



Instructions on page 5

Due February 1, 2020

I. Project information

Project title: Red and Upper Mississippi Watershed Pollutant Load Monitoring

Contract number: 8638 SWIFT number: 103100 Purchase order number: 3000015411

Local partner information:

Organization name: International Water Institute (IWI)

Street address: Renaissance Hall #110 650 NP Avenue

City: Fargo State: ND Zip code: 58102

Primary contact name: Danni Halvorson Phone: 218-280-0515

Email address: danni@iwinst.org Fax: _____

Fiscal contact name: Donna Kristianson Phone: 701-231-9734

Email address: donna@iwinst.org Fax: _____

Field contact name: Asher Kingery Phone: 701-331-9259

Email address: asher@iwinst.org Fax: _____

Reporting period:

Start date: 1/1/2019 End date: 12/31/2019
 (mm/dd/yyyy) (mm/dd/yyyy)

Project location:

Basin (check all that apply):

Red River Rainy River Lake Superior Minnesota Lower Mississippi St. Croix Upper Mississippi

Mustinka, Bois De Sioux, Otter Tail, Marsh,
 Sandhill, Clearwater, Red Lake, Thief, Snake,
 Tamarac, Two, Roseau, Mississippi River
 (Headwaters-Lake Winnibigoshish), Leech Lake

09020101, 09020102,
 09020103, 09020107,
 09020301, 09020303,
 09020304, 09020305,
 09020309, 09020311,
 09020312, 09020314,
 07010101, 07010102,

Major watershed(s): River, Mississippi River (Grand Rapids) Hydrologic unit code(s): 07010103

Project details:

Name of eligible laboratory: RMB Environmental Laboratories, Inc.

How many full-time equivalents (FTEs) worked on this project in 2018 (total project hours/2,088 hours): 1.66 over a 4 year period.

Were there any staff changes on the project? Yes No

If yes, please describe: Yes 2 different monitoring specialists.

II. Activities completed

Table 1: Workplan activities

1. Please list activities completed during the report period. Include task level detail as appropriate. Refer to the instructions for an example. (Insert more rows as needed by hitting the tab key in the last row/column.)

Objective and task	Description
Stream Monitoring Obj. 1 Task A	Field meters were calibrated weekly or as needed throughout the sample season. Temperature probe checks were also completed. Calibration and temperature probe check information was entered into the calibration log sheets.
Stream Monitoring Obj. 1 Tasks BC	1058 lab samples were collected at 42 sites in the Red River and Upper Mississippi Basins in 2019. The sampling hydrographs within section IV below show the number of samples collected at each site. Field replicate and equipment blank collections are also summarized in section IV within Table 1.
Stream Monitoring Obj. 1 Task D	Monitoring staff including back up samplers attended all training provided by the MPCA and DNR.
Mercury Sampling Obj. 2 Task A	Mercury project ended in October 2016.
Data Management Obj. 3 Tasks ABC	Field data, Canvas information, photos, field meter calibration logs, and field sheet photo copies were all submitted to the MPCA project manager prior to the November 1, 2019 deadline. November and December 2019 information was submitted by February 1, 2020.
Data Management Obj. 3 Task D	2019 Load calculations using FLUX32 for flow year 2017 were completed for 34 sites. Sites that loads were calculated for and the date loads were submitted are summarized in Table 2 (section IV). Field staff that calculated the loads attended all of the load verification meetings that they were requested to attend.
Project Oversight Obj. 4 Tasks ABCD	This report submitted February 11, 2020 satisfies the Interim reporting requirement. Requests for reimbursement have been submitted quarterly.
Project Oversight Obj. 4 Tasks EFG	Monitoring and administrative staff attended the majority of the weekly and monthly check-in meetings. Staff missed a few meetings due to sample collection activities or scheduled vacation. Required trainings have been attended. The Monitoring Director attended the mid-project review December 9, 2019.

2. Please answer the following questions relating to the deliverables for the project.

- a. Was the Quality Assurance Project Plan (QAPP) revised in 2019?
 Yes No If yes, approval date (mm/dd/yyyy): _____
- b. Were the field meter calibration logs, Canvas entries, and field notes submitted by February 1, 2018 (if applicable) and November 1, 2019?
 Yes No If no, please comment: _____
- c. Were pollutant loads computed in a timely manner (within 60 days of receiving the .xml)?
 Yes No If no, please comment: _____
- d. Were you able to attend a majority of the weekly check in telephone conferences during the reporting period?
 Yes No If no, please comment: _____
- e. Was a backup sampler used to collect any of the samples?
 Yes No If yes, please describe when, who, if they were trained, and any other details:
2 samples were collected on September 11, 2019 by the Monitoring Director who attended trainings with staff. It was a struggle but he managed.

3. Please answer the following questions *and* provide comments.

Were you comfortable with your level of training and current ability to:

- a. Collect stream samples over the entire range of the hydrograph? Yes No
 Comments:

- b. Calibrate and use the field meter and equipment? Yes No

Comments:

- c. Enter information into the GoCanvas application and submit the calibration log, field notes and additional photos?
 Yes No

Comments:

- d. Use the FLUX32 model accurately and submit pollutant loads? Yes No

Comments:

- e. Complete and submit invoices? Yes No

Comments:

- 4. Describe in detail any problems, delays, or difficulties that occurred in fulfilling the requirements of the work plan. How did you resolve these problems?**

- 5. Were there any change orders and/or amendments to the contract and work plan? If yes, summarize the changes.**

Yes No

Comments:

2019 had 2 change orders. One monitoring site was terminated in early 2019 due to poor data quality. Other changes involved moving money from Equipment and Supplies into the mileage.

- 6. Please provide any constructive feedback regarding the WPLMN (training, midproject meeting, deliverables, deadlines, program directives):**

Things are good, no concerns.

III. Budget Information

Please copy the information on the Invoice tab from the Microsoft Excel Invoice workbook and paste into this Interim Progress Report template. See Instructions for details.

Line Item	MPCA Funds Awarded	MPCA Funds Expended prior to this Invoice	MPCA Funds Expended this Invoice	MPCA Funds Expended	Balance	Budget Expended (%)
Monitoring Specialist #1	\$174,326.25	\$162,513.75	\$9,900.00	\$172,413.75	\$1,912.50	99%
Monitoring Specialist #2	\$137,125.00	\$122,913.75	\$13,312.50	\$136,226.25	\$898.75	99%
Monitoring Specialist #3	\$188,062.50	\$178,893.75	\$9,137.50	\$188,031.25	\$31.25	100%
Monitoring Specialist #4	\$113,762.50	\$113,390.00	\$350.00	\$113,740.00	\$22.50	100%
Administrative Assistant	\$13,893.75	\$11,340.00	\$1,192.50	\$12,532.50	\$1,361.25	90%
Director of Monitoring	\$44,912.50	\$42,265.00	\$2,625.00	\$44,890.00	\$22.50	100%
Ob 1 (Stream Monitoring) Laboratory	\$233,104.23	\$200,828.23	\$13,305.00	\$214,133.23	\$18,971.00	92%
Ob 1 (Stream Monitoring) Mileage	\$90,797.61	\$84,785.98	\$4,631.30	\$89,417.28	\$1,380.33	98%
Ob 1 (Stream Monitoring) Shipping	\$4,986.71	\$3,976.71	\$615.21	\$4,591.92	\$394.79	92%
Ob 1 (Stream Monitoring) Training	\$1,993.46	\$1,293.46	\$595.79	\$1,889.25	\$104.21	95%
Ob 1 (Stream Monitoring) Equipment & supplies	\$12,975.92	\$12,167.11	\$340.45	\$12,507.56	\$468.36	96%
Ob 1 (Stream Monitoring) Per Diem	\$7,270.00	\$6,617.00	\$275.00	\$6,892.00	\$378.00	95%
Ob 2 (Mercury Sampling) Shipping	\$1,400.00	\$318.43	\$0.00	\$318.43	\$1,081.57	23%
Ob 3 (Data Management) Equipment & supplies	\$125.00	\$16.29	\$0.00	\$16.29	\$108.71	13%
Total:	\$1,024,735.43	\$941,319.46	\$56,280.25	\$997,599.71	\$27,135.72	97%

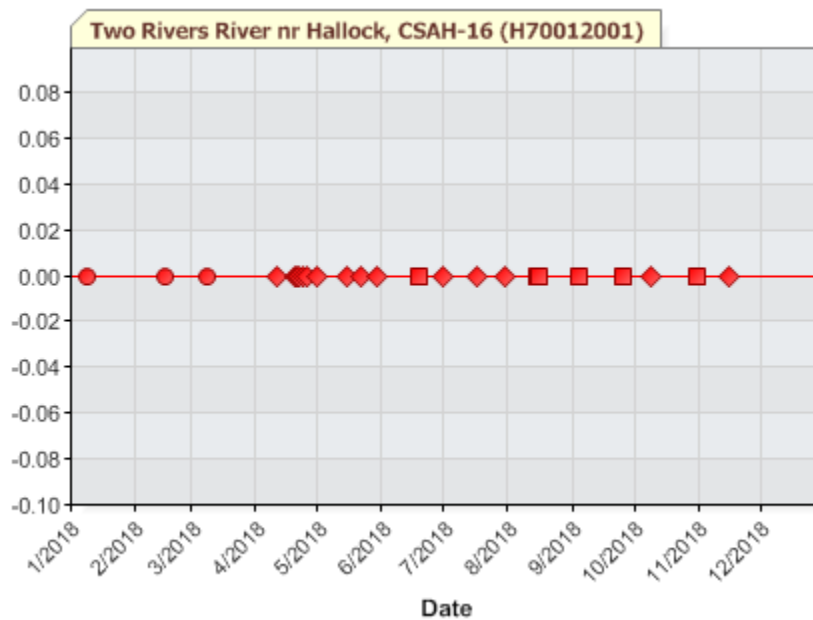
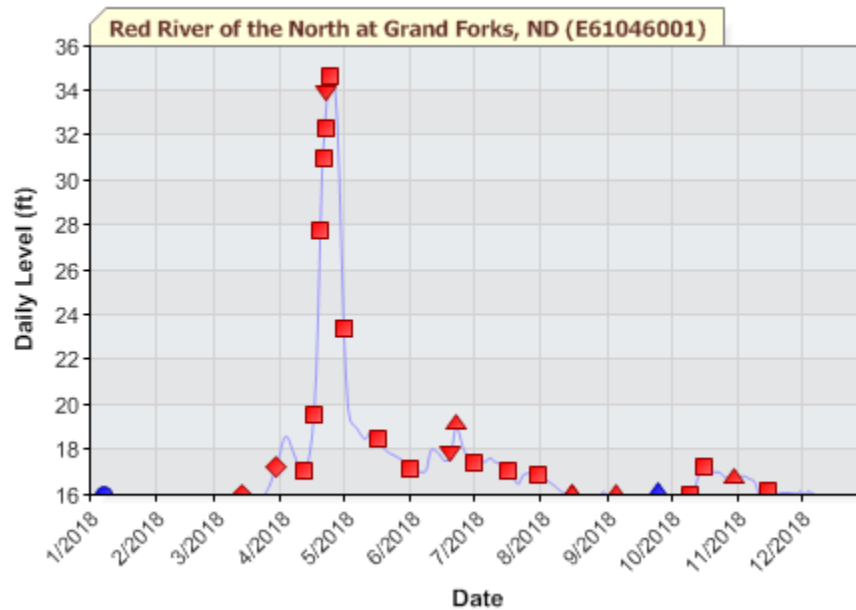
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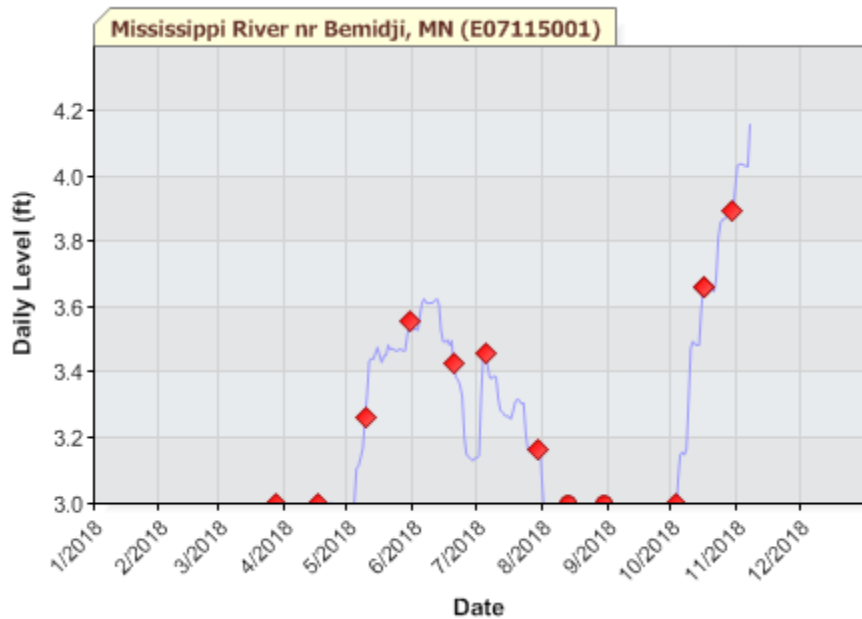
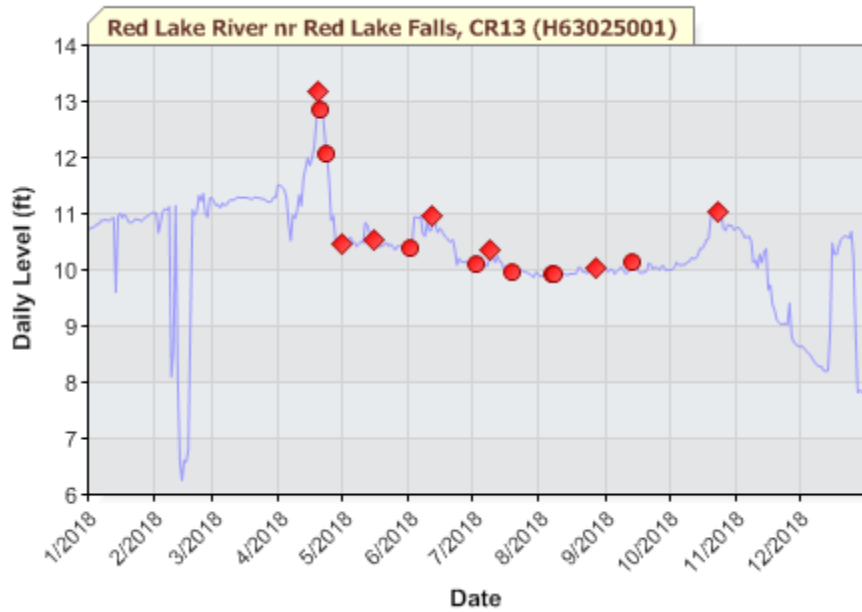
The budget summary provided covers estimated expenses through December 31, 2019.

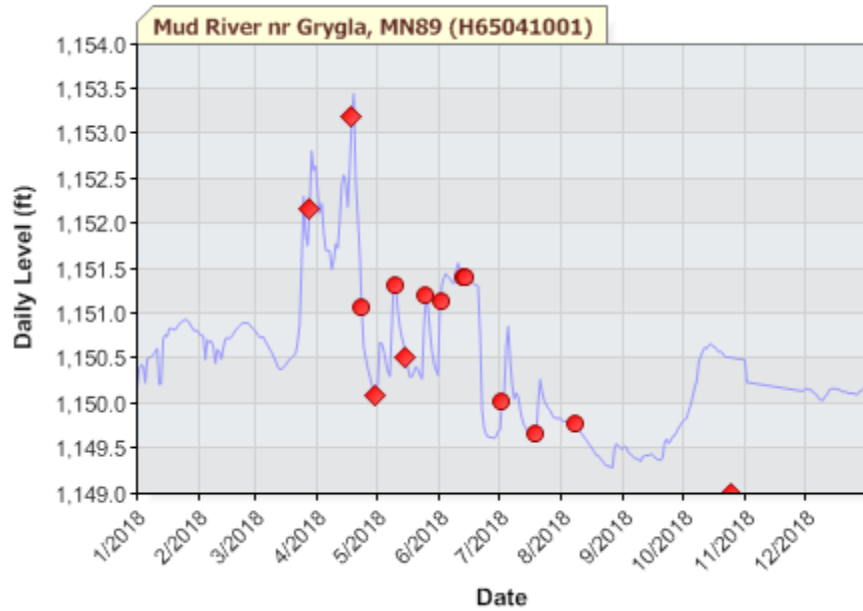
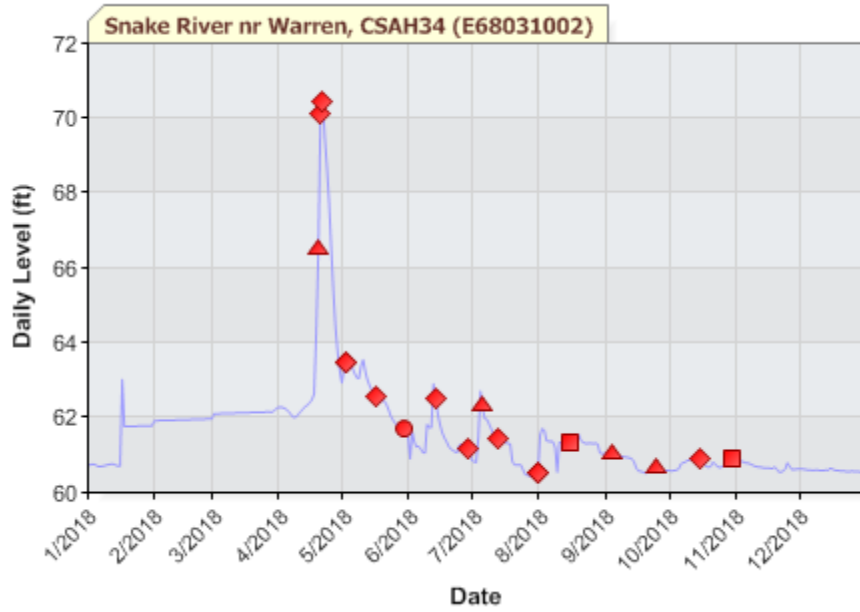
IV. Hydrographs

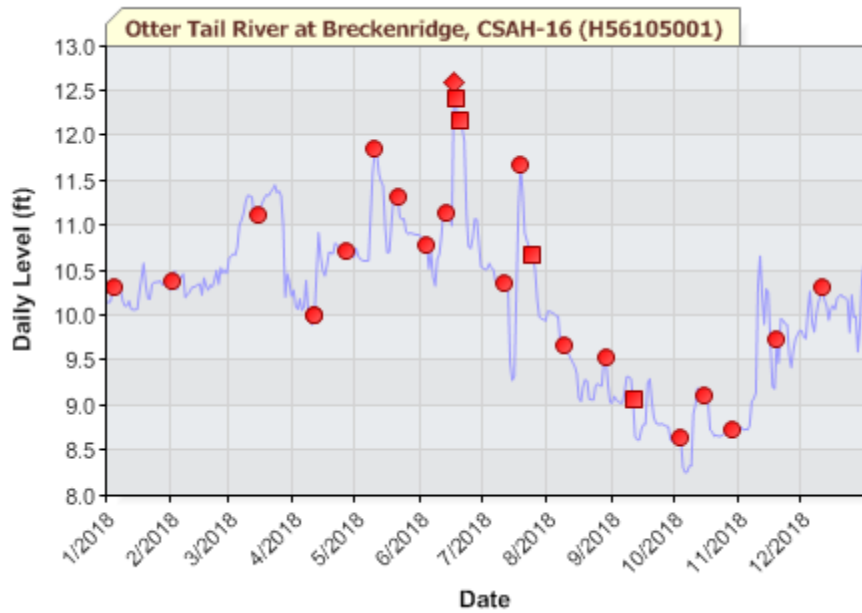
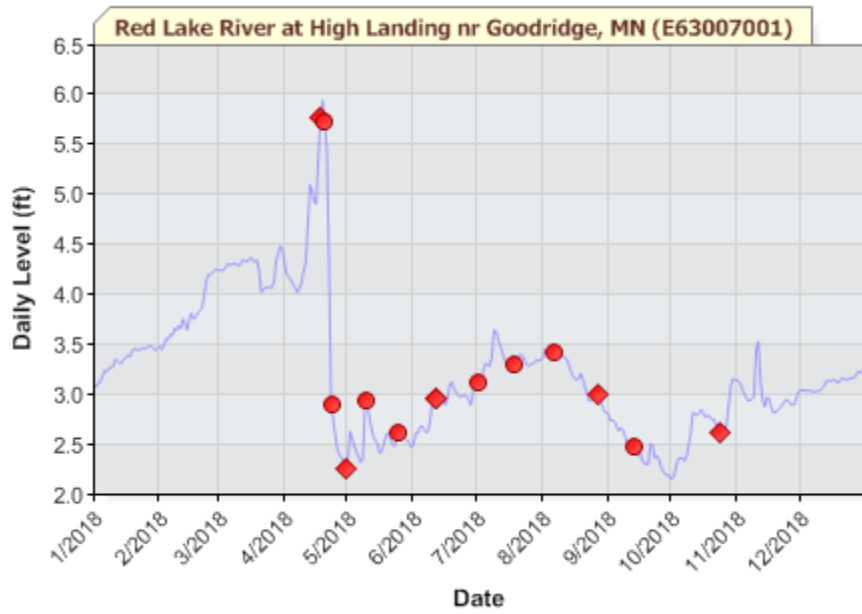
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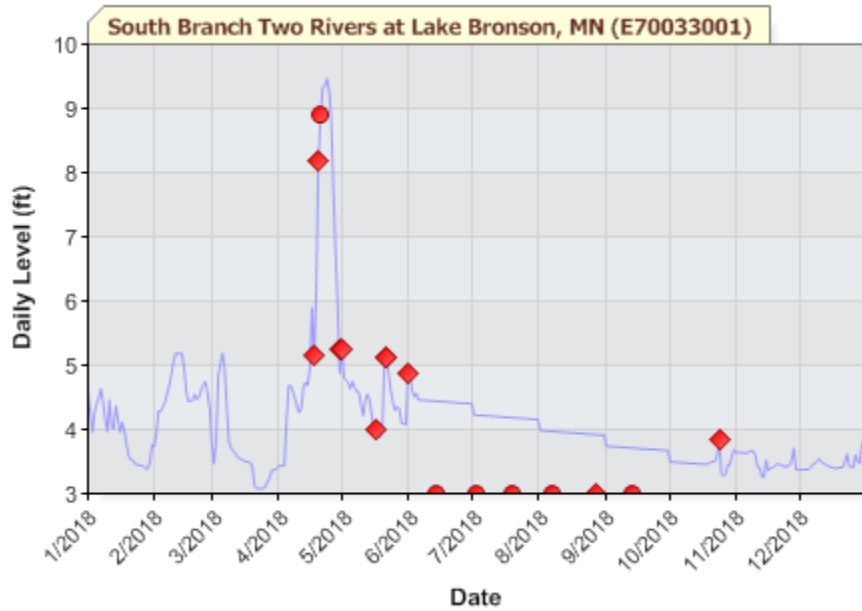
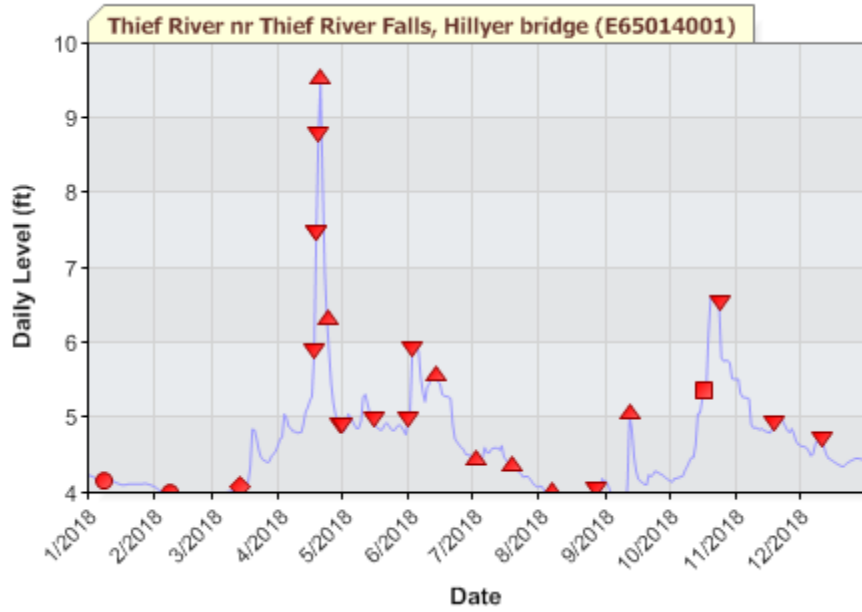
Tables 1 & 2 that follow the sampling hydrographs summarize 2019 QC samples and FLUX32 load calculations completed in 2019.

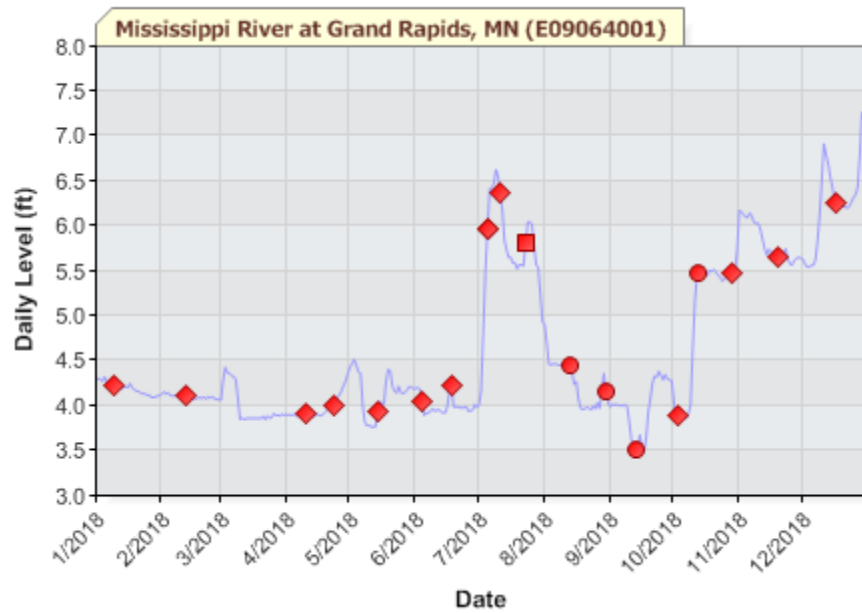
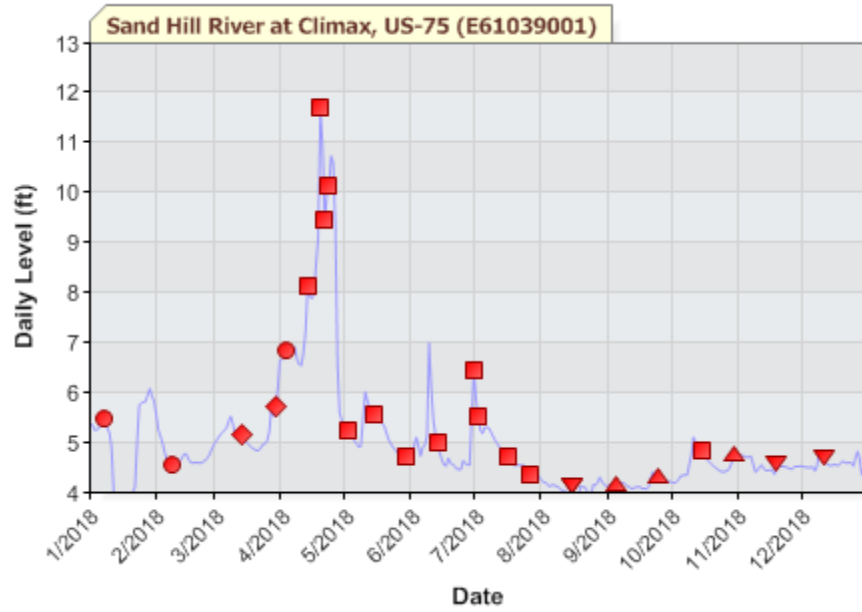


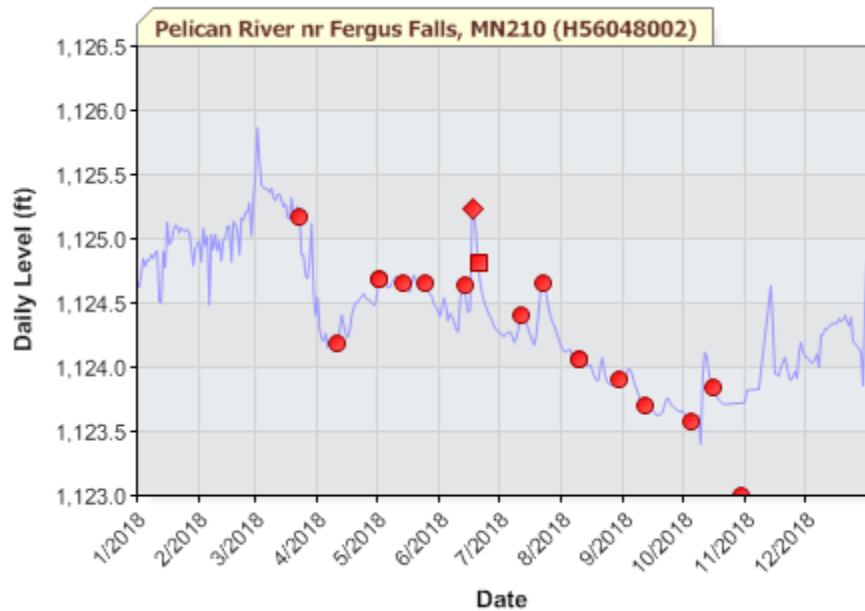
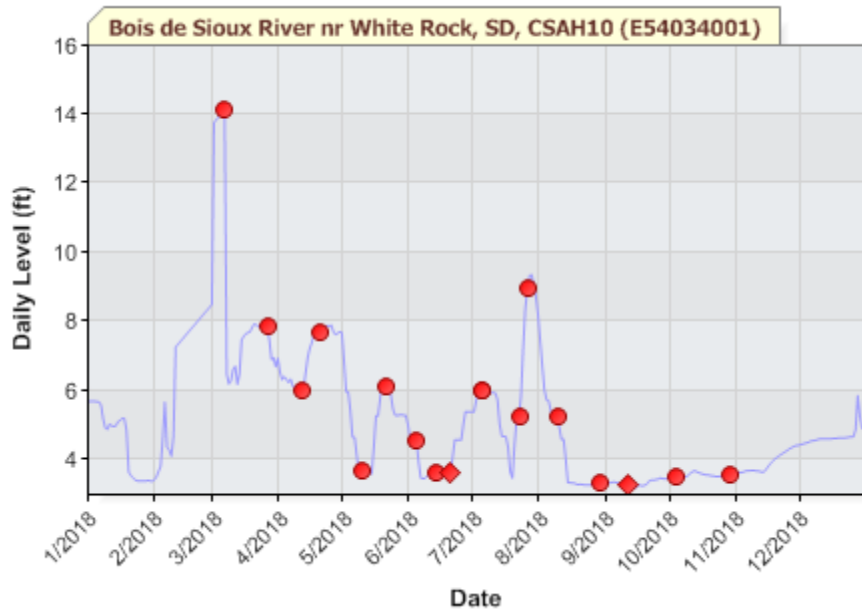


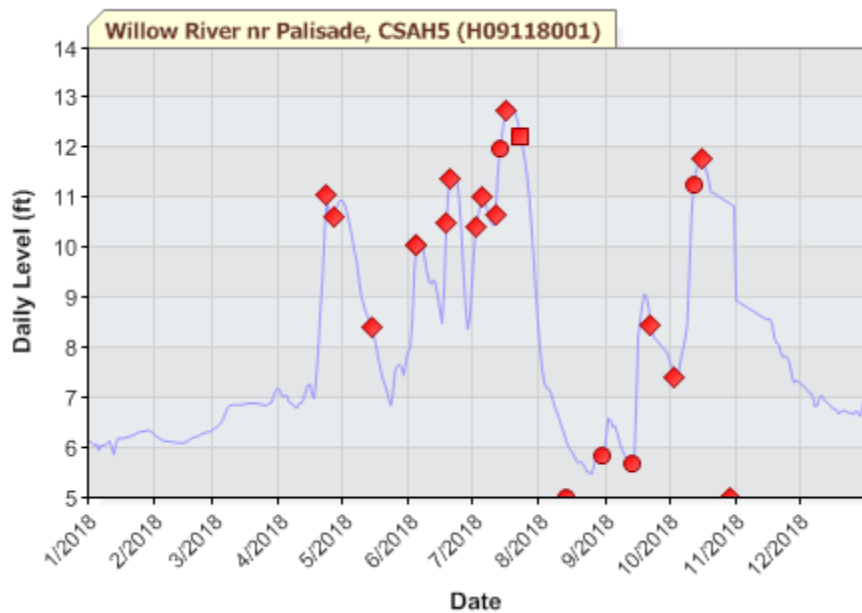
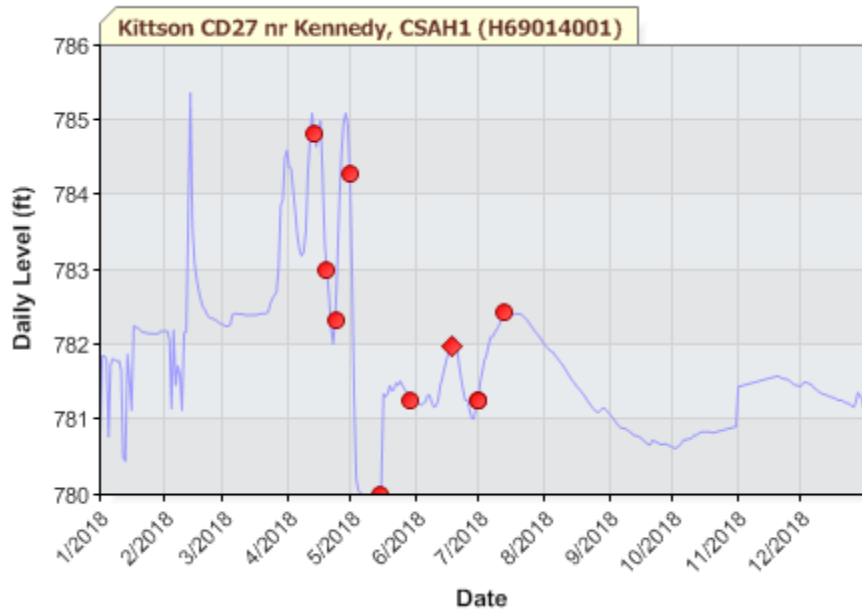


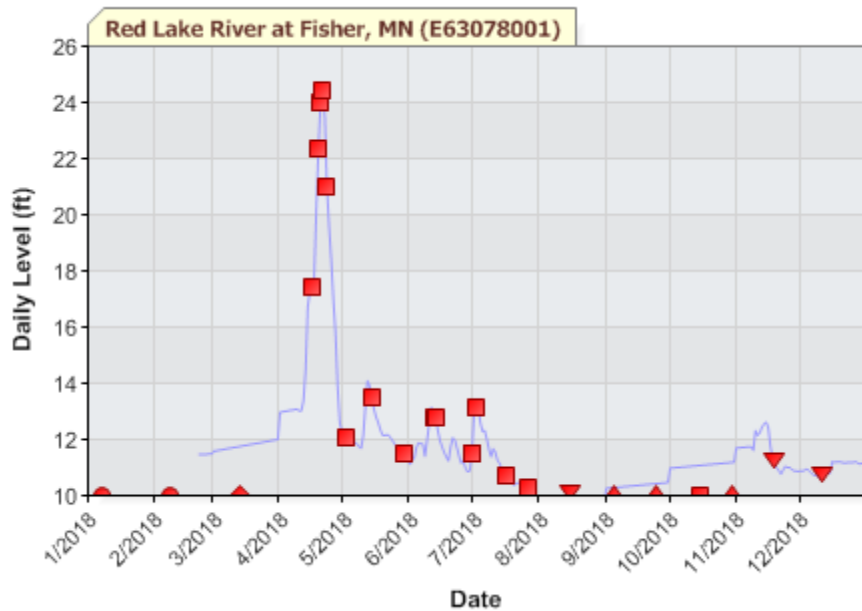
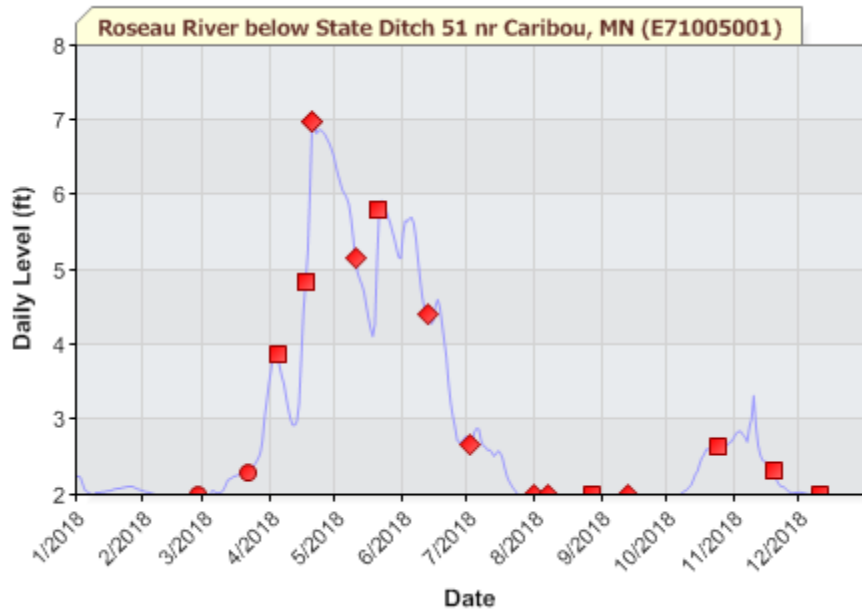


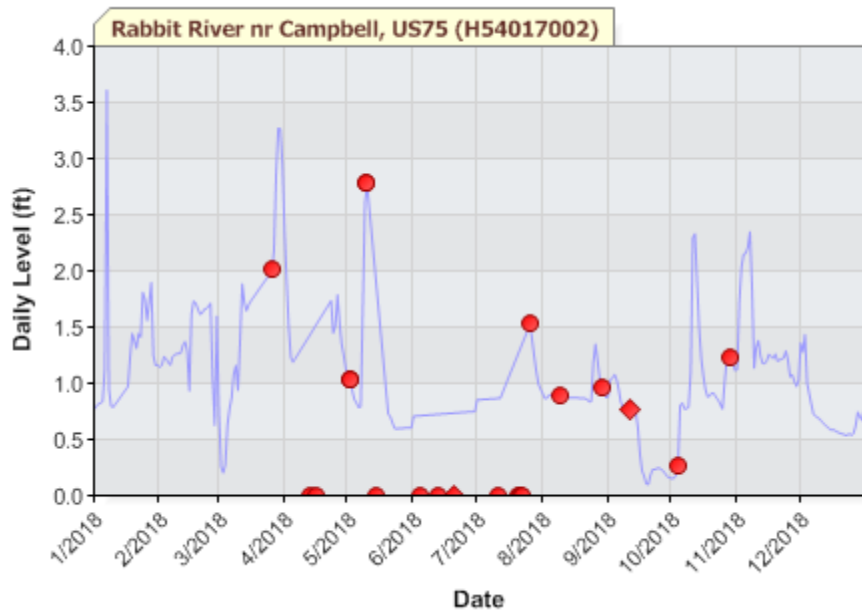
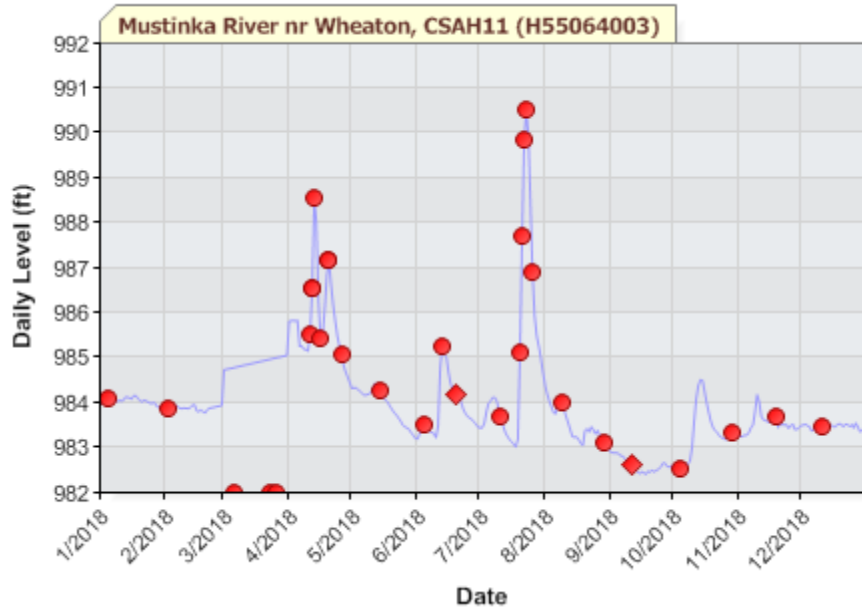


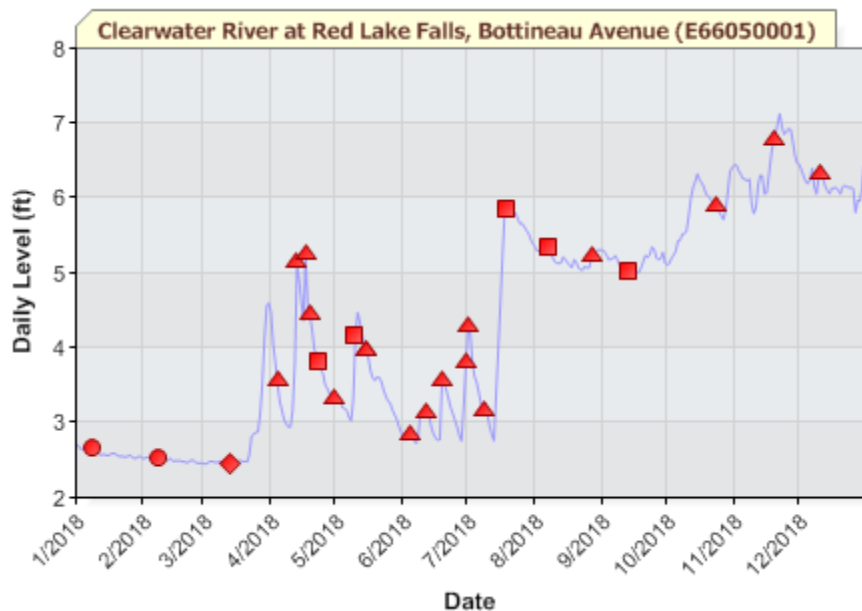
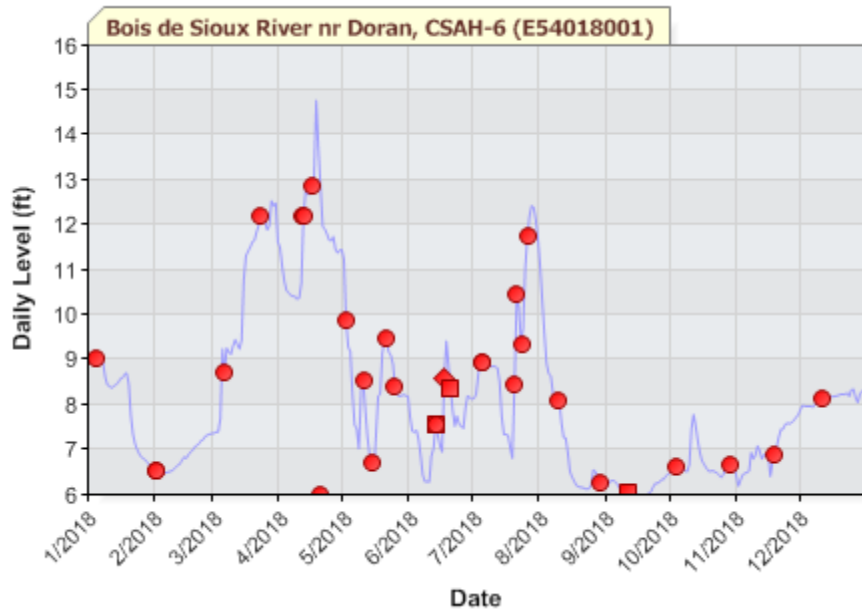


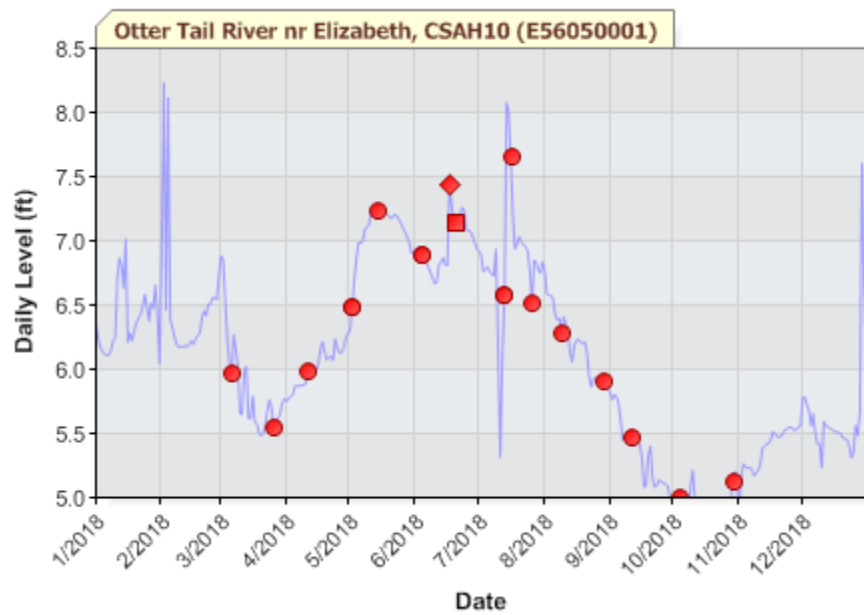
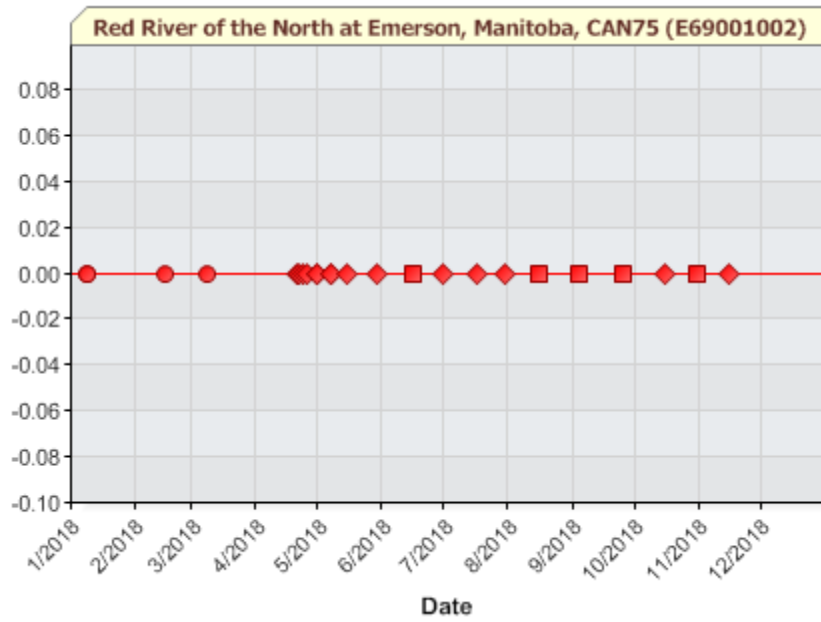


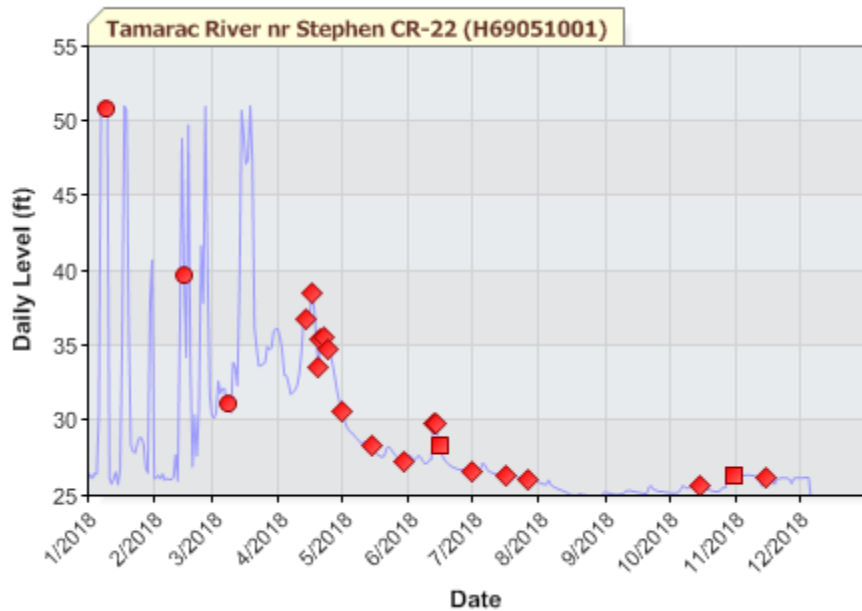
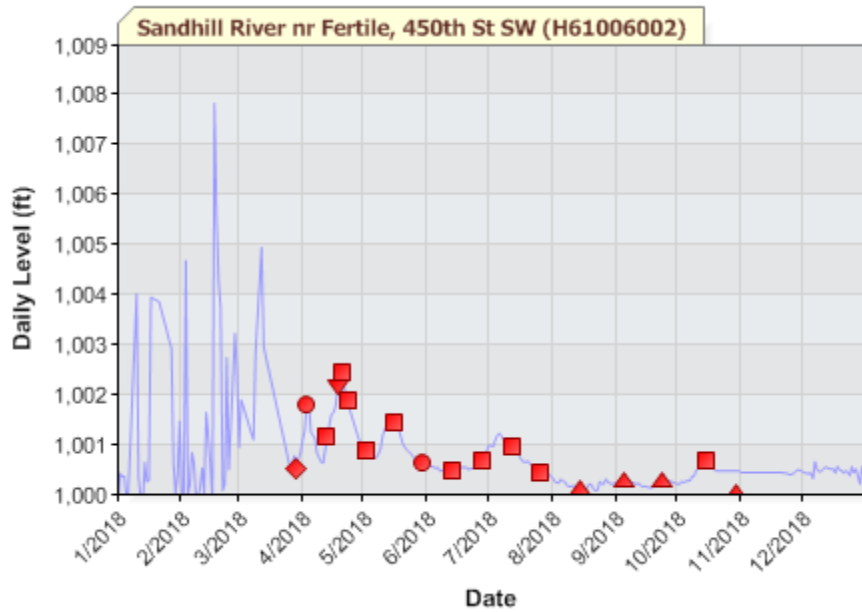


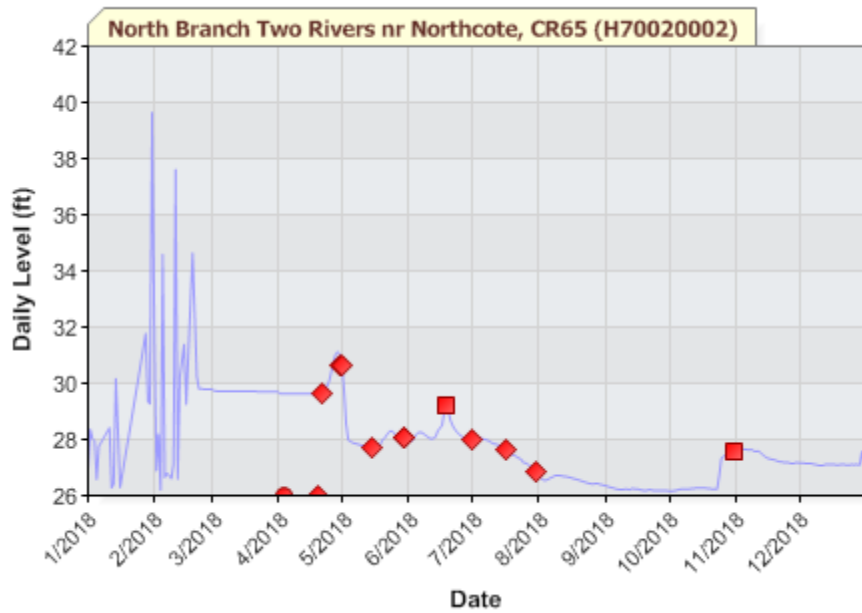
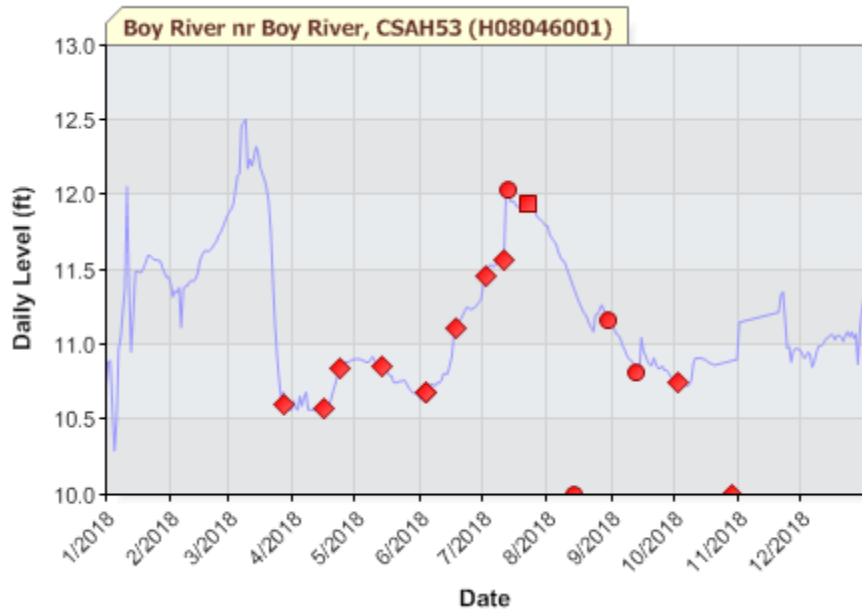


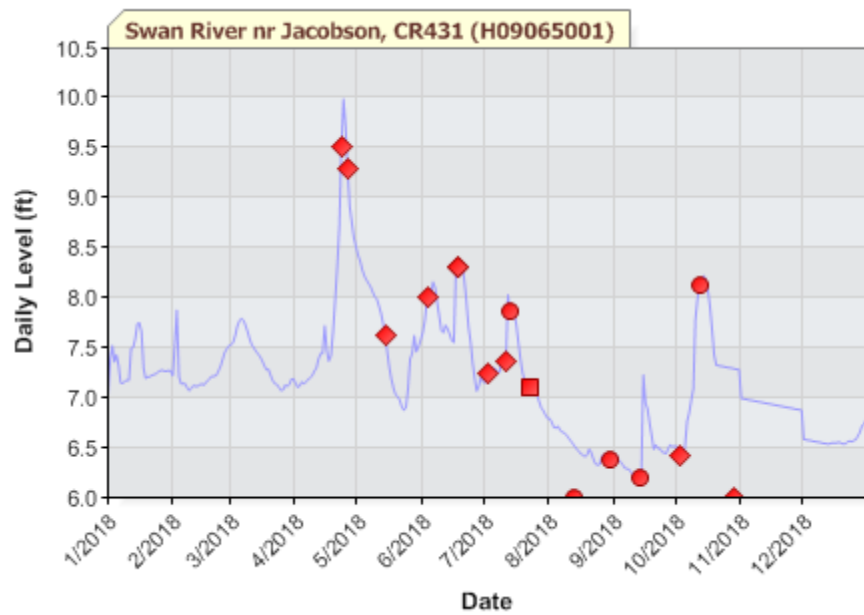
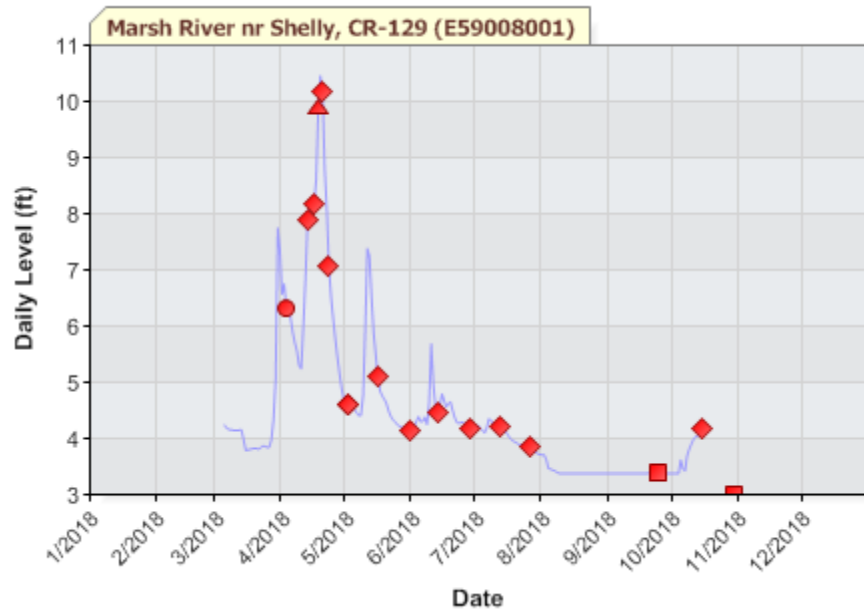


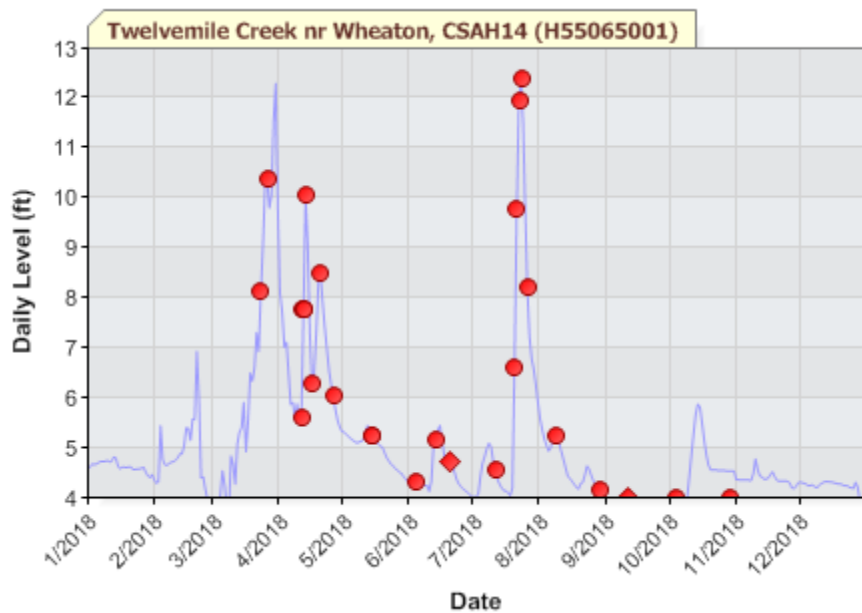
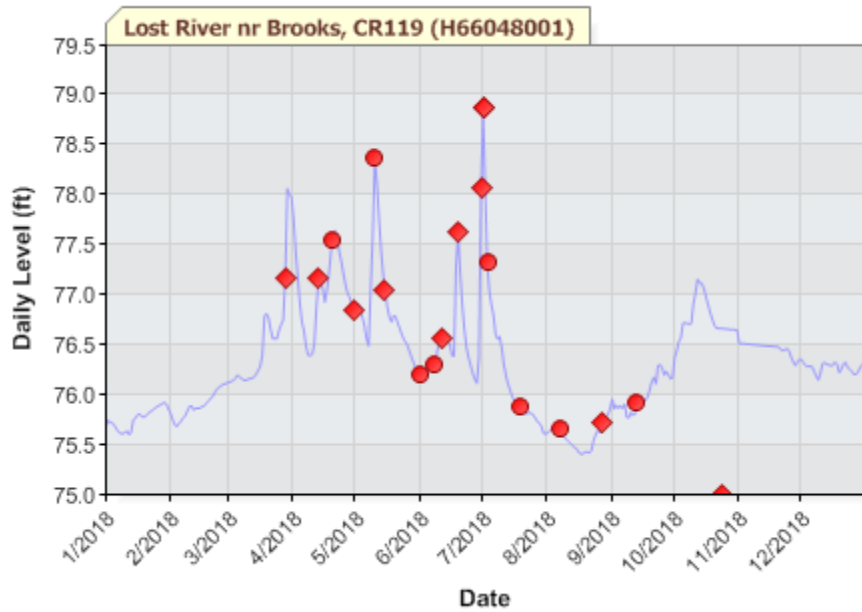


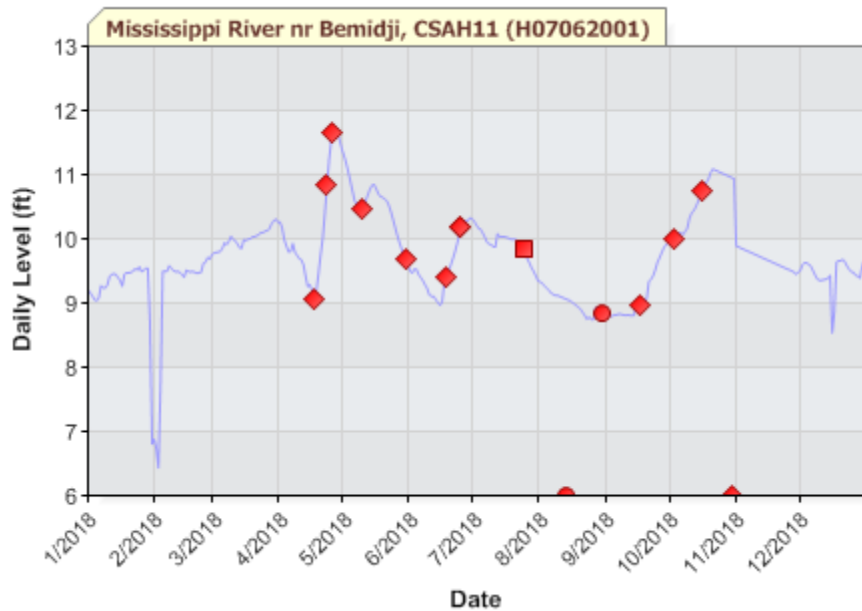
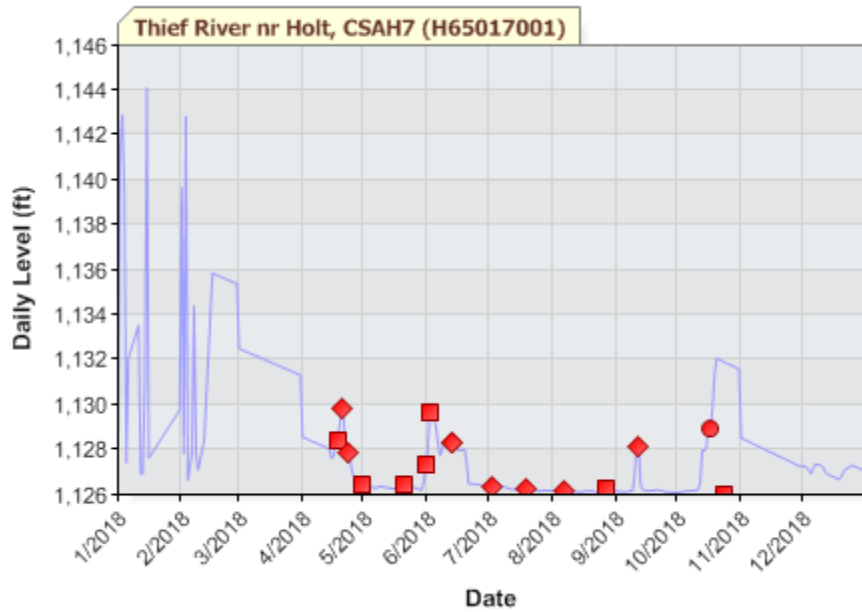


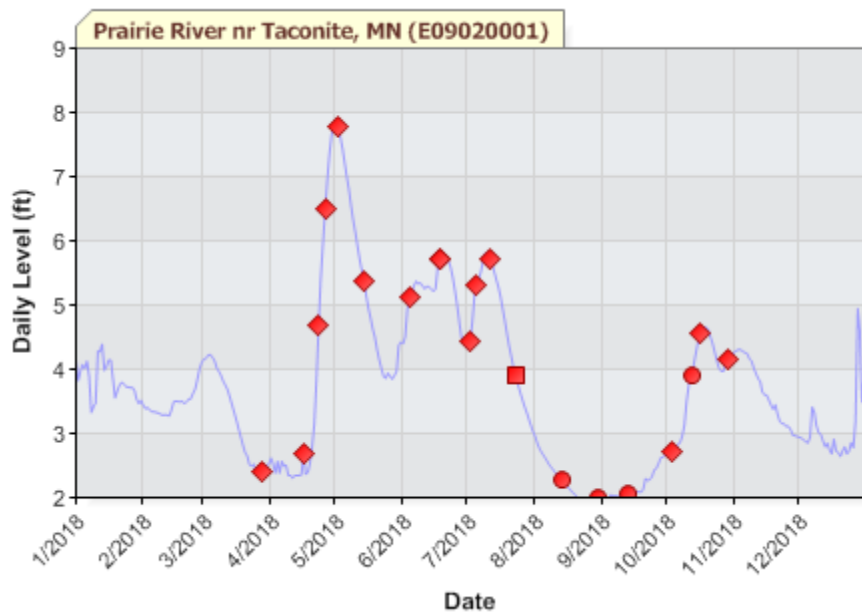
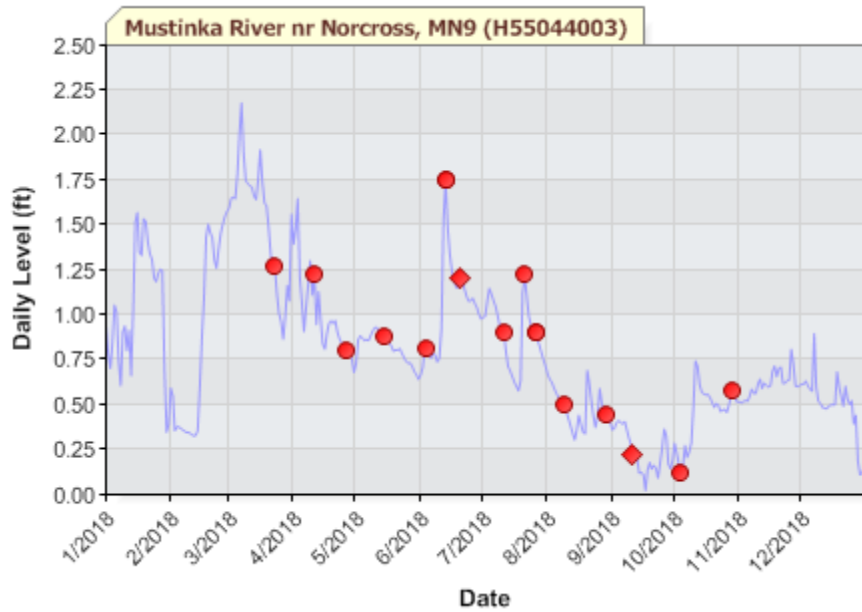


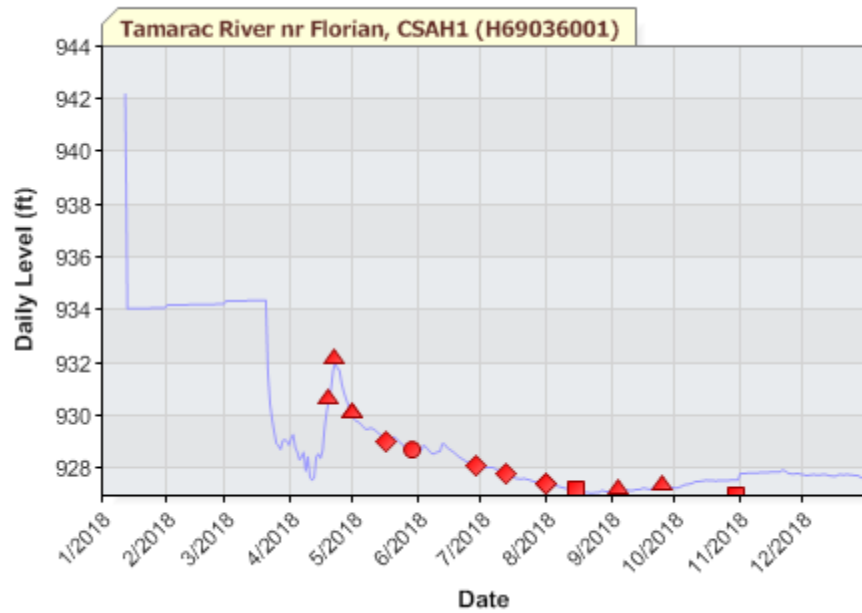
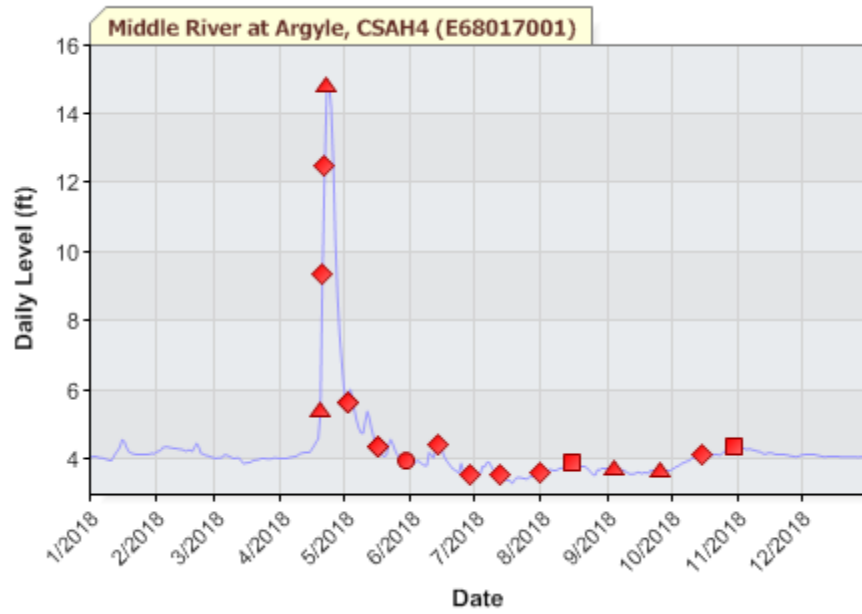


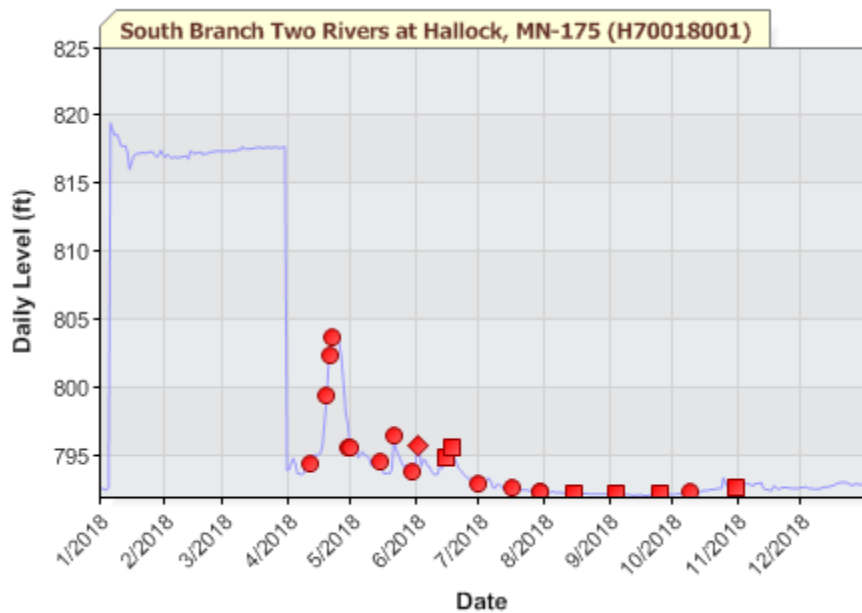
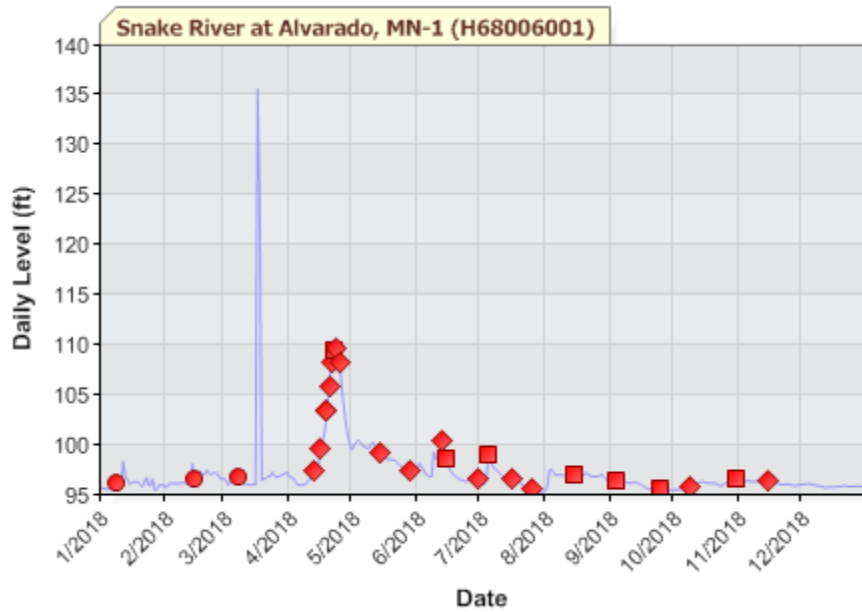












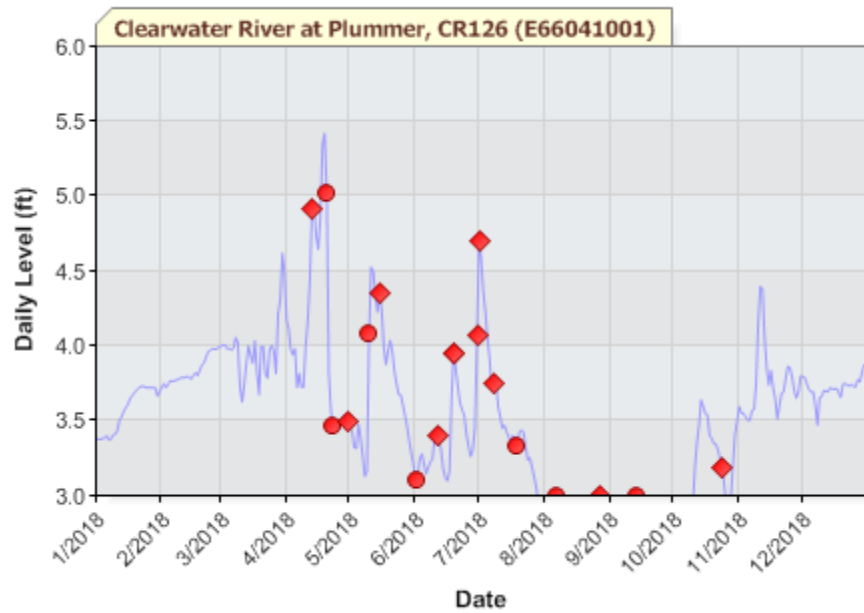
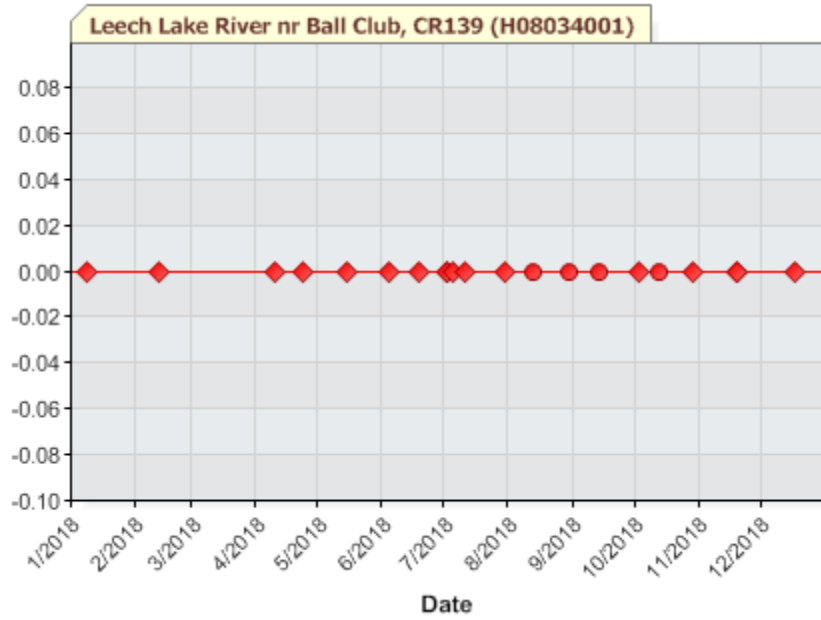


Table 1 2018 – 2019 QC

2018-2019 IWI WPLMN QC Tracker						
EQulS ID	Site Name	Dup 1	Dup 2	Dup 3	Dup 4	Dup 5
Middle Basin						
S002-133	Lost River nr Brooks, CR119	7/1/2018		7/29/19 (ML)		
S002-124	Clearwater River at Plummer, CR 126	6/19/2018		7/10/19 (ML)		
S003-172	Red Lake River nr Red Lake Falls, CR13	7/2/2018		9/13/19 (ML)		
S002-118	Clearwater River at Red Lake Falls, MN	5/15/2018		9/5/19 (ML)		
S002-099	Sand Hill River at Climax, MN	8/15/2018		6/12/19 (ML)		
S002-127	Marsh River nr Shelly, CR113	5/2/2018		9/17/19 (ML)		
S003-136	Sandhill River nr Fertile, 450th St SW	5/2/2018		7/30/19 (ML)		
S000-008	Red River of the North at Grand Forks, ND	8/15/2018		7/22/19 (ML)		
S000-031	Red Lake River at Fisher, MN	6/30/2018		8/19/19 (ML)		
NW/NE Basin						
S005-387	South Branch Two Rivers River at Hallock, MN175	7/30/2018		7/8/19 (ML)		
S007-127	Red River of the North at Emerson, Manitoba, CAN7	1/9/2018	5/7/2018	7/23/19 (ML)		
S000-700	Middle River at Argyle, MN	5/16/2018		8/5/19 (ML)		
S002-365	South Branch Two Rivers at Lake Bronson, MN	5/21/2018		8/6/19 (ML)	8/26/19 (ML)	
S007-587	Kittson CD27 nr Kennedy, CSAH1					
S008-208	N. Branch Two Rivers nr Northcote, CSAH4	5/29/2018		6/18/19 (ML)	9/12/19 (ML)	
S002-077	Red Lake River at High Landing nr Goodridge, MN	6/12/2018		6/13/19 (ML)	7/1/19 QC-EB (AU)	9/15/19 (ML)
S002-078	Mud River nr Grygla, MN89	6/13/2018		5/20/2019 (ML)	9/15/19 (ML)	
S002-088	Thief River nr Holt, CSAH7	6/13/2018		6/6/19 (ML)		
S002-079	Thief River nr Thief River Falls, MN	4/18/2018		6/25/19 (ML)		
S000-185	Snake River nr Big Woods, MN220	4/19/2018		9/16/19 (ML)		
S000-569	Two Rivers nr Hallock, CSAH16	8/15/2018		6/18/19 (ML)		
S002-100	Tamarac River nr Robbin, MN220	10/31/2018		5/21/19 (ML)		
S003-101	Snake River nr Warren, CSAH34	7/31/2018		6/21/19 (ML)		
S006-994	Tamarac River nr Florian, CSAH1	7/31/2018		6/21/19 (ML)		
S007-589	Roseau River below State Ditch 51 nr Caribou, MN	4/17/2018	*QC EB* 5/21/18	7/27/19 (ML)		
South Basin						
S002-000	Otter Tail River at Breckenridge, CSAH16	4/11/2018		9/3/19		
S000-553	Bois de Sioux River nr Doran, MN	2/2/2018	7/5/2018	8/6/19		
S003-677	Mustinka River nr Wheaton	4/20/2018		08/05/19		
S003-124	Twelvemile Creek nr Wheaton, CSAH14	5/14/2018		8/5/19	*QCEB* 8/19/19	
S005-142	Otter Tail River nr Elizabeth, MN	6/4/2018	7/13/18	7/8/19		
S002-001	Mustinka River nr Norcross, MN9	6/13/18	7/26/2018	7/8/2019		
S003-107	Bois de Sioux River nr White Rock, SD	*QC EB* 4/13/18	7/5/2018	8/5/19		
S001-029	Rabbit River nr Campbell, US75	5/10/2018		8/21/19		
S000-556	Pelican River nr Fergus Falls, MN210	8/9/2018				
Upper Mississippi						
S001-897	Miss at Bemidji	6/25/18	6/18/19			
S002-034	Miss at Bemidji (Power Dam)	10/16/18	6/18/19			
S006-262	Boy River	6/4/18	6/19/19			
S004-407	Willow River	6/4/18	6/19/19			
S001-922	Swan River	6/18/18	7/8/19			
S007-944	Prairie River	6/18/18	7/8/19	*QC-EB* 10/23/19		
S003-656	Miss at Grand Rapids	7/5/18	7/8/19			
S001-925	Leech Lake River	7/2/18	*QC-EB* 11/19/18	7/8/19		
		2018	2019			
	*AU Equipment Blank (1 per year/person)	4/13/2018	7/1/19			
	*AK Equipment Blank (1 per year/person)	11/19/2018	10/23/19			
	*MK Equipment Blank (1 per year/person)	5/21/2018				
	*DY Equipment Blank (1 per year/person)	8/19/2019	09/11/19			
	*ML Equipment Blank (1 per year/person)	n/a				

The MPCA project manager recommended 1 to 2 QC duplicates per year versus 2 to 3 as per the work plan as waived QC samples may be used as stream samples in wet years.

Table 2 – 2019 Load Calculations

IWI 2019 FLUX32 Load Calculations (2017 Flow Year)			
Hydstra ID	Site Name	date XML sent	date zip received
H54017002	Rabbit River nr Campbell, US75	11/14/18	11/20/18
H55044003	Mustinka River nr Norcross, MN9	11/14/18	11/20/18
H56105001	Otter Tail River at Breckenridge, CSAH16	11/14/18	1/3/19
E65014001	Thief River nr Thief River Falls, MN	11/14/18	1/11/19
H65041001	Mud River nr Grygla, MN89	11/14/18	1/11/19
E68017001	Middle River at Argyle, MN	11/15/18	1/11/19
E61039001	Sand Hill River at Climax, MN	12/28/18	2/6/19
E61046001	Red River of the North at Grand Forks, ND	12/28/18	1/2/19
E63078001	Red Lake River at Fisher, MN	12/28/18	2/26/19
E63007001	Red Lake River at High Landing nr Goodridge, MN	12/28/18	2/26/19
E66041001	Clearwater River nr Plummer	12/28/18	1/3/19
E54018001	Bois de Sioux River nr Doran, MN	12/28/18	1/3/19
E66050001	Clearwater River nr Red Lake Falls, MN	12/28/18	2/26/19
E68031002	Snake River nr Warren, CSAH34	12/28/18	2/25/19
E70033001	South Branch Two Rivers at Lake Bronson, MN	12/28/18	1/30/19
E56050001	Otter Tail River nr Elizabeth, MN	1/10/19	1/29/19
E54034001	Bois de Sioux nr White Rock, SD, CSAH10	1/11/19	1/29/19
E71005001	Roseau River below State Ditch 51 nr Caribou, MN	1/11/19	3/14/19
E59008001	Marsh River nr Shelly, MN	5/3/19	7/1/19
E69001002	Red River of the North at Emerson, Manitoba, CAN75	5/3/19	5/20/19
H70018001	South Branch Two Rivers River at Hallock, MN175	5/17/19	6/21/19
H55065001	Twelvemile Creek nr Wheaton, CSAH14	5/22/19	6/13/19
H69051001	Tamarac River nr Stephen, CSAH22	6/3/19	6/21/19
E09064001	Mississippi River at Grand Rapids, MN	6/17/19	7/11/19
E07115001	Mississippi River nr Bemidji, MN	6/17/19	7/3/19
E09020001	Prairie River nr Taconite, MN	6/17/19	6/21/19
H70012001	Two Rivers nr Hallock, CSAH16	9/23/19	11/20/19
H63025001	Red Lake River at Red Lake Falls, CR13	9/23/19	11/20/19
H55064003	Mustinka River nr Wheaton, CSAH9	9/23/19	11/20/19
H68011001	Snake River nr Big Woods, MN220	9/23/19	11/20/19
H56048002	Pelican River nr Fergus Falls, MN210	11/5/19	11/25/19
H61006002	Sandhill River nr Fertile, 450th St SW	11/5/19	12/10/19
H66048001	Lost River nr Brooks, CR119	11/5/19	12/10/19
H69036001	Tamarac River nr Florian, CSAH1	11/22/19	1/13/20