June 15, 2023
File No. 25220183.00

Mr. Brian Clepper
Columbia Energy Center
W8375 Murray Road
Pardeeville, WI 53954

Subject: Columbia Energy Center Ash Disposal Facility – Monitoring Well Construction Documentation, MW-313, MW-314, and MW-315

Dear Mr. Clepper:

SCS Engineers (SCS) has completed the installation of three groundwater monitoring wells at the Columbia Energy Center in Pardeeville, Wisconsin (**Figure 1**). These wells were installed to support compliance with the final Coal Combustion Residuals Rule (40 CFR 257.50-107) and the groundwater monitoring requirements of NR 507.15(3).

MW-313, MW-314, and MW-315 were installed as water table observation wells to provide data on shallow groundwater flow and water quality at the downgradient edge of Modules 10 and 11 of the ADF, which were under construction at the time of well installation. The documentation for wells MW-313, MW-314, and MW-315A must be placed in the federal CCR Rule Operating Record for the facility and submitted to the Department of Natural Resources for approval in accordance with NR 507.14. The monitoring well locations are shown on **Figure 2**.

BORING LOGS

The borings for monitoring wells MW-314 and MW-315 were drilled on December 1 and 2, 2022, by Horizon Construction and Exploration, LLC, of Fredonia, Wisconsin. The boring for MW-313 could not be completed on the same mobilization because the drilling rig encountered refusal at a depth shallower than the water table. This boring was named B-313X and was abandoned. Horizon remobilized to the site on December 19, 2022, to drill and install MW-313. All drilling and well construction was performed under the supervision of SCS.

Native soils encountered in the soil borings were poorly graded sand. The boring logs are located in **Appendix A**.

MONITORING WELL CONSTRUCTION/DEVELOPMENT

Monitoring wells MW-314 and MW-315 were installed by Horizon on December 1 and 2, 2022, and MW-313 was installed by Horizon on December 19, 2022. SCS completed well development on December 30, 2022, and surveyed the wells on January 5, 2023.

The well construction and development forms for the new wells, and abandonment documentation for B-313X, are included in **Appendix B**. A Well Information Form (Wisconsin Department of Natural Resources form 4400-089) is also included in **Appendix B**. Photographs of the monitoring wells are included in **Appendix C**.

SCS completed hydraulic conductivity testing at the wells on December 30, 2022. Conductivity test results are included in **Appendix D** and are summarized below. These values are the typical range for the soil types observed within the screened intervals.

Well	Calculated Hydraulic Conductivity (cm/sec)
MW-313	1.8×10^{-3}
MW-314	2.2×10^{-3}
MW-315	1.3×10^{-3}

Please contact us at 608-224-2830 if you have any questions about the well documentation.

Sincerely,

Meghan Blodgett. PG
Senior Project Hydrogeologist
SCS Engineers

Thomas J. Karwoski, PG
Senior Project Manager
SCS Engineers

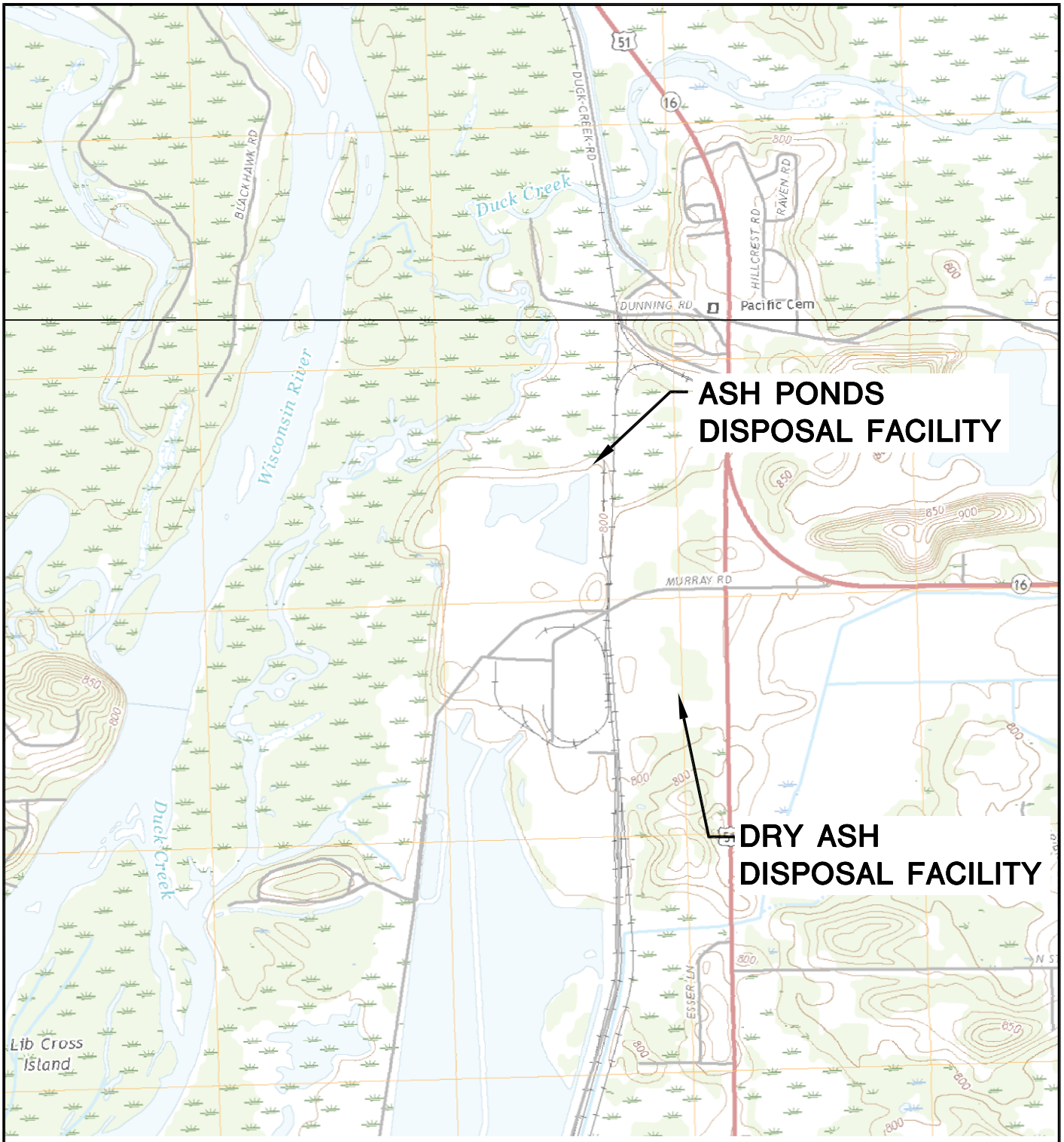
MDB/AJR_REO/TK/SCC

cc: Jeff Maxted, Alliant Energy
Matt Bizjack, Alliant Energy

Encl. Figure 1 – Site Location Map
Figure 2 – Site Plan and Monitoring Well Locations
Appendix A – Boring Logs
Appendix B –Well Construction, Development, and Abandonment Forms
Appendix C – Site Photographs
Appendix D – Hydraulic Conductivity Test Results

I:\25220183.00\Deliverables\Monitoring Well Documentation\MW313 MW314 MW315\230615_Clepper_Well Documentation Letter_COL_Final.docx

Figures

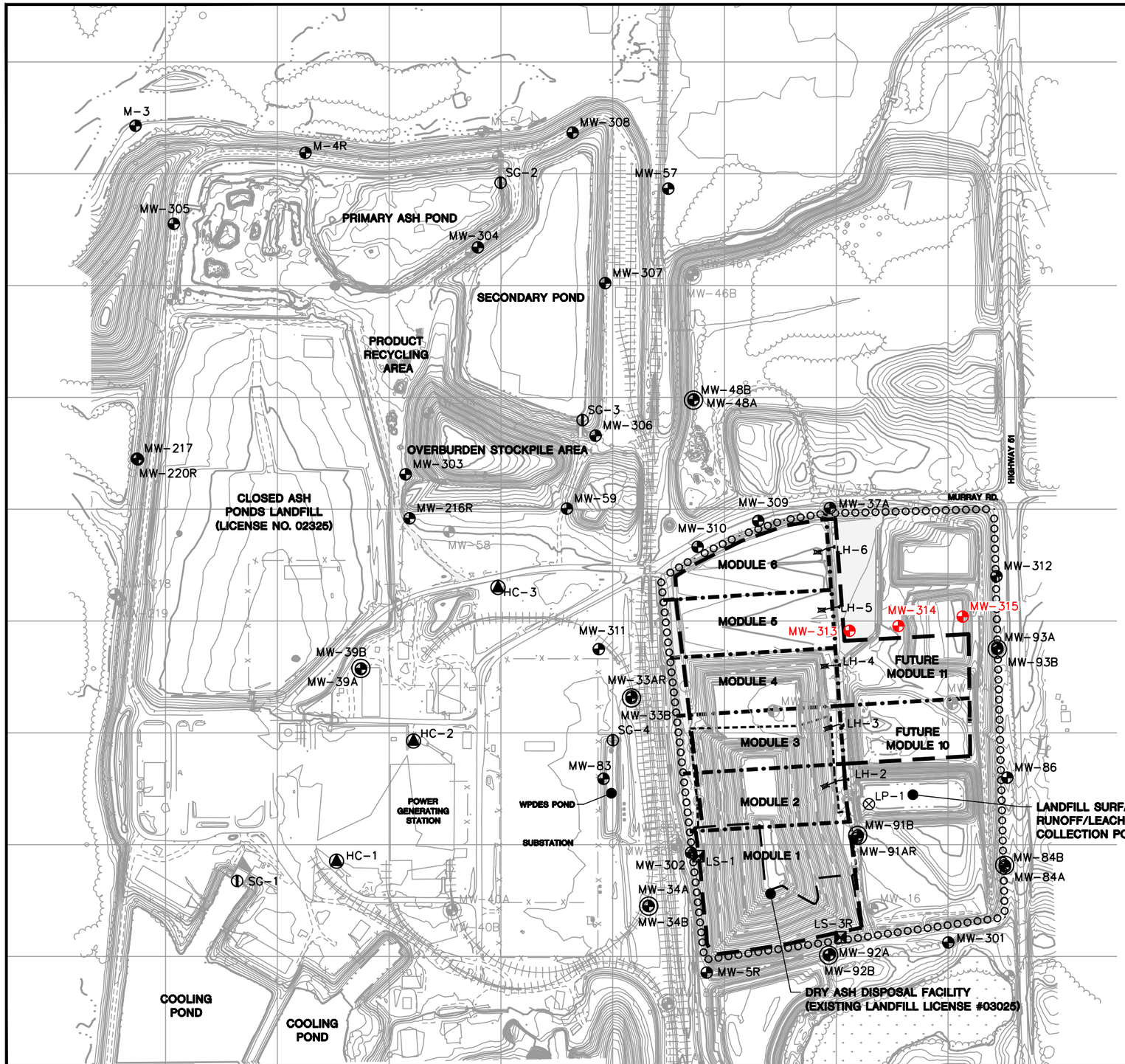


N

POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT: ALLIANT ENERGY COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WI 53954	SITE: ALLIANT ENERGY COLUMBIA ENERGY CENTER PARDEEVILLE, WI	SITE LOCATION MAP	
PROJECT NO. 25220067.00	DRAWN BY: BSS	ENGINEER: SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE 1
DRAWN: 12/02/2019	CHECKED BY: MDB		
REVISED: 01/10/2020	APPROVED BY: TK 04/10/2020		

I:\25220067.00\Drawings\ASD Mod 1-3 LF\Site Location Map.dwg, 4/12/2020 7:05:09 PM



LEGEND

- EXISTING MAJOR CONTOUR (10' INTERVAL)
- EXISTING MINOR CONTOUR (2' CONTOUR)
- EXISTING FENCELINE
- EXISTING TRACKS
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EDGE OF WATER
- DRY ASH DISPOSAL FACILITY LIMITS
- LIMITS OF WASTE
- LINER PHASE/MODULE LIMITS
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- SURFACE WATER SAMPLE LOCATION
- LYSIMETER
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- LEACHATE HEADWELL
- NEW WATER TABLE WELL

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEY BY SCS ENGINEERS IN MAY 2016, JUNE 2016, OCTOBER 2016, NOVEMBER 2016, APRIL 2017, NOVEMBER 2017, JULY 2018, AUGUST 2018, FEBRUARY 2019, MAY 2019, SEPTEMBER 2020, AUGUST 2021, AND NOVEMBER 2021.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. MONITORING WELLS MW-301 THROUGH MW-305 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 11-13, 2015.
5. MONITORING WELLS MW-306 THROUGH MW-308 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 14-15, 2016.
6. MONITORING WELLS MW-309 THROUGH MW-311 INSTALLED BY BADGER STATE DRILLING ON FEBRUARY 13-14, 2018.
7. MONITORING WELLS MW-93A, MW-93B, AND MW-312 WERE INSTALLED BY CASCADE ENVIRONMENTAL ON MARCH 23-28, 2022.
8. MONITORING WELLS MW-313, MW-314, AND MW-315 WERE INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON DECEMBER 12 AND 19, 2022.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25222067.00	DRAWN BY:	KP
DRAWN:	12/02/2019	CHECKED BY:	MDB 6/15/2023
REVISED:	01/27/2023	APPROVED BY:	MDB 6/15/2023

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
DRY ASH DISPOSAL FACILITY
PARDEEVILLE, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE 2

I:\25222067.00\Drawings\Whole Site\Site Plan and Monitoring Well Locations.dwg, 1/27/2023 9:22:13 AM

Appendix A

Boring Logs

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	03025	B-313X

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Sweet Horizon Construction and Exploration	12/1/2022	12/1/2022	Geoprobe/HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane Located 1.5' west of MW-313 N, E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
111049180	Columbia	11	Town of Pacific

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	SILTY GRAVEL, fine to medium sand, fine to coarse gravel, tan, angular gravel (base course/fill).	GM									
			2	POORLY GRADED SAND, fine to medium, medium brown (7.5Y 5/4), trace angular fine to coarse gravel, trace silt, uniform (alluvium).										
S1	44		3							M				Geoprobed to 35 ft. Overdrilled with HSA to 27ft and hit refusal.
			4											
			5											
			6											
			7											
S2	47		8		SP					M				
			9											
			10											
			11											
			12											
S3	60		13							M				
			14											
			15											

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

Signature	Firm		Tel:
	SCS Engineers	2830 Dairy Drive, Madison, WI 53718 608-224-3830	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 be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-313X Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
S4	53		18							M				
			19											
			20											
			21											
			22											
S5	60		23							M				
			24											
			25		SP									
			26											
S6	30		27							M				Tough/hard drilling, only pushed 2.5 ft
			28											
S7	30		29							M				HSA refusal at approximately 27 ft; large boulder at depth
			30											
			31											
			32											
S8	60		33	Pulverized gravel at base of core.						M				Geoprobe refusal at 35 ft
			34											
			35	End of Borehole at 35 ft below ground surface. Abandoned borehole with 3/8" bentonite chips. Attempted monitoring wel MW-313 installation.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	03025	MW-313

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Sweet Horizon Construction and Exploration	12/19/2022	12/19/2022	rotosonic

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
WC188		MW-313	Feet MSL	~817.80 Feet MSL	6.0 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,957 N, 2,124,559 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
111049180	Columbia	11	Town of Pacific

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1–15	Blind drilled to 32 feet below ground surface. See boring log B-313X for lithology from 0-32 feet.										

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:
608-224-3830 Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-313 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16											
			17											
			18											
			19											
			20											
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32	POORLY GRADED SAND, fine to medium, brown (7.5Y, 5/4), trace angular to sub-rounded fine to coarse gravel, trace silt, massive, (alluvium).										
			33											
			34											
			35											
			36		SP									
			37											
			38											
			39							W				Depth to water ~34-35 ft
			40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-313 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			41		SP									
			42											
			43											
			44											
			45	End of boring at 45 feet below ground surface. Installed monitoring well MW-313 at 43 feet.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	03025	MW-314

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Sweet Horizon Construction and Exploration	12/1/2022	12/1/2022	Geoprobe/HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
WC199		MW-314	Feet MSL	~819.07 Feet MSL	2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 542,978 N, 2,124,778 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
111049180	Columbia	11	Town of Pacific

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	36		1–5	POORLY GRADED SAND, fine to coarse, light brown (fill).	SP					M				Geoprobed to 45 ft, overdrilled with HSA to 45 ft
S2	36		6–10	POORLY GRADED SAND, fine to medium, light olive brown (2.5Y, 5/6), trace sub-rounded to sub-angular fine to coarse gravel (alluvium).	SP					M				
S3	32		11–15							M				

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

Signature	Firm		Tel:
	SCS Engineers	2830 Dairy Drive, Madison, WI 53718 608-224-3830	Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-314 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S4	36		16–40		SP					M				
S5	55									M				
S6	60									M				
S7	60									M+				Measured water at approximately 34 ft in augers
S8	60									W				Depth to water ~36 ft

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-314 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S9	60		41 42 43 44 45		SP					W				
				End of borehole at 45 ft. Installed MW-314 to 43.5 ft.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Columbia Dry Ash Disposal Facility SCS#: 25220183.00	03025	MW-315

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Adam Sweet Horizon Construction and Exploration	12/1/2022	12/1/2022	Geoprobe/HSA

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
PM289		MW-315	Feet MSL	~817.28 Feet MSL	2.0/8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 543,020 N, 2,125,065 E S/C/N
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
111049180	Columbia	11	Town of Pacific

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	42		1–5	POORLY GRADED SAND, fine to medium sand, fine to coarse gravel, medium brown (fill).	SP					M				Geoprobed to 30 ft and hit refusal. Overdrilled to 45 ft with HSA.
S2	37		5–10	POORLY GRADED SAND, fine to medium sand, light brown (7.5YR, 6/4), with fine to coarse sub-rounded to sub-angular gravel, (alluvium).	SP					M				
S3	40		10–15							M				

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

Signature	Firm		Tel:
	SCS Engineers	2830 Dairy Drive, Madison, WI 53718 608-224-3830	Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-315 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample 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: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S4	60		16–20							M				
S5	60		21–25							M				
S6	27		26–30		SP					M				Sand got more compacted and continued to get more compacted.
S7	4		31–35							W				Attempt of split spoon sample at 34 ft and hit refutal. Depth to waterat ~ 34 ft.
			36–40											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-315 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
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	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			41		SP									
			42											
			43											
			44											
			45	End of boring at 45 feet. Installed MW-315 to 43 feet.										

Appendix B

Well Construction, Development, and Abandonment Forms

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Dry Ash Disposal Facility	Local Grid Location of Well: ___ ft. ☐N. ☐S. ___ ft. ☐E. ☐W.	Well Name: MW-313
Facility License, Permit or Monitoring No.: 03025	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No.: WC188 / DNR Well ID No.: ___
Facility ID: 111049180	St. Plane 542956.598 ft. N, 2124559.041 ft. E. S/C/N	Date Well Installed: 12 / 019 / 2022 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Adam Sweet / Horizon Construction and Exploration
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation ___ ft. MSL

B. Well casing, top elevation 820.30 ft. MSL

C. Land surface elevation ~817.80 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☐ 41 / Other ☒ Rotosonic

15. Drilling fluid used: Water ☒ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required): Horizon's drilling shop

E. Bentonite seal, top ~817.80 ft. MSL or 0 ft.

F. Fine sand, top ~788.80 ft. MSL or 29 ft.

G. Filter pack, top ~786.80 ft. MSL or 31 ft.

H. Screen joint, top ~784.80 ft. MSL or 33 ft.

I. Well bottom ~774.80 ft. MSL or 43 ft.

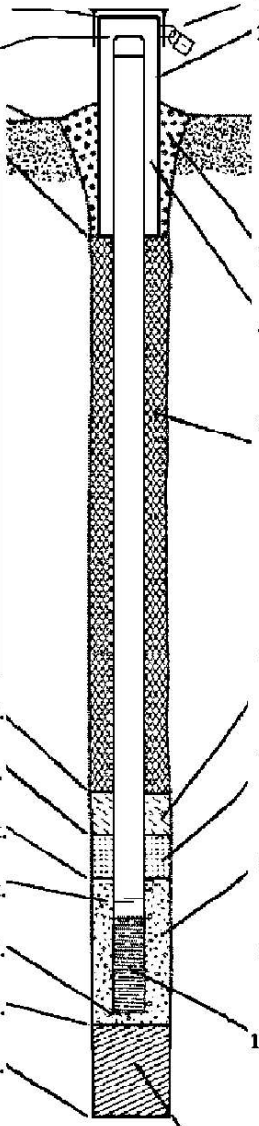
J. Filter pack, bottom ~772.80 ft. MSL or 45 ft.

K. Borehole, bottom ~772.80 ft. MSL or 45 ft.

L. Borehole, diameter 6.00 in.

M. O.D. well casing 2.31 in.

N. I.D. well casing 2.21 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Three bollards

3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐

4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☒ Filter sand

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 5.22 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #5 ☒
b. Volume added 0.36 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #7 ☒
b. Volume added 2.52 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☐ 14 / Other ☒ SP- native, cave in

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

Signature: Jackie Rennebohm | Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL-Columbia Dry Ash Disposal Facility	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-314
Facility License, Permit or Monitoring No.: 03025	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or	Wis. Unique Well No.: WC199 / DNR Well ID No.: ____
Facility ID: 111049180	St. Plane 542978.081 ft. N, 2124778.237 ft. E. S/C/N	Date Well Installed: 12 / 01 / 2022 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Adam Sweet / Horizon Construction and Exploration
Distance from Waste/Source ____ ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 821.57 ft. MSL
C. Land surface elevation ~819.07 ft. MSL
D. Surface seal, bottom ____ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ____

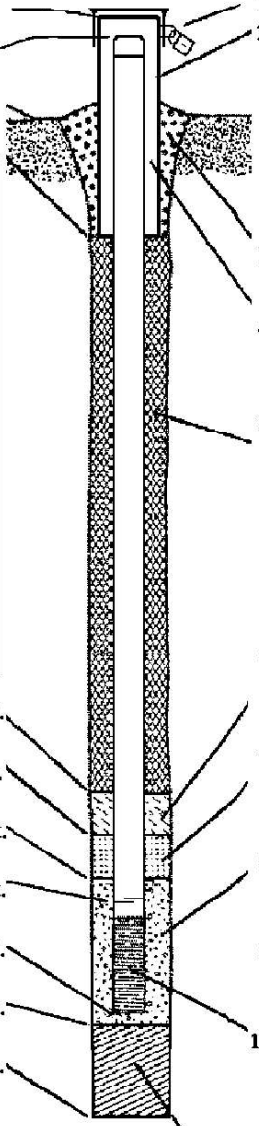
15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required):
NA

E. Bentonite seal, top ~819.07 ft. MSL or 0 ft.
F. Fine sand, top ~789.57 ft. MSL or 29.5 ft.
G. Filter pack, top ~787.57 ft. MSL or 31.5 ft.
H. Screen joint, top ~785.57 ft. MSL or 33.5 ft.
I. Well bottom ~775.57 ft. MSL or 43.5 ft.
J. Filter pack, bottom ~775.57 ft. MSL or 43.5 ft.
K. Borehole, bottom ~774.07 ft. MSL or 45 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.31 in.
N. I.D. well casing 2.21 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐ ____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Three bollards
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☒ ____
Filter sand
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 10.47 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size ☒
a. Red Flint #5
b. Volume added 0.71 ft^3
8. Filter pack material: Manufacturer, product name & mesh size ☒
a. Red Flint #7
b. Volume added 4.26 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☐ 14 / Other ☒ ____
SP- native, cave in

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

Signature	Firm
Jackie Rennebohm	SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25220183

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name WPL-Columbia Dry Ash Disposal Facility	**Local Grid Location of Well** ☐ ft. ☐N. ☐S. ☐ ft. ☐E. ☐W.	**Well Name** MW-315
Facility License, Permit or Monitoring No. 03025	**Local Grid Origin** ☐ (estimated: ☐) or **Well Location** ☐ Lat. ° ' " Long. ° ' " or	**Wis. Unique Well No.** PM289 — **DNR Well ID No.**
Facility ID 111049180	**St. Plane** 543019.956 ft. N, 2125065.014 ft. E. S/C/N	**Date Well Installed** 12 / 2 / 2022 (m m d d y y y y)
Type of Well Well Code 11 / MW	**Section Location of Waste/Source** NW 1/4 of NE 1/4 of Sec. 27, T. 12 N, R. 09 ☒E ☐W	**Well Installed By: Name (first, last) and Firm** Adam Sweet Horizon Construction and Exploration
Distance from Waste/ Source ____ ft. — **Enf. Stds. Apply** ☒	**Location of Well Relative to Waste/Source** u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	**Gov. Lot Number**

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 819.78 ft. MSL

C. Land surface elevation ~817.28 ft. MSL

D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe NA

17. Source of water (attach analysis, if required):
NA

E. Bentonite seal, top ~817.28 ft. MSL or 0 ft.

F. Fine sand, top ~788.28 ft. MSL or 29 ft.

G. Filter pack, top ~786.28 ft. MSL or 31 ft.

H. Screen joint, top ~784.28 ft. MSL or 33 ft.

I. Well bottom ~774.28 ft. MSL or 43 ft.

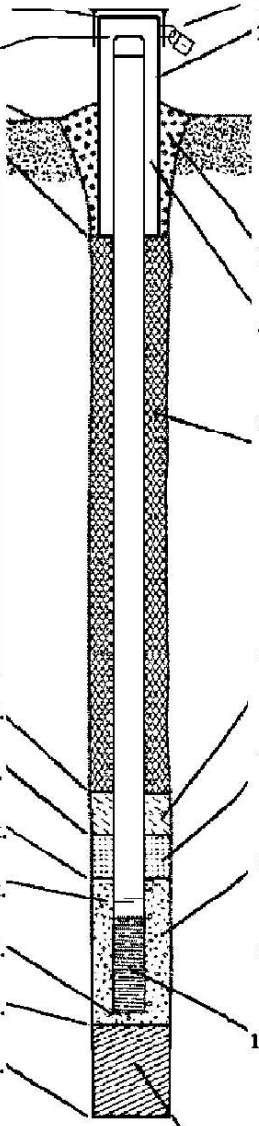
J. Filter pack, bottom ~772.28 ft. MSL or 45 ft.

K. Borehole, bottom ~772.28 ft. MSL or 45 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.31 in.

N. I.D. well casing 2.21 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: three bollards

3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐

4. Material between well casing and protective pipe:
Bentonite ☒ 30
Filter Sand — Other ☒

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 10.23 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #5 ☒
b. Volume added 0.71 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #7 ☒
b. Volume added 4.97 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 14 Other ☐

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

Signature	Firm
Jackie Rennebohm	SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a 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 these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WPL-Columbia Dry Ash Disposal Facility	Columbia	MW-313

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
03025	11	WC188	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 45 min.

4. Depth of well (from top of well casisng) 46.18 ft.

5. Inside diameter of well 2.21 in.

6. Volume of water in filter pack and well casing 10.6 gal.

7. Volume of water removed from well 110.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 37.34 ft.	37.43 ft.
Date	b. 12/30/2022 (m m d d y y y y)	12/30/2022
Time	c. 3:05 ☐ a.m. ☒ p.m.	3:50 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	____.__ inches	____.__ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15 (Describe) clear to light brown at start	Clear ☒ 20 Turbid ☐ 25 (Describe) clear
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 5 gallons/ 2 minutes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: 
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WPL-Columbia Dry Ash Disposal Facility	Columbia	MW-314

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
03025	11	WC199	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 132 min.

4. Depth of well (from top of well casisng) 44.96 ft.

5. Inside diameter of well 2.31 in.

6. Volume of water in filter pack and well casing 10.4 gal.

7. Volume of water removed from well 120.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 37.34 ft.	38.37 ft.
Date	b. 12/30/2022 (m m d d y y y y)	12/30/2022
Time	c. 11:10 ☒ a.m. ☐ p.m.	1:22 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	____.__ inches	____.__ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	creamy brown at start	clear
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 5.0 gallons/ 5 minutes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: 
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25220183.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WPL-Columbia Dry Ash Disposal Facility	Columbia	MW-315

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
03025	11	PM289	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 45.61 ft.

5. Inside diameter of well 2.31 in.

6. Volume of water in filter pack and well casing 10.64 gal.

7. Volume of water removed from well 120.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☐ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 36.34 ft.	36.34 ft.
Date	b. 12/30/2022 (m m d d y y y y)	12/30/2022
Time	c. 10:40 ☒ a.m. ☐ p.m.	12:40 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15 (Describe) brown at start	Clear ☒ 20 Turbid ☐ 25 (Describe) clear
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Adam Last Name: Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
31 degrees F and cloudy
Purge rate= 1gallon/minute

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: Wisconsin Power and Light Co. - Alliant Energy
Street: 1919 Alliant Energy Center Way
City/State/Zip: Madison, WI 53713

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Adam Watson
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wis., Dept. of Natural Resources SCS No. 25220183.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, 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. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☒ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Columbia	NA	

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ NW	¼ NE	Section	Township	Range
or Gov't Lot #		27	12 N	09 ☒ E ☐ W

Well Street Address: W8375 Murray Road

Well City, Village or Town	Well ZIP Code
Pardeeville	53954

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
failed MW attempt	NA

2. Facility / Owner Information

Facility Name: WPL - Columbia Dry Ash
Facility ID (FID or PWS): 111049180
License/Permit/Monitoring #: 03025
Original Well Owner: Wisconsin Power and Light Co. - Alliant Energy
Present Well Owner: Wisconsin Power and Light Co. - Alliant Energy
Mailing Address of Present Owner: 1919 Alliant Energy Center Way

City of Present Owner	State	ZIP Code
Madison	WI	53713

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/01/2022
If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
35	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
8.25" (0-29') / 2.0" (29-35')	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
NA	~34-35 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☒ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☒ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	35	~11 ft3	--

6. Comments

Boring B313X. Attempted monitoring well installation, geoprobe refusal at 35 feet and hollow stem auger refusal at 29 feet.

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Horizon Construction and Exploration		12/01/2022

Street or Route	Telephone Number
764 Tower Drive	(262) 692-3347

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Jackie Rennebohm	12/01/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

GROUNDWATER MONITORING WELL AND POINT INFORMATION

Form 4400-089 (R 04/19)

Use the Groundwater Monitoring Well and Point Information Form to record identification, location and construction information for groundwater monitoring wells and any other sample "points," (e.g., gas probes, lysimeters, leachate collection systems, etc.), that are part of the environmental monitoring program. **NOTE:** Not all fields will be applicable to all point types. Only **one** coordinate reference system may be used per site. Allowable coordinate systems are listed below. (Coordinates for each system require a minimum number of digits as described below.) Local grid coordinates cannot be accepted. Identify the Coordinate Reference System, Datum and Method used.

Facility Name	County	Facility ID No. (FID)	License, Permit or Monitoring No.	Date	Completed By (Name and Firm)
WPL - Columbia Energy Center	Columbia		03025	06/22/2022	Meghan Blodgett, SCS Engineers

DNR Point ID No.	Point Name[1]	WUWN[2] (if app.)	Type	Status	Gradient	*Enf. Stds. Y/N.*	Construction Date	Elevations msl (ft)		Well Casing			Well Screen Length (ft)	Well (Pt) Total Length[5] (ft)	Coordinates[6,7,8,9]	
								Ground Surface	Well Top (of casing)	Type	Diam[3] (in)	Length[4] (ft)			Y / Lat / Northing	X / Long / Easting
	MW-313	WC188	11	A	D	Yes	12/19/2022	817.80	820.30	P	2	36.2	10	46.2	542,956	2,124,559
	MW-314	WC199	11	A	D	Yes	12/01/2022	819.07	821.57	P	2	35.0	10	45.0	542,978	2,124,778
	MW-315	PM289	11	A	D	Yes	12/02/2022	817.28	819.78	P	2	35.6	10	45.6	543,020	2,125,065

[1]Include previous name as well if one exists.

[2]Wisconsin Unique Well Number.

[3]Well Casing Diameter measures inside diameter.

[4]Length of well casing from top of casing to top of screen.

[5]Total length of well from top of casing to bottom of well. *Should equal sum of well casing length and screen length.*

[6]Identify Coordinate Reference System (only one system may be used per site):

- ( ) Lat/Long (Decimal Degrees) WGS84 (min. 8 digits total w/ 6 right of decimal, e.g., -89.123456)

State Plane (min. 2 digits right of decimal)

- ( ) North
- ( ) Central
- (X) South
- ( ) Wisc. Transverse Mercator WTM91 (min. 2 digits right of decimal)
- ( ) Local County Coord. Sys. (WISCRS) (min. digits vary by county)

[7]Identify Projection Datum and units*

- (X) NAD83
- ( ) NAD27
- ( ) NAD83(91)
- ( ) NAD83(11)
- ( ) Other Describe:

Units used for State Plane, WTM or County Coord. Sys:

- ( ) meters
- (•) feet

*NOTE: A datum and units are not required for Lat/Long

[8]Identify the Method Used to Determine the Coordinates:

- (X) GPS001-Survey grade
- ( ) GPS003-Mapping grade/real-time differential correction
- ( ) GPS004-Mapping grade/post processing
- ( ) SRV001-Classical terrestrial surveying techniques
- ( ) OTH001 (Other), Describe:

[9]Y / Lat / Northing describe the vertical axis.

X / Long / Easting describe the horizontal axis.

(include "-" where needed, e.g., -89.123456)

Remarks:
MW-313, MW-314, and MW-315 are CCR Monitoring Wells

Completion of this form is mandatory under chs. 281, 289 and 292, Wis. Stats., and ss. NR 110.25, NR 507.14 and NR 716.15, Wis. Admin. Code

Appendix C

Site Photographs

Columbia Energy Center
W8375 Murray Rd, Pardeeville, WI
SCS Engineers Project #25220183.00

Photo 1: MW-313, looking east.

Photo 2: MW-314, view inside protective cover showing WUWN sticker and compression cap. Compression cap to be replaced with a dedicated pump system & integrated cap.

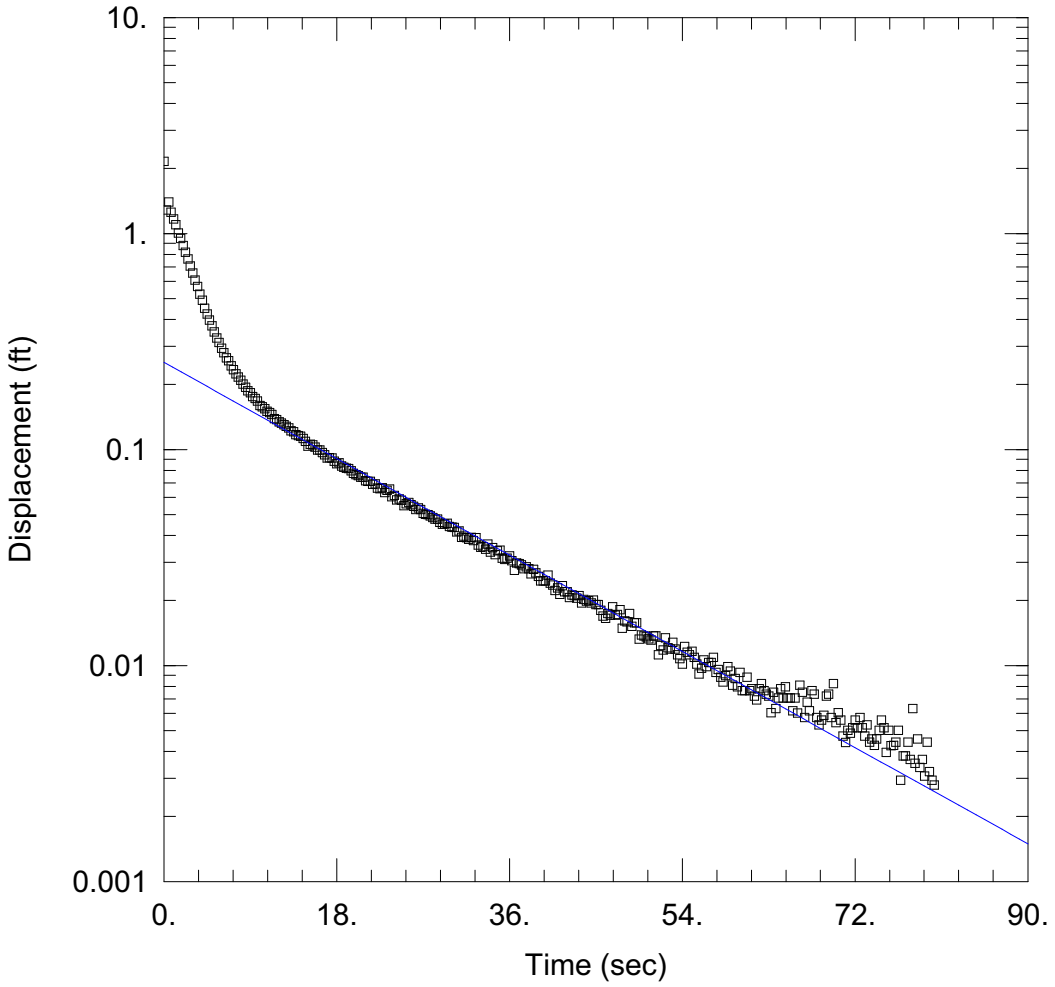
Columbia Energy Center
W8375 Murray Rd, Pardeeville, WI
SCS Engineers Project #25220183.00

Photo 3: MW-315, looking southeast.

Photo 4: Completing abandonment of MW-313X. MW-313 was later installed 1.5 feet east of MW-313X.

Appendix D

Hydraulic Conductivity Test Results



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW313.aqt
Date: 01/24/23 Time: 22:13:07

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-313
Test Date: 12/30/2022

AQUIFER DATA

Saturated Thickness: 100. ft Anisotropy Ratio (Kz/Kr): 1.

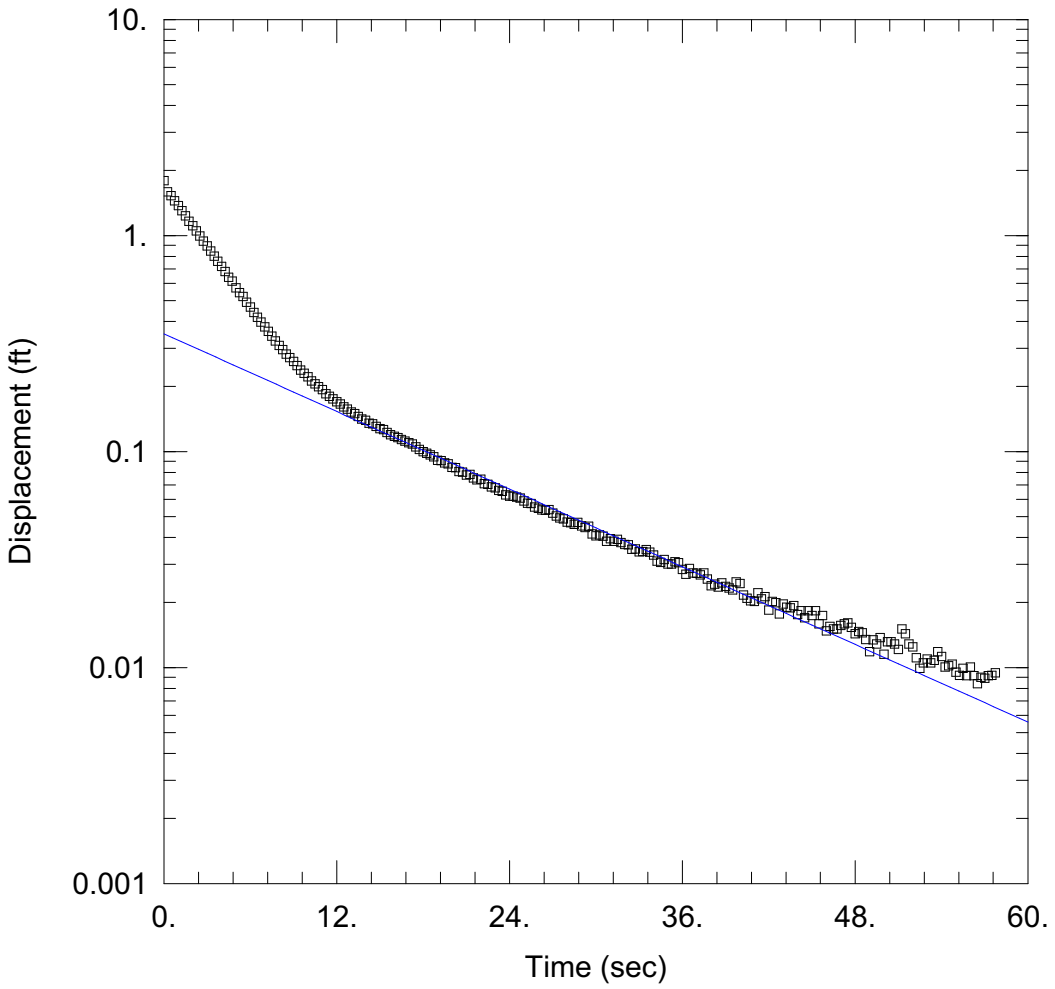
WELL DATA (MW-313)

Initial Displacement: 2.16 ft
Total Well Penetration Depth: 8.75 ft
Casing Radius: 0.09 ft
Static Water Column Height: 8.75 ft
Screen Length: 8.75 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K_r = 0.001768 cm/sec
y0 = 0.2531 ft



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW314.aqt
Date: 01/24/23 Time: 22:12:57

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-314
Test Date: 12/30/2022

AQUIFER DATA

Saturated Thickness: 100. ft Anisotropy Ratio (Kz/Kr): 1.

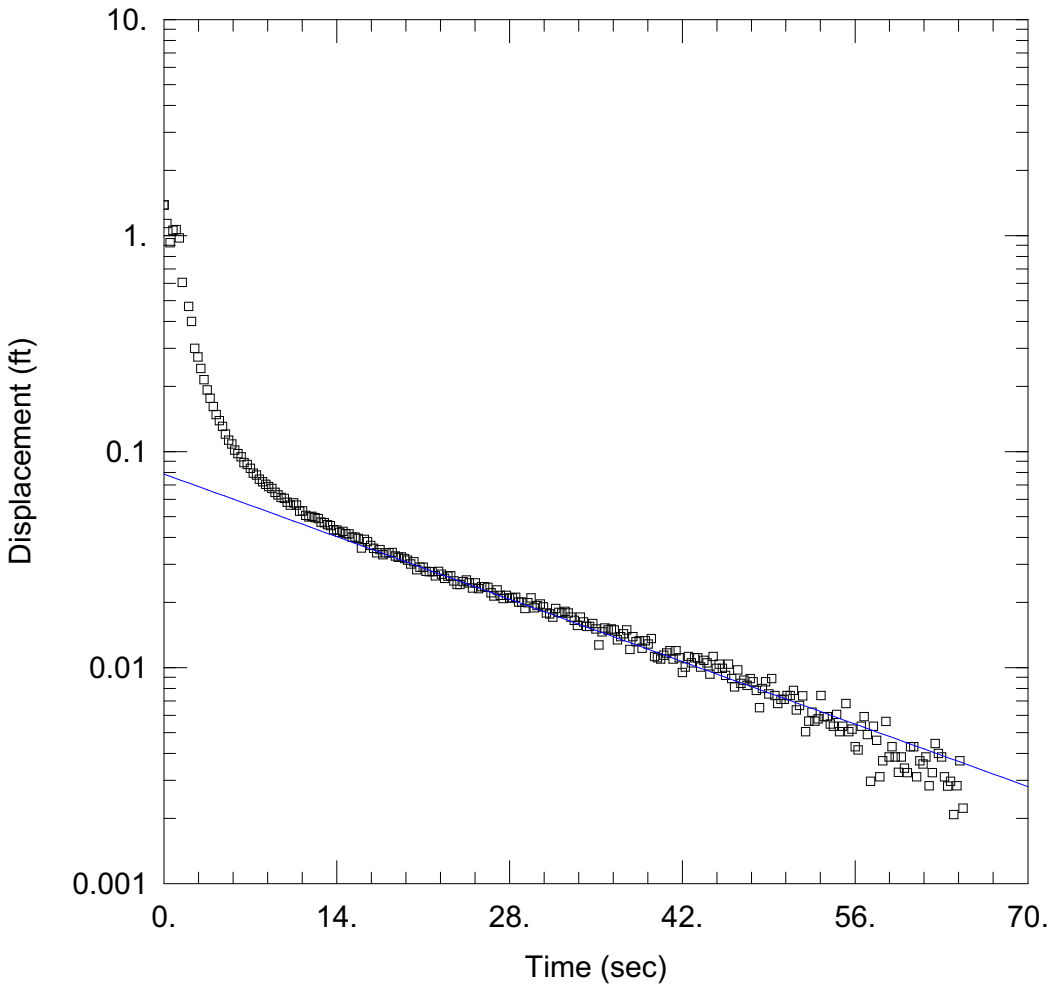
WELL DATA (MW-314)

Initial Displacement: 1.797 ft
Total Well Penetration Depth: 6.55 ft
Casing Radius: 0.09 ft
Static Water Column Height: 6.55 ft
Screen Length: 6.55 ft
Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.002217 cm/sec
y0 = 0.3507 ft



WELL TEST ANALYSIS

Data Set: I:\25220183.00\Data and Calculations\K Tests\MW 313 314 315\MW315.aqt
Date: 01/24/23 Time: 22:03:09

PROJECT INFORMATION

Company: SCS Engineers
Client: Alliant
Project: 25220183.00
Location: WPL - Columbia
Test Well: MW-315
Test Date: 12/30/2022

AQUIFER DATA

Saturated Thickness: 100. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-315)

Initial Displacement: 1.385 ft
Total Well Penetration Depth: 9.27 ft
Casing Radius: 0.09 ft
Static Water Column Height: 9.27 ft
Screen Length: 9.27 ft
Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.001259 cm/sec
y0 = 0.07861 ft