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Green Bay, WI 54307-9001
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April 8, 2013

FERC Project: 2525

Ms. Kimberly D. Bose, Secretary
The Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Dear Secretary Bose:

Proposed Amendment to the Order Amending Water Quality Monitoring Plan issued April 23, 2012

Reference: 1) Letter to Mr. T. Jensky from Mr. T LoVullo dated January 9, 2012
2) Order Amending Water Quality Monitoring Plan, Issued April 23, 2012

During the 2011 water quality monitoring season at the Caldron Falls Hydroelectric Project, there were periods during the monitoring season where the water quality monitor was not continuously in the water to monitor water quality parameters. Pursuant to reference 1, The FERC requested that Wisconsin Public Service Corporation (WPSC) amend the water quality monitoring plan to either permanently affix the water quality monitor or provide details on how the equipment will be maintained so that it functions properly throughout the monitoring period. Accordingly, WPSC submitted a proposal to amend the Water Quality Monitoring Plan for the Caldron Falls Hydroelectric Project for review and approval on March 20, 2012.

Per reference 2, WPSC needed to consult with the Wisconsin Department of Natural Resources (WDNR) to determine the location of the downstream water quality monitor. WPSC and WDNR met at the facility on July 18, 2012 to determine the monitoring location. As a result of this consultation, WPSC and WDNR have agreed upon a downstream monitoring location where WPSC will be able to affix water quality monitoring equipment so that the monitor remains in the water at all times in a location that is unaffected by fluctuations in river flow.

Accordingly, WPSC is proposing the following change to the water quality monitoring plan:

- Monitoring downstream of the Project shall occur approximately 770' downstream of the powerhouse in a location that is unaffected by changes in water elevation due to fluctuations in release flow volumes (NW ¼ of NE ¼, T33N, R18E, Section 10, approximately at 88° 13' 39.9"N, 45° 21' 25.7"W).

WPSC has consulted with the Wisconsin Department of Natural Resources (WDNR) regarding the proposed change to the downstream monitoring location. Documentation of Agency Consultation is attached.

Should you have any questions or concerns with this submittal, please do not hesitate to call Mr. Mark Metcalf at (920) 433-1833.

Sincerely,

Terry P. Jensky
Vice President - Generation Assets

Enc: Proposed Caldron Falls Water Quality Monitoring Plan

cc: Mr. Gil Snyder, WPSC - D2
Mr. Shawn Puzen, IBS - D2
Ms. Joan Johanek, WPSC - D2
Mr. Bill Bosacki, WPSC - D2
Mr. John Myers, IBS - D2
Mr. Dave Giesler, IBS - D2
Mr. Ed Brandt, WPSC - CRI
Mr. John Zygaj, FERC - CRO

Caldron Falls Hydroelectric Project (FERC No. 2525)

Proposed Amendments to the Approved Water Quality Monitoring Plan

April 8, 2013

Original Issue Date: April 30, 2002

Revision No. 3

Caldron Falls Hydroelectric Project - FERC License No. 2525

Article 409: The licensee shall file with the Commission, for approval, a plan to monitor dissolved oxygen (DO) and water temperature, and pH of the Peshtigo River upstream and downstream of the Caldron Falls dam.

Water Quality Monitoring Plan Requirement:

Ensure flow releases from the project, as measured immediately downstream from the dam, maintain the following standards, except when natural conditions prohibit attainment of the standards:

(1) DO concentrations shall not be less than 5.0 milligrams per liter (mg/L) (minus the precision of the monitoring instrument of 0.2 mg/L for Hydrolab Brand Equipment) for more than 24 hours per year;

(2) Water temperature shall not exceed 89 degrees Fahrenheit, and;

(3) The pH shall be within the range of 6.0 to 9.0 standard units, with no change greater than 0.5 units outside the natural seasonal maximum and minimum.

Natural conditions include inflows to the project less than the 95 percent exceedances flow.

I. Location and Frequency of Monitoring

Monitoring upstream and downstream of the facility occurs on a five-year basis. The next scheduled monitoring period is in 2016, and every five years thereafter for the term of the License. Upstream monitoring shall consist of monthly dissolved oxygen, temperature, and pH profiles of the Caldron Falls Reservoir. Readings will be taken at one (1) meter intervals just above the dam near the powerhouse intake. Monitoring downstream of the Project shall occur approximately 770' downstream of the powerhouse in a location that is unaffected by changes in water elevation due to fluctuations in release flow volumes (NW ¼ of NE ¼, T33N, R18E, Section 10, approximately at 88° 13' 39.9"N, 45° 21' 25.7" W).

II. Methods

The monitoring parameters include pH, dissolved oxygen, and temperature. At the downstream monitoring location, the data is collected at one-hour intervals continuously for the months of June, July, August, and September using a Hydrolab Datasonde Equipment or equivalent. Instrumentation shall be cleaned, downloaded, and calibrated according to manufacturer specification at least every 14 calendar days during the monitoring period. Calibration and maintenance information is recorded in a log for each piece of equipment. A post deployment calibration of the monitor will be conducted to determine the calibration drift. Raw dissolved oxygen data will be corrected for calibration drift assuming a linear degradation of calibration

based upon a post calibration of the equipment. At the upstream monitoring location, dissolved oxygen, pH and temperature data shall be collected using handheld monitoring equipment. The handheld equipment shall be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance records shall be maintained for the monitoring equipment.

III. Data Submittal and Review

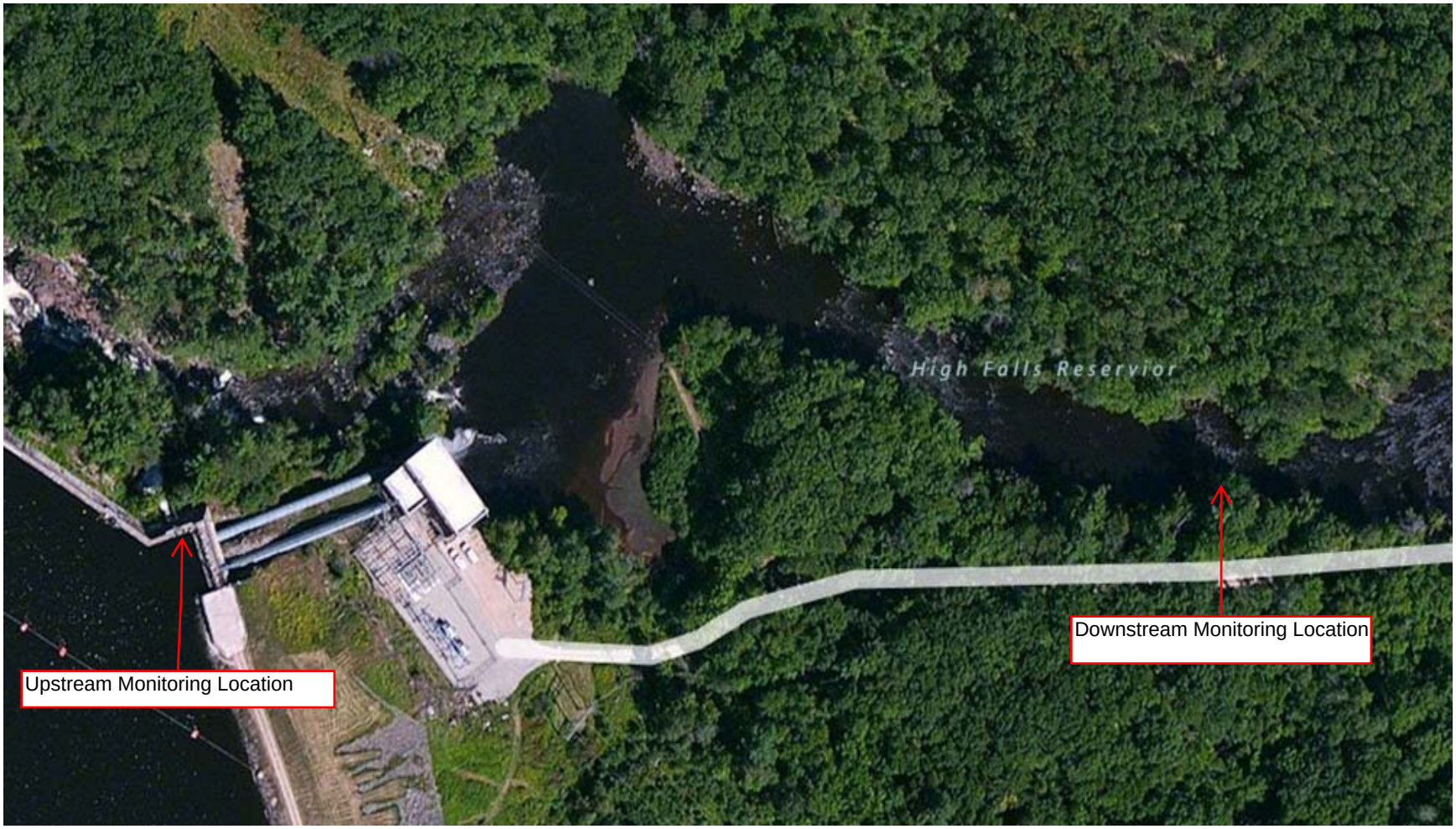
A. When data is downloaded from the equipment, it will be screened for periods of non-compliance with the standards. If periods of non-compliance are identified, the WDNR will be notified within five working days. The results of the monitoring will be supplied to the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service (USFWS) in a tabular format in an excel spreadsheet or equivalent.

B. The resource agencies will be given 30 days for review of the results of the study. The monitoring results, agency comments and responses to agency comments will be provided to the Federal Energy Commission (FERC) by February 28th of the year following the year in which monitoring occurred.

IV. Correction of Potential Problems

A. Through monitoring conducted in 1999, 2000, and 2001, it was determined that it is necessary to increase the flow through the sluice gate during periods of the summer. Past accurate data from 2000 and 2001 indicate all periods of low dissolved oxygen levels occur between July 15 and September 1. Therefore, annually during the period July 15 and September 1, Wisconsin Public Service Corporation (WPSC) will release a minimum flow of 56 CFS out of a sluice gate to mitigate low dissolved oxygen concentrations downstream of the facility.

Caldron Falls Hydroelectric Project
Water Quality Monitoring Locations



Documentation of Agency Consultation

Proposed Amendment to the Water Quality Monitoring Plan

Caldron Falls Hydroelectric Project (FERC No. 2525)

Metcalf, Mark W

From: Metcalf, Mark W
Sent: Tuesday, April 10, 2012 3:50 PM
To: 'Sevener, Gregory A - DNR'; Laatsch, Cheryl - DNR; Hudak, Andrew J - DNR
Cc: McLennan, Robin - DNR; Long, Christopher C - DNR; Puzen, Shawn C
Subject: RE: Caldron Falls Q

All:

The water quality monitoring plan for Caldron Falls indicates that 56 CFS of flow is to be released from the drop gate (spillway) between July 15 and September 1st. During this timeframe, there is a constant 56 cfs of flow, not a fluctuated volume based on DO levels downstream of the facility. Monitoring data has shown that the DO water quality standard is maintained when this volume of water is released.

As part of the water quality monitoring plan for the site, we had requested modifications to the plan in response to a requirement from FERC to address downstream monitoring. WPSC had solicited comments from WDNR and FWS and have submitted a proposed monitoring plan to FERC based upon the comments received. An item WPSC had suggested was to eliminate upstream monitoring as the current monitoring location is providing data with limited value – it is confirming that the reservoir is stratified and that DO levels are very low during the summer months. The Department had requested continued monitoring upstream of the facility and had suggested vertical DO, pH and temperature profiles in lieu of continuous monitoring near the bottom of the reservoir. We agree with the recommendation to conduct vertical profiles for those parameters and have proposed to modify the plan accordingly.

With regards to the downstream monitoring location, WPSC had periods in 2011 when the monitor came out of the water when water levels receded during peaking operation. FERC required WPSC to come up with a plan to either permanently affix the monitor so that is it in the water at all times or a plan to maintain the equipment so that it functions properly throughout the monitoring period. As provided in the Department's comments and discussed at the Annual Agency meeting, the Department does not want the monitor located at the Parkway bridge. In response to your concerns and the requirements of FERC, WPSC has recommended in the plan filed with FERC that the water quality monitor be moved downstream to a location that is unaffected by fluctuations in water flow. The exact location will need to be determined while the Caldron Falls facility is operating in peaking mode. I would be glad to arrange a site visit for sometime this summer.

If the Department would like to have a conference call to discuss this further, please send me some tentative dates and I will coordinate a conference call.

Mark

Mark Metcalf
Environmental Consultant - Air & Water | Integrys Business Support, LLC

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Providing support for Integrys Energy Group, Integrys Energy Services, Integrys Transportation Fuels, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Upper Peninsula Power Company and Wisconsin Public Service.

From: Sevener, Gregory A - DNR [mailto:Gregory.Sevener@wisconsin.gov]
Sent: Monday, April 09, 2012 1:55 PM
To: Laatsch, Cheryl - DNR; Hudak, Andrew J - DNR; Metcalf, Mark W
Cc: McLennan, Robin - DNR; Long, Christopher C - DNR
Subject: RE: Caldron Falls Q

There were a few issues in question with the Caldron Falls Project as follows:

1. Mitigating the low DO s from occurring below the Caldron Falls Project which Mark is confident can be done by passing the 56 cfs. to maintain the 5 mg/l below the project where currently monitored. That means if they want to mitigate by passing the 56 cfs. when the DO will be potentially below 5mg/l, they need some manner to trigger the passing of 56 cfs such as a remote warning signal from the down stream monitoring device or even triggering when the upstream DO drops out in the pool hypolimnion, thus the continuing need for upstream monitoring whether it is manual profile monitoring each month or some other method.

I think moving the monitoring below the project further down stream to Parkway Road should not be done unless there is assurance the DO water quality limits will be met at low flow warm water periods into the future. The deviation below 5mg/l were not many and long lasting but need to be mitigated where the tail water has mixed completely. I feel the downstream zones below projects can be some of the most productive and diverse areas if flow is maintained as well as sufficient DO.

2. Is elimination of monitoring upstream of the project for pH and DO a good idea upstream?

I still feel DO should be continued to be monitored upstream of the project dam and since pH is a water quality standard it should also be monitored

3. Can the monitoring location be moved for monitoring downstream of the project to Parkway Road?
I do not feel the monitoring should be moved farther down stream unless it can be shown the DO alternative of ph.
Have other methods of installation been attempted for housing the sonde to help assure it will remain in the water? These are such things as horizontal PVC housing which would be installed into the bottom ?

In any event monitoring may be required more than once every five years. I guess we should schedule a conference call and possible even meet on site to discuss by actually viewing the situation. Johnson Falls also needs to be discussed and that is considered coldwater and higher DO standard of 6
mg/l.

Gregory A. Sevener
WI. DNR Peshtigo Service Center
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Peshtigo, WI. 54157
Phone : 715-582-5013
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Find us at http://dnr.wi.gov and www.facebook.com/WIDNR

From: Laatsch, Cheryl - DNR
Sent: Monday, April 09, 2012 09:11 AM
To: Hudak, Andrew J - DNR; Sevener, Gregory A - DNR

Cc: McLennan, Robin - DNR
Subject: FW: Caldron Falls Q

See below. Please let me know how we want to move forward on this discussion,.

Cheryl Laatsch,Water Mgt Specialist,
WDNR,Office of Energy, GEF2, 7th Floor
101 S Webster St Madison WI 53707-7921
Madison office phone:(608) 264-8943

OR

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N7725 HIGHWAY 28
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(920) 387-7869
(920) 485-3028 (Fax)

e-mail: Cheryl.laatsch@wisconsin.gov
Website: dnr.wi.gov
www.facebook.com/WIDNR

From: Metcalf, Mark W [mailto:MWMetcalf@integrysgroup.com]
Sent: Thursday, April 05, 2012 12:50 PM
To: Laatsch, Cheryl - DNR
Cc: Puzen, Shawn C
Subject: RE: Caldron Falls Q

Hi Cheryl,

At the Caldron Falls project, the facility has a requirement to pass a minimum flow of 50 cfs. The minimum flow is provided through a combination of unit leakage and release through the drop gate (spillway). Leakage through the units is estimated to be 22 cfs, which means a minimum of 28 cfs must be released through the drop gate. Water quality monitoring conducted during the summer of 2001 indicated there were periods of low DO readings downstream of the powerhouse when 28 CFS was being released through the drop gate. After consulting with the resource agencies, WPSC agreed to double the flow during the summer from the drop gate, thereby increasing it to 56 cfs to mitigate low DO downstream of the powerhouse. Attached is information on the increase to 56 cfs through the drop gate is included with the 2001 water quality monitoring report filed with FERC on February 27, 2002. FERC approved the change in the water quality monitoring plan to include a release of 56 cfs from the drop gate in an order amending the water quality monitoring plan on April 30, 2002.

I believe the 56 cfs flow is effective at mitigating low DO downstream of the facility. That said, as you and Greg discussed at the annual agency meeting, we are very willing to work with the Department to evaluate options to mitigate low DO levels downstream of the facility. The periods of low DO levels observed in 2011 occurred prior to August 12th when 56 cfs was not being released through the drop gate. After correcting the flow, DO levels were maintained above the water quality standard. Keep in mind that the upstream monitoring data from the reservoir showed that the headwater was stratified between early July and mid September, with DO readings near the bottom of the reservoir where water is withdrawn and passed through the powerhouse averaging 0.9

mg/l throughout August. While it is possible that site conditions have changed, the 56 cfs flow does not appear to be affected.

Mark

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Providing support for Integrys Energy Group, Integrys Energy Services, Michigan Gas Utilities, Minnesota Energy Resources, North Shore Gas, Peoples Gas, Upper Peninsula Power Company and Wisconsin Public Service.

From: Laatsch, Cheryl - DNR [mailto:Cheryl.Laatsch@Wisconsin.gov]
Sent: Wednesday, March 28, 2012 10:17 AM
To: Metcalf, Mark W
Subject: Caldron Falls Q

Hi -

We are wondering where the 56cfs came from, and what information was used to derive this number? It is possible that the site conditions have changed, and we are wondering if the 56cfs is affected by this?

Cheryl Laatsch,Water Mgt Specialist,
WDNR,Office of Energy, GEF2, 7th Floor
101 S Webster St Madison WI 53707-7921
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Metcalf, Mark W

From: Metcalf, Mark W
Sent: Monday, September 24, 2012 10:25 AM
To: 'Hudak, Andrew J - DNR'
Cc: Nuthals, James D
Subject: Caldron Falls Water Quality Monitoring Location

Hi Andy,

Just wanted to follow up on the water quality monitoring location downstream of the Caldron Falls Hydroelectric Project. On July 18th, we had met at the site to discuss the location of the water quality monitor downstream of the powerhouse. As you are aware, during the 2011 water quality monitoring season there were periods during reservoir refilling events when the water quality monitor came out of the water. After the monitoring season, WPSC had received an order from FERC to amend the water quality monitoring plan to either permanently affix the water quality monitor or provide details on how the equipment will be maintained so that it functions properly throughout the monitoring period. WPSC is proposing to move the downstream monitoring location to a deeper water location that is unaffected by changes in release flow so that the monitor can be kept in the water at all times.

During the site visit, the facility was refilling the reservoir after peaking operation and water levels in the river were representative of low water conditions. We discussed the possibility of moving the water quality monitoring location downstream approximately 100 to 125 yards downstream of the 2011 monitoring location where there is a slight bend in the river. At this location, WPSC would be able to safely place the monitor under all flow conditions and the river is deep enough that the monitor would be unaffected by changes in water elevation. You had taken dissolved oxygen readings at several locations in the river downstream of the powerhouse and, if I recall correctly, there was not a significant difference in DO concentrations between the 2011 monitoring location and the location downstream (readings were within a couple of tenths). After meeting at the site, you had indicated you wanted to discuss the situation a little more with Greg Sevner and potentially perform some in-stream monitoring.

I am wondering if the Department has discussed the issue further and what your thoughts are on moving the monitoring location downstream to a slightly deeper area in the river. Please let me know when you have a chance.

Thanks,
Mark

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Metcalf, Mark W

From: Hudak, Andrew J - DNR [Andrew.Hudak@wisconsin.gov]
Sent: Tuesday, March 12, 2013 2:03 PM
To: Metcalf, Mark W; Nuthals, James D
Cc: Laatsch, Cheryl - DNR; Long, Christopher C - DNR
Subject: Caldron Falls Amendment Request Comments
Attachments: FERC CaldronF2011 WQ ammendment comments.doc; cald.pdf

Mark and Jamie-

This was a little later than I would have liked to get these comments back to you following our site visit back in July. Anyways here are comments to address the amendment request and movement of downstream monitoring location. Please let me know if you have any questions and I would assume you would like to set-up a call between Cheryl, Chip, and I to discuss the final amendment request and revised monitoring plan.

Andy

Andrew Hudak
Water Resources Management Specialist
Bureau of Watershed Management
Wisconsin Department of Natural Resources
(☎) phone: (920) 662-5117
(☎) fax: (920) 662-5498
(✉) e-mail: andrew.hudak@wisconsin.gov

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: March 12, 2013 FILE REF: WPS Caldron Falls P-2525
TO: Wisconsin Public Service
FROM: WDNR
SUBJECT: WDNR Comments to the 2011 Water Quality Monitoring Summary and Monitoring Plan Amendment Request

Comments:

1. WDNR asserts the licensee should continue to monitor the DO and ph above the project discharge. The WDNR would accept an alternative to do bi-monthly water column profile monitoring of Temp, DO, and pH upstream of the dam in the deepest pool every meter in depth. This data will provide a depth of stratification and oxygen concentrations within the pool water column during the sample months.

2. Monitoring for pH should be continued at the downstream monitoring location.

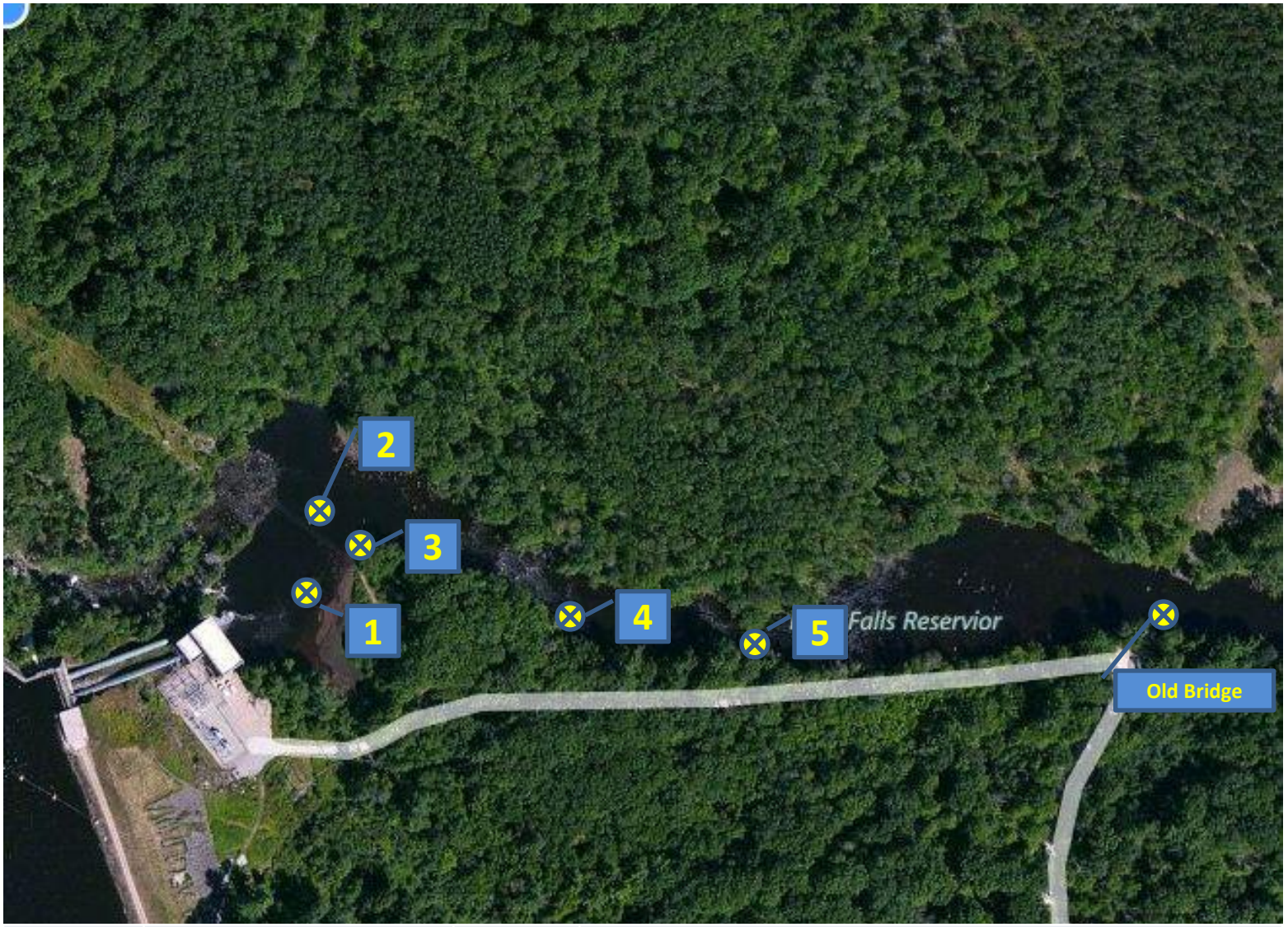
3. Based on the joint site visit during the 2012 field season, a downstream sample location could be moved and located to the area closer to location #5 on the attached map. The previous sample location was located approximately 600 ft downstream of the dam. The new sample location would be approximately 900 feet downstream of the dam where sufficient water depth and access is available for the sample equipment to remain submerged during refill peaking operations.

4. The monitoring plan should specify additional mitigation efforts if standards are not met downstream of the Caldron Falls dam. (Additional passage of water through the spillway gate, real-time downstream monitoring device, etc…)

5. Monitoring devices must be maintained per manufactures instructions to assure quality of measurements. Monitoring plan should reflect device instructions to maintain data quality.

Please contact me with any questions or concerns regarding the monitoring plan amendment comments. I can be reached at 920-662-5117 or Andrew.hudak@wisconsin.gov

Thanks.



Location	Description	DO mg/l	Distance Descriptions
1	In Plunge Pool	4.4	131 ft dam, 107 ft spillway
2	DS of Confluence	4.5	232 ft dam, 215 ft spillway, 131ft ds confluence
3	Deep Hole @ Portage	4.5	309 ft dam, 255 ft spillway, 204 ft ds confluence
4	DS 1st Riffle	5.5	550 ft dam, 520 ft spillway, 430 ft ds confluence
5	DS 2nd Riffle	5.1	900 ft dam, 770 ft spillway, 770 ft ds confluence
	Old Roadway Crossing	NA	1470 ft dam, 1430 ft spillway, 1377 ft ds confluence

Response to comments from the Wisconsin Department of Natural Resources

Comment: WDNR asserts the licensee should continue to monitor the DO and ph above the project discharge. The WDNR would accept an alternative to do bi-monthly water column profile monitoring of Temp, DO, and pH upstream of the dam in the deepest pool every meter in depth. This data will provide a depth of stratification and oxygen concentrations within the pool water column during the sample months.

Response: Comment noted. WPSC received similar comments from WDNR in March 2012 during a previous request to modify the water quality monitoring plan. Per WDNR's recommendation, the monitoring plan was modified to conduct vertical profiles for dissolved oxygen, temperature, and pH at one (1) meter intervals once a month during the monitoring season.

Comment: Monitoring for pH should be continued at the downstream monitoring location.

Response: Comment noted. WPSC will continue to monitor pH on a continuous basis as identified in the monitoring plan.

Comment: Based on the joint site visit during the 2012 field season, a downstream sample location could be moved and located to the area closer to location #5 on the attached map. The previous sample location was located approximately 600 ft downstream of the dam. The new sample location would be approximately 900 feet downstream of the dam where sufficient water depth and access is available for the sample equipment to remain submerged during refill peaking operations.

Response: The monitoring plan has been amended as follows: Monitoring downstream of the Project shall occur approximately 770' downstream of the powerhouse in a location that is unaffected by changes in water elevation due to fluctuations in release flow volumes (NW ¼ of NE ¼, T33N, R18E, Section 10, approximately at 88° 13' 39.9"N, 45° 21' 25.7"W).

Comment: The monitoring plan should specify additional mitigation efforts if standards are not met downstream of the Caldron Falls dam. (Additional passage of water through the spillway gate, real-time downstream monitoring device, etc…)

Response: The monitoring plan currently identifies that the facility shall release a minimum of 56 cfs of aeration flow through a sluice gate between July 15th and September 1st. Additional measures, if needed, shall be determined through consultation with the resource agencies and implemented upon approval by the FERC.

Comment: Monitoring devices must be maintained per manufactures instructions to assure quality of measurements. Monitoring plan should reflect device instructions to maintain data quality.

Response: The monitoring plan specifies that the instrumentation shall be cleaned, downloaded, and calibrated according to manufacturer specification.

Document Content(s)

20130408 FERC Caldron WQM Plan Amendment Request.PDF.....1-16