



Alliant Energy
4902 North Biltmore Lane
P.O. Box 77007
Madison, WI 53707-1007

1-800-ALLIANT (800-255-4268)
alliantenergy.com

April 16, 2018

To: CCR Operating Record

Re: Closure Plan and Status of WPDES Pond Closure pursuant to 40 CFR 257.102(c)

The Nelson Dewey Generating Station (NED) WPDES Pond, an inactive Coal Combustion Residuals (CCR) surface impoundment, is currently completing closure by removal of CCR pursuant to 40 CFR 257.102(c). CCR removal was completed on November 2, 2017, and groundwater monitoring to confirm completion of the closure is ongoing. NED retired in December 2015 and the plant has been demolished.

A Closure Plan for the WPDES Pond was prepared by a Professional Engineer registered in Wisconsin and submitted to the Wisconsin Department of Natural Resources. The Closure Plan also addressed closure of the NED Slag Pond, an existing CCR surface impoundment, the coal yard, and other areas located at the facility. Appendix B of the Closure Plan (attached) is an Impoundment Abandonment Plan that specifically addresses closure and restoration of the WPDES Pond. The full Closure Plan was approved by the Wisconsin Department of Natural Resources (WDNR) on July 25, 2017.

This notification applies to the following CCR unit at this facility:

CCR Surface Impoundment

NED WPDES Pond (inactive CCR surface impoundment)

Signed:

Print Name Jeff Maxted	Title Lead Environmental Specialist
Phone No. or Email Address (608) 458-3853; jeffreymaxted@alliantenergy.com	



Impoundment Abandonment Plan
**Nelson Dewey Generating Station
Cassville, Wisconsin**

Prepared for:

Wisconsin Power and Light Company

Nelson Dewey Generating Station
11999 County Highway VV
Cassville, Wisconsin 53806

Prepared by:

SCS ENGINEERS

2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

March 2017
File No. 25216054.00

Offices Nationwide
www.scsengineers.com

**Impoundment Abandonment Plan
Nelson Dewey Generating Station**

Prepared for:

Wisconsin Power and Light Company
Nelson Dewey Generating Station
11999 County Highway VV
Cassville, Wisconsin 53806

Prepared by:

SCS ENGINEERS
2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

March 2017
File No. 25216054.00

Table of Contents

Section	Page
Certification Statement	iii
1.0 Introduction.....	1
1.1 Purpose	1
1.2 Facility and Contact Information.....	1
1.3 Site Background	2
1.3.1 WPDES Ponds Operations	2
1.3.2 Slag Pond Operations	2
2.0 Sediment Evaluation.....	3
2.1 WPDES Ponds Assessment	3
2.2 Slag Pond Assessment	4
3.0 Abandonment Plan	4
3.1 Material Removal and Consolidation	4
3.2 Supplemental Wastewater Treatment.....	5
3.3 Miscellaneous Demolition.....	6
3.3.1 WPDES Ponds Pump House.....	6
3.3.2 Culverts	6
3.3.3 Piping	7
3.4 Post-Sediment Removal Soil Sampling.....	7
3.5 Final Grades.....	7
3.6 Closure Area Final Cover	8
3.7 Post-Closure Storm Water Management	8
3.8 Restoration	9
4.0 Post-Closure Care	9
5.0 Schedule	9

List of Tables

No.

1	Sediment Sampling and Analysis Plan
2a	Sediment and Soil Analytical Results – Metals
2b	Sediment and Soil Analytical Results – Additional Parameters
3	Sediment and Soil Analytical Results – PAHs
4a	Sediment and Soil Analytical Results – Water Leach Test Metals
4b	Sediment and Soil Analytical Results – Water Leach Test Additional Parameters
4c	Sediment and Soil Analytical Results – Water Leach Test Radiochemistry
5	Geotechnical Sample Results
6	Post-Sediment Removal Soil Sample & Analysis Plan

List of Figures

No.

- 1 Bathymetric and Topographic Survey and Sediment Thickness Locations
- 2 Material Volume and Thickness Measurements

Appendices

- A WPDES Permit No. WI-0002381-07-0
- B Water Table Maps
- C Select Test Pit, Boring, and Push Core Logs

I:\25216054.00\Deliverables\Abandonment Plan\170331_Abandonment Plan_FINAL.docx

CERTIFICATION STATEMENT

"I, ERIC J. NELSON, hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A-E 4, Wisconsin Administrative Code (Wis. Adm. Code); that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code."

Eric J. Nelson
Signature

Sr Project Manager
Title

3-31-2017
Date



[This page left blank intentionally.]

1.0 INTRODUCTION

1.1 PURPOSE

This Impoundment Abandonment Plan has been prepared to detail the abandonment of the wastewater impoundments at the Wisconsin Power and Light Company (WPL) Nelson Dewey Generating Station (NED) located in Cassville, Wisconsin (Figure 1, Closure Plan). WPL has retired the generating units at the NED facility and decommissioning work has begun. This Impoundment Abandonment Plan is provided to support the Closure Plan that WPL has submitted to WDNR. The Closure Plan describes the decommissioning process for the wastewater impoundments, the Coal Yard, and Slag Handling Areas at the NED facility.

The decommissioning activities outlined in the Closure Plan include the abandonment of two wastewater impoundments at the NED facility that include the Wisconsin Pollutant Discharge Elimination System (WPDES) Ponds and the Slag Pond. The WPDES Ponds will be abandoned by removing accumulated materials and impacted soil from the impoundment. The material removed from the WPDES Ponds will be consolidated on site at the NED facility under a Low Hazard Exemption, which WPL has requested from WDNR; also under the cover of the Closure Plan (see Appendix C of the Closure Plan). The Slag Pond will be abandoned by leaving accumulated materials in place under a low-permeability final cover system. Material removed from the WPDES Ponds will be consolidated in the Slag Pond before the cover is installed.

The Impoundment Abandonment Plan was developed in accordance with Wisconsin Administrative Code (Wis. Adm. Code), Chapter NR 213.07 and is submitted for WDNR review and approval. The Closure Plan cannot be implemented as proposed without this approval.

1.2 FACILITY AND CONTACT INFORMATION

Owner and Facility Information: Wisconsin Power and Light Company
Nelson Dewey Generating Station
11999 County Highway VV
Cassville, WI 53806
Facility Identification (FID) #: 122014530
Section 18 and 19, T03N, R05W

Facility Contact: Jenna Wischmeyer
Sr. Project Manager
Alliant Energy
200 1st Street SE
Cedar Rapids, IA 52401
(319) 786-4843
Jennawischmeyer@alliantenergy.com

Consultant Contact: Eric J. Nelson, PE
Sr. Project Manager
SCS Engineers
137 Bluff Street, #202
Dubuque, IA 52001
(563) 940-0538
enelson@scsengineers.com

1.3 SITE BACKGROUND

General background information for the NED facility is provided in the Closure Plan. Additional background information pertinent to this Impoundment Abandonment Plan is discussed in the following sections.

1.3.1 WPDES Ponds Operations

The WPDES Ponds are operated in accordance with WPDES Permit. No. WI-0002381-07-0. Wastewater and surface water received by the WPDES Ponds that is not discharged to the Slag Pond or evaporated is discharged via infiltration. The WPDES Ponds do not currently receive generating station wastewater due to the plant retirement. Fly ash from equipment washing operations at the generating station was occasionally removed from the WPDES Ponds for off-site disposal if excessive build-up occurred at its influent. A copy of WPDES Permit. No. WI-0002381-07-0 is provided in **Appendix A**.

The WPDES Ponds were designed for infiltration; so, historically, the water level in the ponds while they were receiving wastewaters has been interpreted to be above the water table. The water table maps from 2015 and 2016 that are included in **Appendix B** represent conditions when the plant was operating (2015) and when the plant was shut down (2016), and water levels in the WPDES Ponds were below the staff gauge elevations, but there was still water in the ponds.

1.3.2 Slag Pond Operations

The Slag Pond is operated in accordance with WPDES Permit. No. WI-0002381-07-0. Wastewater and surface water received by the Slag Pond that is not discharged to the Mississippi River via WPDES Permit Outfall 002, or evaporated is discharged via infiltration. The Slag Pond is not currently receiving generating station wastewater due to the plant retirement. A copy of WPDES Permit. No. WI-0002381-07-0 is provided in **Appendix A**.

The Slag Pond was designed as an infiltration basin; so, historically, the water level in the pond while it is receiving wastewaters has been interpreted to be above the water table in the area of the pond. The water table maps from 2015 and 2016 that are included in **Appendix B** represent conditions when the plant was operating (2015) and when the plant was shut down (2016), and the pond was receiving only limited wastewater.

2.0 SEDIMENT EVALUATION

As required by the facility's WPDES permit and the abandonment requirements in NR 213.07, WPL has completed evaluations for the presence of accumulated sediment in the WPDES Ponds and the Slag Pond. Accumulated sediment in the WPDES Ponds and Slag Pond were evaluated during a site assessment of the NED facility completed to confirm that the approach to decommissioning site features and managing the material generated during decommissioning was appropriate. Site assessment work was completed according to the May 2016 Sampling and Analysis Plan, which was reviewed by WDNR. The Sampling and Analysis Plan provided the details of how material accumulated in the impoundments would be characterized. A summary of the Sampling and Analysis Plan is provided as **Table 1**.

The sediment evaluation at the WPDES Ponds and Slag Pond was completed between June and August 2016. The results of the site assessment and sediment evaluation are summarized in the sections below.

2.1 WPDES PONDS ASSESSMENT

The site assessment identified an estimated 16,700 cubic yards (cy) of material to be removed during the abandonment of the WPDES Ponds and consolidated in the Slag Pond under the proposed final cover. **Figure 1** shows the results of the bathymetric and topographic survey completed at the WPDES Ponds. **Figure 2** shows the area of removal and the estimated volume of material to be removed from the WPDES Ponds. Sediment thickness measurements obtained during the site assessment are also shown on these figures.

The materials in the WPDES Ponds were characterized during the site assessment and consist of the following:

- Sediment consisting of fly ash, coal fines, and other solids settled from plant wastewaters, Coal Yard runoff, and storm water runoff during suspended solids treatment and infiltration
- Soil underlying sediment deposits that has been impacted by or mixed with ash or sediment
- Soil used to create berms within the WPDES Ponds that has been impacted by wastewater

The sediment contains metals, polynuclear aromatic hydrocarbons (PAHs), and phenols. The soil materials contain metals. Analytical results obtained during the site assessment to characterize the materials in the WPDES Ponds are summarized on **Tables 2** through **5**. Laboratory analytical reports are provided in the Low Hazard Exemption Request that is presented as Appendix C of the Closure Plan. Test pit, boring, and push core logs showing the materials identified in the WPDES Ponds are provided in **Appendix C**.

2.2 SLAG POND ASSESSMENT

The site assessment identified an estimated 28,250 cy of material that will be left in the Slag Pond and capped with the final cover system described in Section 3.3 of the Low Hazard Exemption Request. **Figure 1** shows the results of the bathymetric and topographic survey completed at the Slag Pond. **Figure 2** shows the estimated volume of material that is present in the Slag Pond. Sediment thickness measurements obtained during the site assessment are also shown on these figures.

These materials were characterized during the site assessment and consist of the following:

- Sediment consisting of slag and other solids settled from plant wastewaters and storm water runoff during suspended solids treatment and infiltration
- Soil underlying sediment deposits that has been impacted by or mixed with sediment

The sediment contains metals, limited PAHs in select locations, and phenols. The soil materials contain metals. Analytical results obtained during the site assessment to characterize the materials in the Slag Pond are summarized in **Tables 2** through **5**. Laboratory analytical reports are provided in the Low Hazard Exemption Request that is presented as Appendix C of the Closure Plan, so the reports are not duplicated here. Test pit, boring, and push core logs showing the materials identified in the Slag Pond are provided in **Appendix C**.

3.0 ABANDONMENT PLAN

The plan for abandoning the WPDES Ponds and Slag Pond at the NED facility is described in the following sections. The plan is also detailed in the plan set included with the Closure Plan. The work completed to implement this plan will be conducted in accordance with the Construction Quality Assurance / Quality Control (CQA) Plan included in Appendix F of the Closure Plan.

3.1 MATERIAL REMOVAL AND CONSOLIDATION

The WPDES Ponds will be abandoned in accordance with NR 213.07 and 40 CFR 257.102(c) by removing accumulated materials, underlying impacted soil, and riprap/miscellaneous debris surrounding the pond. The WPDES Ponds will be dewatered by pumping residual free liquids in the pond to the Slag Pond. Dewatering discharges to the Slag Pond will be conducted in accordance with the existing, individual WPDES Permit No. WI-0002381-07-0 (Sample Point 102) issued to the NED facility. A copy of WPDES Permit No. WI-0002381-07-0 is provided in **Appendix A**.

Once the WPDES Ponds are dewatered and the Slag Pond has been prepared to receive additional material, the material in the WPDES Ponds will be removed to the proposed excavation grades shown on Sheet 5 of the Closure Plan. The proposed excavation grades include a 6-inch over dredge. Proposed excavation grades are designed to remove accumulated sediment from the WPDES Ponds, the soil in the interior berms, and underlying soil containing

contaminants above NR 720 industrial direct contact residual contaminant levels (RCLs). If the proposed excavation grades are reached and accumulated material or obviously impacted soil is still observed, the excavation will be extended until no accumulated material and/or visual impacts remain. As discussed below in **Section 3.4**, the removal of accumulated material and impacted soil will be confirmed by collecting post-excavation/dredging samples. Sampling will be conducted according to **Section 3.4**.

Materials removed from the WPDES Ponds will be consolidated on site in the Slag Pond under a composite final cover system in accordance with a low-hazard exemption issued by the WDNR. The low-hazard exemption is addressed in the Low Hazard Exemption Request, which is provided as Appendix C of the Closure Plan. If the moisture content of the materials removed from the WPDES Ponds precludes it from being transported or placed and compacted at the Slag Pond, the materials will be dewatered or stabilized as needed to facilitate transport and placement.

The Slag Pond will be abandoned in accordance with 40 CFR 257.102(d) by leaving accumulated materials in the pond and installing a composite final cover system over it. The Slag Pond will be dewatered before additional material is placed in the pond from the WPDES Ponds and Coal Yard. Slag Pond dewatering will likely occur in phases. The first phase of dewatering will remove free liquids from the pond and dewater the existing sediments to prepare the Slag Pond to receive additional fill. The initial phase of dewatering is required to ensure that a stable subgrade is provided before new fill material and the final cover are installed. The Slag Pond will also be dewatered on an as needed basis throughout the impoundment abandonment activities to remove storm water that accumulates in the Slag Pond and comes in contact with CCR or other impacted materials that are consolidated in the pond. Dewatering discharges from the Slag Pond will be conducted in accordance with the existing, individual WPDES Permit No. WI-0002381-07-0 (Outfall 002) issued to the NED facility. A copy of WPDES Permit No. WI-0002381-07-0 is provided in **Appendix A**.

The final cover system will cap both the Slag Pond and the adjacent Slag Handling Area and Barge Slip Area, which are referred to in aggregate as the Closure Area. The final cover system is discussed in **Section 3.6**. A detailed discussion of the final cover system design is provided in the Low Hazard Exemption Request.

3.2 SUPPLEMENTAL WASTEWATER TREATMENT

WPL anticipates that supplemental treatment for suspended solids will be needed to meet the requirements of WPDES Permit No. WI-0002381-07-0. Although the sediment removal process for abandonment is similar to typical sediment removal process for maintenance, additional suspended solids treatment is expected because the abandonment work will involve the following:

- Pumping to lower impoundment water levels below normal operating levels and existing discharge structures
- Disturbance of existing sediments

- Pumping directly to discharge structures resulting in the disruption of typical settling flow paths
- Reduced residence times for settling with reduced pond footprints due to excavation and filling activities

Supplemental treatment during impoundment closure will be provided by a contractor hired to implement the Closure Plan. However, WPL is ultimately responsible for maintaining compliance with the WPDES Permit and Closure Plan approval. WPL will work closely with the closure contractor to select, operate, and monitor the performance of supplemental treatment technologies. Additional treatment may include a combination of the items below:

- Pumping from gravel-lined sumps
- Polymer/flocculant addition
- Frac/weir tanks
- Dewatering bags
- Bag filter canisters
- Sand filters

The treatment equipment will be appropriately sized for the sediment present in the ponds, pumping rates, and discharge limits. Additional details regarding the specifications and performance of the technologies proposed by the closure contractor will be provided to WDNR for review and approval as a planned change as described in Section 6.2.7 of WPDES Permit No. WI-0002381-07-0.

3.3 MISCELLANEOUS DEMOLITION

Miscellaneous demolition activities that will be required to implement the Closure Plan and abandon the wastewater impoundments at the NED facility are described in the following sections. Miscellaneous demolition activities are also shown on Sheet 4 of the Closure Plan.

3.3.1 WPDES Ponds Pump House

The pump house located on the northwest corner of the WPDES Ponds will be demolished during abandonment of the WPDES Ponds. Concrete material from the demolition will be used as fill in the Closure Area as long as it conforms to the low-hazard exemption issued by the WDNR. Other demolition debris will be recycled and/or disposed of off site at a licensed landfill.

3.3.2 Culverts

The cast iron culverts connecting the individual areas of the WPDES Ponds will be removed and recycled and/or disposed of off site at a licensed landfill. Storm water runoff culverts from the Coal Yard will be removed and recycled or disposed of off site at a licensed landfill. If present, concrete culverts will be broken up and disposed of in the proposed Closure Area.

3.3.3 Piping

Piping from the pump house runs above ground across the Closed CCR Landfill to the Slag Pond and will be removed. The Closed CCR Landfill cover will be protected during removal. Two additional pipelines discharge in the WPDES Ponds from the two valve houses located near the Slag Pond. The valve house pipes will be abandoned in place and/or removed as necessary to complete material removal and restoration grading.

3.4 POST-SEDIMENT REMOVAL SOIL SAMPLING

In accordance with abandonment requirements in NR 213.07, soil samples will be collected following accumulated sediment removal activities in the WPDES Ponds. Post-sediment removal samples will document post-excavation conditions and be evaluated to determine if additional material excavation is necessary. Post-sediment samples will be analyzed for parameters listed in **Table 6**. No sampling will be conducted in the Slag Pond since accumulated material will remain in place under the final cover.

Post-sediment removal samples will be collected at the base of the excavation in each of the four individual areas of the WPDES Ponds. A single sample will be collected from each of the three smaller ponds, and three samples will be collected from the larger portion of the pond. Each sample will consist of approximately 6 inches of surface material collected via excavator and/or hand auger. Post-excavation soil samples will not be collected if the excavation extends below the water table. Samples will be submitted to for a laboratory for analysis.

Sample analytical results will be compared to the proposed industrial direct contact RCLs in **Table 6** to evaluate the final limits of excavation. Residual concentrations of parameters listed in **Table 6** will also be evaluated for cumulative exceedances of an acceptable hazard index or cumulative cancer risk using the WDNR Remediation and Redevelopment Programs draft RCL spreadsheet. If needed, post-excavation sampling results will be discussed with the WDNR to determine the final limits of material removal activities.

If laboratory analytical results indicate **Table 6** parameters are present at concentrations below the NR 720 industrial direct contact RCLs, sediment removal will be considered complete and post-excavation limits will be documented. If a sample contains a **Table 6** parameter at a concentration above the industrial direct contact RCL, excavation/dredging will continue with removal of another 6 to 12 inches of material from the area around the sample. Another sample will be collected and compared to the RCLs. This process will continue until final confirmation samples and parameters are below the industrial direct contact RCLs. Once the final samples are below the RCLs, site restoration activities can commence in the WPDES Ponds.

3.5 FINAL GRADES

Once excavation/dredging and sampling activities are completed, the WPDES Ponds will be graded and restored. Proposed final grades in the WPDES Ponds are shown on Sheet 7 of the Closure Plan. The area will be restored as a Storm Water Basin. The new Storm Water Basin will receive runoff from the Closed CCR Landfill, the former Coal Yard, and a portion of the

Closure Area. Typical cross sections through the new Storm Water Basin are shown on Sheets 10 and 11 of the Closure Plan.

Proposed final grades for the Closure Area, which includes the Slag Pond, were developed based on estimated material excavation volumes. The final grades are shown on Sheet 8 of the Closure Plan. The final grades may vary slightly based on the actual volume of material relocated during closure activities. A minimum slope of 2 percent will be maintained in all final cover areas. Typical cross sections through the proposed final cover are shown on Sheets 12 and 13 of the Closure Plan. The proposed final grades will be tied into existing grades around the perimeter of the Closure Area.

3.6 CLOSURE AREA FINAL COVER

A final cover system will be installed over the Slag Pond and adjacent Slag Handling Areas and Barge Slip (Closure Area) to the extent shown on Sheets 3 and 8 of the Closure Plan. The final cover will be a composite geosynthetic clay liner (GCL) cover. The final cover will consist of the following from bottom to top (Detail 3, Sheet 14 of the Closure Plan):

- 3-inch grading layer
- Laminated GCL
- Geocomposite
- 24-inch rooting zone
- 6-inch topsoil

The final cover over the Barge Slip Area will be the same, except that the 24-inch rooting zone and 6-inch topsoil layers will be replaced with gravel materials to facilitate future use of the Barge Slip Area.

The final cover system is similar to the final cover used previously on the adjacent Closed CCR Landfill on site. The design of the final cover system is detailed in the Low Hazard Exemption Request.

3.7 POST-CLOSURE STORM WATER MANAGEMENT

The abandonment of the WPDES Ponds and decommissioning of the Coal Yard will result in the construction of a new Storm Water Basin. Areas of the site that currently drain to the WPDES Ponds along with the southern portion of the proposed Closure Area final cover will be drained to this new basin.

The Closure Area final cover installed over the Slag Pond will be crowned, and storm water runoff will drain in all directions. The south portion of the Closure Area will sheet flow toward the river; the northwest portion will flow to a swale and through a culvert to the river at a new outfall; and the northeast portion will flow to a swale and ultimately drain into the new Storm Water Basin.

The design and permitting required for post-closure storm water management is discussed in Section 4.3 of the Closure Plan.

3.8 RESTORATION

As described in Section 4.4 of the Closure Plan, the areas disturbed during material removal, placement, and grading will be vegetated with the exception of the new Storm Water Basin and access road areas. A suitable seed mixture from Section 630.2.1.5 of the Wisconsin Department of Transportation's Standard Specifications for Highway and Structure Construction, 2017 Edition, will be selected based on the topsoil used to restore non-closure upland areas and non-closure lowland areas (Sheet 9, Closure Plan).

4.0 POST-CLOSURE CARE

Post-closure care activities including documentation of abandonment activities, maintenance of the final cover system, and long-term monitoring are discussed in Section 6.0 of the Closure Plan.

Post-closure care will include groundwater monitoring to satisfy the requirements in the federal CCR Rule (40 CFR 257). Groundwater monitoring will occur at the Slag Pond following Closure Activities for a 30-year post-closure period. Groundwater monitoring wells B7R, B11R/B11A/B11B, B26, B31A, and B31R (see Sheet 2 of the Closure Plan) will be maintained and sampled semi-annually for the parameters listed in Appendix III to 40 CFR 257 and in accordance with 40 CFR 257.90-98.

Groundwater monitoring will also be conducted in the area of the former WPDES Ponds following abandonment. Three monitoring wells will be installed downgradient of the WPDES Ponds. One round of groundwater samples will be collected for constituents listed in 40 CFR Appendix III and Appendix IV. The CCR removal and decontamination of the WPDES ponds will be considered complete under 40 CFR 257.102(c) if the groundwater concentrations do not exceed the groundwater protection standard (GWPS) established pursuant to 40 CFR 257.95(h) for constituents listed in Appendix IV.

5.0 SCHEDULE

The estimated start date for the abandonment of the WPDES Ponds is July 2017. The complete removal and restoration of the WPDES Ponds is estimated to be completed in October 2017. WPL plans to complete the work in the Slag Pond by the end of 2017.

[This page left blank intentionally]

TABLES

1	Sediment Sampling and Analysis Plan
2	Sediment and Soil Analytical Results – Metals
2b	Sediment and Soil Analytical Results – Additional Parameters
3	Sediment and Soil Analytical Results – PAHs
4a	Sediment and Soil Analytical Results – Water Leach Test Metals
4b	Sediment and Soil Analytical Results – Water Leach Test Additional Parameters
4c	Sediment and Soil Analytical Results – Water Leach Test Radiochemistry
5	Geotechnical Sample Results
6	Post-Sediment Removal Soil Sample & Analysis Plan

Table 1. Sampling & Analysis Plan
Wisconsin Power and Light - Nelson Dewey Generating Station / SCS Engineers Project #25216054.00

Sample Material	Locations	Samples	Parameters	Method	Container	Preservative	Hold Times	Regulatory Category ⁽⁸⁾								
								NR528	NR538 Table 1A	NR538 Table 1B	Appendix III, 40 CFR Part 257	Appendix IV, 40 CFR Part 257	Other			
Soft Sediment Samples	WPDES Ponds	4	Metals ¹	EPA 6010/7471	4 oz. Plastic	None	6 Months									
			Antimony, Sb	EPA 6010							X					
			Arsenic, As	EPA 6010					X		X					
			Barium, Ba	EPA 6010							X					
			Beryllium, Be	EPA 6010							X					
			Boron, B	EPA 6010							X					
			Cadmium, Cd	EPA 6010					X		X					
			Copper, Cu	EPA 6010					X							
			Chromium, Cr	EPA 6010					X							
			Lead, Pb	EPA 6010					X		X					
			Mercury, Hg	EPA 7471							X					
			Molybdenum, Mo	EPA 6010							X					
			Nickel, Ni	EPA 6010					X		X					
			Thallium, Tl	EPA 6010							X					
			Vanadium, V	EPA 6010							X					
			Zinc, Zn	EPA 6010					X		X					
			Metals ² (ASTM Water Leach Test)	ASTM D3938/EPA 6010/7470/6020	1 L. Plastic	None	6 Months									
			Aluminum, Al	ASTM D3938/EPA 6010							X					
			Antimony, Sb	ASTM D3938/EPA 6010							X				X	
			Arsenic, As	ASTM D3938/EPA 6010							X				X	
			Barium, Ba	ASTM D3938/EPA 6010							X				X	
			Beryllium, Be	ASTM D3938/EPA 6010							X				X	
			Boron, B	ASTM D3938/EPA 6010							X		X			
			Cadmium, Cd	ASTM D3938/EPA 6010							X				X	
			Calcium, Ca	ASTM D3938/EPA 6010									X			
			Chromium Total, Cr	ASTM D3938/EPA 6010							X				X	
			Copper, Cu	ASTM D3938/EPA 6010							X					
			Cobalt, Co	ASTM D3938/EPA 6010											X	
			Iron, Fe	ASTM D3938/EPA 6010							X					
			Lead, Pb	ASTM D3938/EPA 6010							X				X	
			Lithium, Li	ASTM D3938/EPA 6020											X	
			Manganese, Mn	ASTM D3938/EPA 6010							X					
	Mercury, Hg	ASTM D3938/EPA 7471							X				X			
	Molybdenum, Mo	ASTM D3938/EPA 6010							X				X			
	Nickel, Ni	ASTM D3938/EPA 6010							X							
	Selenium, Se	ASTM D3938/EPA 6010							X				X			
	Silver, Ag	ASTM D3938/EPA 6010							X							
	Thallium, Tl	ASTM D3938/EPA 6010							X				X			
	Zinc, Zn	ASTM D3938/EPA 6010							X							
	Sulfate (ASTM Water Leach Test)	ASTM D3938/EPA 3000	1 L. Plastic	None	28 Days				X		X					
	Chloride	EPA 300.0	4 oz. Plastic	None	28 Days									X ⁽⁷⁾		
	Chloride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days				X		X					
	Fluoride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days						X		X			
	TKN	EPA 351.2	4 oz. Plastic	None	28 Days			X								
	TKN (ASTM Water leach)	ASTM D3938/EPA 351.2	1 L. Plastic	None	28 Days									X ⁽⁷⁾		
N+N-Nitrogen	EPA 353.2	4 oz. Plastic	None	28 Days			X									
N+N, Nitrogen (ASTM Water leach)	ASTM D3938/EPA 353.2	1 L. Plastic	None	28 Days				X								
Total Phenols	EPA 420.4	4 oz. Glass	None	28 Days									X ⁽⁷⁾			
Total Phosphorus	EPA 365.4	4 oz. Plastic	None	28 Days			X									
Total PAHs ³ (18)	EPA 8270-SIM	4 oz. Glass	None	14 Days ⁴					X							
Radium 226 & 228 (ASTM Water Leach Test) (Select Samples)	CCR Gap methodology	1 L. Plastic	None	6 Months								X				
Total Dissolved Solids (TDS)	SM 2540C	1 L. Plastic	None	7 Days						X						
% Solids	EPA 2540G	1 L. Plastic	None	7 Days			X									
% Organic Matter	ASTM D2974	1 L. Plastic	None	7 Days			X									
Electrical Conductivity	EPA 9050	4 oz. Plastic	None	Immediate			X									
pH	SW 9045	1 L. Plastic	None	Immediate			X			X						
Laboratory Classification (2 per location)	ASTM D2487				1 Gallon Plastic Bag	None	None									
Moisture Content (2 per location)	ASTM D2216					None	Immediate									
Grain Size Distri. (sieve) (2 per location)	ASTM D422					None	None									

Table 1. Sampling & Analysis Plan
Wisconsin Power and Light - Nelson Dewey Generating Station / SCS Engineers Project #25216054.00

Sample Material	Locations	Samples	Parameters	Method	Container	Preservative	Hold Times	Regulatory Category ⁽⁸⁾							
								NR528	NR538 Table 1A	NR538 Table 1B	Appendix III, 40 CFR Part 257	Appendix IV, 40 CFR Part 257	Other		
Native/Sub-Sediment Samples	WPDES Ponds	2	Metals ¹	EPA 6010/7471	4 oz. Plastic	None	6 Months								
			Antimony, Sb	EPA 6010							X				
			Arsenic, As	EPA 6010					X		X				
			Barium, Ba	EPA 6010							X				
			Beryllium, Be	EPA 6010							X				
			Boron, B	EPA 6010							X				
			Cadmium, Cd	EPA 6010					X		X				
			Copper, Cu	EPA 6010					X						
			Chromium, Cr	EPA 6010					X						
			Lead, Pb	EPA 6010					X		X				
			Mercury, Hg	EPA 7471							X				
			Molybdenum, Mo	EPA 6010							X				
			Nickel, Ni	EPA 6010					X		X				
			Thallium, Tl	EPA 6010							X				
			Vanadium, V	EPA 6010							X				
			Zinc, Zn	EPA 6010					X		X				
			Metals ² (ASTM Water Leach Test)	ASTM D3938/EPA 6010/7470/6020	1 L. Plastic	None	6 Months								
			Aluminum, Al	ASTM D3938/EPA 6010							X				
			Antimony, Sb	ASTM D3938/EPA 6010							X			X	
			Arsenic, As	ASTM D3938/EPA 6010							X			X	
			Barium, Ba	ASTM D3938/EPA 6010							X			X	
			Beryllium, Be	ASTM D3938/EPA 6010							X			X	
			Boron, B	ASTM D3938/EPA 6010							X		X		
			Cadmium, Cd	ASTM D3938/EPA 6010							X			X	
			Calcium, Ca	ASTM D3938/EPA 6010									X		
			Chromium Total, Cr	ASTM D3938/EPA 6010							X			X	
			Copper, Cu	ASTM D3938/EPA 6010							X				
			Cobalt, Co	ASTM D3938/EPA 6010										X	
			Iron, Fe	ASTM D3938/EPA 6010							X				
			Lead, Pb	ASTM D3938/EPA 6010							X			X	
			Lithium, Li	ASTM D3938/EPA 6020										X	
			Manganese, Mn	ASTM D3938/EPA 6010							X				
			Mercury, Hg	ASTM D3938/EPA 7471							X			X	
			Molybdenum, Mo	ASTM D3938/EPA 6010							X			X	
			Nickel, Ni	ASTM D3938/EPA 6010							X				
			Selenium, Se	ASTM D3938/EPA 6010							X			X	
			Silver, Ag	ASTM D3938/EPA 6010							X				
			Thallium, Tl	ASTM D3938/EPA 6010							X			X	
			Zinc, Zn	ASTM D3938/EPA 6010							X				
			Sulfate (ASTM Water Leach Test)	ASTM D3938/EPA 3000	1 L. Plastic	None	28 Days				X		X		
Chloride	EPA 300.0	4 oz. Plastic	None	28 Days								X ⁽⁷⁾			
Chloride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days				X		X					
Fluoride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days						X	X				
TKN	EPA 351.2	4 oz. Plastic	None	28 Days			X								
TKN (ASTM Water leach)	ASTM D3938/EPA 351.2	1 L. Plastic	None	28 Days								X ⁽⁷⁾			
N+N-Nitrogen	EPA 353.2	4 oz. Plastic	None	28 Days			X								
N+N, Nitrogen (ASTM Water leach)	ASTM D3938/EPA 353.2	1 L. Plastic	None	28 Days				X							
Total Phenols	EPA 420.4	4 oz. Glass	None	28 Days								X ⁽⁷⁾			
Total Phosphorus	EPA 365.4	4 oz. Plastic	None	28 Days			X								
Total PAHs ³ (18)	EPA 8270-SIM	4 oz. Glass	None	14 Days ⁴					X						
Radium 226 & 228 (ASTM Water Leach Test) (Select Samples)	CCR Gap methodology	1 L. Plastic	None	6 Months							X				
Total Dissolved Solids (TDS)	SM 2540C	1 L. Plastic	None	7 Days						X					
% Solids	EPA 2540G	1 L. Plastic	None	7 Days			X								
% Organic Matter	ASTM D2974	1 L. Plastic	None	7 Days			X								
Electrical Conductivity	EPA 9050	4 oz. Plastic	None	Immediate			X								
pH	SW 9045	1 L. Plastic	None	Immediate			X			X					

Table 1. Sampling & Analysis Plan
Wisconsin Power and Light - Nelson Dewey Generating Station / SCS Engineers Project #25216054.00

Sample Material	Locations	Samples	Parameters	Method	Container	Preservative	Hold Times	Regulatory Category ⁽⁸⁾							
								NR528	NR538 Table 1A	NR538 Table 1B	Appendix III, 40 CFR Part 257	Appendix IV, 40 CFR Part 257	Other		
Soil	Slag Holding Area	2	Metals ¹	EPA 6010/7471	4 oz. Plastic	None	6 Months								
			Antimony, Sb	EPA 6010							X				
			Arsenic, As	EPA 6010					X		X				
			Barium, Ba	EPA 6010							X				
			Beryllium, Be	EPA 6010							X				
			Boron, B	EPA 6010							X				
			Cadmium, Cd	EPA 6010					X		X				
			Copper, Cu	EPA 6010					X						
			Chromium, Cr	EPA 6010					X						
			Lead, Pb	EPA 6010					X		X				
			Mercury, Hg	EPA 7471							X				
			Molybdenum, Mo	EPA 6010							X				
			Nickel, Ni	EPA 6010					X		X				
			Thallium, Tl	EPA 6010							X				
			Vanadium, V	EPA 6010							X				
			Zinc, Zn	EPA 6010					X		X				
			Metals ² (ASTM Water Leach Test)	ASTM D3938/EPA 6010/7470/6020	1 L. Plastic	None	6 Months								
			Aluminum, Al	ASTM D3938/EPA 6010							X				
			Antimony, Sb	ASTM D3938/EPA 6010							X			X	
			Arsenic, As	ASTM D3938/EPA 6010							X			X	
			Barium, Ba	ASTM D3938/EPA 6010							X			X	
			Beryllium, Be	ASTM D3938/EPA 6010							X			X	
			Boron, B	ASTM D3938/EPA 6010							X		X		
			Cadmium, Cd	ASTM D3938/EPA 6010							X			X	
			Calcium, Ca	ASTM D3938/EPA 6010									X		
	Chromium Total, Cr	ASTM D3938/EPA 6010							X			X			
	Copper, Cu	ASTM D3938/EPA 6010							X						
	Cobalt, Co	ASTM D3938/EPA 6010										X			
	Iron, Fe	ASTM D3938/EPA 6010							X						
	Lead, Pb	ASTM D3938/EPA 6010							X			X			
	Lithium, Li	ASTM D3938/EPA 6020										X			
	Manganese, Mn	ASTM D3938/EPA 6010							X						
	Mercury, Hg	ASTM D3938/EPA 7471							X			X			
	Molybdenum, Mo	ASTM D3938/EPA 6010							X			X			
	Nickel, Ni	ASTM D3938/EPA 6010							X						
	Selenium, Se	ASTM D3938/EPA 6010							X			X			
	Silver, Ag	ASTM D3938/EPA 6010							X						
	Thallium, Tl	ASTM D3938/EPA 6010							X			X			
	Zinc, Zn	ASTM D3938/EPA 6010							X						
	Sulfate (ASTM Water Leach Test)	ASTM D3938/EPA 3000	1 L. Plastic	None	28 Days				X		X				
	Chloride	EPA 300.0	4 oz. Plastic	None	28 Days								X ⁽⁷⁾		
	Chloride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days				X		X				
	Fluoride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days				X		X				
	TKN	EPA 351.2	4 oz. Plastic	None	28 Days			X							
	TKN (ASTM Water leach)	ASTM D3938/EPA 351.2	1 L. Plastic	None	28 Days								X ⁽⁷⁾		
N+N-Nitrogen	EPA 353.2	4 oz. Plastic	None	28 Days			X								
N+N, Nitrogen (ASTM Water leach)	ASTM D3938/EPA 353.2	1 L. Plastic	None	28 Days				X							
Total Phenols	EPA 420.4	4 oz. Glass	None	28 Days								X ⁽⁷⁾			
Total Phenols (ASTM Water Leach)	ASTM D3938/EPA 420.4	1 L. Glass	None	28 Days											
Total Phosphorus	EPA 365.4	4 oz. Plastic	None	28 Days			X								
Total Phosphorus (ASTM Water Leach)	ASTM D3938/EPA 365.4	1 L. Glass	None	28 Days											
Total PAHs ³ (18)	EPA 8270-SIM	4 oz. Glass	None	14 Days ⁴					X						
Radium 226 & 228 (ASTM Water Leach Test) (Select Samples)	CCR Gap methodology	1 L. Plastic	None	6 Months							X				
Total Dissolved Solids (TDS)	SM 2540C	1 L. Plastic	None	7 Days						X					
% Solids	EPA 2540G	1 L. Plastic	None	7 Days			X								
% Organic Matter	ASTM D2974	1 L. Plastic	None	7 Days			X								
Electrical Conductivity	EPA 9050	4 oz. Plastic	None	Immediate			X								
pH	SW 9045	1 L. Plastic	None	Immediate			X			X					
Laboratory Classification (2 per location)	ASTM D2487	1 Gallon Plastic	None	None											

Table 1. Sampling & Analysis Plan
Wisconsin Power and Light - Nelson Dewey Generating Station / SCS Engineers Project #25216054.00

Notes:

1. Metals analysis includes Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium (Total), Copper, Iron, Lead, Mercury, Molybdenum, Nickel, Thallium, Vanadium and Zinc.
2. ASTM Water Leach Test metals analysis includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium (Total), Cobalt, Copper, Iron, Lead, Lithium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium and Zinc.
3. Total PAHs (18) includes Acenaphthene, Acenaphthylene, Anthracene, Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(ah)anthracene, Fluoranthene, Fluorene, Indeno(123-cd)pyrene, 1-Methyl Naphthalene, 2-Methyl Naphthalene, Naphthalene, Phenanthrene, and Pyrene.
4. PAH samples for native and background locations will be prepped and extracted to extend the hold time to 40 days while soft sediment samples
5. The following additional geotechnical tests and quantities will be submitted for analysis: Classification (4 samples), Moisture Content (4 Samples), Grain Size Distribution (4 samples), Atterberg Limits (6 samples), Bulk Density (4 samples) and Specific Gravity (3 CCR samples).
6. Up to three duplicate sample will be collected.
7. Analyte included based on previous project experience at other WPL sites (i.e., precedent).
8. In addition to the listed regulatory categories in the table, characterization of the accumulated sediment and/or soil impacted by the accumulated sediment will be conducted in accordance with NR 213.07.

Created by:	<u>RJG</u>	Date: <u>3/2/2016</u>
Last Rev by:	<u>RJG</u>	Date: <u>5/4/2016</u>
Checked by:	<u>EJN</u>	Date: <u>5/5/2016</u>

Table 2a. Sediment and Soil Analytical Results - Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in mg/kg unless otherwise noted)

Sample	Date	Depth (feet)	Material Type	Antimony	Arsenic ¹	Barium	Beryllium	Boron	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Molybdenum	Nickel	Thallium	Vanadium	Zinc
WPDES PONDS																		
SED-1	8/3/2016	0-1.3	Fly Ash	<1.6	17.3	<u>791</u>	1.2	<u>32.7</u>	<u>8.8</u>	31.5	86.1	<u>40.4</u>	<0.10	<u>18.8</u>	<u>724</u>	<u>3</u> J	<u>249</u>	1,160
SED-2	8/3/2016	0-1	Fly Ash	<1.9	12.8	<u>344</u>	1.2 J	<u>17.4</u> J	<u>6.5</u>	31.5	61.2	<u>30.3</u>	<0.12	<u>13.3</u>	<u>486</u>	<u>3.5</u> J	<u>117</u>	1,130
QC-03 (SED-2)	8/3/2016	0-1	Fly Ash	<1.8	14.1	<u>1,220</u>	0.98 J	<u>36.1</u>	<u>15.8</u>	25	<u>120</u>	23	<0.13	<u>10.5</u>	<u>1,040</u>	<u>5.8</u> J	<u>242</u>	3,670
SED-3	7/20/2016	0-4.5	Slag	<u>1.2</u> J	3.4	<u>562</u>	0.32 J	<u>36.8</u>	0.69 J	6.6	16.9	13.8	<0.057	<u>4.4</u>	<u>22.3</u>	<1.2	49	242
	7/20/2016	4.5-5.5	SP	<0.58	<u>1.7</u> J	<u>28.6</u>	0.13 J	1.4 J	<0.068	6.6	2.5	1.4	<0.037	<0.22	4.8	<0.84	11.8	10.7
SED-4	7/19/2016	0-4.8	ML	<0.84	21.7	<u>231</u>	1.8	<u>33.6</u>	0.32 J	40.8	35.9	<u>32.4</u>	0.071 J	<u>14.1</u>	<u>40</u>	<1.2	<u>81.7</u>	223
	7/19/2016	4.8-5.5	SP	NA	2.5	14.3	NA	3.4 J	NA	NA	NA	NA	NA	1.5 J	NA	NA	NA	NA
GP-19	8/4/2016	8-12	SM	<0.64	<u>1.7</u> J	25.4	0.18 J	2.9 J	<0.074	7.4	3.6	2.1	<0.037	0.31 J	6.4	<0.92	15.5	8.6
SLAG POND																		
SED-5	7/20/2016	0-1.6	ML-OL	<4.2 D3	<4.7 D3	<u>9,110</u>	2.3	<u>100</u>	<u>0.82</u>	85.3	<u>146</u>	21.8	<0.051	<u>7.2</u>	<u>214</u>	<u>1.6</u> J	<u>359</u>	848
	7/20/2016	3.7-5.3	SM	NA	NA	45.6	NA	<u>6.5</u> J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SED-6	7/20/2016	0-1.0	ML	<0.93	14.1	<u>2,480</u>	2.2	<u>50.9</u>	<u>0.76</u> J	61	<u>97.3</u>	22.4	0.088 J	<u>7.7</u>	<u>229</u>	<u>2.2</u> J	<u>354</u>	650
SED-7	8/4/2016	0-3	Fly Ash	<u>4.2</u> J	96.6	<u>2,360</u>	10.8	<u>190</u>	<u>2.7</u>	111	<u>150</u>	<u>92.1</u>	0.13 J	<u>12.5</u>	<u>179</u>	<u>3.6</u> J	<u>249</u>	768
SED-8	8/4/2016	1-1.5	Fly Ash	<u>1.8</u> J	17.2	<u>2,180</u>	1.8	<u>43.4</u>	<u>2.4</u>	70.8	<u>119</u>	<u>34.9</u>	<0.13	<u>10.6</u>	<u>344</u>	<2.5	<u>438</u>	913
COAL YARD																		
TP-CY-1	7/19/2016	0-0.5	Coal	<0.71	<u>1.4</u> J	<u>468</u>	0.16 J	<u>19.5</u>	<0.083	2.7	6.8	1.6	<0.046	<u>2.1</u> J	<u>14.5</u>	<1.0	44.7	19.9
	7/19/2016	3.0-3.5	SM	<0.62	<u>0.96</u> J	28.3	0.20 J	2.7 J	<0.072	7.4	3.5	2.3	<0.038	<0.23	6.0	<0.89	14.2	11.2
TP-CY-3	7/20/2016	1.9-2.1	GM	<0.57	<6.4 D3	11.7	<0.038	4.3 J	<0.066	3.6	2.5	2.6	<0.038	<0.21	7.5	<0.82	5.2	2.9 J
TP-CY-4	7/19/2016	0-2.8	Coal	<0.65	6.1	<u>202</u>	0.67	<u>10.8</u> J	<0.076	4.7	15.4	4.5	<0.046	<u>2.0</u> J	11.5	<0.94	18.7	42.8
	7/19/2016	2.8-3.2	GP & SM	<0.56	<u>0.74</u> J	18.4	0.074 J	1.7 J	<0.065	5.4	4.2	2.3	<0.038	<0.21	9.3	<0.81	11.7	14.6
	7/19/2016	3.6-4.8	Slag	<0.54	<0.61	3.6	0.075 J	1.7 J	<0.063	0.99	0.4 J	<0.41	<0.037	<0.20	1.2	<0.79	1.4	1.3 J
TP-CY-6	7/19/2016	0-0.5	Coal	<0.76	<u>1.8</u> J	<u>521</u>	0.18 J	<u>36.6</u>	<0.089	6.3	11.6	5.2	0.066 J	<u>2.1</u> J	10.6	<1.1	36.4	43.5
	7/19/2016	0.7-1.0	SP	<0.58	<0.65	22.5	0.15 J	2 J	<0.067	6.3	5.6	2.6	<0.034	<0.22	11.3	<0.83	14.3	35.4
TP-CY-10	7/19/2016	0-0.5	Coal	<0.66	<u>2.1</u> J	<u>617</u>	0.22 J	<u>28.9</u>	<0.078	3	7.8	2.5	<0.047	0.94 J	4	<0.96	13.4	21.2
	7/19/2016	1.0-2.0	SM	<0.57	<u>0.92</u> J	15.8	0.066 J	1.9 J	<0.066	4.1	3.2	1.3	<0.036	<0.21	6	<0.82	9.7	25.2
TP-CY-12	7/20/2016	0-0.3	Coal	<u>0.97</u> J	<u>0.92</u> J	<u>563</u>	0.14 J	<u>26</u>	<0.094	3.2	10	1.6 J	<0.054	1.1 J	4.8	<1.2	15.1	105
	7/20/2016	0.3-2.0	SP	<0.57	<0.64	21	0.074 J	1.4 J	<0.067	4.9	3.5	1.3	<0.036	<0.22	12.3	<0.83	15.6	10.9
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	<u>0.73</u> J	<0.65	21.5	0.087 J	1.4 J	<0.067	4	3.5	1.3	<0.037	<0.22	7.5	<0.83	13.7	8.3
	7/20/2016	2.0-2.7	SP	<0.57	<u>0.9</u> J	16.8	0.082 J	1.2 J	<0.067	3.6	3.4	1.1 J	<0.034	<0.21	5.9	<0.82	10	5.8

Table 2a. Sediment and Soil Analytical Results - Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in mg/kg unless otherwise noted)

Sample	Date	Depth (feet)	Material Type	Antimony	Arsenic ¹	Barium	Beryllium	Boron	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Molybdenum	Nickel	Thallium	Vanadium	Zinc
SLAG HANDLING AREA																		
GP-5	8/3/2016	12.5-15	Fly Ash	<u>5.2</u>	227	<u>321</u>	7.6	<u>406</u>	<u>13.1</u>	<u>202</u>	<u>131</u>	547	<0.051	<u>58.5</u>	<u>95.6</u>	13.9	<u>238</u>	1,290
	8/3/2016	18-24	ML & SM	<0.70	<u>1.1</u> J	<u>39.9</u>	<u>0.29</u> J	<u>4.4</u> J	<0.081	<u>10.8</u>	<u>5.8</u>	<u>3.7</u>	<0.044	<u>1.5</u> J	<u>9.0</u>	<1.0	<u>20.3</u>	<u>18.7</u>
GP-7	8/3/2016	7.5-18	Slag	<u>0.93</u> J	4.9	<u>347</u>	<u>0.94</u>	<u>43.4</u>	<u>0.19</u> J	<u>17.8</u>	<u>7.9</u>	<u>15.1</u>	<0.037	<u>3.0</u>	<u>13.8</u>	<0.86	<u>54.6</u>	<u>40.8</u>
QC-02 (GP-7)	8/3/2016	7.5-18	Slag	<u>0.96</u> J	8	<u>288</u>	<u>1.6</u>	<u>63.4</u>	<u>0.46</u> J	<u>26.9</u>	<u>14</u>	<u>22.1</u>	<0.039	<u>4.0</u>	<u>23.1</u>	<0.77	<u>63.9</u>	<u>71</u>
GP-14	8/4/2016	12.5-15	Fly Ash	<u>5.7</u> J	208	<u>517</u>	<u>6.9</u>	<u>401</u>	<u>8.4</u>	<u>185</u>	<u>124</u>	346	<0.056	<u>25</u>	<u>94.6</u>	14	<u>231</u>	<u>964</u>
	8/4/2016	17.5-20	SM	<0.66	3.1	<u>44.7</u>	<u>0.28</u> J	<u>4.0</u> J	<0.077	<u>9.9</u>	<u>5.7</u>	<u>2.7</u>	NA	<u>1.0</u> J	<u>9.5</u>	<0.96	<u>19.2</u>	<u>32.8</u>
SLAG SAMPLES²																		
Slag 01	6/3/2013	--	Slag	< 1.23	5.57 A	<u>7,870</u>	<u>2.37</u> B	<u>131</u>	<u>2.28</u> A	42.4	<u>94.8</u>	< 0.677	< 0.00025	<u>12.1</u>	<u>22.7</u>	< 0.0714	<u>111</u>	<u>427</u>
Slag 01	12/23/2013	--	Slag	NA	NA	NA	NA	NA	NA	NA	<u>73.3</u>	NA	NA	NA	NA	NA	NA	NA
Slag Composite 2014	7/1/2014	--	Slag	<u>0.112</u> A	<u>0.969</u> A B	<u>11,500</u>	<u>1.89</u> A B	<u>125</u>	<u>0.347</u>	<u>52.3</u>	<u>87.7</u>	<u>0.444</u>	< 0.00071	<u>3.54</u>	<u>112</u>	< 0.0165	<u>138</u>	<u>338</u> B
Slag Sample	4/14/2015	--	Slag	<u>0.242</u> A B	<u>1.41</u> B	<u>10,400</u>	<u>2.53</u> B	<u>125</u>	<u>0.482</u> B	<u>35.3</u> B	<u>94.4</u>	< 1.98	< 0.00347	<u>5.18</u> B	<u>24.7</u>	<u>0.0263</u> A	<u>107</u> B	<u>479</u>
FLY ASH SAMPLES²																		
NED Flyash Comp.	2/14/2014	--	Fly Ash	<u>10.2</u>	70.1	<u>221</u> B	<u>3.76</u> A	<u>1,140</u>	<u>1.31</u> A B	<u>69.8</u>	<u>323</u> B	<u>34.6</u> B	<u>0.402</u>	<u>20.9</u>	<u>52.3</u> B	<u>1.51</u>	<u>235</u>	<u>235</u> B
2015 Fly Ash	7/3/2015	--	Fly Ash	<u>6.64</u> A	120	<u>175</u>	<u>4.1</u> F2 F1	<u>965</u>	<u>3.13</u> A	<u>60.9</u> B	<u>392</u>	<u>42.6</u>	<u>0.375</u>	<u>24.5</u>	<u>46.3</u>	<u>0.805</u> A F1	<u>207</u>	<u>8,370</u> B
Week of 010916	1/4/2016	--	Fly Ash	< 3.33	82.7	<u>409</u> B	<u>2.79</u> F1	<u>1,570</u>	<u>2.01</u> A B	<u>82.9</u> B	<u>423</u>	<u>70.1</u>	<u>0.228</u>	<u>10.8</u> A B	<u>61.3</u> B	<u>1.41</u>	<u>307</u>	<u>775</u> B
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2				0.542	0.584	164.8	6.32	6.416	0.752	360,000	91.6	27	0.208	1.6192	13.0612	0.284	60	NE
NR 720 Industrial Direct Contact RCLs				409	2.39	100,000	2,010	100,000	799	NE ²	40,900	800	3.13	5,110	19,800	10.2	5,110	100,000
NR 538 Table 1B Standards				6.3	0.042	1100	0.014	1400	7.8	NE	NE	50	4.7	78	310	1.3	110	4,700
NR 538 Table 2B Standards				NE	21	NE	7	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NR 528 Ceiling Levels				NE	8	NE	NE	NE	10	100	NE	250	NE	NE	NE	NE	NE	NE

**Table 2a. Sediment and Soil Analytical Results - Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00**

Abbreviations:

mg/kg - milligrams per kilogram or parts per million (ppm)	NA = Not Analyzed	NE = No Standard Established	GP = Poorly Graded Gravel
RCLs = Residual Contaminant Levels	GM = Silty Gravel	ML = Silt	ML-CL = Silty Clay
SM = Silty Sand	SP = Poorly Graded Sand		

Notes:

Underlined values exceed NR 720 Groundwater Pathway RCLs, as of June 2016.

Bold+underlined values exceed NR 720 Industrial Direct Contact RCLs, as of June 2016.

Shaded values exceed NR 528 Ceiling Levels

Red text exceeds NR 538 Table 2B Standards

1. Wisconsin Statewide Soil-Arsenic Background Threshold Value is 8 mg/kg from WDNR publication RR-940, dated July 2013, at <http://dnr.wi.gov/files/PDF/pubs/rr/RR940.pdf>.
2. Slag and Fly Ash samples were collected by the plant as part of permit requirements.
3. Chromium Direct Contact Standards:

III Non-Industrial Direct Contact RCL = 100,000 mg/kg; Industrial Direct Contact RCL = 100,000 mg/kg
VI Non-Industrial Direct Contact RCL = 0.293 mg/kg; Industrial Direct Contact RCL = 5.57 mg/kg

Laboratory Notes/Qualifiers:

- J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
- A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
- B = Compound was found in the blank and sample.
- F1 = MS and/or MSD Recovery is outside acceptance limits.
- F2 = MS/MSD RPD exceeds control limits.
- D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Created by:	<u>RJG</u>	Date: <u>3/14/2016</u>
Last revision by:	<u>RJG</u>	Date: <u>10/24/2016</u>
Checked by:	<u>BSS</u>	Date: <u>10/24/2016</u>

I:\25216054.00\Data and Calculations\Tables\[Table 2. Sediment_Soil_Metals and Misc Results.xlsx]2a Notes

Table 2b. Sediment and Soil Analytical Results - Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in mg/kg unless noted)

Sample	Date	Depth (feet)	Material Type	Chloride	Nitrite+ Nitrate	Total Kjeldahl Nitrogen	Phosphorus (Total)	% Solids	Total Organic Matter (% weight)	Total Phenol	Electrical Conductivity (dS/m) ¹	pH ²
WPDES PONDS												
SED-1	8/3/2016	0-1.3	Fly Ash	<302	<2.8	5980	749	39.2	35.6	3.53	0.142	7.30 H6
SED-2	8/3/2016	0-1	Fly Ash	<354	<3.4	3430	756	48.9	8.3	3.06	0.1580	7.00 H6
QC-03 (SED-2)	8/3/2016	0-1	Fly Ash	<383	<3.6	6030	801	26.5	47.1	3.63	0.172	7.20 H6
SED-3	7/20/2016	0-4.5	Slag	<311	<1.5	3900	96.2	62.3	79.4 3q	0.48 J	0.0818	7.10 2q,H6
	7/20/2016	4.5-5.5	SP	<21.3	<1.0	<23.1	209	93.8	0.28	0.86	0.0279	7.97 H6
SED-4	7/19/2016	0-4.8	ML	<165	<1.6	2440	674	68.8	22.7	0.57 J	0.226	8.20 2q,H6
GP-19	8/4/2016	8-12	SM	<22.6	1.3 J	73.7 J	159	87.7	0.45	<0.171	0.0385	7.51 H6
SLAG POND												
SED-5	7/20/2016	0-1.6	ML-OL	49.9 J	<1.4	410	514	64.5	3.6	0.23 J	1.04	7.40 2q,H6
	7/20/2016	3.7-5.3	SM	NA	NA	NA	NA	90.8	0.98	NA	0.125	7.56 H6
SED-6	7/20/2016	0-1.0	ML	85.6	39.7	2170	1430	59.5	8.1	<0.270	1.170	7.00 2q,H6
SED-7	8/4/2016	0-3	Fly Ash	135	<3.1	2180	1220	28.5	6.3	3.89	0.205	7.30 H6
SED-8	8/4/2016	1-1.5	Fly Ash	150	<3.4	3090	1450	25.5	8.7	4.64	0.229	7.00 H6
COAL YARD												
TP-CY-1	7/19/2016	0-0.5	Coal	<271	<1.3	2930	57.6 M0,R1	76.2	89.9 3q	1	0.0551	7.80 2q,H6
	7/19/2016	3.0-3.5	SM	<111	<1.1	276	220	90.6	0.88	0.5 J	0.046	7.48 H6
TP-CY-3	7/20/2016	1.9-2.1	GM	<105	<0.97	99.8	519	95.3	1.1	0.540 J	0.201	8.91 H6
	7/20/2016	4.8-5.5	SM	NA	NA	NA	NA	95.9	0.52	NA	0.213	8.00 H6
TP-CY-4	7/19/2016	0-2.8	Coal	<263	<1.2	3090	39.3 J	74.6	82.9	0.65 J	0.076	6.90 2q,H6
	7/19/2016	2.8-3.2	GP & SM	<21.3	<1.0	113	204	91.5	0.47 R1	<0.151	0.108	8.15 H6
	7/19/2016	3.6-4.8	Slag	<20.5	<0.97	<22.2	<15.8	96	4.7	<0.163	0.0324	7.94 H6
	7/19/2016	4.8-5.0	SM	NA	NA	NA	NA	89	1.3	NA	0.197	7.83 H6
TP-CY-6	7/19/2016	0-0.5	Coal	<276	<1.3	1450 M0	31.8 J	76.5	82.6 3q	0.880	0.164	7.60 2q,H6
	7/19/2016	0.7-1.0	SP	<103	<0.93	34.1 J	146	96.6	0.34	0.52	0.0773	7.74 H6
TP-CY-10	7/19/2016	0-0.5	Coal	34 J	<1.2	1590	41.1 J	80.1	83.3	0.53 J	0.183	7.50 2q,H6
	7/19/2016	1.0-2.0	SM	<104	<0.95	<22.8	250 M0	96.5	0.31	0.53	0.146	8.66 H6
	7/19/2016	6.5-7.0	SP	NA	NA	NA	NA	79.7	0.52	NA	0.731	8.05 H6
TP-CY-12	7/20/2016	0-0.3	Coal	<303	<1.4	2500	51.6	71	87.3 3q	0.84	0.253	7.20 2q,H6
	7/20/2016	0.3-2.0	SP	<20.5	<0.97	<22.1	140	98.5	0.14	<0.133	0.102	8.29 H6
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	<20.6	<0.96	<22.5	118	98.1	0.2	1.08	0.118	8.09 H6
	7/20/2016	2.0-2.7	SP	<20.7	<0.97	<22.6	93.8	97	0.13	0.47 J	0.123	7.86 H6
SLAG HANDLING AREA												
GP-5	8/3/2016	12.5-15	Fly Ash	<29.1	3.6 J	332	1230	67.3	2.1	1.21	0.158	6.80 H6
	8/3/2016	18-24	ML & SM	<124	<1.2	294	358	79.7	0.75	1.30	0.0382	7.55 H6
GP-7	8/3/2016	7.5-18	Slag	<21.3	<1.0	36.3 J	193	93.7	6.3	0.45 J	0.0429	7.58 H6
QC-02 (GP-7)	8/3/2016	7.5-18	Slag	<21.4	1.0 J	67.6 J	200	93.4	1.2	1.00	0.0395	7.39 H6
GP-14	8/4/2016	12.5-15	Fly Ash	<31.3	4.3 J	307	1130	56.7	3.9	<0.241	0.339	7.20 H6
SLAG SAMPLES³												
Slag 01	6/3/2013	--	Slag	NA	NA	NA	NA	95	NA	NA	NA	NA
Slag 01	12/23/2013	--	Slag	5.68	NA	NA	NA	88	NA	NA	0.231	7.66 H
Slag Composite 2014	7/1/2014	--	Slag	< 1.1	NA	NA	NA	95	NA	NA	0.00876	7.96 HF
Slag Sample	4/14/2015	--	Slag	12.2	NA	NA	NA	96	NA	NA	0.0125	8.81 HF
FLY ASH SAMPLES³												
NED Flyash Comp.	2/14/2014	--	Fly Ash	NA	NA	NA	NA	100	NA	NA	NA	11.2 H
2015 Fly Ash	7/3/2015	--	Fly Ash	NA	NA	NA	NA	99	NA	NA	NA	11.4
Week of 010916	1/4/2016	--	Fly Ash	NA	NA	NA	NA	98	NA	NA	NA	11.2 H
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2				NE	NE	NE	NE	NE	NE	2.2946	NE	NE
NR 720 Industrial Direct Contact RCLs				NE	NE	NE	20.4	NE	NE	100,000	NE	NE
NR 538 Table 1B Standards				NE	NE	NE	NE	NE	NE	NE	NE	NE
NR 538 Table 2B Standards				NE	NE	NE	NE	NE	NE	NE	NE	NE
NR 528 Ceiling Levels				NE	NE	NE	NE	NE	NE	NE	8	<5 or >10

Table 2b. Sediment and Soil Analytical Results - Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00

mg/kg - milligrams per kilogram or parts per million
RCLs = Residual Contaminant Levels
SM = Silty Sand

NA = Not Analyzed
GM = Silty Gravel
SP = Poorly Graded Sand

NE = No Standard Established
ML = Silt

GP = Poorly Graded Gravel
ML-CL = Silty Clay

Notes:

Underlined values exceed NR 720 Groundwater Pathway RCLs, as of June 2016.

Bold+underlined values exceed NR 720 Industrial Direct Contact RCLs, as of June 2016.

Shaded values exceed NR 528 Ceiling Levels

Red text exceeds NR 538 Table 2B Standards

1. Electrical conductivity has units of 8 deciSiemens/meter at 25°C
2. pH has units of standard units
3. Slag and Fly Ash samples were collected by the plant as part of permit requirements.

Laboratory Notes/Qualifiers:

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

2q = Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis.

3q = Sample did not reach consistent weight criteria after 4 muffle furnace cycles. Organic Matter result calculated using the 4th muffle furnace cycle weight.

H = Sample was prepped or analyzed beyond the specified holding time.

HF = Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

H6 = Analysis initiated outside of the 15 minute EPA required holding time.

MO = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 = RPD value was outside control limits.

Created by:	<u>RJG</u>	Date:	<u>3/14/2016</u>
Last revision by:	<u>RJG</u>	Date:	<u>10/24/2016</u>
Checked by:	<u>BSS</u>	Date:	<u>10/24/2016</u>

I:\25216054.00\Data and Calculations\Tables\[Table 2. Sediment_Soil_Metals and Misc Results.xlsx]2b Notes

Table 3. Sediment and Soil Analytical Results - PAHs
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in µg/kg)

Sample	Date	Depth (feet)	Material Type	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Benzo(ghi) perylene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
WPDES POND																						
SED-1	8/3/2016	0-1.3	Fly Ash	<25.3 H2	<22.6 H2	77 H2	125 H2	54.1 H2	40.6 J H2	153 H2	124 H2	161 H2	93.5 H2	101 H2	30.7 J H2	56.6 H2	92.6 H2	212 H2	122 H2	172 H2	158 H2	1,773.1
SED-2	8/3/2016	0-1	Fly Ash	<74.0	<66.3	<76.8	<51.3	<74.0	<81.9	60.4 J	<56.4	<68.5	<54.3	<74.0	<74.0	<56.3	<74.0	90 J	<74.0	<74.0	<74.0	150.4
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	<31.9	<28.5	86.3	127	49.8 J	49.1 J	154	124	166	58.5 J	100	41 J	55.8 J	110	273	159	212	155	1,920.5
SED-3	7/20/2016	0-4.5	Slag	<13.0	<11.6	<13.4	25.7 J	15 J	<14.3	31.9	24.9 J	31	12.1 J	18.6 J	<13.0	<9.8	13.7 J	26.8	17.6 J	32.3	25.8 J	275.4
	7/20/2016	4.5-5.5	SP	<8.9	<7.9	<9.2	<6.2	<8.9	<6.8	<6.3	<6.8	<8.2	<6.5	<8.9	<8.9	<6.7	<8.9	<8.9	<8.9	<8.9	<8.9	ND
SED-4	7/19/2016	0-4.8	ML	<13.7	<12.3	<14.2	<9.5	<13.7	<15.2	<9.8	<10.5	<12.7	<10.1	<13.7	<13.7	<10.4	<13.7	<13.7	<13.7	<13.7	<13.7	ND
GP-19	8/4/2016	8-12	SM	<9.4	<8.4	<9.8	<6.5	<9.4	<10.4	<6.7	<7.2	<8.7	<6.9	<9.4	<9.4	<7.2	<9.4	<9.4	<9.4	<9.4	<9.4	ND
SLAG POND																						
SED-5	7/20/2016	0-1.6	ML-OL	<12.7	<11.3	<13.1	<8.8	<12.7	<14.0	<9.1	<9.7	<11.7	<9.3	<12.7	<12.7	<9.6	<12.7	<12.7	<12.7	<12.7	<12.7	ND
SED-6	7/20/2016	0-1.0	ML	<14.1	<12.6	<14.7	<9.8	<14.1	<15.6	<10.1	<10.8	<13.1	<10.4	<14.1	<14.1	<10.7	<14.1	<14.1	65.9	17 J	<14.1	82.9
SED-7	8/4/2016	0-3	Fly Ash	<82.7	<74.0	<85.8	<57.3	<82.7	<91.6	<59.2	<63.0	<76.5	<60.7	<82.7	<82.7	<62.9	<82.7	<82.7	<82.7	<82.7	<82.7	ND
SED-8	8/4/2016	1-1.5	Fly Ash	<30.3	<27.1	<31.5	<21.0	<30.3	<33.6	<21.7	<23.1	<28.0	<22.3	<30.3	<30.3	<23.0	<30.3	<30.3	<30.3	<30.3	<30.3	ND
COAL YARD																						
TP-CY-1	7/19/2016	0-0.5	Coal	<56.7	<50.7	<58.7	69.3 J	<56.7	<62.7	50.8 J	<43.2	79.9 J	<41.6	84.1 J	<56.7	<43.0	<56.7	67.7 J	<56.7 D3	112 J	96.1 J	559.9
	7/19/2016	3.0-3.5	SM	<9.2	<8.2	<9.5	<6.4	<9.2	<10.2	<6.6	<7.0	<8.5	<6.8	<9.2	<9.2	<7.0	<9.2	<9.2	<9.2	<9.2	<9.2	ND
TP-CY-3	7/20/2016	1.9-2.1	GM	<8.7	<7.8	<9.0	<6.0	<8.7	<9.6	<6.2	<6.6	<8.1	<6.4	<8.7	<8.7	<6.6	<8.7	<8.7	<8.7	<8.7	<8.7	ND
TP-CY-4	7/19/2016	0-2.8	Coal	<87.2	<78.1	<90.5	<60.5	<87.2	<96.6	<62.4	<66.5	117 J	<64.0	94.7 J	215	<66.3	608	2,220	734	534	<87.2	4,522.7
	7/19/2016	2.8-3.2	GP & SM	<8.9	<8.0	<9.2	<6.2	<8.9	<9.9	<6.4	<6.8	<8.2	<6.5	<8.9	<8.9	<6.8	<8.9	<8.9	<8.9	<8.9	<8.9	ND
	7/19/2016	3.6-4.8	Slag	<8.5	<7.6	<8.8	<5.9	<8.5	<9.4	<6.1	<6.5	<7.9	<6.3	<8.5	<8.5	<6.5	<8.5	<8.5	<8.5	<8.5	<8.5	ND
TP-CY-6	7/19/2016	0-0.5	Coal	<57.2	<51.2	71.9 J	139	94.6 J	<63.3	87.6 J	<43.6	155	<41.9	182	<57.2	<43.5	172	230	125 D3	303	204	1,764.1
	7/19/2016	0.7-1.0	SP	<8.6	<7.7	<8.9	<5.9	<8.6	<9.5	<6.1	<6.5	<7.9	<6.3	<8.6	<8.6	<6.5	<8.6	<8.6	<8.6	<8.6	<8.6	ND
TP-CY-10	7/19/2016	0-0.5	Coal	<54.4	<48.6	<56.4	77.1 J	<54.4	<60.2	<38.9	<41.4	58.4 J	<39.9	171	<54.4	<41.3	<54.4	<54.4	<54.4 D3	140	151	597.5
	7/19/2016	1.0-2.0	SM	<8.6	<7.7	<8.9	<6.0	<8.6	<9.5	<6.2	<6.6	<8.0	<6.3	<8.6	<8.6	<6.6	<8.6	<8.6	<8.6	<8.6	<8.6	ND
TP-CY-12	7/20/2016	0-0.3	Coal	<62.6	<56.0	<64.9	64.4 J	<62.6	<69.3	<44.8	<47.7	<57.9	<45.9	121 J	<62.6	<47.6	77.7 J	82.2 J	65 J D3	151	113 J	674.3
	7/20/2016	0.3-2.0	SP	<8.5	<7.6	<8.8	<5.9	<8.5	<9.4	<6.1	<6.5	<7.9	<6.2	<8.5	<8.5	<6.5	<8.5	<8.5	<8.5	<8.5	<8.5	ND
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	<8.5	<7.6	<8.8	<5.9	<8.5	<9.4	<6.1	<6.5	<7.9	<6.2	<8.5	<8.5	<6.5	<8.5	<8.5	<8.5	<8.5	<8.5	ND
	7/20/2016	2.0-2.7	SP	<8.6	<7.7	<8.9	<5.9	<8.6	<9.5	<6.1	<6.5	<7.9	<6.3	<8.6	<8.6	<6.5	<8.6	<8.6	<8.6	<8.6	<8.6	ND
SLAG HANDLING AREA																						
GP-5	8/3/2016	12.5-15	Fly Ash	<12.2	<10.9	<12.7	<8.5	<12.2	<13.5	<8.7	<9.3	<11.3	<9.0	<12.2	<12.2	<9.3	<12.2	<12.2	<12.2	<12.2	<12.2	ND
	8/3/2016	18-24	ML & SM	<10.4	<9.3	<10.8	<7.2	<10.4	<11.5	<7.4	<7.9	<9.6	<7.6	<10.4	<10.4	<7.9	<10.4	<10.4	<10.4	<10.4	<10.4	ND
GP-7	8/3/2016	7.5-18	Slag	<8.9	<8.0	<9.3	<6.2	<8.9	<9.9	<6.4	<6.8	<8.3	<6.5	<8.9	<8.9	<6.8	<8.9	<8.9	<8.9	<8.9	<8.9	ND
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	<8.9	<8.0	<9.3	<6.2	<8.9	<9.9	<6.4	<6.8	<8.3	<6.6	<8.9	<8.9	<6.8	<8.9	<8.9	<8.9	<8.9	<8.9	ND
GP-14	8/4/2016	12.5-15	Fly Ash	<13.1	<11.7	<13.5	<9.0	<13.1	<14.4	<9.3	<9.9	<12.1	<9.6	<13.1	<13.1	<9.9	<13.1	<13.1	<13.1	<13.1	<13.1	ND

Table 3. Sediment and Soil Analytical Results - PAHs
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in µg/kg)

Sample	Date	Depth (feet)	Material Type	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Benzo(ghi) perylene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
SLAG SAMPLES																						
Slag 01	12/23/2013	--	Slag	< 0.748	< 0.691	< 0.662	< 0.950	< 1.58	< 1.90	< 2.50	< 2.16	< 1.32	< 2.10	< 0.518	< 0.806	< 1.84	< 1.29	< 2.65	< 1.47	< 1.09	< 0.604	ND
NED Slag Composite 2014	7/1/2014	--	Slag	< 3.35	< 1.93	< 2.96	< 2.11	1.67 A	< 1.22	< 1.29	< 1.43	< 1.30	< 1.34	< 2.85	< 3.67	< 1.40	< 3.30	< 3.35	< 4.21	< 2.54	< 2.57	1.67 A
Slag Sample	4/14/2015	--	Slag	< 3.05	< 1.92	< 2.94	< 2.10	< 1.40	< 1.21	< 1.28	< 1.41	< 1.29	< 1.33	< 2.83	< 3.65	< 1.39	< 3.27	< 3.33 *	< 4.18	< 2.52	< 2.55	ND
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2				NE	NE	196,949.2	NE	479.3	NE	470	NE	144.6	NE	88,877.8	14,829.9	NE	NE	NE	658.2	NE	54,545.5	NE
NR 720 Industrial Direct Contact RCLs				33,000,000	NE	100,000,000	2,100	2,110	21,100	211	NE	211,000	211	22,000,000	22,000,000	2,110	53,100	2,200,000	26,000	NE	16,500,000	NE
NR 538 Table 1B Standards				900,000	8,800	5,000,000	88	88	880	8.8	880	8,800	8.8	600,000	600,000	88	8,800	8,800	600,000	880	500,000	NE
NR 538 Table 2B Standards				NE	NE	NE	44,000	44,000	NE	4,400	NE	NE	4,400	NE	NE	44,000	NE	NE	NE	NE	NE	100,000

Abbreviations:

µg/kg = micrograms per kilogram or parts per billion (ppb)
 PAHs = Polynuclear Aromatic Hydrocarbons
 GM = Silty Gravel

NA = Not Analyzed
 RCLs = Residual Contaminant Levels
 ML = Silt

NE = No Standard Established
 ND = Not Detected
 SM = Silty Sand

GP = Poorly Graded Gravel
 ML-CL = Silty Clay
 SP = Poorly Graded Sand

Notes:

Underlined values exceed NR 720 Groundwater Pathway RCLs, as of December 2016.
Bold+underlined values exceed NR 720 Industrial Direct Contact RCLs, as of June 2016.
 Red text exceeds NR 538 Table 2B Standards

Laboratory Notes/Qualifiers:

J = Estimated concentration at or above the limit of detection and below the limit of quantitation.
 A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
 H2 = Extraction or preparation was conducted outside of the recognized method holding time.
 D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Created by: RJG Date: 3/14/2016
 Last revision by: RJG Date: 10/24/2016
 Checked by: BSS Date: 10/24/2016

I:\25216054.00\Data and Calculations\Tables\Table 3. Sediment_Soil_PAH Results.xlsx\Soil PAHs

Table 4a. Sediment and Soil Analytical Results - Water Leach Test Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in µg/L, except where noted otherwise)

Sample	Date	Depth (feet)	Material Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium (Total)	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc	
WPDES POND																										
SED-1	8/3/2016	0-1.3	Fly Ash	<250	<25	<25	<u>650</u>	<25	<u>240</u>	<2.5	6,100	<25	<25	<25	<250	<3.8	7.9	<25	<0.13	<u>130</u>	<25	<25	<25	<25	<25	
SED-2	8/3/2016	0-1.0	Fly Ash	<250	<25	<25	<u>550</u>	<25	<u>200</u>	<2.5	5,900	<25	<25	<25	<250	<3.8	12	<25	0.18 J	<u>120</u>	<u>25</u> J	<25	<25	<25	<25	
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	<250	<25	<25	<u>520</u>	<25	<u>240</u>	<2.5	5,900 J	<25	<25	<25	<250	<3.8	7.7	<25	<0.13	<u>56</u>	<25	<25	<25	<25	<25	
SED-3	7/20/2016	0-4.5	Slag	<250	<25	<25	<250	<25	130	<2.5	2,200	<25	<25	<25	<250	<3.8	3.4	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/20/2016	4.5-5.5	SP	<250	<25	<25	<250	<25	<50	<2.5	<500	<25	<25	<25	<250	<3.8	0.81 J	<25	<0.13	<25	<25	<25	<25	<25	<25	
SED-4	7/19/2016	0-4.8	ML	<250	<25	<u>130</u>	280 J	<25	<u>510</u>	<2.5	4,100	<25	<25	<25	<250	<3.8	1.2	<25	<0.13	<u>410</u>	<25	<25	<25	<25	<25	
	7/19/2016	4.8-5.5	SP	NA	NA	<25	<250	NA	74 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<u>44</u> J	NA	NA	NA	NA	NA	
GP-19	8/4/2016	8-12	SM	<250	<25	<25	<250	<25	62 J	<2.5	<500	<25	<25	<25	<250	<3.8	<0.11	<25	<0.13	<25	<25	<25	<25	<25	<25	
SLAG POND																										
SED-5	7/20/2016	0-1.6	ML-OL	<250	<25	<25	390 J	<25	54 J	<2.5	18,200	<25	<25	<25	<250	<3.8	3.4	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/20/2016	3.7-5.3	SM	NA	NA	NA	<250	NA	93 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SED-6	7/20/2016	0-1.0	ML	<250	<25	<25	310 J	<25	60 J	<25	17,500	<25	<25	<25	<250	<3.8	1.5	<25	<0.13	<25	<25	<25	<25	<25	<25	
SED-7	8/4/2016	0-3.0	Fly Ash	<250	<25	<25	<u>440</u> J	<25	88 J	<2.5	11,300	<25	<25	<25	<250	<3.8	2.1	<25	<0.13	<u>75</u>	<25	<25	<25	<25	<25	
SED-8	8/4/2016	1.0-1.5	Fly Ash	<250	<25	<25	<u>410</u> J	<25	82 J	<2.5	11,400	<25	<25	<25	<250	<3.8	2.2	<u>70</u>	<0.13	<u>27</u> J	<25	<25	<25	<25	<25	
COAL YARD																										
TP-CY-1	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	140	<2.5	<500	<25	<25	<25	<250	<3.8	1.9	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/19/2016	3.0-3.5	SM	<250	<25	<25	<250	<25	100 J	<2.5	<500	<25	<25	<25	<250	<3.8	0.21 J	<25	<0.13	<25	<25	<25	<25	<25	<25	
TP-CY-3	7/20/2016	1.9-2.1	GM	<250	<25	<25	<250	<25	<50	<2.5	7,600	<25	<25	<25	<250	<3.8	2.5	<25	<0.13	<25	<25	<25	<25	<25	<25	
TP-CY-4	7/19/2016	0-2.8	Coal	<250	<25	<25	<250	<25	190	<2.5	<500	<25	<25	<25	<250	<3.8	1.1	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/19/2016	2.8-3.2	GP & SM	<250	<25	<25	<250	<25	<50	<2.5	4,500	<25	<25	<25	<250	<3.8	1.9	<25	<u>0.24</u> J	<25	<25	<25	<25	<25	<25	
	7/19/2016	3.6-4.8	Slag	<250	<25	<25	<250	<25	<50	<2.5	<500	<25	<25	<25	<250	<3.8	1.3	<25	<0.13	<25	<25	<25	<25	<25	<25	
TP-CY-6	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	190	<2.5	<500	<25	<25	<25	<250	<3.8	4.3	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/19/2016	0.7-1.0	SP	<250	<25	<25	<250	<25	<50	<2.5	2,600	<25	<25	<25	<250	<3.8	2.3	<25	<0.13	<25	<25	<25	<25	<25	<25	
TP-CY-10	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	120	<2.5	<25	<25	<25	<25	<250	<3.8	3.5	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/19/2016	1.0-2.0	SM	<250	<25	<25	<250	<25	<50	<2.5	2,000	<25	<25	<25	<250	<3.8	1.4	<25	<0.13	<25	<25	<25	<25	<25	<25	
TP-CY-12	7/20/2016	0-0.3	Coal	<250	<25	<25	<250	<25	160	<2.5	<500	<25	<25	<25	<250	<3.8	3.8	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/20/2016	0.3-2.0	SP	<250	<25	<25	<250	<25	<50	<2.5	2,600	<25	<25	<25	<250	<3.8	1.7	<25	<0.13	<25	<25	<25	<25	<25	<25	
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	<250	<25	<25	<250	<25	<50	<2.5	700 J	<25	<25	<25	<250	<3.8	1.7	<25	<0.13	<25	<25	<25	<25	<25	<25	
	7/20/2016	2.0-2.7	SP	<250	<25	<25	<250	<25	<50	<2.5	11,000	<25	<25	<25	<250	<3.8	1.6	<25	<0.13	<25	<25	<25	<25	<25	<25	
SLAG HANDLING AREA																										
GP-5	8/3/2016	12.5-15	Fly Ash	<250	<25	<25	<250	<25	100	<2.5	3,000	<25	<25	<25	<250	<3.8	5.5	<25	<0.13	<25	<25	<25	<25	<25	<25	
	8/3/2016	18-24	ML & SM	<250	<25	<25	<250	<25	99 J	<2.5	2,300	<25	<25	<25	<250	<3.8	0.42 J	<25	<0.13	<u>56</u>	<25	<25	<25	<25	<25	
GP-7	8/3/2016	7.5-18	Slag	<250	<25	<25	<250	<25	<50	<2.5	720 J	<25	<25	<25	<250	<3.8	0.85 J	<25	<0.13	<25	<25	<25	<25	<25	<25	
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	<250	<25	<25	<250	<25	<50	<2.5	710 J	<25	<25	<25	<250	<3.8	0.84 J	<25	<0.13	<25	<25	<25	<25	<25	<25	
GP-14	8/4/2016	12.5-15	Fly Ash	<250	<25	<25	320 J	<25	120	<2.5	25,200	<25	<25	<25	<250	<3.8	3.0	<25	<0.13	<u>52</u>	<25	<25	<25	<25	<25	
	8/4/2016	17.5-20	SM	<250	<25	<25	<250	<25	120	<2.5	2,500	<25	<25	<25	<250	<3.8	NA	<25	NA	<u>69</u>	<25	<25	<25	<25	36 J	
SLAG SAMPLES¹																										
Slag 01 ²	6/3/2013	--	Slag	NA	< 2.93	< 0.925	< 100	< 10	NA	< 10	NA	< 20	NA	< 100	NA	< 100	NA	NA	< 0.250	NA	NA	< 150	NA	< 2.62	NA	
Slag 01	12/23/2013	--	Slag	<u>312</u>	0.918 A B	0.95 A B	43 B	0.166 A	12.5 A B	<u>0.602</u> A	1,240	1.0 A B	NA	1.48 A B	<u>238</u> B	0.621 A	NA	2.99 A	< 0.020	< 0.81	1.5 A B	0.425 A	0.05 A B	< 0.40	3.8 A B	
NED Slag Composite 2014	7/1/2014	--	Slag	<u>809</u>	< 0.11	0.34 A B	65.6	0.29 A B	11.7 AB**	< 0.026	879 A	0.764 A	NA	1.78 A B	<u>394</u>	0.177 A	NA	4.49 A	< 0.071	< 0.81	0.4 A	< 0.340	0.01 A B	< 0.40	5.7 A B	
Slag Sample	4/14/2015	--	Slag	<u>788</u> B	0.689 A B	0.99 A B	49.3 B	0.221 A	< 1020 A	0.067 A	1,140 A	1.65 A B	NA	1.87 A	<u>493</u> B	< 1.01	NA	3.96 A	< 1.84	1.05 A B	< 0.23	0.903 A	0.02 A B	0.19 A	7.3 A	
FLY ASH SAMPLES¹																										
NED Flyash Composite ²	2/14/2014	--	Fly Ash	NA	<u>5.99</u> A	<u>52.6</u>	<u>497</u>	< 30	NA	< 722	NA	<u>265</u>	NA	< 300	NA	< 1.02	NA	NA	< 0.710	NA	NA	< 450	NA	< 2.38	NA	
Week of 062815 ²	7/3/2015	--	Fly Ash	NA	<u>27.5</u> A	<u>278</u>	<u>626</u> B	< 9.36	NA	< 12	NA	<u>282</u>	NA	< 11	NA	< 59.4	NA	NA	< 0.926	NA	NA	< 98.7	NA	< 2.98 F1	NA	
Week of 010916	1/4/2016	--	Fly Ash	NA	< 3.37 F1	<u>61.3</u> F1	<u>482</u> B	< 9.36	NA	< 12	NA	<u>250</u>	NA	< 11	NA	< 59.4	NA	NA	< 0.926	NA	NA	<u>434</u> A	NA	< 1.79 F1	NA	
NR 140 Preventative Action Limits (PALs)				40	1.2	1	400	0.4	200	0.5	NE	10	8	130	150	1.5	NE	60	0.2	8	20	10	10	0.4	2,500	
NR 140 Enforcement Standards (ES)				200	6	10	2,000	4	1,000	5	NE	100	40	1,300	300	15	NE	300	2	40	100	50	50	2	5,000	
CFR 40 141.62 Maximum Contaminant Levels (MCL)				NE	6	10	2,000	4	NE	5	NE	100	NE	NE	NE	NE	NE	NE	2	NE	NE	50	NE	2	NE	
NR 538 Table 1A Standards				1,500	1.2	5	400	0.4	190	0.5	NE	10	NE	130												

**Table 4a. Sediment and Soil Analytical Results - Water Leach Test Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00**

Abbreviations:

µg/L = micrograms per liter or parts per billion (ppb)
ML = Silt

NA = Not Analyzed
ML-CL = Silty Clay

NE = No Standard Established
SM = Silty Sand

GM = Silty Gravel
SP = Poorly Graded Sand

GP = Poorly Graded Gravel

Notes:

1. Slag and Fly Ash samples were collected by the plant as part of permit requirements.

2. Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.

NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

NR 140 PALS - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

Bold+underlined values meet or exceed NR 140 enforcement standards.

Italic+underlined values meet or exceed NR 140 preventive action limits.

Shaded values exceed NR 538 Table 1A Standards.

Red text exceeds NR 538 Table 2A Standards.

Laboratory Notes/Qualifiers:

J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

B = Compound was found in the blank and sample.

F1 = MS and/or MSD Recovery is outside acceptance limits.

^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

* = LCS or LCSD is outside acceptance limits.

Created by:	<u>RJG</u>	Date:	<u>3/14/2016</u>
Last revision by:	<u>RJG</u>	Date:	<u>10/24/2016</u>
Checked by:	<u>BSS</u>	Date:	<u>10/24/2016</u>

I:\25216054.00\Data and Calculations\Tables\[Table 4. Sediment_Soil_Water Leach Results.xlsx]4a. Leach Test - Metals

Table 4b. Sediment and Soil Analytical Results - Water Leach Test Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in mg/L, except where noted otherwise)

Sample	Date	Depth (feet)	Material Type	Lab Notes	Chloride	Fluoride	Nitrite+ Nitrate	Total Kjeldahl Nitrogen	Sulfate	TDS
WPDES POND										
SED-1	8/3/2016	0-1.3	Fly Ash	--	4.3	<1.0	<0.095	0.69 J	4.4	54
SED-2	8/3/2016	0-1.0	Fly Ash	--	4.3	<1.0	<0.095	0.75	11.5	60
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	--	3.5 J	<1.0	<0.095	0.59 J	6.1	52
SED-3	7/20/2016	0-4.5	Slag	--	2.7 J	<1.0	<0.095	0.22 J	5	28
	7/20/2016	4.5-5.5	SP	--	2.5 J	<0.20	<0.095	0.22 J	<2.0	14 J
SED-4	7/19/2016	0-4.8	ML	--	10.5 J	<10.0	<0.095	1.4	11.9 J	86
GP-19	8/4/2016	8-12	SM	--	2.4 J	<1.0	<0.095	0.23 J	2 J	16 J
SLAG POND										
SED-5	7/20/2016	0-1.6	ML-OL	--	3.2 J	<1.0	<0.095	<0.22	33.3	90
SED-6	7/20/2016	0-1.0	ML	--	3.7 J	0.36 J	1.0	<0.22	59.1	130
SED-7	8/4/2016	0-3.0	Fly Ash	--	4	<1.0	<0.095	1.1	10.5	76
SED-8	8/4/2016	1.0-1.5	Fly Ash	--	3.7 J	<1.0	<0.095	1.1	12.1	74
COAL YARD										
TP-CY-1	7/19/2016	0-0.5	Coal	--	<20.0	<2.0	<0.095	0.26 J	<20.0	32
	7/19/2016	3.0-3.5	SM	--	2.8 J	<1.0	<0.095	0.28 J	<2.0	20
TP-CY-3	7/20/2016	1.9-2.1	GM	--	3.9 J	<0.20	<0.095	<0.22	2.8 J	50
TP-CY-4	7/19/2016	0-2.8	Coal	--	<20.0	<2.0	<0.095	0.81	<20.0	38
	7/19/2016	2.8-3.2	GP & SM	--	<10.0	<1.0	<0.095	<0.22	<10.0	34
	7/19/2016	3.6-4.8	Slag	--	<20.0	<2.0	<0.095	<0.22	<20.0	10 J
TP-CY-6	7/19/2016	0-0.5	Coal	--	<20.0	<2.0	<0.095	0.23 J	<20.0	54
	7/19/2016	0.7-1.0	SP	--	2.5 J	<0.20	<0.095	<0.22	2.3 J	30
TP-CY-10	7/19/2016	0-0.5	Coal	--	2.4 J	<1.0	<0.095	<0.22	11.6	48
	7/19/2016	1.0-2.0	SM	--	2.2 J	<1.0	<0.095	<0.22	2.3 J	28
TP-CY-12	7/20/2016	0-0.3	Coal	--	<20.0	<2.0	<0.095	0.26 J	<20.0	44
	7/20/2016	0.3-2.0	SP	--	2.2 J	<0.20	<0.095	<0.22	2.2 J	24
	7/20/2016	2.0-2.7	SP	--	2.3 J	<0.20	<0.095	<0.22	27.5	50
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	--	2.6 J	<0.20	<0.095	<0.22	2.5 J	24
SLAG HANDLING AREA										
GP-5	8/3/2016	12.5-15	Fly Ash	--	<2.0	<1.0	0.11 J	<0.22	3.0 J	22
	8/3/2016	18-24	ML & SM	--	3.3 J	<1.0	<0.095	0.48 J	<2.0	24
GP-7	8/3/2016	7.5-18	Slag	--	2.2 J	<1.0	<0.095	0.22 J	<2.0	<8.7
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	--	2.2 J	<1.0	<0.095	0.24 J	<2.0	10 J
GP-14	8/4/2016	12.5-15	Fly Ash	--	<2.0	<1.0	0.1 J	<0.22	13.4	96
SLAG SAMPLES¹										
Slag 01 ²	6/3/2013	--	Slag	--	NA	NA	NA	NA	NA	NA
Slag 01	12/23/2013	--	Slag	--	0.277 B	NA	0.923	NA	0.218	NA
NED Slag Composite 2014	7/1/2014	--	Slag	--	< 0.142	NA	< 0.045	NA	0.457 B	98 H
Slag Sample	4/14/2015	--	Slag	--	0.751	NA	< 0.045	NA	0.427	NA
FLY ASH SAMPLES¹										
NED Flyash Composite ²	2/14/2014	--	Fly Ash	--	NA	NA	NA	NA	6,530 B	NA
Week of 062815 ²	7/3/2015	--	Fly Ash	--	NA	NA	NA	NA	6,260	NA
Week of 010916	1/4/2016	--	Fly Ash	--	NA	NA	NA	NA	NA	NA
NR 140 Preventative Action Limits (PALs)					125	0.8	2	NE	125	NE
NR 140 Enforcement Standards (ESs)					250	4	10	NE	250	NE
40 CFR Part 141.62 Maximum Contaminant Levels (MCL)					NE	4	10	NE	NE	NE
NR 538 Table 1A Standards					125	0.8	2	NE	125	NE
NR 538 Table 2A Standards					1,250	8	20	NE	1,250	NE

**Table 4b. Sediment and Soil Analytical Results - Water Leach Test Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00**

Abbreviations:

mg/L = micrograms per liter	NE = No Standard Established	NA = Not Analyzed	TDS = Total Dissolved Solids	GM = Silty Gravel
ML = Silt	ML-CL = Silty Clay	SM = Silty Sand	SP = Poorly Graded Sand	GP = Poorly Graded Gravel

Notes:

- Slag and Fly Ash samples were collected by the plant as part of permit requirements.
 - Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.
- NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
- NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

Bold+underlined values meet or exceed NR 140 enforcement standards.

Italic+underlined values meet or exceed NR 140 preventive action limits.

Shaded values exceed NR 538 Table 1A Standards.

Red text exceeds NR 538 Table 2A Standards.

Laboratory Notes/Qualifiers:

- J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
- A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
- B = Compound was found in the blank and sample.
- F1 = MS and/or MSD Recovery is outside acceptance limits.
- H = Sample was prepped or analyzed beyond the specified holding time.
- ^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
- * = LCS or LCSD is outside acceptance limits.

Created by:	<u>RJG</u>	Date:	<u>3/14/2016</u>
Last revision by:	<u>RJG</u>	Date:	<u>10/24/2016</u>
Checked by:	<u>BSS</u>	Date:	<u>10/24/2016</u>

I:\25216054.00\Data and Calculations\Tables\Table 4. Sediment_Soil_Water Leach Results.xlsx\4b. Leach Test - Parameters

Table 4c. Sediment and Soil Analytical Results - Water Leach Test Radiochemistry
WPL Nelson Dewey / SCS Engineers Project #25216054.00
 (Results are in pCi/L)

Sample	Date	Depth (feet)	Lab Notes	Radium-226	Radium-228	Total Radium
WPDES POND						
SED-4	7/19/2016	0-4.8	--	0.0858 ± 0.481 (0.922)	0.355 ± 0.483 (1.00)	0.441 ± 0.964 (1.92)
SLAG POND						
SED-6	7/20/2016	0-1.0	--	0.206 ± 0.905 (1.45)	2.97 ± 1.30 (2.14)	3.18 ± 2.21 (3.59)
COAL YARD						
TP-CY-10	7/19/2016	0-0.5	--	1.23 ± 0.996 (0.556)	0.915 ± 0.497 (0.891)	2.145 ± 1.493 (1.45)
SLAG HANDLING AREA						
GP-5	8/3/2016	12.5-15	--	0.0829 ± 0.586 (0.996)	0.447 ± 0.474 (0.981)	0.53 ± 1.06 (1.98)
GP-7	8/3/2016	7.5-18	--	-0.085 ± 0.683 (1.19)	0.446 ± 0.418 (0.843)	0.446 ± 1.1 (2.03)
NR 140 Preventive Action Limits (PALs)				NE	NE	NE
NR 140 Enforcement Standards (ESs)				NE	NE	NE
CFR 40 141.66 Maximum Contaminant Levels (MCL)				NE	NE	5
NR 538 Table 1A Standards				NE	NE	NE
NR 538 Table 2A Standards				NE	NE	NE

Abbreviations:

pCi/L = picocuries per liter NA = Not Analyzed NE = No Standard Established GM = Silty Gravel ML = Silt
 ML-CL = Silty Clay SM = Silty Sand SP = Poorly Graded Sand

Notes:

NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
 NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

Bold+underlined values meet or exceed NR 140 enforcement standards.

Italic+underlined values meet or exceed NR 140 preventive action limits.

Shaded values exceed NR 538 Table 1A Standards.

Red text exceeds NR 538 Table 2A Standards.

Created by: RJG Date: 3/14/2016
 Last revision by: RJG Date: 10/24/2016
 Checked by: BSS Date: 10/24/2016

I:\25216054.00\Data and Calculations\Tables\[Table 4. Sediment_Soil_Water Leach Results.xlsx]4c. Leach Test - Radium

**Table 5. Summary of Physical Testing Results - Sediment, Boring, and Test Pit Samples
Nelson Dewey Closure Investigation
Nelson Dewey Generating Station / SCS Project #25216054.00**

Sample Number	Sample Depth (ft. bgs)	Material Type	% Silt and Clay (P-200) (<0.75 mm)	Atterberg Limits		Specific Gravity	Dry Bulk Density (pcf)	Moist Bulk Density (pcf)	Water Content (%)
				Liquid Limit (%)	Plasticity Index (%)				
WPDES Pond									
SED-1	0-1.3	Ash	--	--	--	--	--	--	67.0
SED-2	0-1.0	Ash	--	--	--	--	--	--	71.9
SED-2	0-1.5	Ash	59.3	--	--	1.86	19.5 ⁽¹⁾	72.7	272.9
SED-3	0-4.5	Slag	11.8	--	--	1.58	52.5 ⁽¹⁾	79.0	35.7
	4.5-5.5	Soil	--	--	--	--	--	--	6.1
SED-4	0-4.8	Soil	--	--	--	--	--	--	39.3
	4.8-5.5	Soil	2.1	--	--	--	--	--	17.7
GP-19	8.0-12.0	Soil	6.5	--	--	--	--	--	11.6
Slag Pond									
SED-5	0-1.6	Soil	--	--	--	--	--	--	34.3
	3.7-5.3	Soil	--	--	--	--	--	--	8.6
SED-6	0-1.0	Soil	73.8	--	--	--	--	--	41.0
SED-7	0-3.0	Ash	--	--	--	--	--	--	69.3
SED-8	1.0-1.5	Ash	--	--	--	--	--	--	72.5
SED-8	1.0-2.5	Ash	69.0	58	7	--	30.8 ⁽¹⁾	79.6	158.4
Coal Yard									
TP-CY-1	0-0.5	Coal	--	--	--	--	--	--	26.5
	3.0-3.5	Soil	--	--	--	--	--	--	9.5
TP-CY-3	1.9-2.1	Soil	10.4	--	--	--	--	--	4.3
	4.8-5.5	Soil	--	--	--	--	--	--	4.3
TP-CY-4	0-2.8	Coal	--	--	--	--	--	--	23.6
	2.8-3.2	Soil	--	--	--	--	--	--	6.6
	3.6-4.8	Slag	--	--	--	--	--	--	2.3
	4.8-5.0	Soil	--	--	--	--	--	--	11.1
TP-CY-6	0-0.5	Coal	13.5	--	--	--	--	--	27.1
	0.7-1.0	Soil	--	--	--	--	--	--	2.9
TP-CY-8	0-0.2	Coal	--	--	--	1.62	--	--	44.6
TP-CY-10	0-0.5	Coal	4.7	--	--	--	--	--	23.3
	1.0-2.0	Soil	--	--	--	--	--	--	3.4
	6.5-7.0	Soil	--	--	--	--	--	--	19.0
TP-CY-12	0-0.3	Coal	--	--	--	--	--	--	33.4
	0.3-2.0	Soil	--	--	--	--	--	--	1.9
	2.0-2.7	Soil	--	--	--	--	--	--	2.9
Slag Handling Area									
GP-5	0-12.0	Slag	7.3	--	--	--	121.0 ⁽²⁾	143.5	18.6
	12.5-15.0	Ash	90.2	--	--	--	--	--	31.7
	18.0-24.0	Soil	17.0	--	--	--	--	--	19.7
GP-7	7.5-18.0	Slag	4.6	--	--	--	--	--	6.7
	18.0-24.0	Soil	--	--	--	--	--	--	17.3
GP-14	12.5-15.0	Slag/Ash	73.4	--	--	--	--	--	36.1
	17.5-20.0	Soil	--	--	--	--	--	--	14.8
GP-23	6.5-12	Soil	--	--	--	--	--	--	19.9

Abbreviations:

--: Not tested

Notes:

(1) = Dry density of sample tamped into 4 inch Proctor mold at as-received moisture con

(2) = Dry density of sample subjected to standard Proctor effort at as-received moisture

Created by: AV

Date: 9/7/2016

Revised by: AV

Date: 9/30/2016

Checked by: DN

Date: 9/30/2016

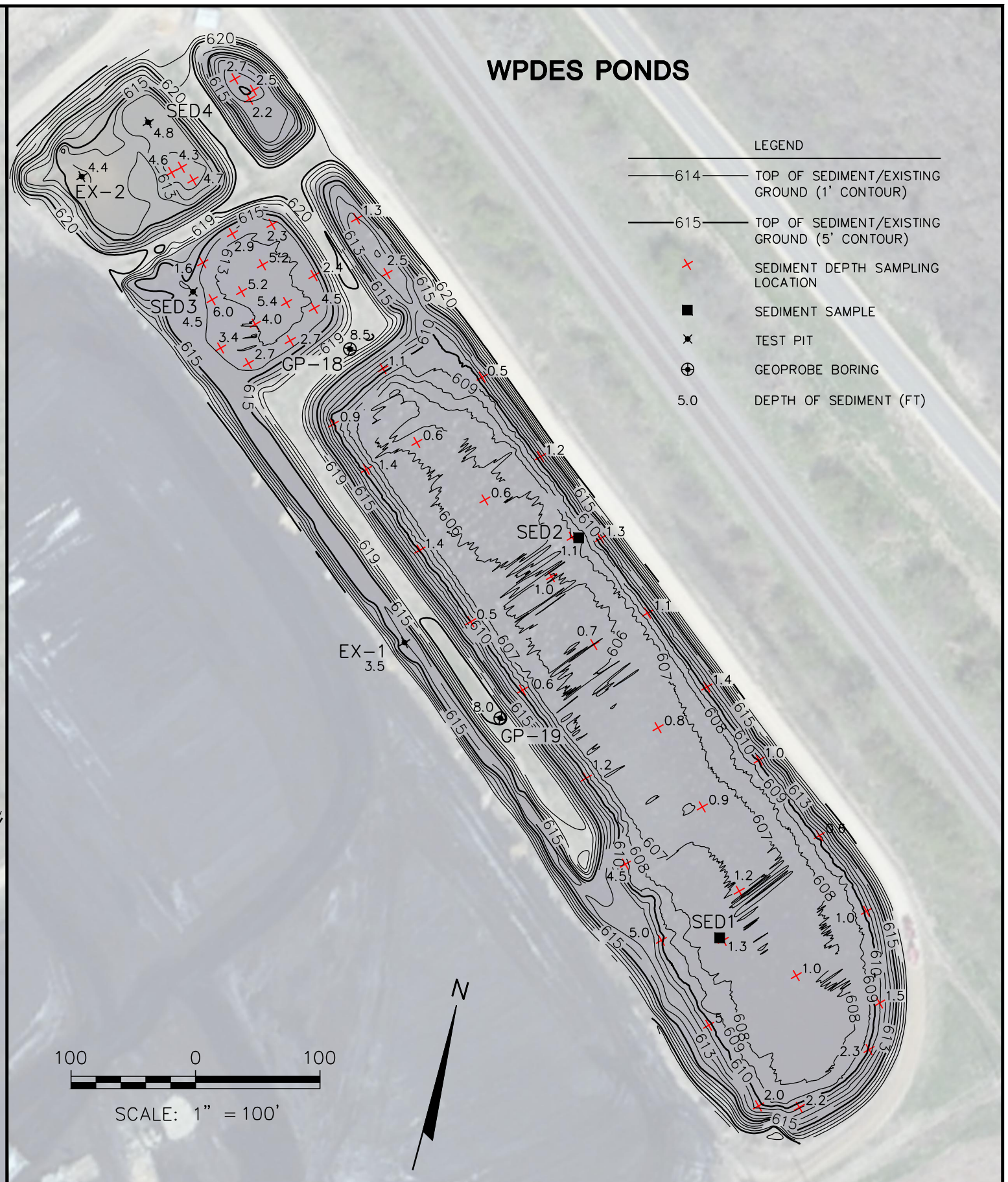
I:\25216054.00\Data and Calculations\Tables\[Table 5. Geotech_Nelson Dewey Closure Investigation Table_160930.xls]Geotech

Table 6. Post-Sediment Removal Soil Sample & Analysis Plan
Wisconsin Power and Light - Nelson Dewey Generating Station / SCS Engineers Project #25216054.00

Locations	Samples	Parameters	Method	Container	Preservative	Hold Times	Regulatory Category		
							NR720	Appendix III, 40 CFR Part 257	Appendix IV, 40 CFR Part 257
		Metals	EPA 6010/7471	4 oz. Plastic	None	6 Months			
		Antimony, Sb	EPA 6010				X		
		Arsenic, As	EPA 6010				X		
		Barium, Ba	EPA 6010				X		
		Beryllium, Be	EPA 6010				X		
		Boron, B	EPA 6010				X		
		Cadmium, Cd	EPA 6010				X		
		Copper, Cu	EPA 6010				X		
		Chromium, Cr	EPA 6010				X		
		Lead, Pb	EPA 6010				X		
		Mercury, Hg	EPA 7471				X		
		Molybdenum, Mo	EPA 6010				X		
		Nickel, Ni	EPA 6010				X		
		Thallium, Tl	EPA 6010				X		
		Vanadium, V	EPA 6010				X		
		Metals (ASTM Water Leach Test)	ASTM D3938/EPA 6010/7470/6020	1 L. Plastic	None	6 Months			
		Antimony, Sb	ASTM D3938/EPA 6010						X
		Arsenic, As	ASTM D3938/EPA 6010						X
		Barium, Ba	ASTM D3938/EPA 6010						X
		Beryllium, Be	ASTM D3938/EPA 6010						X
		Boron, B	ASTM D3938/EPA 6010					X	
		Cadmium, Cd	ASTM D3938/EPA 6010						X
		Calcium, Ca	ASTM D3938/EPA 6010					X	
		Chromium Total, Cr	ASTM D3938/EPA 6010						X
		Cobalt, Co	ASTM D3938/EPA 6010						X
		Lead, Pb	ASTM D3938/EPA 6010						X
		Lithium, Li	ASTM D3938/EPA 6020						X
		Mercury, Hg	ASTM D3938/EPA 7471						X
		Molybdenum, Mo	ASTM D3938/EPA 6010						X
		Selenium, Se	ASTM D3938/EPA 6010						X
		Thallium, Tl	ASTM D3938/EPA 6010						X
		Sulfate (ASTM Water Leach Test)	ASTM D3938/EPA 3000	1 L. Plastic	None	28 Days		X	
		Chloride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days		X	
		Fluoride (ASTM Water Leach Test)	ASTM D3938/EPA 300.0	1 L. Plastic	None	28 Days		X	X
		Total Phenols	EPA 420.4	4 oz. Glass	None	28 Days	X		
		Total PAHs ¹ (18)	EPA 8270-SIM	4 oz. Glass	None	14 Days	X		
		Radium 226 & 228 (ASTM Water Leach Test) (Select Samples)	CCR Gap methodology	1 L. Plastic	None	6 Months			X
		Total Dissolved Solids (TDS)	SM 2540C	1 L. Plastic	None	7 Days		X	
		pH	SW 9045	1 L. Plastic	None	Immediate		X	

FIGURES

- 1 Bathymetric and Topographic Survey and Sediment Thickness Locations
- 2 Material Volume and Thickness Measurements



PROJECT NO.	25216054.00	DRAWN BY:	KP	SCS ENGINEERS	CLIENT	WISCONSIN POWER AND LIGHT CO. NELSON DEWEY GENERATING STATION 11999 COUNTY HIGHWAY VV CASSVILLE, WI 53806	SITE	IMPOUNDMENT ABANDONMENT PLAN WISCONSIN POWER AND LIGHT NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN	BATHYMETRIC AND TOPOGRAPHIC SURVEY AND SEDIMENT THICKNESS LOCATIONS	FIGURE					
DRAWN:	10/05/16	CHECKED BY:	RJG							PHONE: (608) 224-2830	CASSVILLE, WI 53806	CASSVILLE, WISCONSIN	CASSVILLE, WISCONSIN	CASSVILLE, WISCONSIN	1
REVISED:	03/20/17	APPROVED BY:	MRH 03/31/17												

I:\25216054.00\Drawings\lm:oundment -bandonment Plan\Ponds.dwg, 3/31/2017 11:24:13 AM

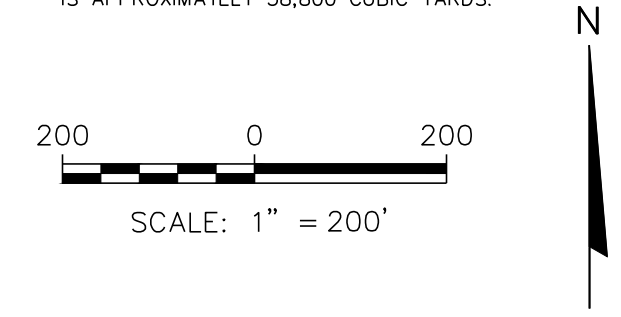


LEGEND

- COAL YARD (COAL) VOLUME AREA
- COAL YARD (SLAG) VOLUME AREA
- SLAG HANDLING VOLUME AREA
- SLAG POND VOLUME AREA
- WPDES PONDS VOLUME AREA
- COAL YARD (GRAVEL) VOLUME AREA
- 2.8 COAL OR SEDIMENT THICKNESS
- .36 SLAG THICKNESS
- 0.9 GRAVEL THICKNESS
- B-35 MONITORING WELL
- ⊙ B-35A PIEZOMETER
- ⊕ SG-6 STAFF GAUGE
- ⊕ GP-1 SOIL BORING
- × TP-CY-1 TEST PIT
- SED1 SEDIMENT SAMPLE

VOLUMES (CUBIC YARDS)				
	COAL	SEDIMENT	SLAG	GRAVEL
COAL YARD	19,225	--	23,400	5,500
SLAG HANDLING	--	--	94,400	--
SLAG POND	--	28,300	--	--
WPDES POND	--	16,700	--	--

- NOTES:**
- SEE FIGURE 2 FOR BASE MAP LEGEND ITEMS AND NOTES.
 - COAL, SLAG, AND GRAVEL VOLUMES WERE CALCULATED BASED ON THICKNESS OF MATERIAL OBSERVED IN BORINGS AND TEST PITS. THE AVERAGE THICKNESS OF MATERIAL WAS THEN APPLIED TO THE ESTIMATED EXTENT (AREA) OF EACH MATERIAL.
 - SLAG POND AND WPDES POND SEDIMENT VOLUMES WERE CALCULATED USING AUTOCAD CIVIL 3D SOFTWARE BASED ON TOP AND BOTTOM OF SEDIMENT SURFACES.
 - WPDES POND SEDIMENT VOLUME INCLUDES THE INTERIOR SEPARATION BERMS AND A 6-INCH OVERDREDGE.
 - COAL YARD MATERIAL WITH A 6-INCH OVER EXCAVATION IS APPROXIMATELY 58,800 CUBIC YARDS.



PROJECT NO. 25216054.00	DRAWN BY: KP	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT WISCONSIN POWER AND LIGHT CO. NELSON DEWEY GENERATING STATION 11999 COUNTY HIGHWAY VV CASSVILLE, WI 53806	SITE IMPOUNDMENT ABANDONMENT PLAN WISCONSIN POWER AND LIGHT NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN	FIGURE 2
DRAWN: 10/05/16	CHECKED BY: RJG				
REVISED: 03/20/17	APPROVED BY: MRH 03/31/17				

I:\25216054.00\Drawings\lm_pondment -bandonment Plan\Sediment and Slag Vols.dwg, 3/31/2017 11:25:43 .im

APPENDIX A

WPDES Permit No. WI-0002381-07-0

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 South Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone (608) 266-2621
FAX (608) 267-3579
TDD (608) 267-6897



Duane V. Fritz
Manager GENCO Operations
WPL - Nelson Dewey Generating Station
11999 Cty Hwy V V
Cassville, WI 53806

SUBJECT: WPDES Permit Reissuance No. WI-0002381-07-0
Wisconsin Power and Light NELSON DEWEY GENERATING STATION,
NWQ Section 19, T3N, R5W - Cassville, Wisconsin

Dear Permittee:

Your Wisconsin Pollutant Discharge Elimination System (WPDES) Permit is enclosed. The conditions of the enclosed permit reissuance were determined using the permit application, information from your WPDES permit file, other information available to the Department, comments received during the public notice period, and applicable Wisconsin Administrative Codes. All discharges from this facility and actions or reports relating thereto shall be in accordance with the terms and conditions of the enclosed permit.

This enclosed permit requires you to submit monitoring results to the Department on a periodic basis. Monitoring forms, which must be submitted electronically, are available on the Department's web page. Go to the DNR Switchboard page at <http://dnr.wi.gov/topic/switchboard/> to log in and access your monitoring forms. For your convenience, there is a 'Summary of Reports Due' at the end of the enclosed permit that shows a synopsis of the required reports and monitoring forms.

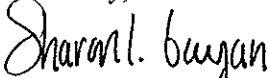
The WPDES permit program has been approved by the Administrator of the U.S. Environmental Protection Agency pursuant to Section 402(b) of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. Section 1342 (b)). The terms and conditions of the enclosed permit are accordingly subject to enforcement under ss. 283.89 and 283.91, Stats., and Section 309 of the Federal Act (33 U.S.C. Section 1319).

The Department has the authority under chs. 160 and 283, Wis. Stats., to establish effluent limitations, monitoring requirements, and other permit conditions for discharges to groundwater and surface waters of the State. The Department also has the authority to issue, reissue, modify, terminate, or revoke and reissue WPDES permits under ch. 283, Wis. Stats.

The enclosed permit contains water quality-based effluent limitations that are necessary to ensure the water quality standards for the Mississippi River are met. You may apply for a variance from the water quality standard used to derive the limitations pursuant to s. 283.15, Stats., by submitting an application to the Director of the Bureau of Water Quality, P.O. Box 7921, Madison, Wisconsin 53707 within 60 days of the date the permit was issued (see "Date Permit Signed/Issued" after the signature on the front page of the enclosed permit). This statute also allows the permittee to apply for a variance to the water quality standard when applying for reissuance of the permit. Subchapter III of ch. NR 200, Wis. Adm. Code, specifies the procedures that must be followed and the information that must be included when submitting an application for a variance.

To challenge the reasonableness of or necessity for any term or condition of the enclosed permit, s. 283.63, Stats., and ch. NR 203, Wis. Adm. Code, require that you file a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was issued (see "Date Permit Signed/Issued" after the signature on the front page of the enclosed permit). For permit-related decisions that are not reviewable pursuant to s. 283.63, Stats., it may be possible for permittees or other persons to obtain an administrative review pursuant to s. 227.42, Stats., and s. NR 2.05(5), Wis. Adm. Code, or a judicial review pursuant to s. 227.52, Stats. If you choose to pursue one of these options, you should know that Wisconsin Statutes and Administrative Code establish time periods within which requests to review Department decisions must be filed.

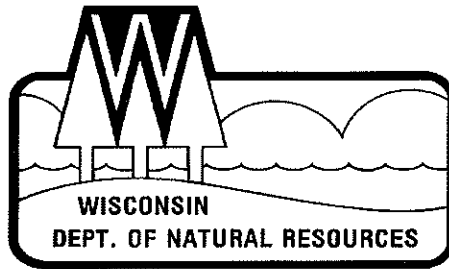
Sincerely,



Sharon Gayan
Director, Bureau of Water Quality

Dated: November 17, 2016

cc: Legal Permit File
Cyndi Barr, WT/3
U.S. Fish and Wildlife Service (Electronic Copy via Email)
Timothy Ryan
EPA – Region 5 (Electronic Copy via Email)



WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

WPL - Nelson Dewey Generating Station

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at
NWQ Section 19, T3N, R5W - Cassville, Wisconsin
to

Mississippi River and the Groundwater of the Grant-Platte River Basin

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources

For the Secretary

By

Sharon L. Gayan

Sharon L. Gayan
Water Quality Bureau Director

November 17, 2016
Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - January 01, 2017

EXPIRATION DATE - December 31, 2021

TABLE OF CONTENTS

1 INFLUENT REQUIREMENTS	1
1.1 SAMPLING POINT(S)	1
1.2 MONITORING REQUIREMENTS	1
1.2.1 Sampling Point 701 - Cooling water intake structure	1
1.2.2 Sampling Point 703 - Influent Temperature	3
1.2.3 Sampling Point 704 - Background pH	3
1.2.4 Sampling Point 705 - Background mercury	4
2 IN-PLANT REQUIREMENTS	5
2.1 SAMPLING POINT(S)	5
2.2 MONITORING REQUIREMENTS AND LIMITATIONS	5
2.2.1 Sampling Point 102 - Pump from WPDES to slag pond	5
3 SURFACE WATER REQUIREMENTS	6
3.1 SAMPLING POINT(S)	6
3.2 MONITORING REQUIREMENTS AND EFFLUENT LIMITATIONS	6
3.2.1 Sampling Point (Outfall) 001 - Condenser Cooling Water	6
3.2.2 Sampling Point (Outfall) 002 - Slag Pond	6
3.2.3 Sampling Point (Outfall) 003 - Deice water	8
3.2.4 Sampling Point (Outfall) 004 - Intake screen washing	8
4 LAND TREATMENT REQUIREMENTS	9
4.1 SAMPLING POINT(S)	9
4.1.1 Seepage Ponds Management	9
5 SCHEDULES	10
5.1 MERCURY POLLUTANT MINIMIZATION PROGRAM	10
5.2 ANNUAL CERTIFICATION STATEMENT AND REPORT FOR INTAKE	10
6 STANDARD REQUIREMENTS	12
6.1 REPORTING AND MONITORING REQUIREMENTS	12
6.1.1 Monitoring Results	12
6.1.2 Sampling and Testing Procedures	12
6.1.3 Recording of Results	12
6.1.4 Reporting of Monitoring Results	12
6.1.5 Records Retention	13
6.1.6 Other Information	13
6.2 SYSTEM OPERATING REQUIREMENTS	13
6.2.1 Noncompliance Reporting	13
6.2.2 Bypass	14
6.2.3 Scheduled Bypass	14
6.2.4 Controlled Diversions	14
6.2.5 Proper Operation and Maintenance	15
6.2.6 Spill Reporting	15
6.2.7 Planned Changes	15
6.2.8 Duty to Halt or Reduce Activity	15
6.3 SURFACE WATER REQUIREMENTS	15
6.3.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit	15
6.3.2 Appropriate Formulas for Effluent Calculations	15
6.3.3 Effluent Temperature Requirements	16
6.3.4 Energy Emergency Events	16
6.3.5 Visible Foam or Floating Solids	16
6.3.6 Surface Water Uses and Criteria	16

6.3.7 Additives

17

7 SUMMARY OF REPORTS DUE

18

1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
701	Mississippi River cooling water intake structure requirements.
703	Sample point for establishing background/ambient river temperature.
704	Sample point for establishing background/ambient river pH.
705	Sample point for establishing background/ambient river mercury.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - Cooling water intake structure

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Estimated	

1.2.1.1 Cooling Intake Water Description

The permittee shall at all times properly operate and maintain all water intake facilities. The permittee shall give advance notice to the Department of any planned changes in the location, design, operation, or capacity of the intake structure. The permittee is authorized to use the cooling water intake system which consists of the following:

- The circulating water pumps, service water pumps, and the traveling screens are located in the base on the main exhaust stack. This space is connected to the river by a 120-foot long flume.
- The pumps are protected by two, 10-foot wide, 28-foot high, 3/8-inch mesh, traveling screens. The through-screen velocity at design intake rate is estimated to be 1.9 feet per second (1.9 fps).
- Maximum design intake flow rate is 81 MGD. Prior to any repowering or other significant change to the use of the intake structure all submittals and approvals required by 40 CFR 125 Subpart J must be obtained.
- Approximately 0.7% of flow is used exclusively for cooling purposes.
- The design intake flow through velocity is 0.46 fps. This is the velocity at the river bank where river water enters the flume.
- There is no emergency intake.
- Withdrawals at the intake are expected to cease when warm weather occurs in 2016.

1.2.1.2 Water Intake BTA Determination

The cooling water intake, as described above in Subsection 1.2.1.1, represents BTA for minimizing adverse environmental impact in accordance with the requirements in section 283.31 (6) Wis. Stats., and section 316 (b) of the Clean Water Act.

Note: This is a BTA determination based on the Department's February 2, 2009 guidance for evaluating cooling water intake structures using best professional judgment (BPJ). Because there is very little use of the intake water for cooling, the intake is not subject to the new federal regulations for existing facilities in 40 CFR 125.94 through 125.99 (40 CFR 125.91). The intake must meet requirements of 316(b) established by the Department on a case-by-case, BPJ basis.

1.2.1.3 Future BTA

BTA determinations for entrainment and impingement mortality at cooling water intake structures will be made in each permit reissuance, in accordance with 40 CFR §125.90-98. In subsequent permit reissuance applications, the permittee shall provide all the information required in 40 CFR §122.21(r). Exemptions from some application requirements are possible in accordance with 40 CFR §125.95(c) and §125.98(g), where information already submitted is sufficient. If desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

Note: The Department is in the process of promulgating ch. NR 111, Wis. Adm. Code, on cooling water intake structures. The objective of ch. NR 111 is to incorporate federal requirements for cooling water intake structures into the state's administrative code. If ch. NR 111 is promulgated prior to the expiration of this permit, the permittee may be subject to ch. NR 111 application requirements for the next permit reissuance.

1.2.1.4 Monitoring

1.2.1.4.1 Biological Studies

No studies are specified in this permit.

1.2.1.4.2 Compliance Monitoring Requirements

1.2.1.4.2.1 Impingement Mortality

Not applicable.

1.2.1.4.2.2 Entrainment Mortality

Not applicable.

1.2.1.4.2.3 Visual or Remote Inspections

The permittee shall on an annual basis conduct visual inspection or employ a remote monitoring device during periods when the cooling water intake is in operation.

1.2.1.4.3 Reporting Requirements

1.2.1.4.3.1 Discharge Monitoring Reports

Include monitoring for flow.

1.2.1.4.3.2 Annual Certification Statement and Report

By March 1 of each year submit an annual certification for the previous year signed by the authorized representative with information on the following:

- (a) Water intake structure technologies are being maintained and operated as set forth in this permit, or a justification to allow a modification of the practices. Include a summary of the inspections required under paragraph 1.2.1.4.2.3 Visual or Remote Inspections.
- (b) If there are substantial modifications to the operation of any unit that impacts the cooling water withdrawals or operation of the water intake structure, provide a summary of those changes.
- (c) If the information contained in the previous year’s annual certification is still applicable, the certification may simply state as such.

1.2.1.5 Intake Screen Discharges and Removed Substances

Floating debris and accumulated trash collected on the cooling water intake trash rack shall be removed and disposed of in a manner to prevent any pollutant from the material from entering the waters of the State pursuant to s. NR 205.07 (3) (a), Wis. Adm. Code. The permittee may discharge backwash from the traveling water screens and discharge to the river. These backwashes may contain fine materials that originated from the intake water source (sand, silt, small vegetation or aquatic life).

1.2.1.6 Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility’s compliance with the Endangered Species Act. Refer to 40 CFR §125.98 (b) (1) and (2).

1.2.2 Sampling Point 703 - Influent Temperature

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Temperature		deg F	Daily	Grab	Daily grab if withdrawal occurs.

1.2.3 Sampling Point 704 - Background pH

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
pH Field		su	Monthly	Grab	Sample on the same day that pH is sampled at outfall 002. Monthly sample frequency should discharge occur.

1.2.4 Sampling Point 705 - Background mercury

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Monthly	Grab	Sample on the same day that mercury is sampled at outfall 002. Monthly sample frequency should discharge occur.

1.2.4.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
102	Water is pumped from the WPDES pond system to the east end of the slag pond. The pump house is north of Pond 2 and consists of two pumps.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 102 - Pump from WPDES to slag pond

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Daily Max	50 mg/L	Weekly	Grab	Weekly sample frequency should discharge occur.

3 Surface Water Requirements

3.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	Once through water for noncontact cooling. No chlorination or other water additives are part of the wastewater. These will be reduced or eliminated as retirement is implemented.
002	Outfall is primarily composed of once-through non-contact cooling water (service water) associated with bearing seal water cooling, sluicing of slag from each boiler, facility floor drain system, water treatment plant water (demin., reverse osmosis, multi-media filter) from two (2) deep wells, WPDES Pond System (Outfall 005), and storm water runoff associated with the closed landfill, plant grounds, coal pile runoff and new package boiler (5,000 gpd). These will be reduced or eliminated as retirement is implemented.
003	Intake screen deicing (redirected condenser cooling water). These will be reduced or eliminated as retirement is implemented.
004	Intake screen washing (recirculated river water). These will be reduced or eliminated as retirement is implemented.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - Condenser Cooling Water

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Temperature Maximum	Daily Max	120 deg F	Daily	Grab	Daily grab should a withdrawal occur.
Flow Rate		MGD	Daily	Estimated	
Temperature Average	Weekly Avg	104 deg F	Weekly	Calculated	Applicable only in month of June.

3.2.1.1 Effluent Temperature Monitoring

Temperature may be collected via grab daily should discharge occur.

3.2.2 Sampling Point (Outfall) 002 - Slag Pond

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Suspended Solids, Total	Daily Max	100 mg/L	Monthly	Grab	Monthly sample frequency should discharge occur.
Suspended Solids, Total	Monthly Avg	30 mg/L	Monthly	Grab	Monthly sample frequency should discharge occur.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Oil & Grease (Hexane)	Daily Max	20 mg/L	Monthly	Grab	Monthly sample frequency should discharge occur.
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Monthly	Grab	Monthly sample frequency should discharge occur.
pH Field	Daily Max	9.0 su	Monthly	Grab	pH monitoring is not required when background/ambient river pH exceeds 9.0 s.u. Monthly sample frequency should discharge occur.
pH Field	Daily Min	6.0 su	Monthly	Grab	pH monitoring is not required when background/ambient river pH exceeds 9.0 s.u. Monthly sample frequency should discharge occur.
Mercury, Total Recoverable	Daily Max	4.68 ng/L	Monthly	Grab	Refer to the Pollutant Minimization Plan requirements of section 5. Monthly sample frequency should discharge occur.
Aluminum, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.
Barium, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.
Boron, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.
Iron, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.
Magnesium, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.
Manganese, Total Recoverable		mg/L	Annual	Grab	Annual sample frequency should discharge occur.

3.2.2.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.2.2 Polychlorinated Biphenyls

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

3.2.3 Sampling Point (Outfall) 003 - Deice water

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	

3.2.4 Sampling Point (Outfall) 004 - Intake screen washing

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	

4 Land Treatment Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Description/Sample Contents and Treatment Description (as applicable)
005	Seepage ponds receiving various wastewaters. WPDES ponds (1, 2 and 3) and slag pond. Total 1.52 MGD infiltration equal to hydraulic conductivity of 1.699×10^{-4} cm ² /sec per 2015 report.

4.1.1 Seepage Ponds Management

Outfall 005 is a series of seepage ponds that receives the following waste streams: coal pile runoff; non-contact equipment cooling water; demineralizer/reverse osmosis reject waters; boiler blowdown; air heater wash waters; and boiler wash water. The discharge from the seepage ponds to the slag pond is regulated at sample point 102 (refer to section 2 of the permit). The portion of the seepage ponds wastewater volume which discharges, via seepage, to the groundwater is regulated by this section of the permit, and is designated as outfall 005.

The current Department-approved seepage ponds management plan is the BT2, Inc. document, dated June 21, 1999. As discussed in the management plan, if the ponds' treatment capacity is compromised as a result of solids deposition, the permittee shall evaluate solids removal options to restore treatment capacity.

This permit does not authorize any waste streams other than the aforementioned to be discharged into the seepage ponds without prior approval from the Department. The permittee shall submit, for Department approval, proposed modifications to the management plan.

5 Schedules

5.1 Mercury Pollutant Minimization Program

As a condition of the variance to the water quality based effluent limitation(s) for mercury granted in accordance with s. NR 106.145(6), Wis. Adm. Code, the permittee shall perform the following actions.

Required Action	Due Date
<p>Annual Mercury Progress Reports: Submit an annual mercury progress report. The annual mercury progress report shall:</p> <p>Indicate which mercury pollutant minimization activities or activities outlined in the approved Pollutant Minimization Plan have been implemented;</p> <p>Include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling; and</p> <p>Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from activities, procedures or operations at the facility.</p> <p>The first annual mercury progress report is to be submitted by the Due Date.</p>	06/30/2017
Annual Mercury Progress Report #2: Submit a mercury progress report as defined above.	06/30/2018
Annual Mercury Progress Report #3: Submit a mercury progress report as defined above.	06/30/2019
Annual Mercury Progress Report #4: Submit a mercury progress report as defined above.	06/30/2020
<p>Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations. The report shall summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, pollutant minimization activities from the approved pollutant minimization plan were not pursued and why. The report shall include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling during the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from activities, procedures or operations at the facility.</p> <p>Additionally, the report shall include a proposed variance limit and pollutant minimization activities for negotiations with the department if the permittee intends to seek a renewed mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit.</p>	06/30/2021
Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual mercury reports each year covering pollutant minimization activities implemented and mercury concentration trends.	

5.2 Annual Certification Statement and Report for Intake

The permittee shall submit an annual certification statement as set forth in the permit.

Required Action	Due Date
Submit report: As specified in permit condition 1.2.1.4.3.2 for the preceding calendar year.	03/01/2017
Submit report: As specified in permit condition 1.2.1.4.3.2 for the preceding calendar year.	03/01/2018
Submit report: As specified in permit condition 1.2.1.4.3.2 for the preceding calendar year.	03/01/2019

WPDES Permit No. WI-0002381-07-0
WPL - Nelson Dewey Generating Station

Submit report: As specified in permit condition 1.2.1.4.3.2 for the preceding calendar year.	03/01/2020
Submit report: As specified in permit condition 1.2.1.4.3.2 for the preceding calendar year.	03/01/2021

6 Standard Requirements

NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers): The conditions in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(3).

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a principal executive officer, a ranking elected official or other duly authorized representative. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

6.1.4 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD₅ and Total Suspended Solids shall be considered to be limits of quantitation
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a 0 (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.

6.1.5 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

6.1.6 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department as directed at the end of this permit within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Bypass

Except for a controlled diversion as provided in the 'Controlled Diversions' section of this permit, any bypass is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the 'Noncompliance Reporting' section of this permit.

6.2.3 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for unscheduled bypassing are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.4 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation provided the following requirements are met:

- Effluent from the wastewater treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in wastewater treatment facility records and such records shall be available to the department on request.

6.2.5 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. The wastewater treatment facility shall be under the direct supervision of a state certified operator as required in s. NR 108.06(2), Wis. Adm. Code. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.6 Spill Reporting

The permittee shall notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in this permit, or the spill or accidental release of the material is unregulated in this permit, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.

6.2.7 Planned Changes

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application, or if the new discharge will not violate the effluent limitations of this permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may modify this permit to specify and limit any pollutants not previously regulated in the permit.

6.2.8 Duty to Halt or Reduce Activity

Upon failure or impairment of treatment facility operation, the permittee shall, to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

6.3 Surface Water Requirements

6.3.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.3.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.3.3 Effluent Temperature Requirements

Weekly Average Temperature – The permittee shall use the following formula for calculating effluent results to determine compliance with the weekly average temperature limit (as applicable): Weekly Average Temperature = the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state.

6.3.4 Energy Emergency Events

The Department will use enforcement discretion whenever there are exceedances of effluent temperature limitations for the electric generating facility during an energy emergency warning or when an energy emergency event has been declared under a Federal Energy Regulatory Commission order (Standard EOP-002, North American Electric Reliability Corporation).

6.3.5 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.3.6 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land

development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.3.7 Additives

In the event that the permittee wishes to commence use of a water treatment additive, or increase the usage of the additives greater than indicated in the permit application, the permittee must get a written approval from the Department prior to initiating such changes. This written approval shall provide authority to utilize the additives at the specific rates until the permit can be either reissued or modified in accordance with s. 283.53, Stats. Restrictions on the use of the additives may be included in the authorization letter.

7 Summary of Reports Due

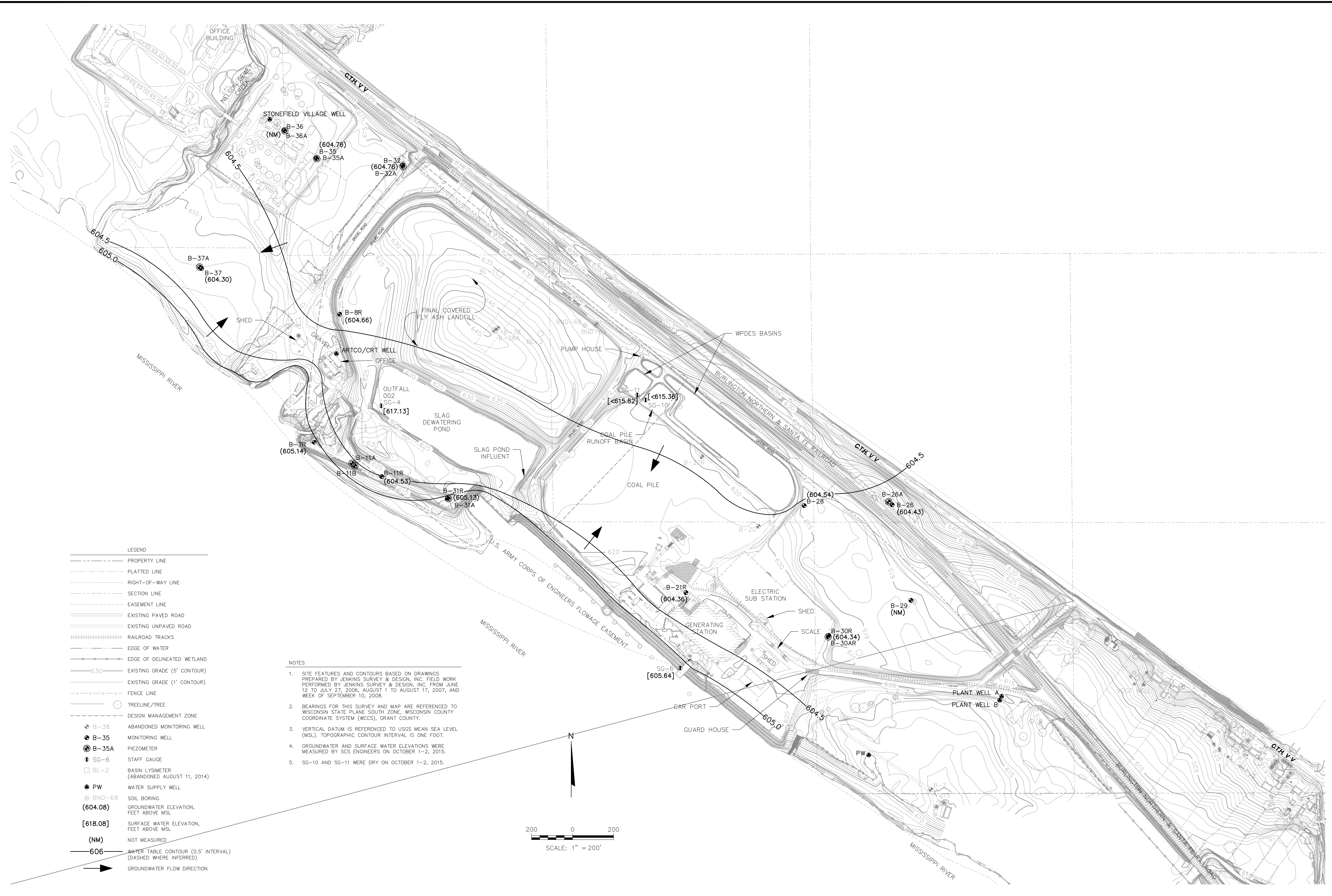
FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Mercury Pollutant Minimization Program -Annual Mercury Progress Reports	June 30, 2017	10
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #2	June 30, 2018	10
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #3	June 30, 2019	10
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #4	June 30, 2020	10
Mercury Pollutant Minimization Program -Final Mercury Report	June 30, 2021	10
Mercury Pollutant Minimization Program -Annual Mercury Reports After Permit Expiration	See Permit	10
Annual Certification Statement and Report for Intake -Submit report	March 1, 2017	10
Annual Certification Statement and Report for Intake -Submit report	March 1, 2018	10
Annual Certification Statement and Report for Intake -Submit report	March 1, 2019	10
Annual Certification Statement and Report for Intake -Submit report	March 1, 2020	11
Annual Certification Statement and Report for Intake -Submit report	March 1, 2021	11
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	12

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:
Central Office, 101 South Webster Street, P.O. Box 7921, Madison, WI 53707-7921

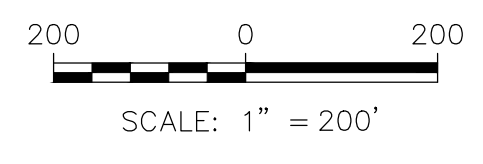
APPENDIX B

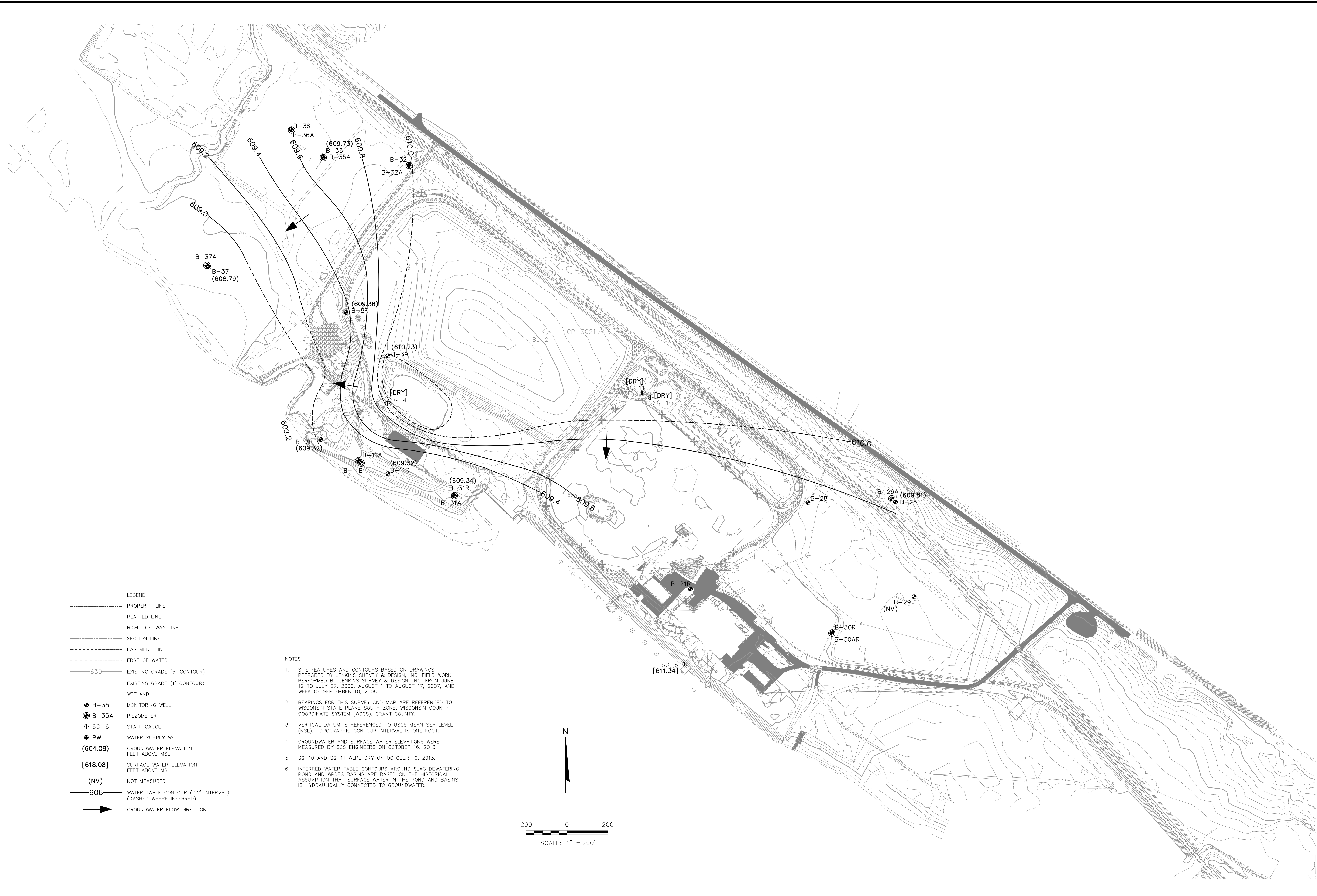
Water Table Maps



- LEGEND**
- PROPERTY LINE
 - PLATTED LINE
 - RIGHT-OF-WAY LINE
 - SECTION LINE
 - EASEMENT LINE
 - EXISTING PAVED ROAD
 - EXISTING UNPAVED ROAD
 - ==== RAILROAD TRACKS
 - EDGE OF WATER
 - EDGE OF DELINEATED WETLAND
 - 630 --- EXISTING GRADE (5' CONTOUR)
 - --- EXISTING GRADE (1' CONTOUR)
 - x-x-x-x- FENCE LINE
 - TREELINE/TREE
 - DESIGN MANAGEMENT ZONE
 - B-38 ABANDONED MONITORING WELL
 - B-35 MONITORING WELL
 - B-35A PIEZOMETER
 - ⊕ SG-6 STAFF GAUGE
 - BL-2 BASIN LYSIMETER (ABANDONED AUGUST 11, 2014)
 - PW WATER SUPPLY WELL
 - ⊕ BND-68 SOIL BORING
 - (604.08) GROUNDWATER ELEVATION, FEET ABOVE MSL
 - [618.08] SURFACE WATER ELEVATION, FEET ABOVE MSL
 - (NM) NOT MEASURED
 - - - 606 --- WATER TABLE CONTOUR (0.5' INTERVAL) (DASHED WHERE INFERRED)
 - GROUNDWATER FLOW DIRECTION

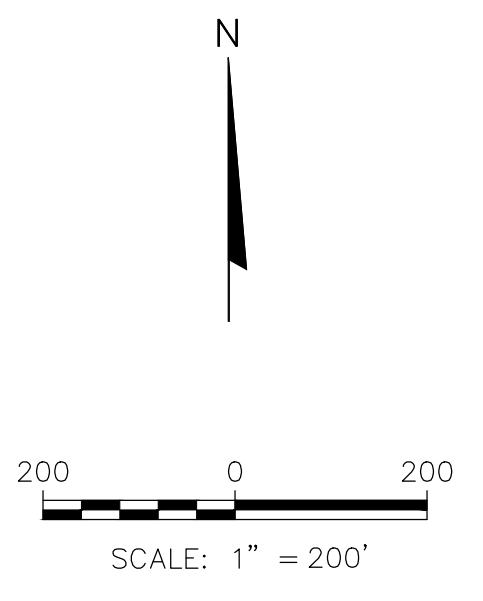
- NOTES**
1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JENKINS SURVEY & DESIGN, INC. FIELD WORK PERFORMED BY JENKINS SURVEY & DESIGN, INC. FROM JUNE 12 TO JULY 27, 2006, AUGUST 1 TO AUGUST 17, 2007, AND WEEK OF SEPTEMBER 10, 2008.
 2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN STATE PLANE SOUTH ZONE, WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
 3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL). TOPOGRAPHIC CONTOUR INTERVAL IS ONE FOOT.
 4. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED BY SCS ENGINEERS ON OCTOBER 1-2, 2015.
 5. SG-10 AND SG-11 WERE DRY ON OCTOBER 1-2, 2015.



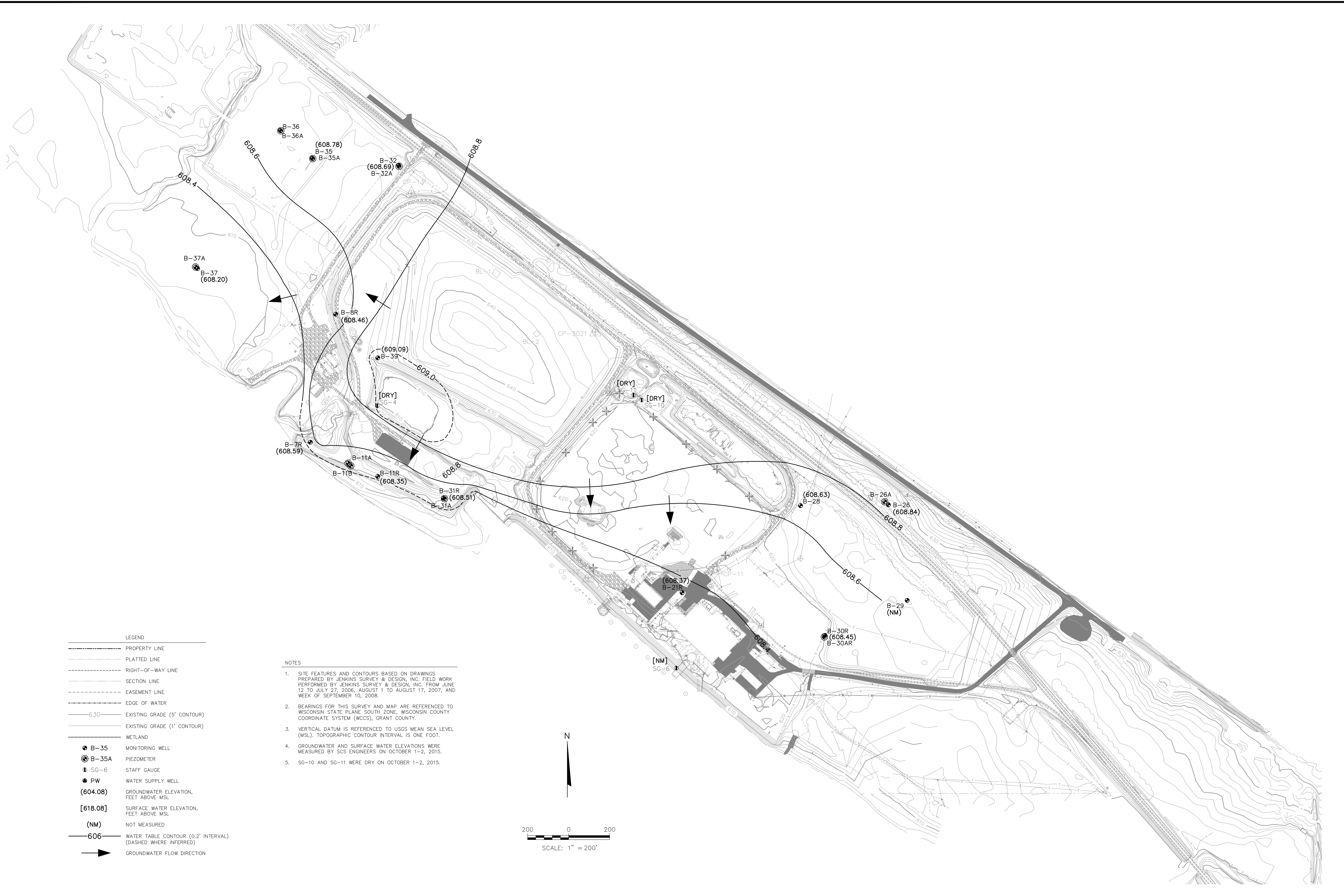


- LEGEND**
- PROPERTY LINE
 - PLATTED LINE
 - RIGHT-OF-WAY LINE
 - SECTION LINE
 - EASEMENT LINE
 - EDGE OF WATER
 - 630 --- EXISTING GRADE (5' CONTOUR)
 - --- EXISTING GRADE (1' CONTOUR)
 - WETLAND
 - B-35 MONITORING WELL
 - ⊙ B-35A PIEZOMETER
 - ⊖ SG-6 STAFF GAUGE
 - PW WATER SUPPLY WELL
 - (604.08) GROUNDWATER ELEVATION, FEET ABOVE MSL
 - [618.08] SURFACE WATER ELEVATION, FEET ABOVE MSL
 - (NM) NOT MEASURED
 - 606 --- WATER TABLE CONTOUR (0.2' INTERVAL) (DASHED WHERE INFERRED)
 - GROUNDWATER FLOW DIRECTION

- NOTES**
1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JENKINS SURVEY & DESIGN, INC. FIELD WORK PERFORMED BY JENKINS SURVEY & DESIGN, INC. FROM JUNE 12 TO JULY 27, 2006, AUGUST 1 TO AUGUST 17, 2007, AND WEEK OF SEPTEMBER 10, 2008.
 2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN STATE PLANE SOUTH ZONE, WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
 3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL). TOPOGRAPHIC CONTOUR INTERVAL IS ONE FOOT.
 4. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED BY SCS ENGINEERS ON OCTOBER 16, 2013.
 5. SG-10 AND SG-11 WERE DRY ON OCTOBER 16, 2013.
 6. INFERRED WATER TABLE CONTOURS AROUND SLAG DEWATERING POND AND WPDES BASINS ARE BASED ON THE HISTORICAL ASSUMPTION THAT SURFACE WATER IN THE POND AND BASINS IS HYDRAULICALLY CONNECTED TO GROUNDWATER.

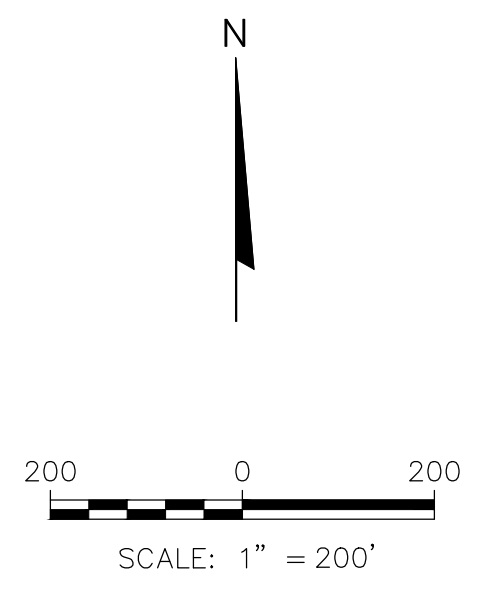


12/05/16 12:05:16 PM



LEGEND	
---	PROPERTY LINE
---	PLATTED LINE
---	RIGHT-OF-WAY LINE
---	SECTION LINE
---	EASEMENT LINE
---	EDGE OF WATER
630	EXISTING GRADE (5' CONTOUR)
---	EXISTING GRADE (1' CONTOUR)
---	WETLAND
● B-35	MONITORING WELL
⊙ B-35A	PIEZOMETER
⊕ SG-6	STAFF GAUGE
● PW	WATER SUPPLY WELL
(604.08)	GROUNDWATER ELEVATION, FEET ABOVE MSL
[618.08]	SURFACE WATER ELEVATION, FEET ABOVE MSL
(NM)	NOT MEASURED
606	WATER TABLE CONTOUR (0.2' INTERVAL) (DASHED WHERE INFERRED)
→	GROUNDWATER FLOW DIRECTION

- NOTES**
1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JENKINS SURVEY & DESIGN, INC. FIELD WORK PERFORMED BY JENKINS SURVEY & DESIGN, INC. FROM JUNE 12 TO JULY 27, 2006, AUGUST 1 TO AUGUST 17, 2007, AND WEEK OF SEPTEMBER 10, 2008.
 2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN STATE PLANE SOUTH ZONE, WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
 3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL). TOPOGRAPHIC CONTOUR INTERVAL IS ONE FOOT.
 4. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED BY SCS ENGINEERS ON OCTOBER 1-2, 2015.
 5. SG-10 AND SG-11 WERE DRY ON OCTOBER 1-2, 2015.



APPENDIX C

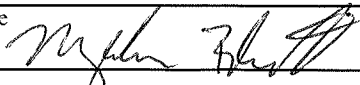
Select Test Pit, Boring, and Push Core Logs

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Alliant-Nelson Dewey SCS#: 25216054.00		License/Permit/Monitoring Number		Boring Number GP-18	
Boring Drilled By: Name of crew chief (first, last) and Firm Craig Kinzer Direct Push Analytical			Date Drilling Started 8/3/2016		Date Drilling Completed 8/3/2016
Drilling Method DPT	WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	
Surface Elevation 620.05 Feet	Borehole Diameter 2.0 in.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>	State Plane 479,201 N, 738,771 E S/C/N	Lat _____ "	Local Grid Location
NE 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W	Long _____ "	Feet <input type="checkbox"/> N	Feet <input type="checkbox"/> E	<input type="checkbox"/> S	<input type="checkbox"/> W
Facility ID		County Grant	County Code 22	Civil Town/City/ or Village Cassville	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	33		1	Topsoil, light brown, slight plasticity	ML									
			2	POORLY GRADED SAND, light brown, fine to coarse, few gravel	SP						M			
			3	LEAN CLAY, black, firm, medium plasticity	CL									
S2	34		4											
			5	SILTY SAND, light brown, fine to medium	SM						M			
S3	35		6											
			7	LEAN CLAY, black/gray, firm	CL									
			8	POORLY GRADED SAND, light brown, fine to coarse	SP							W		
			9											
			10											
			11											
			12	End of boring @ 12' Abandoned with bentonite chips										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718 Tel: (608) 224-2830 Fax:

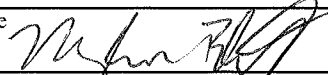
This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Alliant-Nelson Dewey SCS#: 25216054.00		License/Permit/Monitoring Number		Boring Number GP-19	
Boring Drilled By: Name of crew chief (first, last) and Firm Craig Kinzer Direct Push Analytical			Date Drilling Started 8/3/2016	Date Drilling Completed 8/3/2016	Drilling Method DPT
WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	Surface Elevation 620.00 Feet	Borehole Diameter 2.0 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 478,946 N, 738,964 E S/C/N NE 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W			Lat _____" Long _____"	Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID	County Grant	County Code 22	Civil Town/City/ or Village Cassville		

Sample	Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
										Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	41			1	Topsoil	ML									
				2	LEAN CLAY with SILT, brown, dense, plastic	CL						M			
S2	33			5	SLAG, black, fine sand-sized	FILL									
				6	LEAN CLAY with SILT, black	CL					M				
S3	38			7	SILTY SAND, black, fine to medium, dense	SM									
				8	POORLY GRADED SAND, light brown/yellow, fine, few gravel, with silt	SM					M/W				
				12	End of boring @ 12' Abandoned with bentonite chips										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718 Tel: (608) 224-2830 Fax:


This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Alliant-Nelson Dewey SCS#: 25216054.00			License/Permit/Monitoring Number		Boring Number SED-1	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Wyatt JF Brennan			Date Drilling Started 8/3/2016		Date Drilling Completed 8/3/2016	
Drilling Method Push Probe			Final Static Water Level Feet		Surface Elevation Feet	
WI Unique Well No.		DNR Well ID No.		Common Well Name		Borehole Diameter 3.0 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>			Local Grid Location			
State Plane 478,820 N, 739,175 E S/C/N			Lat _____ "			Feet <input type="checkbox"/> N
NE 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W			Long _____ "			Feet <input type="checkbox"/> E
						Feet <input type="checkbox"/> S
						Feet <input type="checkbox"/> W
Facility ID		County Grant		County Code 22		Civil Town/City/ or Village Cassville

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
SI	16		1	FLY ASH, black Few pieces of rounded gravel at 16" End of boring @ 16"	FILL										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature  Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718 Tel: (608) 224-2830 Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Alliant-Nelson Dewey		License/Permit/Monitoring Number SCS#: 25216054.00		Boring Number SED-2	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Wyatt JF Brennan			Date Drilling Started 8/3/2016	Date Drilling Completed 8/3/2016	Drilling Method Push Probe
WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	Surface Elevation Feet	Borehole Diameter 3.0 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 479,100 N, 738,990 E S/C/N NE 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W			Lat _____ " _____ "	Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> S	
Facility ID		County Grant	County Code 22	Civil Town/City/ or Village Cassville	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S1	16		1	FLY ASH, black to dark gray, little organic matter	FILL										
S2				SILTY SAND, brown, fine to medium, little clay, trace organics End of boring at 1'4"	SM										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Firm SCS Engineers
2830 Dairy Drive Madison, WI 53718 Tel: (608) 224-2830 Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

SCS ENGINEERS

TEST PIT LOG

Project: Nelson Dewey Test Pit No.: SED-3
 Client: Alliant
 Project No.: 25216054.00 Surface Elevation: ~613
 Location: Cassville, WI Date Excavated: 7/20/2016

Sample No. (Depth)	Depth (ft.)	Soil/Rock Description and Geologic Origin for Each Major Geologic Unit	USCS
(0-4.5)	1 2 3 4	SLAG	FILL
(4.5-5.5)	5	POORLY GRADED SAND, brown, fine-medium, little silt	SP
	6	End of Test Pit at 5.5 feet.	
	7	Location moved to west to get into high area to allow sampling with an excavator.	

Water Level While Excavating: At Completion: Depth to Water: Depth to Cave In:	None	General Notes	Equipment Used:	Link-Belt 250x3
	None		Excavated by:	Wamsley Excavating
	None		Logged by:	Joe Larson
	None		Edited by:	MDB

SCS ENGINEERS

TEST PIT LOG

Project: Nelson Dewey Test Pit No.: SED-4
 Client: Alliant
 Project No.: 25216054.00 Surface Elevation: ~613
 Location: Cassville, WI Date Excavated: 7/19/2016

Sample No. (Depth)	Depth (ft.)	Soil/Rock Description and Geologic Origin for Each Major Geologic Unit	USCS
(0-4.8)		SILT, light brown, trace fine gravel, very moist	ML
	1	SILT, brown, trace fine sand, layering black/dark grey and brown, very moist	ML
	2		
	3	SILT, dark grey to black	ML
	4		
(4.8-5.5)	5	SAND, dark grey, fine-medium	SP
	6	End of Test Pit at 6.0 feet.	
	7		

Water Level While Excavating: At Completion: Depth to Water: Depth to Cave In:	None	General Notes	Equipment Used:	Link-Belt 250x3
	None		Excavated by:	Long Stick Excavator
	None		Logged by:	Wamsley Excavating
	None		Edited by:	Rick Guenther/Joe Larson
			MDB	Date: 9/7/16

SCS ENGINEERS

TEST PIT LOG

Project: Nelson Dewey Test Pit No.: EX-1
 Client: Alliant
 Project No.: 25216054.00 Surface Elevation: ~614.5
 Location: Cassville, WI Date Excavated: 7/20/2016

Sample No. (Depth)	Depth (ft.)	Soil/Rock Description and Geologic Origin for Each Major Geologic Unit	USCS
		SLAG	FILL
	1		
	2		
	3		
(3.5-4.0)	4	SILTY SAND, brown, fine	SM
	4	End of Test Pit at 4.0 feet.	
	5		
	6		
	7		

Water Level While Excavating: At Completion: Depth to Water: Depth to Cave In:		General Notes	Equipment Used:	Link-Belt 250x3
	None			Long Stick Excavator
	None		Excavated by:	Wamsley Excavating
	None		Logged by:	Joe Larson
None			Edited by:	MDB
				Date: 8/18/16

SCS ENGINEERS

TEST PIT LOG

Project: Nelson Dewey Test Pit No.: EX-2
 Client: Alliant
 Project No.: 25216054.00 Surface Elevation: ~614
 Location: Cassville, WI Date Excavated: 7/20/2016

Sample No. (Depth)	Depth (ft.)	Soil/Rock Description and Geologic Origin for Each Major Geologic Unit	USCS
	1	SILT, brown, very soft	ML
(1.4-4.4)	2	SILT, dark brown (sediment)	ML
	3		
	4		
(4.4-5.5)	5	SAND, light brown	SP
	6	End of Test Pit at 5.5 feet.	
	7		

Water Level While Excavating: At Completion: Depth to Water: Depth to Cave In:	None	General Notes	Equipment Used:	Link-Belt 250x3
	None		Excavated by:	Long Stick Excavator
	None		Logged by:	Wamsley Excavating
	None		Edited by:	Joe Larson
			MDB	Date: 8/18/16