg/L	EM	A
TSS,	(USGS 1-3765-85)	<u>, (1.0 mg/L)</u>	3/25/2010	1600	<u>&lt; 1.0 mg/L</u>	EM	B
Orthophosphate,	(EPA 365.1 Rev 2	2.0), (0.01 mg/L)	3/26/2010	<u>1110</u>	<u>0.080 mg/L</u>	<u>EM</u>	B

Notes:

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Report Submitted By: <u>Ethel Margaria</u>, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-112	Project Name Sa	ample Location SDD 01		Sampled By WESLEY BOLL		
Date Sampled 5/20/2010	Time Sampled 9:25 AM		Date Received 5/20/2010		<u>Temp</u> 0	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZE	D RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	5/20/2010	1603	0.0225 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	<u>3.0 mg/L</u>	EM	A
Total Phosphorus.	(EPA 365.3 Rev. 2.0), (0.005 m	<u>ng/L) 5/27/2010</u>		<u>0.049 mg/L</u>		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

+ 8/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10F-091		Sample Location SDD 01		Sampled By WESLEY BOLL		
Date Sampled 6/15/2010	<u>Time Sampled</u> 9:30 AM	Date Received 6/16/2010		Time Received 7:30 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.149 mg/L	EM	A
TSS (USGS 1-3765-8	5, 1.0 mg/L)	6/17/2010	1700	< 1.0 mg/L	EM	А
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/29/2010		0.253 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-115	Project Name Sa	ample Location SCE 01		Sampled By WESLEY BOLL		
Date Sampled 5/20/2010	Time Sampled 10:15 AM	<u>Date Rece</u> 5/20/20	the second s	Time Received 1:00 PM	Temp 0	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME A	DATE & TIME ANALYZED		BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	5/20/2010	1603	0.0189 mg/L	EM	A
TSS.	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	5.5 mg/L	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	ig/L) 5/27/2010		0.042 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

\$ 8/25/10



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

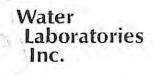
Lab File Number W10F-096			Sample Location SCE 01				
Date Sampled 6/15/2010	Time Sampled 10:45 AM	Date Received 6/16/2010		<u>Time Received</u> 7:30 AM	Temp 2		
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE	
Orthophosphate (EP	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.013 mg/L	EM	A	
TSS (USGS 1-3765-8	35, 1.0 mg/L)	6/17/2010	1700	4.25 mg/L	EM	A	
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/29/2010		0.029 mg/L		в	

Notes:

Total Phosphorus done by MN Lab # 027-035-135

AD 8/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-149		Sample Location SCE 01			Sampled By Wes Boll		
Date Sampled 7/21/2010	<u>Time Sampled</u> 8:30 AM	Date Received 7/21/2010			Temp 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
otal Phosphorus (E	PA 365.3, 0.005 mg/L)		7/27/2010		0.021 mg/L	*	A
TSS (USGS 1-3765-85, 1.0 mg/L)			7/22/2010	1530	2.37 mg/L	EM	B
Orthophosphate (EP/	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	0.0141 mg/L	EM	В

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

AD 8/25/10

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> Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10C-097	Project Name	Sample SHE01	Location	<u>Samp</u> Wes B	<u>led By</u> Boll	TATISANA	
Date Sampled 3/24/2010	<u>Time Sampled</u> 9:45 AM	Date Received 3/25/2010	Time Receiver 7:00 AM	d <u>Ter</u>			
PARAMETERS, M	ETHOD, REPORTING	i LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
Total Phosphorus,	(EPA 365.4 Rev 2.	0), (0.1 mg/L)	3/29/2010	1426	< 0.1 mg/L	EM	A
TSS,	(USGS 1-3765-85)	. (1.0 mg/L)	3/25/2010	1600	<u>5.25 mg/L</u>	<u>EM</u>	В
Orthophosphate,	(EPA 365.1 Rev 2	2.0), (0.01 mg/L)	3/26/2010	<u>1110</u>	<u>0.015 ma/L</u>	<u>EM</u>	B

Notes:

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

8/25/10



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10E-111	Project Name Si	ample Location SHE 01		Sampled By WESLEY BOLL		
Date SampledTime Sampled5/20/20109:10 AM			Date Received 5/20/2010		<u>Temp</u> 0	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANA	ALYZEI	D RESULTS	BY	BOTTLE
Orthophosphale,	(EPA 365.1 Rev 2.0). (0.01 mg/L)	5/20/2010	1603	0.0165 mg/L	EM	Δ
TSS,	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	<u>17.0 mg/L</u>	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	ng/L) <u>5/27/2010</u>		0.156 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

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Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10F-092		Sample Location SHE 01				
Date Sampled 6/15/2010	Time Sampled 9:40 AM	Date Received 6/16/2010		Time Received 7:30 AM	<u>Temp</u> 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		D RESULTS	BY	BOTTLE
Orthophosphate (EP.	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.0158 mg/L	EM	A
TSS (USGS 1-3765-8	15, 1.0 mg/L)	6/17/2010	1700	11.75 mg/L	EM	А
Total Phosphorus (EF	PA 365.3, 0.005 mg/L)	6/29/2010		0.136 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

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### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-153		Sample Location SHE 01			<u>Sampled By</u> Wes Boll		
Date Sampled 7/21/2010	<u>Time Sampled</u> 9:30 AM	Date Received 7/21/2010	Time Received 2:20 PM		<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (	EPA 365.3, 0.005 mg/L)	3	7/29/2010		0.200 mg/L	*	Α
TSS (USGS 1-3765-8	35, 1.0 mg/L)		7/22/2010	1530	<u>13.0 mg/L</u>	EM	B
Orthophosphate (EPA	4 365.1, 0.01 mg/L)		7/22/2010	0901	0.0327 mg/L	EM	B

Notes:

Total Phosphorus done by MN Lab # 027-035-135

AD 8/25/10

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Report Submitted By: 7 Hu

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



11001 Hampshire Ave. S. Minneapolis, MN 55438 952.995.2000 Phone 952.995.2020 Fax

Wenck Associates, Inc.	Client Ref: [none]	Work Order #: 1001282
1800 Pioneer Creek Center P.O. Box 249	Client Contact: Mr. Wes Boll	Project Mgr: Steven J. Albrecht
Maple Plain, MN 55359-0249	PO Number:	Account ID: W02540

## Illsley 1001282-04 (Water) 3/18/10 12:00

### **Classical Chemistry Parameters**

Analyte	Result	MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Orthophosphate as P	0.46	0.030	mg/L	5	B0C0317	3/19/10	3/19/10	EPA 365.3	
Phosphorus, Total as P	0.52	0.020	mg/L	2	B0C0366	3/25/10	3/26/10	EPA 365.3	

AD 25/10



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-094	Project Name	Sample Location SEGNER	Sampled By WESLEY BOLL		
Date Sampled 6/15/2010	<u>Time Sampled</u> 10:15 AM	<u>Date Receive</u> 6/16/2010	d <u>Time Received</u> 7:30 AM	Temp 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANA	LYZED RESULTS	ВҮ	BOTTLE
Orthophosphate (EP.	A 365.1, 0.01 mg/L)	6/17/2010 1	150 0.239 mg/L	EM	A
Total Phosphorus, (E	PA 365.3, 0.005 mg/L)	6/30/2010	0.387 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

**Report Submitted By:** Ethel Margaria, Laboratory Director

AD 25/10

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10F-095	Project Name	Sample Location SEGNER IN		<u>Sampled By</u> WESLEY BOLL		
<u>Date Sampled</u> 6/15/2010	Time Sampled 10:30 AM	<u>Date Rece</u> 6/16/20		Time Received 7:30 AM	Temp 2	
PARAMETER (METHOD, REPORTING LIMIT)		DATE & TIME ANALYZED		RESULTS	вү	BOTTLE
Orthophosphate (EP.	A 365.1, 0.01 mg/L)	6/17/2010	1150	0.251 mg/L	EM	A
Total Phosphorus, (E	PA 365.3, 0.005 mg/L)	6/30/2010		0.339 mg/L		в

Notes:

Total Phosphorus done by MN Lab # 027-035-135

AD 25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-155		Sample Location SEGNER			Sampled By Wes Boll		
Date Sampled 7/21/2010	Time Sampled 10:00 AM	Date Received 7/21/2010	<u>Time Received</u> 2:20 PM		Temp 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		7/29/2010		<u>0.580 mg/L</u>	*	A
TSS (USGS 1-3765-8	<u>35, 1.0 mg/L)</u>		7/22/2010	1530	<u>138 ma/L</u>	EM	B
Orthophosphate (EP/	<u>A 365.1, 0.01 mg/L)</u>		7/22/2010	0901	<u>0.350 mg/L</u>	EM	B

Notes:

* Total Phosphorus done by MN Lab # 027-035-135

8/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-119	Project Name	Sample Location CR 10.5	<u>Sample</u> WES B			
Date Sampled 4/21/2010	<u>Time Sampled</u> 10:00 AM	Date Received 4/21/2010		<u>Received</u> :40 PM	Temp 4	
PARAMETERS, MI	ETHOD, REPORTING LIMIT	DATE & TIME ANA	ALYZED	RESULTS	BY	BOTTLE
Total Phosphorus,	(EPA 365.3 Rev 2.0), (0.005 m	ng/L) <u>4/28/2010</u>	1400	0.049 mg/	Ľ	Δ

Notes:

Total Phosphorus done by MN Lab # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-126	Project Name Sa	ample Location FDI	<u>Sample</u> WES E			
Date Sampled 4/21/2010	Time Sampled	<u>Date Received</u> 4/21/2010	-	<u>Time Received</u> 12:40 PM		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME A	DATE & TIME ANALYZED		ВҮ	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	4/21/2010	<u>1545</u>	0.0158mg/L	<u>EM</u>	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	4/22/2010	1600	13.5 mg/L	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 n	1g/L) 4/28/2010	1400	0.141 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

		ample Location SSW 04		Sampled By WES BOLL		
Date Sampled 4/21/2010	<u>Time Sampled</u> 12:30 PM	Date Received 4/21/2010	Time Received 12:40 PM		<u>Temp</u> 4	
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME A	DATE & TIME ANALYZED		BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	4/21/2010	1545	0.0652 mg/L	<u>EM</u>	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	4/22/2010	1600	11.5 mg/L	EM	Α
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	ng/L) <u>4/28/2010</u>	1400	0.246mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Date SampledTime SampledDate ReceivedTime Received4/21/201011:00 AM4/21/201012:40 PM		
	<u>Temp</u> 4	
PARAMETERS, METHOD, REPORTING LIMIT DATE & TIME ANALYZED RESULTS	вү	BOTTLE
Orthophosphate, (EPA 365.1 Rev 2.0), (0.01 mg/L) 4/21/2010 1545 0.0134 mg/	<u>L EM</u>	A
TSS, (USGS 1-3765-85), (1.0 mg/L) 4/22/2010 1600 9.0 mg/	L EM	Δ
Total Phosphorus, (EPA 365.3 Rev. 2.0), (0.005 mg/L) 4/28/2010 1400 0.161 mg/	à chiến thế	B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



## **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-122	Project Name	Sample Location SSW 02	<u>Sampl</u> WES E			
Date Sampled 4/21/2010	Time Sampled 11:15 AM	<u>Date Received</u> 4/21/2010	-	<u>Received</u> 2:40 PM	Temp 4	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME	ANALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L	<u>-) 4/21/2010</u>	<u>1545</u>	0.169 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	4/22/2010	1600	<u>2.0 mg/L</u>	EM	Α
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005)	mg/L) <u>4/28/2010</u>	<u>1400</u>	0.301mg/L		В

Notes:

Total Phosphorus and E. coli done by MN Lab # 027-145-378

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By:

Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-123	Project Name	Sample Location SDD 01	<u>Sampl</u> WES E			
Date Sampled 4/21/2010	Time Sampled 12:00 PM	<u>Date Receive</u> 4/21/2010		Received 2:40 PM	Temp 4	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME	ANALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 m	ng/L) <u>4/21/2010</u>	<u>1545</u>	0.0250 mg/L	EM	A
TSS,	(USGS 1-3765-85). (1.0 mg/	L) <u>4/22/2010</u>	1600	<u>&lt; 1.0 mg/L</u>	EM	Δ
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.00	05 mg/L) 4/28/2010	1400	0.097 mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number W10D-124	Project Name Sa	ample Location SHE 01	<u>Sample</u> WES B			
Date Sampled 4/21/2010	Time Sampled 12:15 PM	Date Received 4/21/2010		Received 2:40 PM	<u>Temp</u> 4	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME A	NALYZED	RESULTS	вү	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	4/21/2010	<u>1545</u>	0.0235 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	4/22/2010	1600	<u>9.25 mg/L</u>	EM	Α
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	<u>g/L) 4/28/2010</u>	<u>1400</u>	0.186 mg/L		₿

Notes:

Total Phosphorus done by MN Lab # 027-145-378

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Annesota State Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name W10D-120		Sample Location SCE 01		Sampled By WES BOLL		
Date Sampled 4/21/2010	Time Sampled 10:30 AM	Date Received 4/21/2010		<u>Received</u> 2:40 PM	<u>Temp</u> 4	
PARAMETERS, M	ETHOD, REPORTING LIMIT	DATE & TIME A	NALYZED	RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	4/21/2010	<u>1545</u>	0.0179 mg/L	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	4/22/2010	1600	<u>14.5 mg/L</u>	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 m	g/L) <u>4/28/2010</u>	<u>1400</u>	0.037mg/L		B

Notes:

Total Phosphorus done by MN Lab # 027-145-378

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director

Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

Lab File Number Project Name Sa W10E-116		nple Location FD 01		Sampled By WESLEY BOLL		
Date Sampled 5/20/2010	Time Sampled	<u>Date Receiv</u> 5/20/201	the states	Time Received 1:00 PM	<u>Temp</u> 0	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME AN	ALYZE	D RESULTS	BY	BOTTLE
Orthophosphate,	(EPA 365.1 Rev 2.0), (0.01 mg/L)	5/20/2010	1603	<u>&lt; 0.01 mg/L</u>	EM	A
TSS,	(USGS 1-3765-85), (1.0 mg/L)	5/20/2010	1710	3.25 mg/L	EM	A
Total Phosphorus,	(EPA 365.3 Rev. 2.0), (0.005 mg/	<u>L) 5/27/2010</u>		<u>0.041 mg/L</u>		B

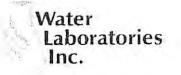
Notes:

Total Phosphorus done by MN Lab # 05/26/2010

Orthophosphate Reagent Blank does not meet the quality assurance criteria.

AD 3/25/10

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

<u>By</u>	
BY	BOTTLE
*	A
EM	B
EM	B
	BY <u>*</u> EM

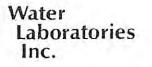
Notes:

* Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories. Inc. Water Laboratories. Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

AD 25/10



## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10G-156		Sample Location FDI	<u>)</u>		<u>Sampled By</u> Wes Boll		
Date Sampled 7/21/2010	Time Sampled	Date Received 7/21/2010	<u>Time Re</u> 2:20 PM	<u>ceived</u>	<u>Temp</u> 5		
PARAMETERS, METHOD, REPORTING LIMIT		DATE & TIME ANALYZED		RESULTS	BY	BOTTLE	
Total Phosphorus (E	PA 365.3, 0.005 mg/L)		7/29/2010		0.911 mg/L	*	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		7/22/2010	1530	2.25 mg/L	EM	B
Orthophosphate (EP/	A 365.1, 0.01 mg/L)		7/22/2010	0901	<u>0.717 mg/L</u>	EM	B

Noles:

* Total Phosphorus done by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories. Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

NCD 12/4/1CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10F-155	Project Name 205 LAKES	Sample Location FDI	<u>Sampled By</u> Dennis Loewen		
Date Sampled 6/22/2010	Time Sampled	Field Duplicate Date Received 6/22/2010	Time Received 3:00 PM	Temp 8	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME ANALY2	ZED RESULTS	BY	BOTTLE
Chlorophyll A (SM 10	200 H, 1µg/L)	7/21/2010	11 μg/L		A

Notes:

Chlorophyll a tested by MN Lab # 027-035-135

The test results are only indicative of the sample tested from the sample point on the date collected. This report must not be reproduced, except in full, without written approval from Water Laboratories, Inc. Water Laboratories, Inc. is certified by the State of Minnesota under the Clean Water Program.

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

Water Laboratories Inc. NON-POTABLE WATER TEST REPORT

Water Laboratories Inc. 333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h20lab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

	THOD, REPORTING LIMIT) PA 365.3, 0.005 mg/L)	DATE & TIME ANALYZEI 6/30/2010	0.055 mg/L	BY	BOTTLE
Date Sampled 6/22/2010	Time Sampled	Date Received 6/22/2010	<u>Time Received</u> 3:00 PM	<u>Temp</u> 8	
Lab File Number W10F-156	Project Name 205 LAKES	Sample Location FDI Field Duplicate 1 Date Received	<u>Sampled By</u> Dennis Loewen		

Notes:

Total Phosphorus done by MN Lab # 027-035-135

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

Water Laboratories Inc. 333 East Main Street PO Box 388 Elk River, MN 55330 Phone: (763) 441-7509 Fax: (763) 441-9176 Email: h2olab@spacestar.net Web Site: www.waterlabs.net

## NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-007		<u>Sample</u> DF6-1	Location		<u>Sampled By</u> DENNIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 7:40 AM		<u>Date Rec</u> 6/1/2		<u>Time Received</u> 10:00 AM	Temp 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	3	DATE & TIME	ANALYZED	RESULTS	ВҮ	BOTTLE
Orthophosphate (EP	A 365.1, 0.01 mg/L)		6/2/2010	1200	0.405 mg/L	EM	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		6/3/2010	1630	3.0 mg/L	EM	А

Notes:

Q

**Report Submitted By:** Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### NON-POTABLE WATER TEST REPORT

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number Project Name W10F-007		<u>Sample</u> DF6-1	ELOCATION		Sampled By DENNIS LOEWEN		
Date Sampled 6/1/2010	Time Sampled 7:40 AM		<u>Date Rec</u> 6/1/2		Time Received 10:00 AM	<u>Temp</u> 3	
PARAMETER (ME	THOD, REPORTING LIMIT)		DATE & TIME	ANALYZEC	RESULTS	BY	BOTTLE
Orthophosphate (EP	A 365.1, 0.01 mg/L)		6/2/2010	1200	0.405 mg/L	EM	A
TSS (USGS 1-3765-8	35, 1.0 mg/L)		6/3/2010	1630	3.0 mg/L	EM	А

Notes:

Dur pro wello

Report Submitted By: Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110



#### **NON-POTABLE WATER TEST REPORT**

CRWD (Wenck Associates, Inc.)

P.O Box 481, Annandale, MN 55302

Lab File Number W10G-022	Project Name 205	Sample Location FD 7		<u>Sampled By</u> Dennis Loewen		
Date Sampled 7/6/2010	Time Sampled 8:55 AM	<u>Date Re</u> 7/6/2		Time Received 9:10 AM	<u>Temp</u> 3	
PARAMETER (ME	THOD, REPORTING LIMIT)	DATE & TIME	ANALYZE	D RESULTS	BY	BOTTLE
Total Phosphorus (E	PA 365.3, 0.005 mg/L)			* mg/L		A
TSS (USGS 1-3765-8	35, 1.0 mg/L)	7/7/2010	1800	12.3 mg/L	EM	в
Orthophosphate (EPA	A 365.1, 0.01 mg/L)	7/7/2010	1601	0.0288 mg/L	EM	в

Notes:

Total Phosphorus done by MN Lab # 027-035-135.

Report Submitted By:_____ Ethel Margaria, Laboratory Director Minnesota State Laboratory ID: 027-141-110

# Appendix G

## **2010 Field Notes and Measurements**

June 16th 2010

Swartout 13'	
Dept Temp	DO
5 20.8	3.00
2 20.2	2,84
3 20.0	0.98
4 19.7	0.07

8.83

Secchi <u>II'</u> Time Top <u>AII</u> II Boltom ____

Secchi 2' Time Top 850 " Boltony ____

Henshaw 6'

Albion 9'

.5 20.1

.5	20.2	7,95
1	20.2	7,65
2	20.2	7,44

1 20.0 7.22 2 19.8 1.10 3 19.7 0,15

Jeechi <u>1.5</u> Timo Top <u>2810</u> Bottom

WB 8/23/10

Albion Temp DO 264 .5 6.82 1 26.4 518 2 26.0 0.25

Date 7260 Time _ 740 (Az) Secchi _ 1.0

Dete 7710 Henshaw 7.70 Time 710 .5 270 1 2.46 2 255 3 412 Seachi 1.5 255 0.07 草

Swartout .5 26.7 1 263 2 26.7 3 26.1

1 :

1

Date 7710 Time 815 Secchi 11'

WB 8 23/10

Augusta 17, 2010 Secchi 0.8 Henshaw D.O Temp Time 8:09 21.8 7.20 0,5 1 11 7.05 2 A1.8 7.05 Swantowt decchi 1.5' 0.5 23.1 5.34 Time 1 23.0 5.15 9:17 2 23,1 5.14 3 23.1 2.21 Albion Secchi 0.6 0,5 22.0 5,66 Time 8:53 6.17 11 1 2 0.17 11

Swartout

Meters Te	mp_D.O.
0.5 157	698
1 158	694
2 158	690
3 155	0 41
4 / 58	6 22
	èmp D.O.
90,5 15°	
1 15.7	,
2 15.6	547

Dable <u>921</u> Ballotime 920 Seahi 1.5

Date 92/10 Time \$59_ Sechi 10

3=4.84 4=+3.1

Henshaw Temp 0.5. 15.5 805 1 15.5 805 2 150

D.J. 505 805

Date 92110 Time <u>S2C</u> Secchi 1:0

WB 12-18/10

5126/10

Augusto Hemp 22 22 DO 7.52 .5 7.73 1 8.17 19.7 23 8.81 8.44 7.95 12.7 45 12.0 6.69 6 11.2 8.8 7 4.41 8 7.0 2.70 5.2 9 1.67 10 4.8 1.59 11 4.2 1.31 12 3.9 13 3.7 1.25 14 3.5 0.83 15 3.3 0.33 14 3.1 72.7 0.10 0.09 182.7 19 20 Z| Z2 23 24 25 24

Sectifit 15'

Secchi

AD 2/10

	Augusta	81, 70	une 16th 2010
			Secchi 12:5
10	,5 20.5	755	Time Top 1109 Boltom
	1 201	757	Boltom
	2 19.9	735	
	3 19.7	6 8,8	
	4 17.1	680	
	5 1 3 2	6.40	
	6 11.1	4.42	
	7 9.6	2.22	
	8 7.0	0.69	
	9 5.8	0 35	
	10 4.6	022 10.16	
l	11 4.4	012	
1	12 4.1	(0°6) .11 ?	
1	13 3.7	011	
	14 3.4	051 .11?	
-	16 3.2	010	
1	П 3.0	0 10	
	18 2.9	010	
	19 2.8	009	
1	20 2.8	009	
1	21 2.8	009	
	22 2.8	009	
	23 28	009	
	24 2.8	008	
Billom	25 28	009	
	040		

AD 125/10

•

Augusta 81' Temp D.D. ,5 27.2 10 12 853 -23454789 26.2 23.5 5.40 090 0.33 20.6 15.6 1.64 1.93 12.7 10.6 0.66 8.9 0.12 0.08 7.9 6.7 0.09 b 009 11 5.1 008 4.5 12 007 13 4.2 007 14 4.0 39 008 15 008 3.5 16 008 33 17 007 3.2 18 006 19 32 007 31 D 007 31 21 004 30 22 006 31 23 006 31 24

Date 2260 Time 1022 Secdii 2.5

AD 8/25/10

bottom 7

August 17 Secchi		ugusta	
Tume	DO,	Temp	~
	(47	23.8	0,5
	(L) L	23.5	1
	6.34	23,4	Z
	5.84	23.3	3
	5.54	17	4
	<u>с</u> і. Т	22.8	5
	0.10	17.5	6
	.19	12.5	7
	. ال	16.3	8
	, 15	8.7	9
	.13	7.4	10
	. 12	6.1	11
	. 11	5,3	Q
	109	4,8	D
	11	4.6	(4
	,07	4.2	15
	80.	4.0	الم
	,09	3.8	Π
	80,	3.7	18
	.07	3.L	দ
	(i	3,5	20
	,07	3,4	21
	()	<u>vi</u>	22
	.DL	3.3	23
	h	3,3	al_
	,06	3.3	25

7xx 1/33/60

	Augustas		September? October?
î ~	Temp 0.5 7.7	D.O. 12.0	Secchi G'
	2 3 7 % 4 5 6 7.8 7 8 9 7.6	12:0	
	5 6 7.8 7	11 . 40	
	8 9 7.C N	12.0	
~	(   2 7.1  3	9.3	
	14 15 56 16	5,3	
	17 16 CC 19 20	6.34	
	21 ZZ Z3 Z4 4.8	3,8	

AD 11/22/10

ususta D. O. Temp 166 679 D.5 674 1 NUTUCLOSO 165 616 163 163 613 520 341 157 044 026 121 8.9 022 72 6.6 11 012 6.0 012 5.3 13 011 4.7 14 0.10 4.5 0.10 4,2 4.6 3.9 N 009 16 • 609 17 008 3.8 18 007 3.8 3.7 19 20 007 21 3.7 3636 22. ł 006 23 24

921 1120 Time Seachi

WB 178/10

75,44

18.721

.

	11/10/2010	
Augusta		
0.5 7.7 1	DO. 120	Secchi G'
2 3 4 5 7 8 7 8 7.6 7 8 7.6	12°C	
6 7.8 7	11.46	
N O	12.0	
11 12 7.1 13	9.3	
14 15 50 16	5.3	
17 16 C.C 19 20 21 22 23	6.34	
24 4-8 25	3,3	

12/8/10

-

-

5/26/10 Secchi 6 Clean Lake .5 20.9 D.O. 8.32 1 20.8 Z 20.6 Z 20.4 7.84 19.8 45 7.13 16.3 6.24 0.14 6 16.0 Retsu S=cchi 13:6 D.D. Temp .5 7.55 222 1 21.8 7.52 1 7.38 234547 20.8 7.67 13.4 7.31 11.9 6.12 Scott Secchi 11 5.19 11.6 Temp DD 2.66 11.1 89 0.09 .5 11.0 22.4 8.77 12.0 0.09 8.74 1 22.4 8.54 23456 22.0 19,2 7.75 16.4 4.62 14.0 1.65 0,92 13,5

10,25/10

> Date 0620/10 Clean 18' Jecchi 1/2 A Temp D.0. Time Top 12:46 15 5 23.1 1 21.8 13.82 Bettom 4.58 21.5 7 4.58 21.3 11.61 11.46 10.84 10.04 Bottom Betsy 28' Data 06-20-10 Secchi -4/2.Ft. .5 22.9 Do Time Top 1:50 12.12 1 22.4 2 21.6 3 21.1 4 19.9 5 17.0 12.3 12.0 13.82 Boltom_ 11,58 1.82 0.22 O.B 6,11 Bottona 7 Date June 22nd Scott 23' Secchi 25 TEMP DO Time Top 1103 5 24.4 1485

1 23.7 1318 2 22.6 8.45 3 21.5 #688

4 20.5 270 5 18.7 027 4 17.6 013 7 175 012

AP/25/10

Bottom

0.5	25.1	5 40
1	25:1	495
2,	24.1	191
3	23,0	038
4	194	609
5	170	007
6	159	007
7	15.0	007

July 21, 2010

Secchi 5:0 Time T 823 B

Jecchi <u>15</u> Time T 948 B

Mear_ 9.93 0.5 25.9 1 25.1 2 250 3 24.9 6:44 650 490 424.6 182 5241 011. 6238 007

3.28×6= 19.68'

4 25/10

		Scott (	231)	Augusta 24, 2010
		Temp		Time 6:57
Ţ	Ar			Siechi 3.5'
	0,5	25.3	7.05	
			(a16-1	
	23	Ĵ	6.40	Windy conditions
		00-		
	* 4	23:7	1.65	
	5	23.1	0.09	
	4	32.8	,07	
1		Clear (	181)	Augusta 24, 2010
	0.5	24.3	6.40	Time 9:13
	1		6.42	decchi 1
	2	11	6.37	
	3	$4_1$	11	
	4	ŋ	6,10	
	5	23.0	0.23	
		Betsy		August 24, 2010
	0.5	24.7	6.50	
	1	24.8		Time Sill
	2	24.9	6.41	Jecchi LI
	*3	23.1	2,52	
	X 4	22.6	0.88	
	5	31-	.10	
	6	17.5	,08	
	7	16-	.07	
	8	15.7	,05	AD 11/22/10
				11/201

ļ,

Clear

Ţ		Temp	<u>D.O.</u>
	0.5	14.4	8.42
	1	)	8,44
	2	/	11
	3	ζ	8.10
	45		8.14
	5	V	8.25
Be	154 281		
	0.5	14.3	6.90
	1	.01	6.84
	2	14.0	5.78
	2 3 4	13,9	5.41
	4	13.7	4.74
	5	13.6	4.70
	6	13,5	4.60
		3.4	4.41
	-	13.D	4.40

1000

Seint	27, 2010
Time	9:49
ecchi	0.5'

8:56 Time

MP 122 10

October ?

Secchi 3.5

	Belsy	
0	D.5 6.5	D.S 15:15
	2 36.5 4	15.21
	6 5.9 7 5.3 8 54	10.8 9.01 8.0
	2 action	

AD/22/10

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	X
D.	han a
De	ISU
10 mm	

11/10/2010 Secchi 3.5 D.S 15.15 Temp 6.5 0.5 6.5 1 2 3 4 5 6 7 8 m B 15.21 10.8 9.01 8.0

NB ,218/10

Ê	Cedar 1	-ake	Mary 21/27	
	Cedar L Temp	DO	Mary 21/27 Secoli	
12345478	20 20 19.6 19.1 19.9 16.8 14.8 13.2 12 11:5	8.52 8.40 7.82 8.29 8.23 8.23 8.23 8.23 8.23 7.42 7.42 7.42 7.42 7.42 7.52 2.13	Secoldi 4.5	
10	11	6.79		
Ŋ	10.7	6.39		
	9.6	4.98		
	8.8	3.62		
100	8.0	2.38		
	7.5	1.21		
14	7.2			
18	7.0	1.09		
19	7.0	1.01		
9D	7.0	1.01		
21	6.9	0.94		
22	6.9	0.89		
23	6.8	0.17		
241				
25				
zb				
27				1,0
28				A71751
29				A 2/25/10
30				
31				
32				

Ce	elar	Lake	108'	June 16th 2010
		Tune	Do	Secchi 7'
	.5	19.8	792	Time Top 7:10 2550
	1	19.8	785	" Bottom
	2	19.8	7.79	
		19.8	7.71	
		19.8	7.71	
		19.0	6.31	
		15.0	4.26	
	Ť	130	479	
	8	121	5.038	
		11.5	530	
32.8		11.0	5-10	
		10.5	4.04	
	12	9.8	299	
		9.0	0.64	
	14	8.3	0,0 8	
	15	8.0	0.06	
	16	7.9	006	
	Π	7.7	006	
	18	7.7	006	
	19	7.4	0.06	
65.6	20	7.4	0.05	
	21	7.4	0.05	
	22	7.3	005	
	23	7.3	005	
	24	5.2	005	
	25	7.2	005	
	26	7.1	004	
	27	7.1	004	ACINSIA
	28	70	004	A V
	29			0.
98.4	30			
101,68	31			
105,26	32			
108.54	33			

July Date 7/7/10	
Sunface time 615	
1	

4'

Cedar	C		July Date : Sunface time
	Temo	D.O.	1
,5	Temp 2.5.6	7,71	Seachi
	25.6	7,71	
	25.6	7,55	
3	25.6	728	
	25.2	\$685	
	240	616 5,45	
6	23.6	4.35	
7 8	18.9	1.19	
9	14.3	0.43	
10	12.3	0,50	
11	109	02.4	
12	10.4	0.12	\$P
13	9.9	007	
14	9.0 8.8	006	32
15 16	8.4	006	33
17	8.3	005	
18	8.2	004	
19	8.1	004	
20	8.1	004	
2]	8.0		
22	79 78	004	
23 24	77	004	30 = 98.4
25	76	004	30 10 1
26	74	003	
27	76	003	
28	75	004	
29	75	004	
30	75	007	

21

0.5 1 2 3	23.q	5.49 5.86			Tim	7:14	
<u>।</u> २	23.q				110	15 1.11	a.m.
1		5 81					
1							
5		5,94					
		5,85					
цļ		5,92					
5		5.93					
6	N/	5,91					
7	22.7	3.10					
8	17.8	0.20					
9	13.5	,10					
10	11.8	.08		-			
	10,5	.09					
Q	9,9	80,					
13	9.2	,08					
14	8:8	, j , j					
15		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			at a substanting strategy and		_
16	8.5	.06 DF					
17	8,4	,05					
18	1) (T. つ		0-1	7 0	0.00		
[q]	8.3		27	7,9	0.04		
20	8.2	د د	28	<u>lı</u>	}		
21	8.1	,05 NU	29 30	7.8	0.04		
22	11	.04	00	1,0	0,01		
24	5,0	,05 .05					
25							
20	7,9	·04 ·04				AD 122	110

.

Ce	edar hake	
0,5 1 2 3	Temp 8.9 8.9 8.9 8.9	D02. 832. 832 832.
4-5	5.9	5.16
67	8.9	7:9 G
8 9	8.8	7.86
10 11	8:8	7.73
12. 13	8.8	767
14 15 16	5.8	763
17 18 19	2.2	7.48
20 21 22	5.6	745
23 24 25	S'.S'	746
21 27 28 29 30 31	85	746

Sechi <u>9.5</u> Sechi <u>15</u>

AD 22/10

.

Cedar Lake DD TEMP 0.5 6.91 16.8 16.8 2.01 12, 151 12.3 020 9.4 8.6 8.3 8.1 25 80 27 29 9 7 31 

Date <u>72110</u> Time <u>736</u> ecchi <u>8</u>0 Seachi

Cedar Lake 11/10/2010 Temp DO Secchi 9.5

1

	lenp	20
0,5	8.2	832
1	5.9	5.32
2	8.9	
3	9.9	532
4-5,	8.9	5.16
67	8.9	7:9 G
8 9	8.8	7.86
10 11	5:5	7.73
12 13	8.8	767
14 15	8.8	763
16		
17	8.8	7.48
19		
ZD	- 1	745
21 22	5.5	145
23		
Z4	8.8	746
25		
26	85	746
27 28	0 0	114
29 29		
30		
31		

0/10 22

June 16th 2010 teasant to Secchi 7' Cheur Water West .5 20.5 982 Time Top 1032 19.4 Bottom ____ Date 940 875 4 194 5 192 6 185 7 170 7.00 317 150 1.60 107-6 14.10 8 q 133 1.10 10,126 0.82 052 11 12.3 066 12 120 13 11.5 055 0.18 14 1.1.1 15 16 IT 18 19 20 Bittom 21 220 AD 125/10

Clearwater West

Temp D.O. 15 26.2 815 1 26.1 2 25'8 3 25.5 793 763 4 24.5 5 23.6 6 2.20 518 365 0,20 7 20.1 009 8 16.5 00.7 0.07 9 14.7 00.7 0.07 10 13.4 007 0.07 11 12.8 006 0.06 12 12.2

Date 2700 Star Time 10:00 Sechi 3.5

\$\$ 12/10

# Clearwater West

a P

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0.5 16.7 1 166 2 166 640 635 588 560 4.41 113 Q19 化行 20

921. 1056 8' lime Secchi

WB 12-18/10

. .

an a	Cleanure-	ten	8/17/10
*	Temp	.D.O	8/17/10 -Stadii _ []
0.5	23.6	5.34	Time 10:39
1	23.3	5.02	
ζ,	23.2	5.—	
3	11	4.80	
4	23.1	4.71	
5	11	4.34	
6	23.0	4.57	
ר_	21.9	0.45	
8	20.1	0,13	
9	17.2	6.10	
10	14.8	,08	
1)	13.8	, 07	
12	13 -	,05	
B	12.4	,04	
14	12.16	.02	
15	12.7	,02	
16	12.8	.01	
			AD

Caroline 45' Temp Do Data 6-22-10

Secchi 12 Time Top 1250 Bottom

5-2	2743	Mag A	8.98 8.90 8.20
	219		7.43
4	193		4.51
5	14.7		369
6	129		21.53
7	11.4		0.52
8	10.5		028
9	7.9	2	016
10	6.2		015
1)	5.2		012
12	50		010
13	5.1		008
14			

7

1 Union 35' Temp DO 5 24.1 1066 1 240 1082 2 22.2 871 3 18.5 600 4 143.7 5 112 6 10.5 7 9.9 8 9.5 080 018 012 0,11 009 9 9.3 007 006 10 11

Dato 6-20-70 Secchi _4' Time Top 1023 Bottom -

Ke /25/10

995 0.5 26.4 938 365 092 l 25.5 25.1 27567890 241 243 215 16.9 12.1 1.40 OII 00.8 009 608 9.7 009 7.9 008 68 008 112 62 007 6.0

n/22/102 Secchi Time T 4.5 B

AP 3/10

_	Carolin	2
_	Temp	D. 0.
0.5	24.4	7,34
l	11	7.27
2	23.2	2.59
3	22.6	1.81
4	22,4	1.01
* 5	<b>(</b> j	0.74
6	22.2	,30
7	- 81	. 13
8	11.8	,12
9	11.7	.09
10	7.7	, D9
$\mathbb{D}$	ID.A	, Clo
R		
	11	2 - 1
	Linion	
0,5	25,4	6.42
)	25.5	6.40
<u>२</u> २	1	6.43
	23.4	の記述
x 4	20.9	0.71
567	15.2	· 19
6	_1,\	,13
	10.3	,08
8	9.8	.07
-9	9.6	.05
(D)	Cl. 6	<i>k1</i>
3011.11	9.6	, CL1

August	ta 24,	2010
	Time	11:16
	Secchi	1.5

Very Windy Today hard to hold anchor

AD 11/22/10

Carolino 45' D.O. Temp 670 15.3 0.5 671 152 1 152 661 2 3 151 444 4 150 645 5 150 645 6 150 640 7 150 641 7 150 641 643 642 15.0 8 6 36 150 9 19.1 120 D 017 8.2 1 8.2 009 12 13 = 42.64 B CR 0.1 12:30 pm 9/27/10

1

Dates 9-2710 time 1127 Secchi 4

AD 122/10

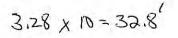
0.5 25.7 808 1 25.7 808 1 25.8 790 2 25.1 167 3 24.8 072 4 246 021 5 243 008 0,5 072 021 008

Jecchi <u>2.5</u> Time T <u>1.30</u> B

07/21/10

Secchi <u>72.5</u> Time T <u>737</u> B

0.5	254	732
l	24.6	701
2	250	531
3	230	106
4	18.4	013
5	13.5	011
6	11.7	009
7	10.2	009
8	9:9	007
9	9.4	005
١Ď	94	004



Union



20	Scott	
-	Temp	D.O.
0.5	14.5	7.21
I	1 1	7.32
2		7.05
3		7.03
4 5		7,10
5		7.21
Ģ	$\vee$	7.24
7	14.5	7.24
Union		
0,5	15.2	7.12
_ 1	Li II	7.10
2	15.1	5.17
3	15.0	4.51
4	14.8	4,52
5	i u	3.80
Ģ	14.3	2.60
7	13,5	0.12
8	11,3	0.08
9	10.1	6,07
10	9.9	0.05

----

7:38
3+1

9-27-10

<u>Time</u> Jecchi 8:18

AD 122/10

Date 06/22/10 June 22nd 2012 Marie 34' Secchi 7.5 Temp DO Time Top 1222 25.1 10.37 .5 24.4 Botton 10.30 1 7.72, Ζ 448 3 200 411 16.4 4567 2 44 13.4 045 12.1 10.4 030 0.21 9-1 8 012 q 8.1 008 7.4 10 Louisa 42' June 22-2010 Jeachi 4:0 Temp D.O. 15 25.3 1229 Time Top 1201 983 Bottom 2 23.1 3 21.6 4 2017.5 824 574 Duto 6/22/10 3.30 200 5 140 0 50 6 121 0.24 7 10.8 0.15 9.4 8 9.14 9 . 7.0 10 57 013 11 5.0 013

010

47

12.

AP 2/2/10

auisa

1/21/10? Secchi _4.5 Time T 11:04 B

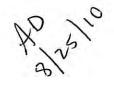
0.5 25.8 891 25.3 1 221 007 12 5.7 13×3.28 = 42.64 13

951

Marie

TE,		
0.5	261	819
1	26,0	825
2	24.1	306
3	22.7	021
L	2179	069
5	13.6	009
6	11.8	008
Ť	104	008
8	9.8	006
9	9.3	005
iÒ	9.1	004
.0		

4.0 Secchi Time T B



	Loui	<u>sci</u> (421)
015 1 X 2	Temp 24,6 24.4 22.6	D.O. 7,44 6,66 0.92
34	20,5 16.6	.13
5 G	12.9 11.1	, [Z, 1,
7 8	10,3 9,1	, 09 11
9	7,8 7,0	,08 .06
	6.1	,05
13	6.4	.03 .02
<u>05</u>	<u>25.1</u>	(34') 9.12
05   2	6011	9.54 9.33
3	22.0	0.40
5 '6	16.2	, C9 , D8
7 Q 9	11.0	.05 .04
9	9,7	.04

Augusta 24, 2010 Time 10:30 Secchi 2'

Very Windy Dry

12 mitures = 39.36

Aug 24, 2010 Time 10:42 Sechi 1.5'

Bout Kept dutiting

AD, 122/10

Louisa 42' Temp D. O. 656 14.8 0.5 656 14.8 1 14.8 653 2 636 3 14.8 456 14.5 4 454 14.3 5 14.3 453 4 14.1 416 7 8 13.6 1.50 101 010 9 007 8.2 10 006 フス 11 7.0 003 12 Marie (34) 1/99 153 0.5 15.3 1082 123 150 950 T. 1 514 14.5 430 14.4 350 14.3 187 11 4547 141 0 45 89 0.14 139 12.8 011 10.4 Ю 007

Dato <u>9-2710</u> Time <u>10:42</u> Juchi <u>4.0</u>

12 = 39.36

Dato 9-2710 Time 1100 Seachi 2.5

10 = 32.80

June 16th 2010 Pleastent Secchi 9.5 Character With 42' Time Top 984 Boltom Temp 20.2 D.0, 987 .5 785 789 753 199 1 23 19.6 755 4567 19.6 6.84 18.8 15.9 5. 30 4.91 13.7 4.82 4.02 89 12.7 375 12.3 2.72 10 12.0 \$266 11.8 1] 242 230 229 11.7 12 11.7 13 11.6 14 11.6 169 15 11.5 16 11.5 17 115 150 18 120 115 105 19 099 20 115

AD 125/10

Pleasant 70' Temp ... D.O. .5 25.5 25.5 25.4 2.4.6 24.2 21.2 0.16 15.8 14.2 13.1 12.6 12.2 12.0 T 0040.04 005 0.05 

Date 2710 Time 203 Secchi 75

\$12/10

	Pleasav	17		08/17/10	9:56 Time
	Temp	D. D.			Secchi 7'
0.5	23.5	5.51			
0.5	23.6	5.84			
2	23.5	5.34			
3	1	5,45			
4		5.40			
5					
ر احک		5.30			
7	22.4	2,08	*		
8	18.4	0.19	10 generation		
9	15.1	, 12			
10	13.8	.10			
η	[3.1	.09			
12	12.8	,08			
13	12.6	,07			
14	12.5	-بان .			
15	12,4				
إلجا	12.4				
	12.3				
- 18	1	1			
19		,06			
20		.05			
	12.3				
22	12.1				
23	12.1	,05	_		
					AD 122/10

Plen	sant	
	Temp	
0.5	166 166	730
Z	16.6	714
	164	717
4	166	709
5	166	7.06
	16.6	701
8	16.5	201
9	165	701
0	16.5	\$693
11	165	691 664
13	163	620
14	161	560
15	126	050
П	12.4	Q.11
18	122 121	08
19	120	:07
20	12.0	,0.6
21	120	.06

100

(

Date <u>921</u> Time <u>1014</u> Secchi <u>6</u>0

68.88 = 21 meters

NB NB

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#### **Clearwater River Watershed District**

WES

#### Lake Level Form

Lake Name <u>GRASS LAKE DAM</u> Volunteer Name <u>JERRY Risberg</u>

	Date	Time	Staff Gauge Reading	Comments
The	4-27-10	11: 101	2.25	1AJ 3/4" PAN 4-24.
TUN	5-4-10	9:AM	13.00	Nove
TUR	4-27-10 5-4-10 5-11-10	2: PM	3.10	HAN IN PAIN
[ sector		, and the		
		1		
		)		
			( <del></del> _	

VIAS

### **Clearwater River Watershed District**

Lake Level Form

Lake Name____RASS LAKE PAMMY Volunteer Name____JERRY Risberg

2010

Date	Time	Staff Gauge Reading	Comments
5/18 Tue	11 Mm	3.18	
\$ 125 Tu	zpm	3.185	Had Ran
101 Tuo	BPM	3.00	No RAIN HARD TO READ
609 Wid	1230Pm	3.00	2 RAN SAT SUN STU
0-11-0	10.10		
-			
	1		
	1		
and the second s			
		1.2	
	•		

WES 3.

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### **Clearwater River Watershed District**

#### Lake Level Form

6	mes Lak	, Pann	
Lake Name	COTSS MARY	la pama	
	Jen Kos	lan	
Volunteer Name	10		
Date	Time	Staff Gauge Reading	Comments
7/20 TW	10 mm	3.62	
7/28 Wed	12 PM	3.35	
013 /re	18 Mm	3.25	RAIN TUR Night
3/11 / W	popi	3.10	A #10 100 101 110
	<u>r</u>		
-			
			-
1			

#### **Clearwater River Watershed District**

#### Lake Level Form

Lake Name_GA	AS DI	9m	
	m		
Volunteer Name	king -	h	
Date	Time	Staff Gauge Reading	Comments
8/14 SAT	2 wer	3.10	
8/15 Wed	400 m	3.05	
8/24 Tue	500 Pm	3.05-3.10	HARD TORCHA
8/27 /11	1000	3.05	n p 4
911 UQ	1000 M	3:00	~
918 84	12 pm	3.15	RAINED ALOT
11.4	- Address		
)			
	<i>j</i>		
1.			
			-

### **Clearwater River Watershed District**

#### Lake Level Form

Lake Name	PASS LAKe	Dan		
Lake Name	Juny Rich	100		
Volunteer Name	Jeny Korn	m		
Date	Time	Staff Gauge Reading	Comments.	1.1
Mar 9/20	10 Am	3:45	3.5 inclus officia	for by of
1.04-9/28	1 pm	4.10		
Tue 10/5	12 PM	4:15		
10010111	2 PM	4.00		
1				
	1.7.1			1

.

By NCO Date 12/13/10 Client _____ Chkd. By _____ Description _____ Grass ____ Sheet_____of____ lake )am Job No.___ From Jerry Stall gauge 3-7 10/27/10 IO AM 11/5 3.8 TROOD 3pm 3.78 11/10 2

Wenck

Wenck Associates, Inc. (763) 479-4200 Fax (763) 479-4242

1800 Pioneer Creek Center P.O. Box 249 Maple Plain, MN 55359-0249

Client:	(	CRWD	-			: Clear		
Project No.:	0002-	129				: Water		ar
Date:	04/06.	10	_		Weather	: Overcast		48
Sampler(s):	DL		2	Sam	ples Taken	:Ye	s) No	
Start Time:	6155		_	Sa	mple Time	: 7:00		
End Time:	7:25							
Channel Conditions:	Clear .		_	DTW Me	asurement	2.1	7	
COC Number:			_					
						Notes	·	
	1	Field Parameters	1					
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)		) pH	(S.U.)			
CLN	4.2	A	50	k				
			4.98				00	0 0
Stage H	t: <u>2'2</u> "		Rated Flow	/:		Gauged Flow	v: 2.8	Lefs
							4	140
							1.	40
			Stream Gau				1.	
Distance from	Width (A)		Velocity	Velo	city	Average		Discharge
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	1			Velocity	Area (ft ² )	
Initial Point (ft)	Width (ft)		Velocity (60%	Velc 20%	city 80%			Discharge
Initial Point (ft) 0, (left side)		Depth (ft)	Velocity (60% Depth)	Velc 20% Depth	city 80% Depth	Velocity		Discharge
Initial Point (ft)	Width (ft)		Velocity (60%	Velc 20%	city 80%	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left		Depth (ft)	Velocity (60% Depth)	Velc 20% Depth , 47	city 80% Depth . 38	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left		Depth (ft) 2 ^l	Velocity (60% Depth)	Velc 20% Depth	city 80% Depth	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Cover		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Cover		Depth (ft)	Velocity (60% Depth)	Velc 20% Depth , 47	city 80% Depth . 38	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Cover		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Cover		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Reight Left		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Covier		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Covier		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge
Initial Point (ft) 0, (left side) Right Left Covier		Depth (ft) 2 ¹ 1.9	Velocity (60% Depth) . ५เว . รว_	Velc 20% Depth , นา	city 80% Depth . 33	Velocity		Discharge

### 84.6

rameters (mS/cm) D.O. (r	Site Sa DTW M mg/l) pl	e Description Weather mples Taken	: <u>(; 4</u> ) : 2	E Clean st No	· · · · · · · · · · · · · · · · · · ·
(mS/cm) <b>D.O.</b> (r	Sa S DTW M mg/l) pl	Weather Imples Taken Sample Time Measurement	:: <u>Ölprca</u> :: <u>(Ye</u> :: <u>G: 4</u> ) :: <u>2</u>	5 a. m.	· · · · · · · · · · · · · · · · · · ·
(mS/cm) <b>D.O.</b> (r	5 DTW N mg/l) pl	mples Taken Sample Time Measurement	:: <u>(Ye</u> :: <u>(): 41</u> :: <u>)</u>	<u>5 a.m.</u> 50	
(mS/cm) <b>D.O.</b> (r	5 DTW N mg/l) pl	Sample Time Measurement	: <u>6:4</u> ;	5a.m. 50	
(mS/cm) <b>D.O.</b> (r	DTW N mg/l) pl	Measurement	2	50'	
(mS/cm) <b>D.O.</b> (r	mg/l) pl				
(mS/cm) <b>D.O.</b> (r	mg/l) pl				
(mS/cm) <b>D.O.</b> (r	2	H (S.U.)	Notes	: NO U	. 1 1.
(mS/cm) <b>D.O.</b> (r	2	H (S.U.)			repana
<b>\$</b>	2	H (S.U.)	1		- <u>) - 1 - 1 - 1 - 1</u>
Stream (	Gauging Dat	ta	Gauged Flov	1	520
th (ft) Veloc Depti	⁶ 20%	locity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0.17					
0,21	6. J				
0.15	2 <b>-</b> - 2				
	-				
	-				
	-			_	
	-		1		

# Field Form: 2009 Stream Sampling

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002 AD / 2/10.

	<u></u>	RWD	-			CLN	li, <u></u>	
oject No.:			<u>.</u>	Site	Description		1 /	
ate:	June 1	2010	÷		Weather	: Light a	louds	
impler(s):	DL		<u>.</u>	Sam	ples Taken	:Ye	s) No	
art Time:		üm	<u></u>	Sa	mple Time	:	m	
nd Time:	7:234	m						
nannel Conditions:	Durk	iome algue on	surface	DTW M	easurement	: Dry	12.59	2
OC Number:		, <u>, , , , , , , , , , , , , , , , , , </u>					<u>ل کند انتها سال</u>	(
						Notes		
	F	ield Parameters				1		
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)	D.O. (mg/l	) pH	(S.U.)			
	16.4		0.60					
								-
Stage H	lt: 2' 7'		Rated Flow	v-		Gauged Flow	. O.C	bcf
						Guiged I Iov	Nr. (	
		5	Stream Gau	ging Data	1		NCO F	<u>5</u> cfs D1
Distance from		01411-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	Velocity		ocity	1	<u> </u>	D' 1
Initial Point (ft)	Width (ft)	Depth (ft)	(60%	20% Depth	80% Depth	- Average Velocity	Area (ft ² )	Discharge (Q, ft ³ /sec
			Depth)	Dopui	Depti	(ft/sec)		(61.1.1.1.1
0, (left side)								
Right			0.14					
Center		1.5	0.15					
Left		1	0.15		1.			
Richt					· · · · · · · · · · · · · · · · · · ·			
Ja		****		1.1.1.1.1				
Constructed in the second s								
			1 · · · · · · · · · · · · · · · · · · ·		1			

T:10185V04\292\Field Forms\Gauging Form

March 27, 2002

Agjoulo

Client: Project No.:	(	CRWD	-		Site Location: <u>Clear Lake N</u> Site Description: <u>Vory poor</u>				
Date:	AND I -						sr .		
	Dennis Samples Taken					(Yes) No			
ampler(s):									
tart Time:		6:00	÷	Sa	imple Time:	6:18 a	L.M.		
nd Time:	6:25		-						
hannel Conditions:		Ke à Smelled		DTW M	easurement:		.08 .		
OC Number:	like sewa	ye (Groy	Nator)						
						Notes			
		Field Parameters							
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH	(S.U.)				
CLN	21.3		0.19						
						Gauged Flow	NED		
		S	Stream Gau	ging Data	1		1020		
Distance from			Velocity	Vel	ocity	Average	1020	Discharge	
Distance from Initial Point (ft)	Width (ft)	S Depth (ft)				Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)	
	Width (ft)		Velocity (60%	Vel/ 20%	ocity 80%	Velocity		and the second	
Initial Point (ft)	Width (ft)		Velocity (60%	Vel/ 20%	ocity 80%	Velocity		and the second	
Initial Point (ft) 0, (left side) $\int_{0}^{1} \int_{0} f(-) - f(-)$	Width (ft)	Depth (ft) $\int_{-1}^{1}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity		and the second	
Initial Point (ft) 0, (left side) $1^{l}$ $1_{l} = \{-\}_{-}$	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity		and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\int_{-1}^{1}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity		and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\int_{-1}^{1}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left- Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left- Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	
Initial Point (ft) 0, (left side) 1 ¹ Left Center	Width (ft)	Depth (ft) $\frac{2^{1}}{2^{1}}$	Velocity (60% Depth)	Vel/ 20%	ocity 80%	Velocity	Area (ft ² )	and the second	

10

Client:		CRWD	_	Si	ite Location	CLN		
Project No.:		. 8	Site Description:				+	
Date:	08/09	40			Weather	for d	ebuo	7.2
Sampler(s):	Dennis			Sam	ples Taken:			
Start Time:	6:35			Sa	mple Time:			
End Time:	6:54		- -			••		
Channel Conditions:	••	1		DTW M	easurement:	2.91		
COC Number:		·						
						Notes:	Veretad	FIDE Some
	F	Field Parameters					duck a	1:
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l	) pH	(S.U.)			
	221		2.06					
Stage H	to Wate	5	Rated Flow	v:		Gauged Flov		
(Dept	to Wata	er)	Stream Gau	iging Data	a		N	D
Distance from		D (1 (0)	Velocity	Vel	ocity 80%	Average		Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	Depth	Depth	Velocity (ft/sec)	Area (ft ² )	(Q, ft ³ /sec)
0, (left side)								
		·						
	-			1.4				125-11
							3	
		· · · · · · · · · · · · · · · · · · ·						
						WB		
		in and				8/23	//0	
		·····						
2				•				22.11

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TADIRSV0402920Field Forms/Gauging Form

Client: Project No.:	C	RWD	÷		te Location:			
Date:	09/13/		÷	Site	Description:	CEN	Clear	Very little
ampler(s):	D.L	10	-			Clear #S		<u>4</u> 6°
tart Time:	6.55		-		ples Taken:			
ind Time:			-	5a	mpie 1ime:	7:00 4	.м.	
hannel Conditions:			-	TYPU MA	asurement:	~	11	-
OC Number:		•	÷	DIWIN		di	66 :	
						Notes:		
-		ield Parameters						
Sample I.D.		Cond. (mS/cm)	The second se	Hq (	(S.U.)			
	112.4		11.44	L				
Stage F		<u>)'</u> 8" '	Rated Flow	v:		Gauged Flov	N: 0.79	cfs
			Stream Gau	iging Data	1		Juk	0
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Deptir	ocity 80% Depth	Average Velocity (ff/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)								
l			.18					
Center	Ħ	1.4	1.21					
¢'			.18					1
			1	•			3	
- in the second								
	1			1				
				1		1 1 1 1 1	1.1	0
W.		•					11/18	10
								Xo
								-

•

Tiniaston 2017 Field Form Cooping Form

l,

Field Form: 2009 Stream Sar	mpling
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Client:	C	CRWD		S	ite Locatior	: Clear	Liora	g. H.		
Project No.:	0002.	-129								
Date:		10	Weather: Overcash							
Sampler(s):	DL									
Start Time:	7:35		Samples Taken: <u>No</u> Sample Time: <u>7:35</u>							
End Time:	8:00									
Channel Conditions:	~ \		DTW Measurement:							
COC Number:							5.10			
						Notes	: 50A			
	I	Field Parameters	5							
Sample I.D.	Temp. (°C)	Cond. (mS/cm	) D.O. (mg/	l) pH	(S.U.)					
CLS	7°		3:46			]				
Stage I	-tt: Ζ΄		Rated Flow			Gauged Flov	N: 2, 2 N	() ()		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velo 20% Depth	ocity 80% Depth	- Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)		
0, (left side)				No.						
Left	1"	2' 2"	.43	.39	. 28					
Center		2'1"	.48	.51	. મૃષ્					
Rynh}	<b>i</b> ″	2'3	. 49	.27	.42					
				•						

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002 AR 8/24/10.

Client:		CRWD								
Project No.:		7		Site	Description					
Date:	05/03/	10	Weather:							
Sampler(s):			-	Sar	nples Taken	:Ye	No No			
Start Time:	7:05		-	S	ample Time	- 7:19	7:19			
End Time:	7:21									
Channel Conditions:	· · · ·		_	DTW M	leasurement	2.	46			
COC Number:			_							
		an an taplance inc				Notes	: Some 1	vezetation		
	1	Field Parameters					above or	Surface		
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm	) <b>D.O.</b> (mg/l	) pH	I (S.U.)		U			
	8.9		3.63			]				
	t: 2'5		Stream Gau			Gauged Flov	>۷	0		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)		
0, (left side)								L		
			.15					5		
Center	· · · · · · · · · · · · · · · · · · ·	\$1.8	.15	]						
			.15		1					
							· · · ]			
					_					
				•		-				

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002

No pullo

Client:	(	CRWD	_	Si	te Location:	CLS	,		
Project No.:			1		Description:		3		
Date:	June 1	ZOD				Light Clouds			
Sampler(s):	DL								
Start Time:	7:30 a	m					7:38 am		
End Time:	7:430	am.					· · · · · · · · · · · · · · · · · · ·		
End Time: Channel Conditions:	Lightalacie	eg: in channe	г	DTW M	easurement:	2'5	13 h c	1,46	
COC Number:	<u></u>	OKPANE					12 0	Le 110	
			-			Notes:			
		Field Parameters				.			
Sample I.D.	100000000000	Cond. (mS/cm)	D.O. (mg/l)	) pH	(S.U.)				
	15,0	13/10	3,50	T T					
Stage I	Ht: 2 5 1/2		Rated Flov	v:	_	Gauged Flow	N: 0.8	2 cfs	
	· 2'5%						no	2 0	
						Gauged Flow	N/-	_	
			Stream Gau	No	a 		1(	)	
Distance from			Velocity	Vel 20%	ocity 80%	Average		Discharge	
Initial Point (ft)	Width (ft) Dep	Depth (ft)	Depth (ft) (60% Depth)	Depth	Depth	Velocity (ft/sec)	Area (ft ² )	(Q, ft ³ /sec)	
0 (loĐ sido)			1	-	-	(IDSec)			
0, (left side) Right	-		0.17	-					
	+	1.5	0.17		1				
Center	+	1.0	0.17	1		the second second			
Left			0.11	1.0	-		2		
	1.5.00								
	-								
								k	
					-				
							<u> </u>		
								-	
					1				
				•					

T.10185/04/292/Field Forms/Gauging Form

March 27, 2002

Ro D D

Client:	(	CRWD	-	S	ite Location:	Clear	Lake &	L		
Project No.:			_		Description:		*			
Date:	7-6-1	0	÷		Weather:					
Sampler(s):	Dennis		-	San	ples Taken:					
Start Time:			Sample Time:							
End Time:					· · ·					
Channel Conditions:	Film oi	surface		DTW M	easurement:	1.0	72' .			
OC Number:	clarity.	minimal	<u>.</u>							
?		•				Notes:				
	1 1	Field Parameters								
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	рĦ	(S.U.)	н 				
CLS	20.3		,32							
		5	Stream Gau		1	Gauged Flow	N<	)		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20% Depth	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)		
0, (left side)				,			2			
1 Left			.37							
•						1				
Center	.422									
							:			
1' Right		······	.37							
5										
				•						
T:1018510412921Field Forms1Geoging Fer					1		<u> </u>	March 27, 2002		

Client:	C	CRWD	-	Si	te Location	CLS	5			
- roject No.:			-1	Site	Description		7			
Date:	08/09/11		4	Weather: Clouding up Very Humid						
Sampler(s):	Pennis		_	Sam	ples Taken:	· · · · · · · · · · · · · · · · · · ·				
Start Time:	7:00		_	Sa	mple Time:					
End Time:	7:18		_							
Channel Conditions:				DTW M	easurement:	2.7	1 ,			
COC Number:		A.					l			
			-			Notes:	Duck L	Sand		
	F	ield Parameters					Vesetat			
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)	D.O. (mg/l)	pH	(S.U.)	Da	star H.	d Euro		
	24.0		0,60			2	AU, IR	h \$ 5 your		
	018-4									
Stage H	tt: 2 8.5"		Rated Flow	r	and the second	Gauged Flow	N: 0.12	cfs		
			Stream Gau	alaa Date			NO			
	1				ocity	<del></del>	1000			
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft ³ /sec)		
0, (left side)				-			1			
left			Ð							
Center		1.4	0.03			1				
risht			Ø							
0,			1	•			2			
		1								
	1									
		6			1					
					1					
1										
, <u> </u>										
	in the second se		1		1			and the second se		

T-10185V0412971Field FormalGeoging Form

March 27, 2002

Ko APzh

Client:	C	RWD	_	S	ite Location:	CLS		
Project No.:	1			Site	Description:			
Date:	09/13/13	5			Weather:	Sunny #	()+a=	460
Sampler(s):	DL			Sam		(Ye		10 1 10 10 10 10 10 10 10 10 10 10 10 10
Start Time:	7:30		7			7: 40	-	
End Time:								
Channel Conditions:	liots of	Ver,	2	DTW M	easurement:	2.(	2	
OG Number:	Water C	Veg. lear						
						Notes	: Cosevel	W/puck h
	F	ield Parameters						PT PULL 4
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l	рН	(S.U.)			
	11,5		2,60					
						Gauged Flow		
			Stream Gau				NG	5
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Stream Gau Velocity (60% Depth)		ocity 80% Depth	Average Velocity (fl/sec)	$\mathcal{N}_{<}$ Area (ft ² )	Discharge (Q, ft ³ /sec)
	Width (ft)		Velocity (60%	Velo 20%	ocity 80%	and the second		Discharge
Initial Point (ft)	Width (ft)		Velocity (60%	Velo 20%	ocity 80%	Velocity		Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velo 20%	ocity 80%	Velocity		Discharge
Initial Point (ft) 0, (left side)	Width (ft)		Velocity (60% Depth)	Velo 20%	ocity 80%	Velocity		Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity		Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth) , 1 4 , 23	Velo 20%	ocity 80%	Velocity	Area (ft²)	Discharge

T101851040297/Field Formationging Form

AD 11 (46/10

Client:	CRWD	Site Location: CLN
Project No.:		Site Description:
Date:	10-5-10	Weather: Clear & Sunny
Sampler(s):	D.L.	Samples Taken: (Tes) No

Sample Time:

DTW Measurement:

pH (S.U.)

### Field Form: 2009 Stream Sampling

Channel Conditions:

Sample I.D.

COC Number:

Start Time:

End Time:

10:25 10:40 itions: <u>Clear some vegetatin</u>

**Field Parameters** 

Cond. (mS/cm) D.O. (mg/l)

Notes:	Saul	1.1	<b>C</b> 1-1-1
	Daw	dead	Crai

2

21'

21/2"

10:30

2

Stage Ht:_____

Temp. (°C)

8.2

Rated Flow:

1,65

Gauged Flow: MID 3,95 cfs

48" Culvert

Stream Gauging Data

Distance from			Velocity		ocity		T	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft ³ /sec)
0, (left side)								te tear de la d
left	1'	1.9'	.65		1.5			
Center Right	2'	м	181					
Right	1'	11	,65			·		
				1				
		( =	•					
				2				
								(C
			6-22					
				<u>/</u>				
	· · · · ·		1					
								3

T:1018510412921Field Forms/Gauging Form

Client:	CRWD Site Lo					n:	2_	
Project No.:			_	Site	Description	1:/		
Date:	10-5-10				Weather	: Clear/s	Sunne	
Sampler(s):	D.L.		-	Sar	nples Taker	: <u> </u>	s) No	
Start Time:	10:46		-			. 10:50		
End Time:	10:54							
Channel Conditions:	Fairly Cle	ar-lots of	Verebation	DTW M	leasurement	:_2' 1'	2	.08'
COC Number:	J		-					54
						Notes	· Notas	much duck
		ield Parameters	a	- <del></del>		. • E.		assume its
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)	D.O. (mg/	) pH	(S.U.)		1	ncreased fl
	8.83		5.63					
	-lt:	(*************************************	Rated Flov Stream Gau			Gauged Flow	w: <u>[/0</u> _	<u>C</u> PS
Distance from			Velocity		ocity	Average		<b>D</b> ' 1
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft ³ /sec)
0, (left side)			S					
left	1	2,0	.27				1.	
Center	2	2.0	138		1			
Right	l	2.0	.27	1				
		9	4					
			أنسبت					
					1			
							G	
	-							
				•	1	54		

.

Field	Form:	2009	Stream	Sampling

Client:	C	CRWD		S	ite Location	: CRa	8.2	
Project No.:	0002-	129	_	Site	Description	: Sancul	nat Stre	ng Flow
Date:	04/06/	10'				: Dierca		.48
Sampler(s):	DL			San		n: (Ye		
Start Time:	8:50					8:55		
End Time:								
Channel Conditions:				DTW M	leasurement			
COC Number:								
			-			Notes	SAME	Verelal
	F	ield Parameters	S			1 (mahak	: Some	mane 7)
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm	) D.O. (mg/l	l) pH	I (S.U.)	1 Provid	3 100	jurs ; /
CR28,2	8.1		14.65					
	4'2"						1	
Stage H	t:		Rated Flov	N:		Gauged Flov	. 35.	64 c fs
						Gauged 110	<u></u>	
							1110	
			Stream Gau	iging Data	a		100	0
Distance from			Stream Gau	Vel	ocity	1	104	0
Distance from Initial Point (ft)	Width (ft)	Depth (ft)				- Average Velocity	/ V <	Discharge
	Width (ft)	Depth (ft)	Velocity (60%	Vel 20%	ocity 80%	Average		Discharge
Initial Point (ft)	- Width (ft)		Velocity (60% Depth) -0.03	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft)	Width (ft)	1,1	Velocity (60% Depth)	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft)	Width (ft)	.   .7  .9	Velocity (60% Depth) -0.03 0,01	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12	Width (ft)	.     . 7	Velocity (60% Depth) -0.03 0.01 0.12	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9	Width (ft)	.   .7  .9 2,2	Velocity (60% Depth) -0.03 0.01 0.12 0.41	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12	Width (ft)	1.1 1.7 1.9 2.2 2,25	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.41 0.67	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12 15	Width (ft)	1.1 1.7 1.9 2.2 2.25 2.1	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.67 0.67 0.98 1.04	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12 15 18	Width (ft)	1.1 1.7 1.9 2.2 2.2 2.1 2.1 2.1 2.1	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.41 0.67 0.98 1.04 0.89	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12 15 18 21	Width (ft)	1.1 1.7 1.9 2.2 2.2 2.1 2.1 2.1 2.1	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.67 0.98 1.04 0.89 0.77	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12 15 18 21 24 27	Width (ft)	1.1 1.7 1.9 2.2 2.25 2.1 2.1 2.1	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.67 0.98 1.04 0.89 0.77 0.52	Vel 20%	ocity 80%	- Average Velocity		Discharge
Initial Point (ft) 0, (left side) 3 6 9 12 15 15 18 21 24	Width (ft)	1.1 1.7 1.9 2.2 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	Velocity (60% Depth) -0.03 0.01 0.12 0.41 0.67 0.98 1.04 0.89 0.77	Vel 20%	ocity 80%	- Average Velocity		Discharge (Q, ft ³ /sec

T:1018510412921Field Forms\Gauging Form

March 27, 2002 APhillo.

Client:		CRWD	-	Si	te Location			
Project No.:			-	Site	Description:	:_Clear		
Date:	04/19	/10	_		Weather			n around E
Sampler(s):	DL		_	Sam	ples Taken:			
Start Time:		<u></u>	_	Sa	mple Time:	8:31		
End Time:	8:35					••		
Channel Conditions:	Clean a	Jill some L	egetation	DTW M	easurement:			
COC Number:			-					
ter				<u></u>	11 - 21 - 21	Notes	Seemed	1 to be
		Field Parameters				( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	lots of	dead
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l	) pH	(S.U.)		Voyeta	Lion Flowin
CR 28.2	10,2		4:04				0	
Stage I	н <u>т: Ҷ'Ҷ</u>		Rated Flov Stream Gau		1	Gauged Flov	w: <u>∂7:0</u> N<	ects 6
Distance from		an a	Velocity		ocity	Average		Disabarga
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)		.4	0.02					
3'		1.7	.07					
6'		1.6	.18					
9		1.9	,35					
12		1.8	1.63				· · · ·	
15		1.8	.85					
18	1	1.8	.70					
21		1.6	,75					
24		1.6	.70				_	
27		1.4	.48					· · · · · · · · · · · · · · · · · · ·
30		1.5	,36					
33		1.4	,13					
34		1.5	0.04	•				
(Right Side		,9	0	-				

T:10185041292\Field Forms\Gauging Form

March 27, 2002 AD 4/10

Client:	0	CRWD	-			<u>CR28</u>	,DD	11
Project No.:	arlas 1		-	Site	Description:		1	1
Date:	<u>05/03/1</u>	D	-	120	Weather:	Cold on	ercast	47' Win
ampler(s):	<u>UL</u>		-			Ye		<u> </u>
tart Time:			-	Sa	umple Time:	7:54		
nd Time:			<del>-</del>					
hannel Conditions:			-	DTW M	easurement:			
OC Number:			-					
	······					Notes:	Some u	vege tation
Sample I.D.		Field Parameters Cond. (mS/cm)	1	- H	(S.U.)			
Sample 1.D.	9.6	cond. (mo/om)	4.52		(3.0.)			
						1		
Stage H	ו <u>ו: י</u> ן ז"		Rated Flow			Gauged Flow	w: <u>15</u> .	<u>44</u> cfs
and the second second	1 1		Stream Gau		ocity			
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)	Blille	0.6	0.01	1 7		(10000)		
3		0.6	0,03		( I)			
6		1.3	0.23					
9		1.5	0,30	e			1	
12		1.5	0,43	-	10-20		••	
15		1.7	0,\$6					
18	1	1,5	0.53	[		T	z = z	
21		1.3	MAA	0.55				
24		1,3	0.45					
27		1.4	0,38					
30		101	0.25					
33	1.24	- MAR	0.04		1			
36 end	·	1,3	0		C			
(P								(

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002

Client:	C	RWD		Si	ite Location	: CP 21	8.2	
Project No.:				Site	Description	: Lots of	Vesetat	ion
Date:	May 17,	2010				: Clear à	0	
Sampler(s):	DK			Sam	ples Taken	6	-	/
Start Time:	6:30				The second secon	6:40		
End Time:	6.55							
Channel Conditions:				DTW M	easurement		-	and the second second
COC Number:						-		
						Notes:	Some	Carp in
	F	ield Parameters				1	channe	J J
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	) D.O. (mg/l)	) pH	(S.U.)		0.0001010	4
	14.4		1.46					
						2		
Stage H	It: 3' 7"		Rated Flow	v:		Gauged Flov	: 34.0	Acf<
		0.00					··	11/2
			Stream Gau	ging Data	a		-	010
Distance from	1 · ·	يحكمن عبريه ببوطك بإطلال ويست	Velocity		ocity	Average	T	Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity	Area (ft ² )	(Q, ft ³ /sec)
	DESHAN	1.4	1		-	(ft/sec)		······
0, (left side)	usorury		.10					
6		2						
a		2.3 2.6	.31	ing and the	-			
			. 42		1			
12		2.8	• 48					
15		2.6	.53					
18		2.3	.86					
21		<u>a.3</u>	.73	-				
24		2.3	.52					
27		2.2	.32	-				
30		2.1	.29					
33		2.1	.15					
36		2.1	.08	•				
38 end		1.9	. 02					

TA018540412921Field Forms/Gauging Form

March 27, 2002

10

lient:	(	CRWD	-		te Location:	CR	28.2	
oject No.:	+	ich - an-	8	Site ]	Description:			
ate:	Bline	157 2010			Weather:	A		
impler(s):	DL				ples Taken:	(Yes		
art Time:	<u> </u>		÷/	Sa	mple Time:	8:01	4	
nd Time:	11	1010	÷		-			
nannel Conditions:	Heavy in	Y CLP	5	DTW M	easurement:			
OC Number:	÷	w or we wanted	-0-			NT - 4		
		Field Parameters				Notes:		
Sample I.D.	Temp. (°C)		D.O. (mg/l	pH	(S.U.)			
	180		1,91		<u> </u>			
Stage I			Rated Flov Stream Gau			Gauged Flov	NCD	
Distance from			Velocity		ocity	Average		Discharge
Initial Point (ft)	Width (ft) Depth	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity (ft/sec)	Area (ft ² )	(Q, ft ³ /sec)
0, (left side)	3.5	4'5"	0.1	~		1		
	3.5	4'.5"	@.11					
	3.5	4'.5"	6.11					
	3.5	4.5"	0.14			4		
	3.5	4.5"	0.12					
	3.5	4' 5"	0.12					
	3.5	4'5"	0.11	-				
	3.5	4'5"	0.08					
	3.5	4 6"	0.08					1
	3.5	4'6"	0.10					
	3.5	to-	0.12	-				
	3.5	14	0.11	-				
	3.5	11	0.09	ŀ				
	3,5	11.	0.16					
101850412921Field Forms\Gauging Fo		[4]	0.12		Ĩ			March 27, 2002
	3.5	4	0110					

Ag24/1P

Field	Form:	2009	Stream	Sampling

Client:	C	RWD	_	Si	te Location:	CR2	18,2		
Project No.:			_	Site ]	Description:	heavy	reading	101	
Date:	7-6-1	D	-		Weather:	1	5		
Sampler(s):	Dennis		Samples Taken: (Yes) No						
Start Time:				Sa	mple Time:	7:2	5 G. M		
End Time:									
Channel Conditions:	Lots of	Veretation	floatin	DTW M	easurement:				
	isht sten		- 11- 1	2					
			-			Notes:	70-		
	~ I	Field Parameters					South I	BAN	
Sample I.D.	1	Cond. (mS/cm)	D.O. (mg/l	Ha	(S.U.)		Culvent	choked	
CR28.2	32.4		0.27		(		- Went	CNORCO	
			10001			1			
Stage F	It: 3' 3"		Rated Flov			Coursed Elso	11.6	21.A	
Stage 1.	n. <u>9</u>	-	Raieu Flov	v		Gauged Flov	w:C	ILC13	
			Stream Gau	ging Data	1		NZT		
Distance from	1.12		Velocity		ocity	Average		Discharge	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity	Area (ft ² )	(Q, ft ³ /sec)	
0, (left side)	1	4.15	.54		-	(ft/sec)			
2			.52	1					
3			,52	1	1				
ц			,53		-				
5	122		.53	1.	1				
6			.52	1					
2				1.0	1-0	)			
Ś		+	.40			eemed -	to have	z a mai	
			121		6	h ll	ahish 1	n tront	
	-				-0	- culle		rth side	
							NO	rth Culver	
/	1			·					
	1.1.1								

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March 27, 2002

amplar(a)-	Da		-00		Weather:	-	ry Hum	iid.
ampler(s):	Denni		÷		ples Taken:	(	)	
tart Time:	7:35		-1	Sa	mple Time:	8:00	an	
ind Time:	8:02				1.5			
Channel Conditions:			-	DTW Me	easurement:			
COC Number:	······		- C					and the
······		C.110						with duck
Sample I.D.		Field Parameters Cond. (mS/cm)			(0.11)			some bu
Campie I.D.	23.2	Cond. (morem)	D.09	<u>y</u> pa	(S.U.)		1.1	to be hea
	1932		10.01	1			getation.	. Slight St
Steen II	±56"					estim	10	n c.
Stage H	<u>EJ6</u>		Rated Flow	v:		Gauged Flow	N: 1:01	2cts
		5	Stream Gau	ging Data	r -		NG	0
Distance from	···		Velocity		ocity	A	1	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ff/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)								
	1							
				1				
					U			
								1
		· · · · · · · · · · · · · · · · · · ·			1			2
				•				

Client: Project No.:		CRWD				CR 21	3.2		
Project No.: Date:	09/13/	10		Site	Description	ſ			
Sampler(s):	<u>-11-21</u>	10	-	. Weather:					
	0.11			Samples Taken:			s) No		
Start Time:	8:14			Sample Time:			0		
End Time:	Clea		<del>.</del>				-71	-	
Channel Conditions:	_ clea	<u> </u>		DTW M	easurement:	4.2	-11		
COC Number:			-						
	<del></del>	Field Parameters		Carl States		Notes	·		
Sample 1.D.	1	Cond. (mS/cm	1	) pH	(S.U.)				
	13.5		1.75	d <u>ar dar</u>	-				
	<del>1</del>		Stream Gau				N <c< th=""><th><u>08</u>cfs</th></c<>	<u>08</u> cfs	
Distance from	WE ML (O)	D	Velocity	Vel 20%	ocity 80%	Average		Discharge	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	Depth	Depth	Velocity (ft/sec)	Area (ft ² )	(Q, ft ³ /sec)	
0, (left side)									
3		1.7	0.03						
6		2.3	032		120				
9		2.4	0.46						
12		a.6	0.31			15	•		
15	11.00	2.65	0.32		1				
18		2.8	0.27						
21		2.6	0.27				1		
18 21 24		2.3	0.23						
27		2.2	0.27						
30		2.2	0.33						
33		1,9	0.30	4.9			1-77		
	1								
36		1.8	0.09	•					
27 30 33 36 34				•					

1

1/18/10

Field Form: 2009 Stream Sampli	ng	
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Client:		CRWD		S	ite Location	: <u>CR 2</u>	8,3			
Project No.:					Description		<u> </u>			
Date:	10-5-10	>			Weather	:Clear/s	Ni Mala			
Sampler(s):	D. L.			Sar	nples Taken	E	a construction of the second se			
Start Time:	11: 15			Sample Time: 11,20						
End Time:	11:40									
Channel Conditions:	Murby "			DTW M	leasurement	: 3' 8	34	3.66		
COC Number:	)							2. aq		
						Notes				
	F	ield Parameter	S				-			
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm	1) D.O. (mg/	l) pH	(S.U.)					
	9.8		3.96							
			Rated Flow		1	Gauged Flov				
			Sfream Gau	7.07						
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20% Depth	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)		
0, (left side)	1.4)		0.04							
3	2.0		.46							
6	2.4		\$55?							
9	2.7		. 44							
12	2.8	7	,51							
15	271	/	.45							
18	2.5		.65							
21	2.4		.79	(		2				
24	2.5		,59							
27	2.3		,50							
30	2.2		.62							
33	22		.64							
Bank 36	2.2		.15	•						
			Contraction of the second							

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002

Client: Project No.: Date: Sampler(s): Start Time:	0002-1	/10		Site San	Description: Weather: pples Taken:	WR Mary li Overcas (Yes 9:3	He ver	etation .47°
End Time: Channel Conditions:	Vater C	lear - Si	It bollo,	DTW M	easurement:	4'	7′′	
COC Number:								
ter terreter deservations		ield Parameters	and the second second			Notes:		
Sample I.D.		Cond. (mS/cm)	D.O. (mg/l	DH	(S.U.)			
	5.9°	<u> </u>	11.52	1				
Stage H	<u>⊧ 4 ]</u>		Rated Flow	ging Dat		Gauged Flow	v: <u> </u>	() ()
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20% Depth	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)		\$2:7		I T	0.41			
1,5		2,5			D.54			
3		2.2			D.68			
4.5		2.2			0.61			
4		2.1		· · · ·	0.69			
7.5		2.1			0.69			
9		2			0.61	•		
10.5		2.1	1.00		0.64		-	
12		2.2			0.66			
13.5		2			0.67			
15		2.1			0.45			
Right Side		2.2			0.53			
				•				

T:\0185\04\292\Field Forms\Gauging Form

March 27, 2002

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Field Form: 2009 St	ream Sampling
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Client:		CRWD			te Location:	ER V	VR 0.2	)	
Project No.:		1		Site I	Description:				
Date:	05/03,	10			Weather:	Overcas	st 47°	- 40	
Sampler(s):	D.L.			Sam		Yes No			
Start Time:	8:27				mple Time:				
End Time:									
Channel Conditions:	·			DTW Me	asurement:	5'	5.5"		
COC Number:			_						
						Notes			
		Field Parameter							
Sample I.D.	Temp. (°C)	Cond. (mS/cm		) pH	(S.U.)				
	10,3		8.93			1	-		
Stage H	lt: <u>5'5</u> /2	4 2	Rated Flov	w:		Gauged Flov	w: 9.0	icfs	
			Stream Gau	iging Data		_	N<(	C	
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vele 20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)	
0, (left side)		0.35	0.17						
		1.2	0.61	11					
2		1.1	1.03						
3		i,i	1,23		1				
4		1	1,34						
5			1,36						
6		0.9	1.18			1			
7		1	1.09			1.141	1		
\$		1	10MANBA	9h779	D.79	(			
edye		0,7	0.46	- <u>C Mar</u>					
<u> </u>									
								1	

T:0185\04\292\Field Forms\Gauging Form

March 27, 2002

Client:		CRWD		S	ite Location:	WRD.	2	
Project No.:			<u>.</u>	Site	Description:	Clear	Some	Jezetatio.
Date:	June	1 2010	_		Weather:	Sunn		Jean
Sampler(s):	DL		Samples Taken:		Ye			
Start Time:	8:35	, ·		Sample Time:		8:45		**
End Time:	9:0	D						1
Channel Conditions:	X.			DTW M	easurement:	ANN	90° 6:	2"
COC Number:	-		_			H	<u> </u>	
						Notes		
	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Field Parameters				h		
Sample I.D.	Temp. (°C)	Cond. (mS/cm)		pH	(S.U.)			
	20		7,54	-				
		5	Stream Gau	ring Date	2		NCD	
	1			NC 245-201	and the second		<del></del>	
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	NC 245-201	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
	Width (ft)		Velocity (60%	Vel 20%	ocity 80%	and the second se	Area (ft ² )	
Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20%	ocity 80%	Velocity	Area (ft ² )	
Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth) O, 04	Vel 20%	ocity 80%	Velocity	Area (ft ² )	
Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24	Vel 20%	ocity 80%	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side) 1 2	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 D,53	Vel 20%	ocity 80%	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side) 1 2 3	Width (ft)	Depth (ft)	(60%) Depth) 0.04 0.24 0.523 0.523 0.44 0.523 0.44 0.523 0.44 0.523	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 D.53 0,64 .75	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6 7	Width (ft)	Depth (ft)	(60%) Depth) 0.04 0.24 0.53 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.52 0.53 0.44 0.53 0.53 0.44 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 0.24 0.53 0,63 .52 .52 .52 .52 .52 .52 .52 .52 .52 .52	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 1 1 1 1 1 1 1	Width (ft)	Depth (ft)	(60%) Depth) 0.04 0.24 0.53 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.44 0.53 0.52 0.53 0.44 0.53 0.53 0.44 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53 0.53	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 1 1 1 1 1 1 1	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 0.24 0.53 0,63 .52 .52 .52 .52 .52 .52 .52 .52 .52 .52	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 1 1 1 1 1 1 1	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 0.24 0.53 0,63 .52 .52 .52 .52 .52 .52 .52 .52 .52 .52	Vel 20%	ocity 80%	Velocity		
Initial Point (ft) 0, (left side) 1 2 3 4 5 6 1 1 2 3 4 5 6 1 1 1 2 3 4 5 6 1 1 1 1 1 1 1 1 1	Width (ft)	Depth (ft)	Velocity (60% Depth) 0,04 0.24 0.24 0.53 0,63 .52 .52 .52 .52 .52 .52 .52 .52 .52 .52	Vel 20%	ocity 80%	Velocity		

T:101850412921Field Forms/Gauging Form

March 27, 2002

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62

Client:		RWD	_	Si	te Location:	n: WROIZ			
roject No.:	-				Description:				
Date:	7-6				Weather:				
Sampler(s):	Denn	S		Sam	ples Taken:	Yes	No		
Start Time:	71,5	5		Sa	mple Time:				
End Time:	8:21	5				• •			
Channel Conditions				DTW M	easurement:	4'	9" .		
COC Number:	, J		_				-1		
*						Notes:	lots of	vegetati	
	F	ield Parameters						n.KS - Nove	
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	рH	(S.U.)		J .	(main)	
	23.6		5.47				<u></u>	<u></u>	
Stage F	н <u>: 4'9"</u>		Rated Flow		 1	Gauged Flow	N: <u>@.0</u>	<u>6 C</u> TS D	
	1 1		Velocity		ocity		1		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ff/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)	
0, (left side)		19	0,09	1.					
	l	1.75	0.25	5201		-			
	2	21-	139						
	3	2	644			· · · · · ·			
	4	1.85	.46	·			3		
	5	1.8	,46						
-	6	1,75	.4)						
	17	1,95	,33						
	8	- 1,9	,34						
	9	1.4	114						
				1	and the second se		1		
close to bank	10	VT.	,02	-					
close ho bank			,02						
close ho bank			,02	•					

T:10185V0412921Field Forms1Gauging Form

Mando 27, 2002 ASpullo

lient:	CI	RWD		Sit	e Location:	WRO	:2'			
roject No.:				Site I	Description:		7			
ate:	08/3/1	0	- 		Weather:	Cloudy	a Vern	Aumid 30		
ampler(s):	Dennis		<u>.</u>	Sam	ples Taken:	Yes	No	-farance - E-		
art Time:	7:44	•	intern	al Sau	nple Time:					
nd Time:	9:19		phone	Carl	nple Time:	1.1	1. P			
hannel Conditions:	9:40			DTW Me	asurement:			(		
OC Number:			_							
						Notes:				
	F	ield Parameters						1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -		
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH	(S.U.)					
	21,1		0,14							
	11									
Stage H	It_66	$\geq$	Rated Flow	r <u>.</u>		Gauged Flow	N: 0.40	lefs		
							11.			
							NCC	$\mathcal{I}$		
			Stream Gau				1050	2		
Distance from	Width (B)		Velocity	Vela	wity	Average		Discharge		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	<del></del>			Average Velocity	Area (ft ² )			
Initial Point (ft)	Width (ft)		Velocity (60% Depth)	Velo 20% Depth	city 80%	Average		Discharge		
	Width (ft)		Velocity (60% Depth)	Velo 20% Depth	city 80%	Average Velocity		Discharge		
Initial Point (ft)	Width (ft)		Velocity (60% Depth) 0,05 0.07	Velo 20% Depth	city 80%	Average Velocity		Discharge		
Initial Point (ft) 0, (left side)	Width (ft)		Velocity (60% Depth) 0,05 0.07	Velo 20% Depth	city 80%	Average Velocity		Discharge		
Initial Point (ft) 0, (left side)	.6.		Velocity (60% Depth) 0,05 0.07	Velo 20% Depth	city 80%	Average Velocity		Discharge		
Initial Point (ft) 0, (left side) 1 0 3	·6 ·7 ·6 ·6 ·6		Velocity (60% Depth) 0,05 0.07 .11 .13 .15	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·6 ·6 ·6 ·6 ·6 ·6 ·5 ·55		Velocity (60% Depth) 0,05 0.07 0.07 0.13 1.5 0.23	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·5 ·55 ·65	Depth (ft)	Velocity (60% Depth) 0,05 0.07 .11 .13 .15 .13 .0(.	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·6 ·6 ·6 ·6 ·6 ·6 ·5 ·55	Depth (ft)	Velocity (60% Depth) 0,05 0.07 0.07 0.13 1.5 0.23	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·5 ·55 ·65	Depth (ft)	Velocity (60% Depth) 0,05 0.07 .11 .13 .15 .13 .0(.	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·55 ·65 ·55	Depth (ft)	Velocity (60% Depth) 0,05 0.07 .11 .13 .15 .13 .0(.	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·55 ·65 ·55	Depth (ft)	Velocity (60% Depth) 0,05 0.07 .11 .13 .15 .13 .0(.	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		
Initial Point (ft) 0, (left side) 1 2 3 $\smile$	·6 ·7 ·6 ·55 ·65 ·55	Depth (ft)	Velocity (60% Depth) 0,05 0.07 .11 .13 .15 .13 .0(.	Velo 20% Depth	city 80%	Average Velocity	Area (ft²)	Discharge		

TADIRSUH(292)Field Formal Geoging Form

March 27, 2002

P. 81

1/10

Client:	C	RWD	÷	Si	ite Location	WRC	),2	
Project No.:				Site	Description			
Date:	09/13/	0	-		Weather			
Sampler(s):			-	Sam	ples Taken	: (ve	s) No	
Start Time:			_	Sa	ample Time			
End Time:	9:58		_					
Channel Conditions:	John Veg	· along Bo	UHS/	DTW M	casurement			
OC Number:	Litter i	ery Clear	-					
				- MC-LL-MD-		Notes:		
	1	ield Parameters	1	J		-		
Sample I.D.		Cond. (mS/cm)	The second s	100000	(S.U.)			
WROIZ	14.2		16.70	1		1		
	n: 5' 8"						19	2-6-
Stage I	-lt: 0 0		Rated Flow	w:		Gauged Flow	w:	245
			Stream Gau	iging Data			N	<0
Distance from		<u> </u>	Velocity		ocity	Average		Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity (ft/sec)	Area (ft ² )	(Q, ft ³ /sec
0, (left side)	D	.8	,063					
	I.I.	.9	,07					
	2	<u>n</u>				· · · · · · · ·		
	3	1,05	,40				10.201	
	H	1.0	, 51					
	5	.9	,40					
	C	,q'	,29					
	9	1.D	,08	-				
	Bank	,5	-0,1					
	,					1		<u> </u>
				1		1		
			-					
		1.1.2		•				
	911.2							

T.101851041297/Field Forms Charging Form

March 27, 2002

• *

Client:	CRWD	Site Location: WR 0.2
Project No .:		Site Description:
Date:	10-5-10	Weather: Clear & Sunny
Sampler(s):	D. L.	Samples Taken: (Yes) No
Start Time:	12:05	Sample Time: 12; 15
End Time:	12:25	
Channel Conditions	: Clear et Aligh	DTW Measurement: 4' 10" 4,92
COC Number:		
		Notes: Water level up
	Field Parameters	after quite a bit of

 Field Parameters

 Sample I.D.
 Temp. (°C)
 Cond. (mS/cm)
 D.O. (mg/l)
 pH (S.U.)

 WRO.2
 12.6
 8.777

rain . of of very hú Lots of leaves

Stage Ht:____

Rated Flow:

Gauged Flow: 6.68 cfs

**Stream Gauging Data** 

Distance from			Velocity		ocity		T	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)		1.7	.07					
1		1.8	,12					
2		2.0	.18					
3		2.1	.60					
4		2.0	,68					4
5		1.9	165		1			
f		1.9	.57					
		1.9	.42					
8		1.7	.12	-				
9		1.3	-07	1				
Right bank		<u>`</u> ,7	,03					
	-		-					
			-	•				
				· · · · ·				

T:\0185\04\292\Field Forms\Gauging Form

1.86 1.76

Client:		CRWD		S	ite Location	: CR.10	5	
Project No.:	6002				Description	: Useshe	5. shruches	l aver l
Date:	. /	10			Weather	: Overa	nd	. 48°
Sampler(s):	D.L.		-	San	nples Taken		*	
Start Time:	39:5	5			ample Time			
End Time:								
Channel Conditions:				DTW M	easurement			
COC Number:								
						Notes	Taken	from
	<b></b>	Field Parameters					catwa	
Sample I.D.	1	Cond. (mS/cm)	D.O. (mg/l	) pH	(S.U.)			
Sector Sector Sector	9.1		13.32			]		
		0	1					
Distance from		5	tream Gau Velocity				1 1	_
Distance from Initial Point (ft)	Width (ft)	S Depth (ft)	Velocity (60% Depth)		ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	<u> </u>	Velocity (60%	Vel 20%	ocity 80%		Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	<u> </u>	Velocity (60%	Vel 20%	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20%	ocity 80%	Velocity	Area (ft ² )	Discharge (Q, ft ³ /sec)
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vel 20%	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	
Initial Point (ft) 0, (left side)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Vela 20% Depth	80% Bopth	Velocity	Area (ft ² )	

Field Form: 2009 Stream Sampling

•

Client:		CRWD	-	Si	ite Location:	- <del>1</del> , (	CR 10.	5
Project No.:			-	Site	Description:			
Date:	05/03	10			Weather:			
Sampler(s):				San	ples Taken:	Ye	s) No	2 F. F. F.
Start Time:	8:51	8:51			Sample Time: S Q:OD			
End Time:	9:10							
Channel Conditions:				DTWA	easurement:	·	-	
COC Number:	Cicui		•		easurement:			
COC Mulliber.			÷1			der.		
- the state of the	in the second	F-11D		ind an		Notes:	Veg	
Comple I D		Field Parameters			(0.11)			
Sample I.D.	Temp. (°C)		D.O. (mg/l フィコ	l) pH	(S.U.)			
	12,5		1 00		Determinen			
150 (	3.1	5	staff					
入たつ 1 マイ13/15 Stage F	It: 5 4	The second second	3.18		4	Gauged Flow	w:	
Hat	2.352			7				
(leva	- /	J .	2.61	261				
Distance from		ť	- 417		1 0004	Average		Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity	Area (ft ² )	(Q, ft ³ /sec)
	-		Depuij			(ft/sec)		_
0, (left side)								
		2.64 FB	). 		12.1			
						-		
					·		1	
a the second		the second se		Low Low Concerns		and the second second	in a second by	

T:0185\04\292\Field Forms\Gauging Form

March 27, 2002 AD 410 . 8/24/10 .

Client:	C	RWD				CR 10		
Project No.:	× 1	sh	-	Site J			· · · · · · · · · · · · · · · · · · ·	
Date:	June 1	2010			Weather:			
Sampler(s):	DL		4	Sam	ples Taken:	Yes	> No	
Start Time:	9:08	-1 -10-7-0	-	Sample Time:		_		
End Time:	9:22		-			••		
Channel Conditions:	Clear .		-	DTW Me	easurement:			
COC Number:		-	-					
	- Constanting					Notes:		
	[	ield Parameters						
Sample I.D.	The second se	Cond. (mS/cm)		pH 	(S.U.)			
	22.5		8.94					
() Stage H	WL 3.1		Rated Flow		_	Gauged Flov	v:	
Hend ;	0,42			E. Sectors				
[]~ <i>m</i> ( )	<del></del>		Stream Gau				<del></del>	
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	ocity 80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
0, (left side)		1						
			-					
	1						3	
				•				

T401850412921Field Forms\Genging Form

March 27, 2002

4D 1110 вI.

Client:	C	RWD	-	Si	te Location:	CRID	).5·	
Project No.:			-	Site I	Description:		•	
Date:	1-6-10	)	-		Weather:			
Sampler(s):	Dennis			Sam	ples Taken:	Yes	No	
Start Time:		•		Sa	mple Time:	812	26	
End Time:			2				- 910- E1-00-01-	
Channel Conditions:	••			DTW Me	easurement:		21	
COC Number:		•	5					
					-	Notes:		
	F	ield Parameters						
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)	D.O. (mg/l)	) pH	(S.U.)			
CR 1015	25.7		6.25					
Gt T	" HDF!		D . 10			Service and		
Stage H	It: 4.05'		Rated Flow	v:		Gauged Flow	w:	
Hei	a:1.37							
	101-1-01		Stream Gau	ging Data	·			
Distance from			Velocity	Vel-	ocity 80%	Average		Discharge
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	Depth	Depth	Velocity	Area (ft ² )	(Q, ft ³ /sec)
(loft side)			1		-	(ft/sec)		
0, (left side)								
	+	200						
							-	
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TADIASVOA2921Field Forms/Gauging Form

March 27, 2002

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Client:	C	RWD				CR 10	2,5	
_ roject No.:	na/ 1	/~		Site I	Description:			
Date:	08/10/	10	÷.		Weather:		Vern	Hamid
Sampler(s):			<del>.</del>	Samples Taken:				
Start Time:	9:29	4:29		Sa	mple Time:	9:30		
End Time:	9:36		<u> </u>		_			
Channel Conditions:				DTW Me	easurement:			
COC Number:								
						Notes:		
	· F	ield Parameters				•		
Sample I.D.	Temp. ( ⁰ C)	Cond. (mS/cm)	<b>D.O.</b> (mg/l)	pH	(S.U.)			
	27.7		3.32					
	2ab: 0,7	2	Stream Gau	ging Data			<del>,</del>	
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
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T:1018540412971Field FormalGauging Form

Manuth 27, 2002 0 P

Client:	C	RWD	21	Si	te Location:	CRID	.5		
Project No.:						Clear			
Date:	9-13-1	v				Sunny		640	
Sampler(s):				Samples Taken:					
Start Time:	(0:05		2						
End Time:									
Channel Conditions:			<u>_</u>	DTW M	easurement:			0	
COC Number:			_				32.0		
	- X C-P-5- 1818-3					Notes	Very (	Clear	
	F	ield Parameters							
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l	рН	(S.U.)			_	
CR 10,5	17.9°		7.20						
Distance from			Velocity	Vel	ocity	Average		Discharge	
Head;	0.52		Stream Gau				<del></del>		
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft ³ /sec)	
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T.10125002925Field Former Complex Form

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Minsh 27, 2002

	CRWD		Site Location	: CR 10,5			
10-5-10 DL							
12:29							
12:46							
Clear .			Guaret 4.15				
				Notes:			
1	Field Parameters						
Temp. ( ⁰ C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)	1.5.5			
14.4		8,20					
	10-5-17 DL 12:29 12:46 Clear	DL 12:29 12:44 Clear Field Parameters Temp. (°C) Cond. (mS/cm)	1D-5-10         DL         12:29         12:44         Clear         Field Parameters         Temp. (°C)         Cond. (mS/cm)         D.O. (mg/l)	ID-5-IO     Site Description       ID-5-IO     Weather:       ID:20     Samples Taken:       ID:20     Sample Time:       ID:3:46     DTW Measurement:       ID:407 Zero 6 f       Field Parameters       Temp. (°C)     Cond. (mS/cm)       D.O. (mg/l)     pH (S.U.)			

Stream Gauging Data

Gauged Flow:____

Width (ft) Depth (		t) Velocity (60% Depth)	Velocity			T	- Carlos - Carlos
	Depth (ft)		20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)
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			<u>.</u>				
			•				
			Width (ft)     Depth (ft)     (60% Depth)	Width (ft)       Depth (ft)       (60% Depth)       20% Depth	Width (ft)       Depth (ft)       (60% Depth)       20% Depth       80% Depth	Width (ft)       Depth (ft)       (60% Depth)       20% Depth       80% Depth       Average Velocity (ft/sec)	Width (ft)Depth (ft) $(60\% Depth)$ $20\% Depth$ $80\% Depth$ Average Velocity (ft/sec)Area (ft²)

T:10185\04\292\Field Forms\Gauging Form

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Field Form: 2009 Stream Samplin	Field	Form:	2009	Stream	Sampling	J
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	C	Site Location: <u>CRO.</u>							
Project No.:		1.0	Site Description:						
Date:	05/03/				Weather:				
Sampler(s):	Dennis					Ye	s No		
Start Time:							· 9:24		
End Time:									
Channel Conditions:	,		DTW Measurement:						
COC Number:									
						Notes:			
		Field Parameters							
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l	) pH	(S.U.)				
Stage F	It:		Rated Flow			Coursed Flou			
Stage 1.		<u> </u>	Rated Plow	v		Gauged Flov	V:		
		\$	Stream Gau	ging Data					
Distance from			Velocity		ocity	Average	1	Disala	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)	
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March 27, 2002

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E. Coli

### Field Form: 2009 Stream Sampling

lient: roject No.:	CRWD			Site Location: <u>CRD.1</u> Site Description:					
ate:	June	une 1, 2010 Weather:							
ampler(s):	Samples Taken:								
tart Time:	Sample Time:				mple Time:				
nd Time:			-			• •			
hannel Conditions:			DTW Measurement:						
OC Number:			-						
	······································	Field Parameters				Notes			
Sample I.D.		Cond. (mS/cm)	D.O. (mg/l)	pH	(S.U.)				
					(5.0.)				
			, and the second second						
Stage H	t:		Rated Flow			Gauged Flow	w:		
		5	Stream Gau	ging Data	a				
Distance from	T: T		Velocity	Velocity		Average	<u> </u>	Dissbarra	
Initial Point (ft)	Width (ft)	Depth (ft)	(60% Depth)	20% Depth	80% Depth	Velocity (ft/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec	
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Client:	C	RWD	100		te Location:				
Project No.:	H 1 10		-	Site	Description:		*		
Date:	1-6-10	)	-		Weather:			•	
Sampler(s):	Dennis		-	Samples Taken:			> No		
tart Time:			-	Sa	mple Time:	91.	10		
ind Time:			<u> </u>						
Channel Conditions:	5:		-	DTW Measurement:					
OC Number:		•	-						
						Notes:	High FI	00	
		ield Parameters	H	·					
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/I	) pH	(S.U.)				
CRO.1			L						
Stage H	lt:		Rated Flov	v:	<u> </u>	Gauged Flow	w:		
	<u>г т</u>		Stream Gau	Arta Marta		1			
Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	20% Depth	ocity 80% Depth	Average Velocity (ff/sec)	Area (ft ² )	Discharge (Q, ft ³ /sec)	
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March 27, 2002

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# Lake Phosphorus and Profile Data

