



Wisconsin Public Service Corporation
700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001
www.wisconsinpublicservice.com

December 20, 2016

FERC Project No. 1979
NATDAM No. WI00748

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20425

Dear Ms. Bose:

Alexander Hydroelectric Project
2016 Invasive Species Report

In accordance with the Order Issuing New License, which approved the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project (FERC Project No. 1979), issued March 4, 2005, Wisconsin Public Service (WPS) is submitting the Purple Loosestrife, Eurasian Water Milfoil, and Zebra Mussel survey results. Additionally, in accordance with the Order Amending Purple Loosestrife Control Measures in Approved Monitoring Plan, issued July 9, 2009, WPS revised the original survey methods to include general plant vigor information in its purple loosestrife survey results.

Purple Loosestrife

A survey for Purple Loosestrife (PL) was completed on July 28, 2016. The survey identified a total of thirty-six (36) PL colonies. No colonies were cut or sprayed to avoid adverse impacts to existing or potential new populations of *Galerucella species* beetles. Each colony was issued a number and mapped. Plant vigor information was recorded for each colony. In 2016, a sum total of approximately 12,000 beetles were released in four different locations to supplement existing beetle populations. The 2016 PL figure and spreadsheet showing colony locations, beetle release locations, and plant vigor survey are included in Appendix A.

WPS created a spreadsheet to summarize the last eight (8) years of purple loosestrife survey and beetle release data, see Appendix B. A review of the data shows that the number of colonies has ranged between eight (8) and thirty-six (36) over the eight-year period and currently sits at thirty-six (36). The percentage of colonies with beetle feeding has ranged from 39 to 74 percent and currently sits at 50 percent.

WPS proposes to continue monitoring for PL and to continue releasing a minimum sum total of 6,000 beetles in at least two separate locations. This is planned as a biological control method to attempt to establish healthy beetle populations throughout the Alexander Hydroelectric Project (Project).

Eurasian Watermilfoil

As outlined in the approved invasive species monitoring plan for the Project, a routine aquatic macrophyte survey for Eurasian Watermilfoil (EWM) around the three boat landings was completed on

Ms. Kimberly D. Bose
December 20, 2016
Page 2 of 2

July 2, 2016. No EWM was observed during the routine aquatic macrophyte survey. EWM was not observed at the Project during the 2016 survey or any of the previous surveys.

Zebra Mussels

Zebra Mussel (ZM) surveys are conducted annually, April through September. In 2016, ZM were not found during any of the monthly substrate inspections. A summary of the 2016 ZM surveys have been included in Appendix C.

Copies of the 2016 Invasive Species Report were submitted to the Wisconsin Department of Natural Resources (WDNR) and US Fish and Wildlife Service (FWS) on October 31, 2016. Copies of the ZM mussel survey results were provided to UW-Manitowoc on October 31, 2016. No comments regarding the reports were received from the resource agencies. Documentation of consultation with the resource agencies is located in Appendix D.

If you have any questions relative to this material, please contact Jes Roloff at (920) 433-5558 at your earliest convenience.

Sincerely,



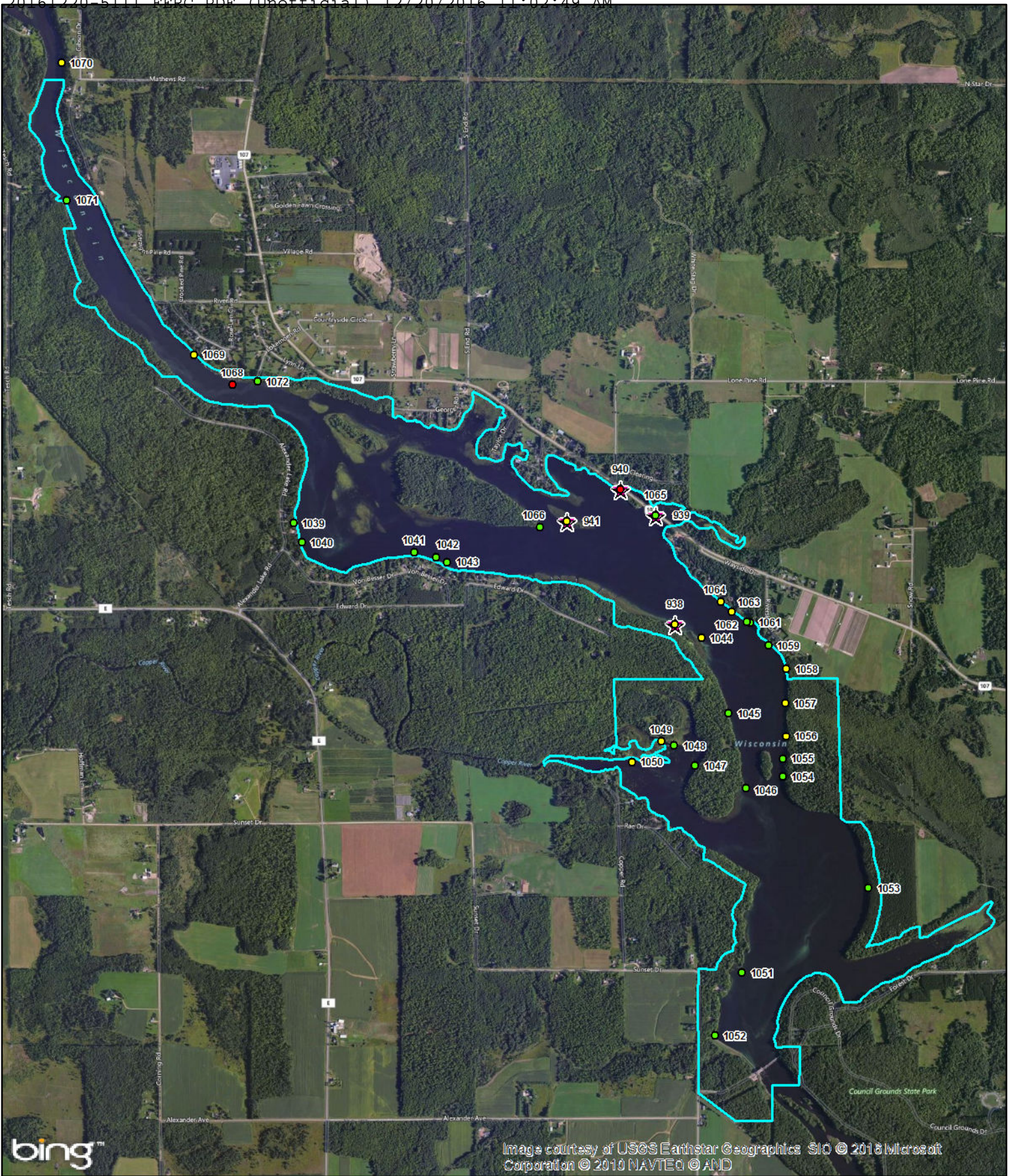
Todd P. Jastremski
Asset Manager Hydro Operations
We Energies
800 Industrial Park Drive
Iron Mountain, MI 49801

JRR/rjv

Enc. Appendix A, Appendix B, Appendix C, Appendix D


cc: Ms. Cheryl Laatsch, WDNR
Mr. Nicholas Utrup, USFWS
Mr. John Zygaj, FERC - CRO

APPENDIX A
2016 PURPLE LOOSESTRIFE FIGURES AND DATA
(WPS LETTER TO FERC DECEMBER 20, 2016)

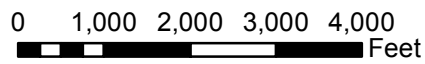


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Image courtesy of USGS Earthstar Geographics SIO © 2015 Microsoft Corporation © 2010 NAVTEQ © AND

	Oneida	
Price		
	Lincoln	
Taylor		
	Marathon	

2016 Alexander Flowage Invasive Plant Survey



- Project Boundary
- Purple Loosestrife-2016**
- 0-5 Plants
- 6-50 Plants
- >50 Plants
- ★ Beetle Release Site



Date: 10/21/2016

Purple Loosestrife Survey FormHydroelectric project: Alexander Hydroelectric ProjectInspection date: 7/5/2016 & 7/28/2016

Colony ID #	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12 = good 7-9 = fair 4-6 = poor 0-3 = very poor	Notes	GPS Point
		Plant Height 4 = >4ft 3 = 2-4ft 2 = 1-2ft 1 = <1ft	Plant Flowering 4 = 100% of plants 3 = 51-99% of plants 2 = 26-50% of plants 1 = <25% of plants	Beetle Feeding 4 = <25% feeding 3 = 26-50% feeding 2 = 51-75% feeding 1 = >76% feeding			
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939	M	3	2	4	9	2 pots released	939
940	L	3	3	4	10	4 pots released	940
941	M	2	3	4	9	4 pots released	941
1039	S	3	4	4	11		1039
1040	S	3	3	4	10		1040
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1043	S	3	3	4	10		1043
1044	M	3	3	3	9		1044
1045	S	3	3	4	10		1045
1046	S	3	4	4	11		1046
1047	S	3	2	4	9		1047
1048	S	3	3	4	10		1048
1049	M	3	3	3	9		1049
1050	M	3	3	4	10		1050
1051	S	2	3	4	9		1051
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1053	S	4	3	4	11		1053
1054	S	4	3	4	11		1054

Colony ID #	Colony Size S 0-5 M 6-50 L >50	General Plant Vigor			Total Plant Vigor 10-12 = good 7-9 = fair 4-6 = poor 0-3 = very poor	Notes	GPS Point
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1064	M	3	3	4	10		1064
1065	S	3	3	4	10		1065
1066	S	2	3	4	9		1066
1068	L	3	3	3	9		1068
1069	M	3	3	4	10		1069
1070	M	3	3	2	8		1070
1071	S	3	3	4	10		1071
1072	S	2	1	1	4		1072

APPENDIX B
PURPLE LOOSESTRIFF EIGHT YEAR SUMMARY TABLE
(WPS LETTER TO FERC DECEMBER 20, 2016)

Alexander Hydroelectric Project 2009 - 2016 Summary

Year	Total Number of Colonies	Number of Small Colonies (0-5 Plants)	Number of Medium Colonies (6 - 50 Plants)	Number of Large Colonies (51+ plants)	Number of Colonies With Beetle Feeding	Percentage of Total Colonies With Beetle Feeding	Beetles Released
2009	20	13	5	2	11	55%	10,000
2010	21	14	5	2	10	48%	2,000
2011	20	13	6	1	14	70%	3,000
2012	38	27	7	4	15	39%	2,000
2013	19	11	6	2	14	74%	3,000
2014	53	49	4	0	28	53%	3,000
2015	31	25	6	0	15	48%	7,000
2016	36	21	13	2	15	42%	12,000

8 Year Average	29.75	21.63	6.50	1.63	15.25	53.63%	
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APPENDIX C
2016 ZEBRA MUSSEL SURVEY SUMMARY
(WPS LETTER TO FERC DECEMBER 20, 2016)

ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

HYDRO NAME

- | | | | |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey | <input type="checkbox"/> Hat Rapids |

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>3-27-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>4-12-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-7-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8-4-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>9-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

APPENDIX D
DOCUMENTATION OF CONSULTATION
(WPS LETTER TO FERC DECEMBER 20, 2016)



Wisconsin Public Service Corporation

700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001

www.wisconsinpublicservice.com

October 31, 2016

FERC Project No. 1979

Ms. Cheryl Laatsch
WDNR – FERC Coordinator
101 S. Webster Street
GEF 2-7th Floor
Madison, WI 53707

Dear Ms. Laatsch:

Alexander Hydroelectric Project – 2016 Invasive Species Report

As per the Order Approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project (P-1979), issued March 4, 2005, Wisconsin Public Service Corporation (WPS) is submitting the purple loosestrife, Eurasian water milfoil, and zebra mussel survey results. Additionally, as per the Order amending Purple Loosestrife Control Measures issued July 9, 2009, WPS revised the original survey methods to include general plant vigor information in its purple loosestrife survey results.

Purple Loosestrife

A survey for purple loosestrife (PL) was completed on July 28, 2016. The survey identified a total of thirty-six (36) PL colonies. No colonies were cut or sprayed to avoid adverse impacts to existing or potential new populations of *Galerucella species* beetles. Each colony was issued a number and mapped. Plant vigor information was recorded for each colony. In 2016, approximately 12,000 beetles were released in four different locations to supplement existing beetle populations. The 2016 PL figure and spreadsheet showing colony locations, beetle release locations, and plant vigor survey are included in Appendix A.

WPS created a spreadsheet to summarize the last eight (8) years of purple loosestrife survey and beetle release data, see Appendix B. A review of the data shows that the number of colonies has ranged between eight (8) and thirty-six (36) over the eight-year period and currently sits at thirty-six (36). The percentage of colonies with beetle feeding has ranged from 39% to 74% and currently sits at 50%.

WPS proposes to continue monitoring for PL and releasing a minimum of 6,000 beetles in at least two separate locations as a biological control method in an attempt to establish healthy beetle populations throughout the Project.

Eurasian Watermilfoil

As outlined in the approved invasive species monitoring plan for the Alexander Hydroelectric project, a routine aquatic macrophyte survey for Eurasian watermilfoil (EWM) around the three boat landings was completed on July 2, 2016. No EWM was observed during the routine aquatic macrophyte survey. EWM has not been observed at the Alexander Hydroelectric Project during this or any of the previous surveys.

Zebra Mussels

Zebra Mussel (ZM) surveys are conducted monthly between April through September on an annual basis. In 2016, ZM were not found during any of the monthly substrate inspections. A summary of the 2016 ZM surveys have been included in Appendix C.

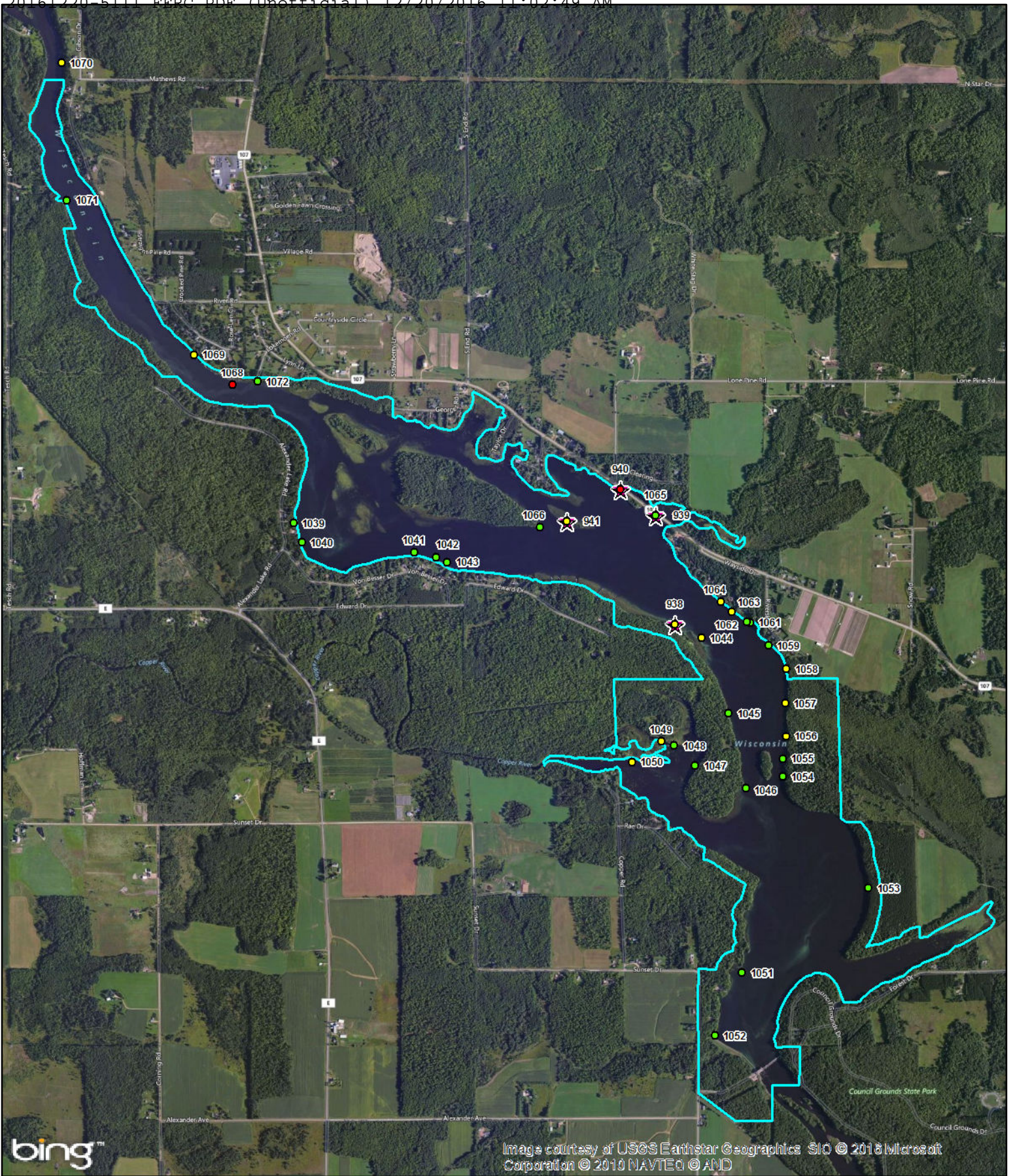
Please provide any comments you may have regarding this report within 30 days. Should you have any questions or require additional information, please do not hesitate to contact me at 920-433-5558 or JRRoloff@integrysgroup.com.

Sincerely,

Jessica Roloff
Environmental Consultant


Enc: Appendix A - C

APPENDIX A

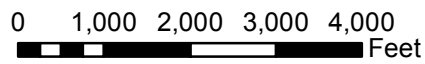


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	Oneida	
Price		
	Lincoln	
Taylor		
	Marathon	

2016 Alexander Flowage Invasive Plant Survey



- Project Boundary
- Purple Loosestrife-2016
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Date: 10/21/2016

Purple Loosestrife Survey Form

Hydroelectric project: Alexander Hydroelectric ProjectInspection date: 7/5/2016 & 7/28/2016

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1069	M	3	3	4	10		1069
1070	M	3	3	2	8		1070
1071	S	3	3	4	10		1071
1072	S	2	1	1	4		1072

APPENDIX B

Alexander Hydroelectric Project 2009 - 2016 Summary

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APPENDIX C

ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

HYDRO NAME

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|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
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DATE: <u>3-27-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>4-12-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-7-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8-4-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>9-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

NO COMMENTS RECEIVED FROM THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES



Wisconsin Public Service Corporation

700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001

www.wisconsinpublicservice.com

October 31, 2016

FERC Project No. 1979

Mr. Nick Utrup
USFWS Ecological Services Field Office
4101 American Boulevard, East
Bloomington, MN 55425

Dear Mr. Utrup:

Alexander Hydroelectric Project – 2016 Invasive Species Report

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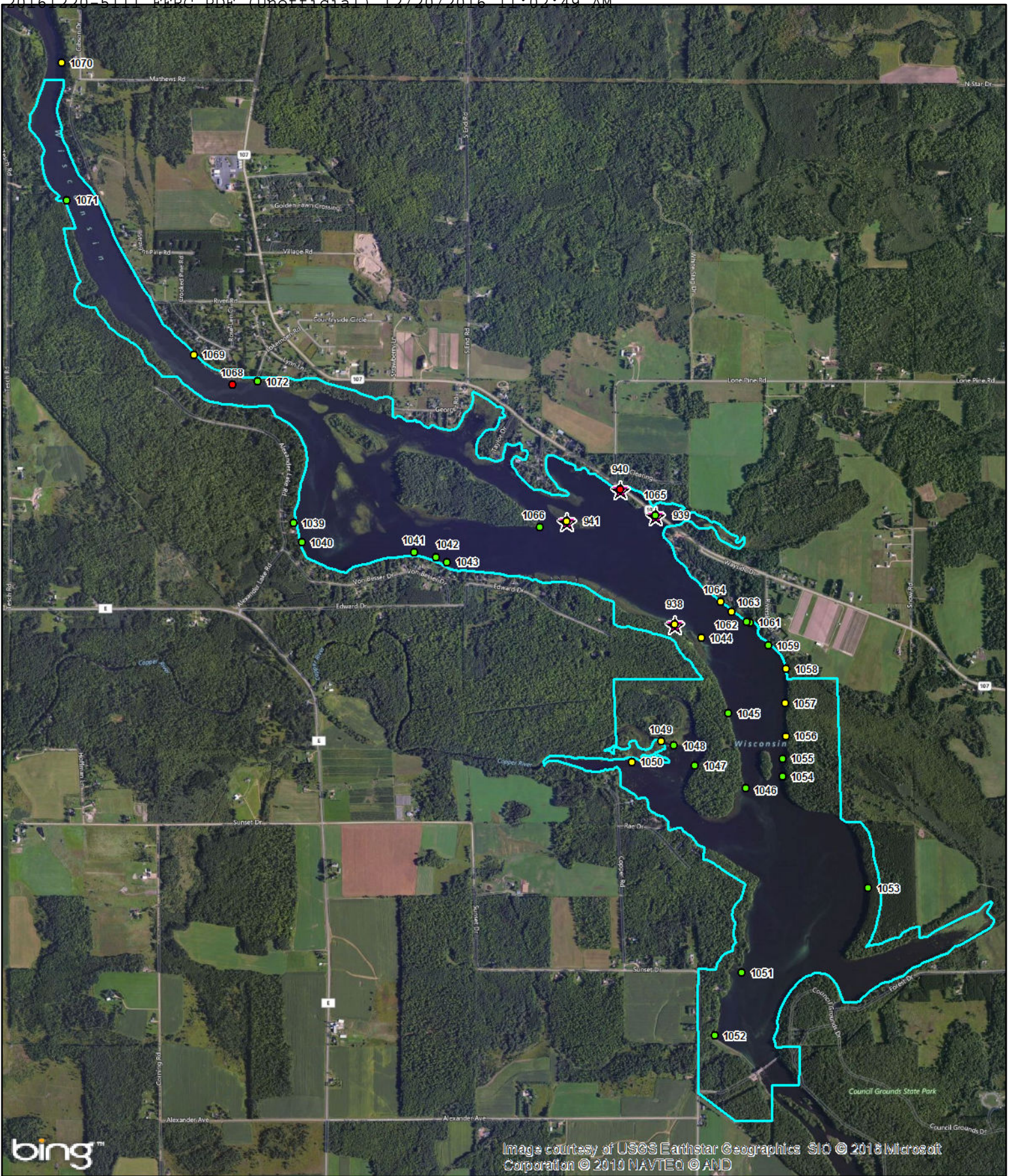
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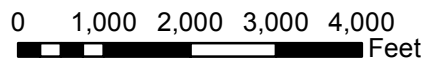


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2016	36	21	13	2	15	42%	12,000

8 Year Average	29.75	21.63	6.50	1.63	15.25	53.63%	
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APPENDIX C

ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

HYDRO NAME

- | | | | |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey | <input type="checkbox"/> Hat Rapids |

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>3-27-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>4-12-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>6-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>7-7-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>8-4-16</u>	
COMMENTS/RESULTS: <u>0</u>	

INSPECTION TYPE: <input checked="" type="checkbox"/> MONTHLY INSPECTION	<input type="checkbox"/> INSPECTION DURING DRAWDOWN
DATE: <u>9-9-16</u>	
COMMENTS/RESULTS: <u>0</u>	

NO COMMENTS RECEIVED FROM THE US FISH AND WILDLIFE SERVICE



Wisconsin Public Service Corporation

700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001

www.wisconsinpublicservice.com

October 31, 2016

FERC Project No. 1979

Phil Moy
UW Manitowoc
705 Viebann Street
Manitowoc, WI 54420

Mr. Moy:

Alexander Hydroelectric Project – 2016 Zebra Mussel Survey Report

As per the Order Approving the Invasive Species Monitoring Plan for the Alexander Hydroelectric Project (P-1979), issued March 4, 2005, Wisconsin Public Service Corporation (WPS) is submitting the zebra mussel survey results.

Monthly inspections of substrate samplers for the presence of zebra mussels were conducted during the months of April and June through September. Zebra mussels were not found during any of the monthly inspections. A summary of the results has been included in Appendix A.

Please provide any comments you may have regarding this report within 30 days. Should you have any questions or require additional information, please do not hesitate to contact me at 920-433-5558 or JRRoloff@integrysgroup.com.

Sincerely,

A handwritten signature in black ink that reads "Jessica R. Roloff". The signature is written in a cursive style.

Jessica Roloff
Environmental Consultant

Enc: Appendix A

APPENDIX A

ZEBRA MUSSEL INSPECTION RESULTS WESTERN HYDROELECTRIC PROJECTS

HYDRO NAME

- | | | | |
|--------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Grandfather Falls | <input type="checkbox"/> Merrill | <input type="checkbox"/> Tomahawk | <input type="checkbox"/> Otter Rapids |
| <input type="checkbox"/> Wausau | <input checked="" type="checkbox"/> Alexander | <input type="checkbox"/> Jersey | <input type="checkbox"/> Hat Rapids |

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 3-27-16
COMMENTS/RESULTS: 0

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 4-12-16
COMMENTS/RESULTS: 0

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 6-9-16
COMMENTS/RESULTS: 0

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 7-7-16
COMMENTS/RESULTS: 0

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 8-4-16
COMMENTS/RESULTS: 0

INSPECTION TYPE: MONTHLY INSPECTION INSPECTION DURING DRAWDOWN
DATE: 9-9-16
COMMENTS/RESULTS: 0

NO COMMENTS RECEIVED FROM UW-MANITOWOC

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