

September 2007 Water Quality Program Progress Summary

October 10, 2007

By: Corey Hanson, Water Quality Coordinator

For: October 11th, 2007

RLWD Board Mtg.

District Monitoring

Enough samples were collected in September to complete a round of monitoring for all long-term monitoring sites. The photo to the right shows the green, turbid, algae-filled water that was leaving Maple Lake in early September.



Clearwater River Dissolved Oxygen and Fecal Coliform TMDL

Five sets of samples were collected at all six E. coli monitoring sites. Both sites on the Clearwater River had acceptable levels of E. coli, as did the sites on the Lost River. The Silver Creek sites, however, continued to have levels of E. coli that exceed the standard of 126 CFU/100 ml, although site # 81 had enough low readings to bring the monthly geometric mean down to an acceptable level. There is no longer any flow in County Ditch 57, but there is still enough standing water for the collection of dissolved oxygen readings. Not surprisingly, dissolved oxygen readings dropped very low in the stagnant water.

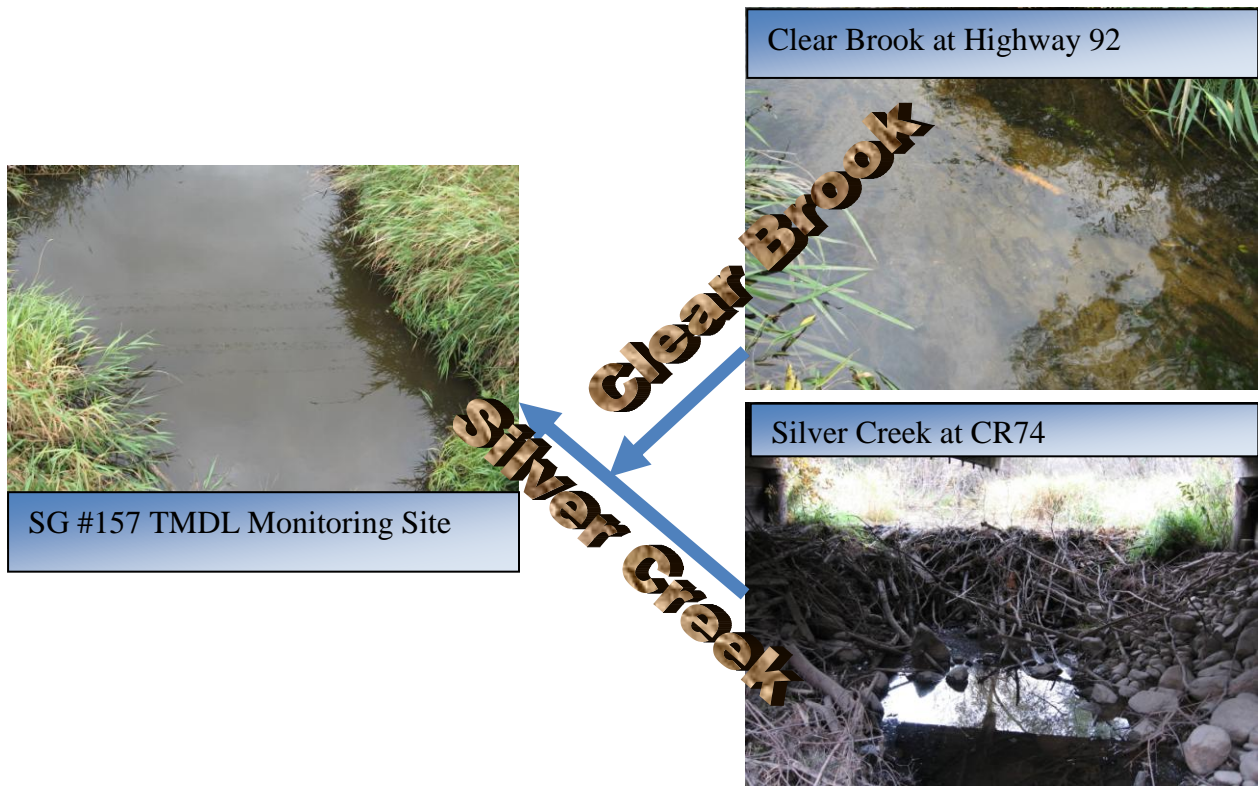
Standard = 126 MPN/100ml

	Clearwater River		Lost River		Silver Creek	
Monitoring Site	<u>780</u>	<u>37</u>	<u>782</u>	<u>51</u>	<u>81</u>	<u>157</u>
Location	Plummer USGS	CR96	Oklee USGS	CR7	CR111	1 mi. W of Clearbrook
Sept. '07 Geometric Mean E. coli (MPN/100ml)	12.47	57.22	19.87	17.41	96.64	472.6

The Eureka Midge dissolved oxygen loggers continued to be cleaned and calibrated once every two weeks. Stage data was downloaded. I will try to get some flow measurements so that the low flow measurements can be combined with higher flow measurements collected next spring to create flow rating curves. This summer has been too busy to get any flow measurements done until this month. The \$50,000 contract with EERC for their SWAT water quality modeling services has been completed, signed, and sent to the EERC. A copy is included in this meeting's packet.

Some flow measurements were taken to get the lower end of a rating curve started. Flow measurements will need to be collected during high flows next spring to be able to translate the stage records collected at several sites into flow records through the creation of flow rating curves.

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During the last round of E. coli sampling for the month of September, the water at monitoring site # 157 (Silver Creek downstream of the confluence with Clear Brook) was very muddy, even compared to the day before. Some turbidity tests were performed at each of the two crossings upstream of this site on Clear Brook at Hwy 92 and Silver Creek at CR74. The problem is not coming from upstream in the Silver Creek watershed because all but a small trickle of flow is blocked by a beaver dam. Most of the flow is probably coming from Clear Brook. The water in Clear Brook at the Hwy 92 crossing was very clear. So, there is something happening within the section of land upstream of site #157 to cause the increased cloudiness in the water. The fresh mud on the CR74 beaver dam suggests that beavers have been active after recent rainfall. This would stir up sediment in the water – if there is a beaver dam, that is. Cattle were roaming the pasture and could have been stirring up sediment as well.

Thief River Watershed Sediment Investigation

Equipment (4 owned by Agassiz NWR, 5 owned by the RLWD) was retrieved, cleaned, calibrated, and replaced twice in September. Water quality has been good lately due to low flow. The Eureka Manta multiprobe was not re-installed due to a lack of water. Samples were collected at the 4 lower sites by me and at the upper 7 sites by Jan Kaspari and Lisa Newton. MPCA staff liked the work plan I completed at the end of August for the project and have approved it. Copies have been distributed to the Board and to project partners.



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Project 60E

I checked on the equipment and made sure it was clean and ready, just in case there is enough rain to generate runoff. There is no flow in the Brandt channel or in CD 2.

September Meetings and Events

- ❖ **September 12th** – Pennington County Outdoor Education Day
 - Rachelle Winter (Penn. Co. Water Planner) and I ran the Incredible Journey station where the 6th graders learned about the water cycle.
- ❖ **September 18th** – Northwest Minnesota Water Festival – Warren
 - Wayne Goeken, Holly Anderson, Rachelle Winter, Jessica Poegel and I taught the 4th graders about water quality (“Turbidity, or not Turbidity” activity).
- ❖ **September 19th** – Northwest Minnesota Water Festival – Fertile
 - I had jury duty in the morning, but was able to help Wayne, Rachelle, and Holly with the water quality station for the last few groups of 4th graders.
- ❖ **September 24th** – Red River Basin Water Quality Team – Moorhead
 - RIMCE (Reinvest in Minnesota Clean Energy)
 - RIM payments for perpetual easements can’t keep up with land prices
 - 90% of average market value
 - Market value keeps increasing before RIM payments can be adjusted (moving target that makes selling the program very difficult).
 - Allow periodic cuttings for cellulosic ethanol production.
 - FDR Benefits
 - Red River Basin Watershed/County Ag Summary
 - The Grand Marais Creek and Sand Hill watersheds have the highest levels of fertilizer application, herbicide application, and pesticide application of the watershed on the Minnesota side of the Red River Basin. This is likely related to the fact that they produce the greatest amounts of soybeans and sugar beets. These amounts occur in spite of the fact that these are the 3rd (Sand Hill) and 4th (Grand Marais) smallest watersheds on this side of the Red River Basin.
 - Jon Roeschlein - Encouraging Buffers and Wetland Restorations
 - Goals in 10-yr plan
 - Buffer 85% of shoreland
 - Restore 10,000 acres of wetlands
 - 30% decrease in sedimentation
 - Contribute cost-share to Pheasants Forever wetland and grassland restoration projects to increase infiltration for FDR benefits
 - Costs the Bois de Sioux Watershed District less per acre-foot of storage than the construction of impoundments.
 - Luke Stuewe – Minnesota Department of Agriculture (MDA) Surface Water Pesticide Monitoring

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- MDA is statutorily required to monitor for pesticides
- Three Tiers of Monitoring
 - 1st Tier
 - May 15th – July 15th
 - Middle R., Grand Marais Crk., Wild Rice R., Bois de Sioux R., Snake R., and Buffalo R.
 - Sample analysis costs \$800/bottle
 - Move site after 3 years if there are no detections
 - 2nd Tier
 - Problem sites from the 1st Tier (pesticides detected)
 - Sampled 8 times, storm events targeted
 - Snake R. and Buffalo R.
 - 3rd Tier
 - Automatic, refrigerated sampling equipment is installed
 - 4-day composite samples
 - No 3rd tier sites in the Red River Basin
 - MDA has authority to increase regulations (i.e. setbacks for pesticide applications) if necessary to keep pesticides out of surface waters.

Future Meetings/Events

- ❖ **October 4th** – TMDL List, public hearing, 1-4 PM, Detroit Lakes MPCA office.
- ❖ **October 10th** – Marshall County WRAC – Groundwater Speakers
- ❖ **October 18th** – Red Lake River Corridor Enhancement Project meeting, Thief River Falls City Hall, 6:30 PM
- ❖ **October 26th** – Red River Basin Monitoring Advisory Committee – All day meeting at the Sand Hill WD in Fertile
- ❖ **October 29th** – Red River Basin Water Quality Team – Thief River Falls
 - Channel stability and septage issues
- ❖ **November 15th** – Red Lake River Corridor Enhancement Project meeting, East Grand Forks – Campbell Library, 6:30 PM
- ❖ **November 19th** – Red River Basin Water Quality Team – Moorhead
 - SWAT modeling, channel stability
- ❖ **November 30th** – Deadline for submitting data to the MPCA for entry into the EPA's STORET water quality database.
- ❖ **December 10th** – Red River Basin Data Analysis and Interpretation Workshop
 - 9 am to 4 pm
 - EERC in Grand Forks, ND
- ❖ **December 12th** - Marshall County WRAC
- ❖ **December 20th** – Red Lake River Corridor Enhancement Project meeting, Fisher School Library, 6:30 PM
- ❖ **January 17, 2008** – Red Lake River Corridor Enhancement Project meeting, Crookston City Hall, 6:30 PM
- ❖ **January 31, 2008** – Final Report deadline for the Tile Drainage Study

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- ❖ **February 21, 2008** – Red Lake River Corridor Enhancement Project meeting, Red Lake Falls City Hall, 6:30 PM
- ❖ **March 20, 2008** – Red Lake River Corridor Enhancement Project meeting, St Hilaire City Hall, 6:30 PM
- ❖ **April 17, 2008** – Red Lake River Corridor Enhancement Project meeting, Thief River Falls City Hall, 6:30 PM
- ❖ **May 15, 2008** – Red Lake River Corridor Enhancement Project meeting, East Grand Forks – Campbell Library, 6:30 PM
- ❖ **June 19, 2008** – Red Lake River Corridor Enhancement Project meeting, Fisher School Library, 6:30 PM