

By: Corey Hanson, Water Quality Coordinator  
 For: June 11, 2009  
 Red Lake Watershed District  
 Board Meeting



**Thief River Watershed Sediment Investigation**

Continuous monitoring equipment installations were maintained at three sites in the watershed. Water levels remained too high to access installation pipes at the two sites on the main channel of the Thief River. Frequent field measurements were collected to compensate for this circumstance. A total of four flow measurements were made for this study in May to establish the upper end of the flow rating curves for the Thief River monitoring sites. A bridge crane was used to at some of the sites that had high water. Samples were collected at all the sites. A second round of E. coli samples were collected at some of the sites so that data requirements for assessment can be met after this year’s monitoring. An extra round of E. coli samples were collected at four sites on the Mud River, Thief River, and CD20. A HOBO water level logger was installed at the Ditch 200 (stream gauge 6) monitoring site.

A software package was purchased that will allow for much more tidy and efficient handling of the thousands of data points that are collected at each site by the continuous water quality monitoring equipment. Aquarius software will allow me to pull raw data into the program, correct for fouling error, correct for calibration drift, examine time series graphs to check for outliers, export a corrected and compiled data file, and export a file listing all the changes that have been made to the data. I will be able to send a clean .csv file (along with the original files for archiving) to the State’s HYDSTRA database that is being used for the storage of continuous water quality and flow data.

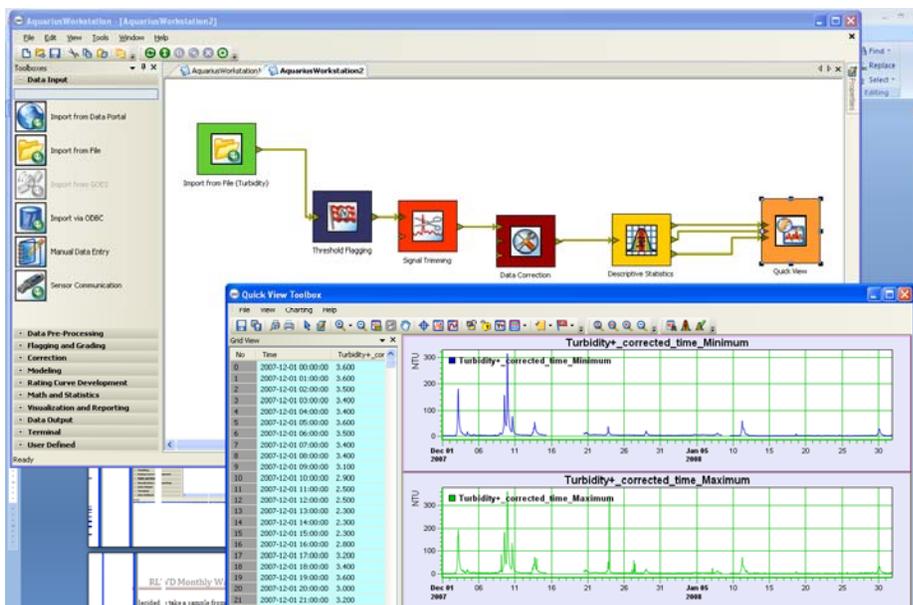


Figure 1. Aquarius software screen shot

In late May, I found out that the bridges over the Moose River and the Mud River along Hwy 89 will be removed in June. The RLWD engineering staff established a BM in a power pole at the Mud River site (and the Moose River site), and I assisted the USGS with surveying in benchmarks and a temporary peak flow gauge at the Mud River site. I also removed the Manta and deployment pipe from under the bridge

I also continued to assist the USFWS with calibration of their equipment when needed.

## **Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study**

May's progress on the Clearwater TMDL Study involved determining the loading capacities, margins of safety, and load allocations for all the E. coli TMDLs. Draft reports were compiled for the E. coli TMDLs (Lost River, Silver Creek, Clearwater River).

## **Project 60 Water Quality Monitoring**

Field measurements were collected at the sites (CD2, Brandt Channel). The TS300 turbidity logger in the Brandt Channel was swapped-out for the clean and calibrated TS300 that is not being used at the CD2 site because of the bent deployment pipe.

## **District Monitoring**

The second 2009 round of sampling at the RLWD's long term monitoring sites was nearly completed in May. I ran out of time to get to three sites (790, 799, and 750) that will have to be visited in June. Jim Blix helped with collecting samples at the Bagley area monitoring sites. The other two rounds of monitoring will be completed in July and September.

- A HOBO water level logger was installed at site # 81 on Silver Creek.
- I received a concerned citizen phone call about runoff from a feedlot southeast of Bagley. I didn't have a chance to get down there soon enough to witness the runoff myself, so I relayed the information to the Clearwater SWCD so they could check on the problem.

## **Surface Water Assessment Grant Monitoring**

Samples and field measurements were collected at the Blackduck River, South Cormorant River, Darrigan's Creek, O' Briens Creek, Kripple Creek, and Lower Badger Creek monitoring sites in May. This monitoring is being paid for by Surface Water Assessment Grant funds being administered by the Red River Watershed Management Board.



**Project 60 Water Quality Monitoring**

Because the deployment tube for the TS300 turbidity logger is damaged at the CD2 monitoring site, I am able to do all the calibration on the TS300's in the lab and swap one for the other during monthly sites visits at the Brandt Channel monitoring site. Flow was measured at the Brandt Channel site in early May.

**Other Notes**

- The Pennington County SWCD has collected samples at the CD21 ditch south of Thief River Falls. Several of these samples had very high E. coli and ammonia concentrations. The mutual opinion at the Professional Judgment Group meeting was that the ditch should be listed as impaired (deferred until development of tiered aquatic life use standards). The reach will likely not end up on the list in this round of assessment because the samples were collected during low flow and there were a lot of swallows living under the bridge. Their droppings are the likely source of both the high E. coli and ammonia readings. The possibility that this is a naturally-caused impairment is made more likely as a windshield survey of the ditch's watershed didn't result in identification of any obvious man-made sources.
- Scott Kroeber, University of North Dakota, has expressed interest in presenting the results of the Red Lake River erosion survey that they did last summer (using the RLWD boat) to the RLWD Board.

**May Meetings and Events**

- **May 5, 2009** – Red Lake River Corridor Enhancement Project Joint Powers Board meeting at Crookston City Hall, 6:30 pm
  - Northwest Regional Development Commission's Trail Plan project
  - Clean Water, Land and Legacy Amendment Funds
    - Need to have projects planned and ready to go.
  - Officer Elections:
    - Gail Healy, President
    - Scott Kleven, Vice President
    - Stacy Myhrer, Treasurer
    - Corey Hanson, Secretary
  - Crookston 6<sup>th</sup> St. Project
    - The landslide area has been repaired.
    - UMC Landscape Design Department (Eric Castle) is working on plans for the site.
    - Native grass
  - Amendment money
    - 35 million in 2010
    - 39 million in 2011
    - Have to have projects ready to go
    - The RLRCE JPB needs to throw its weight behind a project.
    - We should be in contact with the local representatives from the state agencies that will be involved in administering the amendment money.
  - Polk County report
    - East Grand Forks wasn't in much danger during the 2009 flood.

- Culverts were steamed where residences were threatened.
  - People are currently meeting with legislators.
- Red Lake County report
  - There was lots of damage to Huot Park
  - STS will be cleaning up downed trees, etc.
  - A new, severe erosion site developed during an ice jam on the Red Lake River near the Hwy 32 crossing. The river cut across the river bend, through someone's yard, and back into the river near the highway crossing. This created a large hole in the bank due to the headcutting that occurred (it looked like a miniature Niagara Falls). The landowner's boat even got swept away (out of his yard). The County will like to partner with the RLWD to repair the bank.
- The Northwest Regional Development Commission received a Northwest Minnesota Foundation grant to put together a comprehensive regional trail plan.
- **May 18, 2009** – Red River Basin Water Quality Team, Detroit Lakes
  - Larry Gunderson – Lake Pepin TMDL, Using watershed characteristics to predict turbidity levels
    - Stream channel length and watershed area have a reliable, positive relationship with turbidity levels.
  - Vicki Christianson – Effects of land retirement on water quality and biotic integrity
    - Positive relationship between land retirement and index of biotic integrity scores.
- **May 20, 2009** – Red Lake River Corridor Enhancement Project Executive Committee conference call.
  - Add information, photos to Google Maps and Google Earth.
  - Governor's Plan for Amendment money
    - \$9 million each year to the MPCA for TMDL Development in 2010 and 2011.
    - \$ million in 2010 and \$ million in 2011 to the DNR for parks and trails.

### Future Meetings/Events

- **June 1, 2009** – BWSR Technical Advisory Group for the Pennington County Water Plan
  - WQ trends for the major watersheds
  - Identifying the "hot" subwatersheds, prioritizing work areas
  - Identifying probable BMPs
  - Estimating # of targets
  - Identifying further studies/analysis needed
- **June 8, 2009** – Pennington County Water Resources Advisory Committee, 9am
- **June 17, 2009** – Red Lake River Corridor Enhancement Project Exec. Committee mtg. 9am.
- **June 19, 2009** – Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Stakeholders' meeting, 9:30 am, Clearbrook Community Center Council Room.
- **June 22, 2009** – Red River Basin Water Quality Team, RLWD office, 10 am
  - Primer on channel stability in the classroom and the field
    - Dave Friedl, DNR Clean water Legacy Specialist
- **June 26, 2009** – Red River Basin Monitoring Advisory Committee Meeting, Fertile.
- **July 16, 2009** – Marshall County Water Plan meeting, 9:30
- **July 20-24** – I will be on vacation in Montana for my brother's wedding.
- **June 30, 2009** – Deadline for completion of the Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study.
- **August 31, 2010** – Deadline for completion of the Thief River Watershed Sediment Investigation