

December 27, 2024
File No. 25224152.00

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

Subject: Columbia Energy Center Ash Disposal Facility – Documentation of Construction of Monitoring Wells MW-317, MW-318, and MW-319 and Abandonment of MW-313, MW-314, and MW-315

Dear Mr. Clepper:

SCS Engineers (SCS) has completed the installation of three groundwater monitoring wells and the abandonment of three groundwater monitoring wells at the Columbia Energy Center in Pardeeville, Wisconsin (**Figure 1**). The well construction and abandonment was completed to support compliance with the final Coal Combustion Residuals (CCR) Rule (40 CFR 257.50-107), and this documentation is being submitted for placement in the CCR Rule Operating Record for the facility in accordance with 40 CFR 257.105(h)(2). The well construction and abandonment described in this letter also supports compliance with the groundwater monitoring requirements of NR 507.15(3), and documentation of the well construction and abandonment must be submitted to the Wisconsin Department of Natural Resources.

MW-317, MW-318, and MW-319 were installed as water table observation wells to provide data on shallow groundwater flow and water quality at the north edge of Modules 12 and 13 of the ADF, which were under construction at the time of well installation. Monitoring wells MW-313, MW-314, and MW-315 were previously located at the edge of waste in Modules 10-11, but were abandoned because they were located within the approved footprint of Module 12. The monitoring well locations are shown on **Figure 2**.

BORING LOGS

The borings for monitoring wells MW-317, MW-318, and MW-319 were drilled from April 9 through 11, 2024, by Horizon Construction and Exploration, LLC, of Fredonia, Wisconsin. All drilling and well construction was performed under the supervision of SCS.

Native soils encountered in the soil borings were poorly graded sand with some lean clay at the bottom of the borings. The boring logs are included in **Attachment A**.

MONITORING WELL CONSTRUCTION/DEVELOPMENT

Monitoring wells MW-317, MW-318, and MW-319 were installed by Horizon from April 9 through 11. SCS completed well development on June 5, 2024, and surveyed the wells on April 19, 2024. The wells were re-surveyed on September 15, 2024, to resolve an apparent error in the original survey elevations.



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

SCS completed hydraulic conductivity testing at the wells on July 17, 2024. Conductivity test results are included in **Attachment 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-317	7.3×10^{-4}
MW-318	4.5×10^{-4}
MW-319	3.0×10^{-4}

MONITORING WELL ABANDONMENT

Monitoring wells MW-313, MW-314, and MW-315 were abandoned on May 22, 2024. These wells were located within the future Module 12 fill area, therefore abandonment was completed by overdrilling the wells and sealing the resulting boreholes in accordance with the requirements of NR 141.25(2)(c). Abandonment documentation for MW-313, MW-314, and MW-315 is included in **Attachment B**. The wells' abandoned status is indicated on the WIF included in **Attachment B**.

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

Sincerely,



Bridget Russell
Associate Geologist
SCS Engineers



Thomas J. Karwoski, PG
Senior Project Manager
SCS Engineers

BR/AJR/BK/MDB

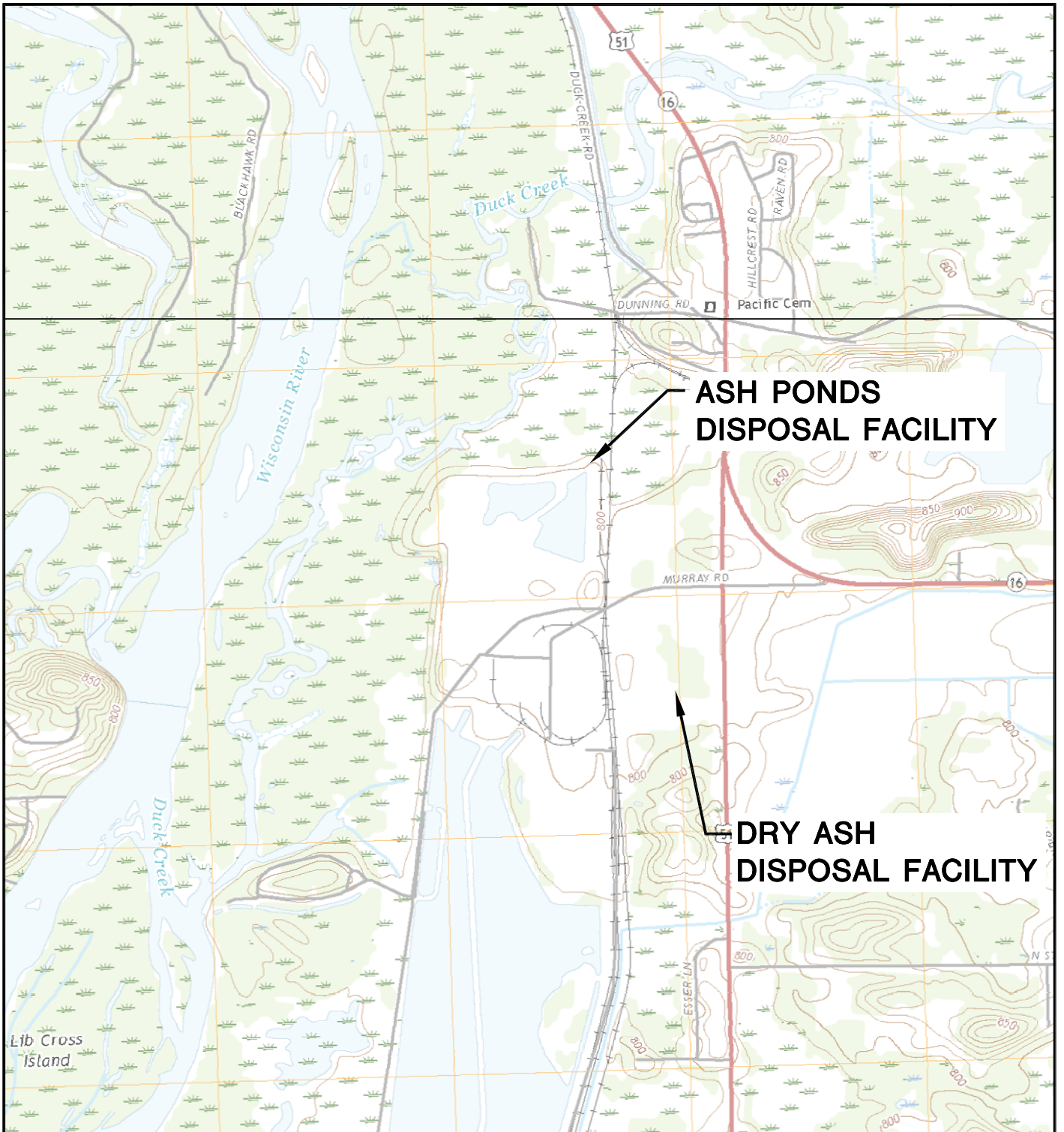
cc: Jeff Maxted, Alliant Energy
Matt Bizjack, Alliant Energy

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

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MW319\241227_Clepper_Well Documentation Letter_COL_Final.docx

Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations

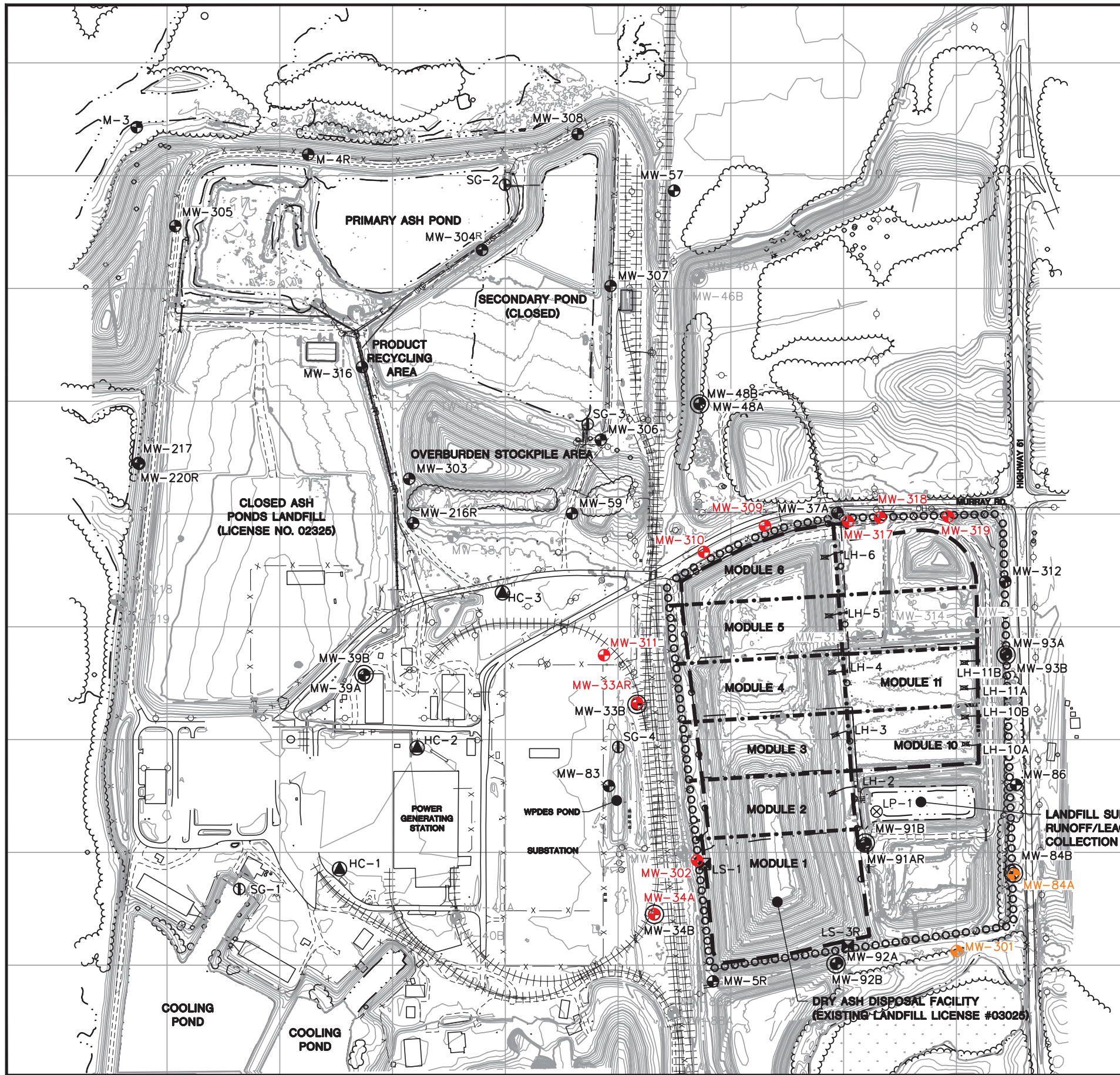


POYNETTE QUADRANGLE
 WISCONSIN-COLUMBIA CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2018
 SCALE: 1" = 2,000'



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

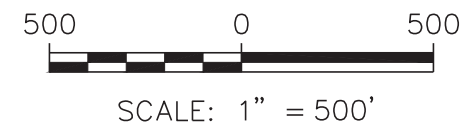
I:\25220067.00\Drawings\ASD Mod 1-3 LF\Site Location Map.dwg, 4/12/2020 7:05:09 PM



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
	CCR MONITORING WELL
	CCR BACKGROUND MONITORING WELL

- NOTES:
1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022.
 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.
 9. MONITORING WELL MW-316 WAS INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON APRIL 27, 2023.
 10. MONITORING WELLS MW-317, MW-318, AND MW-319 WERE INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON APRIL 9-11, 2024. MONITORING WELLS MW-313, MW-314, AND MW-315 WERE ABANDONED BY HORIZON CONSTRUCTION & EXPLORATION ON MAY 22, 2024.
 11. BACKGROUND MONITORING WELLS FOR THE DRY ASH DISPOSAL FACILITY ARE: MW-301 AND MW-84A.



PROJECT NO.	25224067.00	DRAWN BY:	KP/SB	 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	FIGURE SITE PLAN AND MONITORING WELL LOCATIONS: COLUMBIA DRY ASH DISPOSAL FACILITY 2
DRAWN:	12/02/2019	CHECKED BY:	MDB				
REVISED:	10/16/2024	APPROVED BY:	TK 12/27/2024				

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Attachment A

Boring Logs

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

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25224152.00		License/Permit/Monitoring Number 03025		Boring Number MW-317	
Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration		Date Drilling Started 4/11/2024		Date Drilling Completed 4/11/2024	
Drilling Method rotasonic		WI Unique Well No. VZ439		DNR Well ID No.	
Common Well Name		Final Static Water Level 33.0 Feet MSL		Surface Elevation 816.58 Feet MSL	
Borehole Diameter 6.0 in.		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 543,466 N, 2,124,519 E S/C/N		Lat 45° 16' 16.76"		Feet <input type="checkbox"/> N	
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E		Long -70° 24' 7.50"		Feet <input type="checkbox"/> E	
Facility ID 111049180		County Columbia		County Code 11	
Civil Town/City/ or Village Town of Pacific					

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	ORGANIC SILT (OL), dark brown (10YR 3/3), organics (roots).	OL									
			2	POORLY GRADED SAND (SP) and gravel, dark yellowish brown (10YR 4/6), fine to coarse sand and trace fine to coarse gravel, rounded sand, subrounded to subangular gravel (fill), , broken up rock at bottom.	SP						M			Soil from 0-10' extremely hot, had to collect in bucket. Steaming when dumped on table.
S2	60		5	POORLY GRADED SAND (SP), light yellowish brown and dark yellowish brown (10YR 6/4 and 4/4), fine to medium sand, trace silt, fine to coarse gravel, rounded sand (native soil), subrounded to rounded gravel (alluvium).										
			8	Yellowish brown	SP					1.0	M			
S3	32		10	Red brown transition layer										
			13	SILTY SAND (SM), very pale brown (10YR 7/4), very fine to fine sand, silt, trace fine to coarse angular gravel.	SM					0.5	M		Samples from: 0-11", 11"-5", 5-7.5", 7.5-10", 10-12.5", 12.5-15", 15-20'	

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

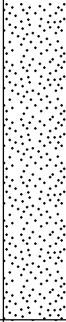
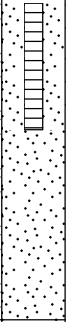
Signature <i>Bridget Powell</i>	Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718
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This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result 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.

Boring Number **MW-317** Use only as an attachment to Form 4400-122. Page **2** of **3**

Sample		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
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S4	24		16		SM				1.0	M				
			17											
S5	34		18	POORLY GRADED SAND (SP), yellowish brown (10YR 5/4), trace silt, trace fine to coarse subround gravel.	SP					M				
			19											
			20											
			21											
			22											
S6	44		23	SILTY SAND (SM), very pale brown and light yellowish brown (10YR 7/3 and 6/4), very fine to fine sand.	SM					M/W			Samples from: 20-22', 22-25', 25-27', 27-30'	
			24											
			25											
			26											
			27											
S7	11		28	LEAN CLAY (CL), light yellowish brown (10YR 6/4), trace red mottling. seam of silt and trace sand	CL					M/W				
			29											
			30											
			31											
			32											
S8	47		33	SILTY SAND (SM), pale brown (10YR 6/3), very fine to fine sand, clay, trace fine gravel, rounded sand, rounded gravel.	SM				0.25	M/W			30-35' fell out, likely in the saturated "silty quicksand-like zone" Going to 40' with catcher bit. First attempt 0" recovered, second attempt 11" recovered.	
			34											
			35											
			36											
			37											
S8	47		38	POORLY GRADED SAND (SP), very pale brown (10YR 7/3 and 8/4), very fine to coarse sand, fine to coarse gravel and trace silt (outwash), rounded sand, rounded gravel.	SP					W			Hole sluffed back in to 33' after drilling to 40' in saturated zone.	
			39											
			40											

Boring Number **MW-317** Use only as an attachment to Form 4400-122. Page **3** of **3**

Sample		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
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S9	43		41 42 43 44 45	Yellow (2.5Y 7/6), Iron and grey mottling	SP									Had to drill to 45' to clear out way and prevent sluffing. Well to be set at 42'. Sampled from: 40-41', 41-45'.
				End of boring at 45'.										

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

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25224152.00		License/Permit/Monitoring Number 03025		Boring Number MW-318	
Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration		Date Drilling Started 4/10/2024		Date Drilling Completed 4/10/2024	
Drilling Method rotasonic		WI Unique Well No. VZ438		DNR Well ID No.	
Common Well Name		Final Static Water Level 31.0 Feet MSL		Surface Elevation 818.04 Feet MSL	
Borehole Diameter 4.5/6 in.		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 543,484 N, 2,124,661 E S/C/N		Lat 45° 16' 16.27"		Feet <input type="checkbox"/> N	
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E		Long -70° 24' 0.98"		Feet <input type="checkbox"/> E	
Facility ID 111049180		County Columbia		County Code 11	
Civil Town/City/ or Village Town of Pacific					

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	35		1	ORGANIC SILT (OL), very dark greyish brown (10YR 3/2), gravel, (topsoil).	OL									Samples: 0-11", 11"-5', 5-10', 10-15', 15-19', 19-20'	
			2	POORLY GRADED SAND (SP), dark yellowish brown (10YR 4/6), trace fine to coarse gravel, silt, and roots.								M			
S2	33		3	some dark yellowish brown (10YR 3/4). trace black mottling.	SP										
			4												
			5												
			6												
			7												
			8												
			9												
S3	25		10	trace roots (fill).	SP										
			11												
			12												
			13												
			14												
15															

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
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Boring Number **MW-318** Use only as an attachment to Form 4400-122. Page **2** of **3**

Sample		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	
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S4	23		16												
			17		SP										
S5	15		18												
			19	Very pale brown (10YR 7/4)											
			20	POORLY GRADED SAND (SP), dark yellowish brown (10YR 4/6 and 3/4) silt, and roots, trace mottling.											
			21												
			22												
S6	37		23												
			24		SP										
			25	trace gravel, fine to coarse subround black sand											
			26												
			27												
S7	44		28	POORLY GRADED SAND (SP), very pale brown (10YR 7/4), formation change with color change, very fine to fine rounded sand.											
			29		SP										
			30	LEAN CLAY (CL), very pale brown (10YR 7/4), silt seams.											
S8	2		31												
			32												
			33		CL					1.0	M/W				
			34	organic odor											
			35	SILT (ML), very pale brown (10YR 7/4), trace sand, very soft.											
			36												
			37												
			38		ML										
			39												
			40												

Samples: 20-25', 25-27.5', 27.5-30', 30-35', 35-40' 4.5" diameter from now on using water

DTW- 31/32' clay very soft

35-40' almost no recovery.

Boring Number **MW-318** Use only as an attachment to Form 4400-122. Page **3** of **3**

Sample		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
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S9	17		41		ML									
			42	POORLY GRADED SAND (SP), very pale brown (10YR 7/4), fine to medium sand, fine to coarse gravel, rounded sand, rounded gravel.	SP									Samples: 40-41', 41-43'.
			43	End of boring at 43'										

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

Facility/Project Name WPL - Columbia Dry Ash Disposal Facility SCS#: 25224152.00		License/Permit/Monitoring Number 03025		Boring Number MW-319	
Boring Drilled By: Name of crew chief (first, last) and Firm Adam Sweet Horizon Construction and Exploration		Date Drilling Started 4/9/2024		Date Drilling Completed 4/9/2024	
Drilling Method rotasonic		WI Unique Well No. VZ437		DNR Well ID No.	
Common Well Name		Final Static Water Level 20.0 Feet MSL		Surface Elevation 825.70 Feet MSL	
Borehole Diameter 4.5/6 in.		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 543,488 N, 2,124,963 E S/C/N		Lat 45° 16' 14.12"		Feet <input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NE 1/4 of Section 27, T 12 N, R 9 E		Long -70° 23' 47.49"		Feet <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID 111049180		County Columbia		County Code 11	
				Civil Town/City/ or Village Town of Pacific	

Sample Number and Type	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					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	11		1	ORGANIC SILT (OL), dark brown (10YR 3/3), trace fine rounded sand, organics (roots).	OL									4.5" diameter rods 7' run for first run, 5' for following
			2	POORLY GRADED SAND (SP), yellowish brown (10YR 5/8), fine to coarse sand, fine to coarse gravel, angular gravel, rounded sand, trace silt.										
S2	11		3	light gray (10YR 7/2), large subround cobbles, fine to coarse angular gravel (alluvium)	SP									Samples: 0-5', 5'-7', 7-12'
			4											
S3	0		5	no recovery										No recovery 12-17' or 17-22',
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											
			15											

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

Signature <i>Bridget Powell</i>	Firm SCS Engineers 2830 Dairy Drive, Madison, WI 53718
------------------------------------	--

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Boring Number **MW-319** Use only as an attachment to Form 4400-122. Page **2** of **3**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S4	0		16-21												no water used in 12-22'.
S5	21		22-26	POORLY GRADED SAND (SP), pale brown (10YR 6/3), fine to medium sand, trace fine to coarse gravel, rounded sand, subangular gravel (alluvium)	SP						M				6" diameter rods 27' onward using water 22' onward
S6	11		27-32	SILTY SAND (SM), light yellowish brown (10YR 6/4), very fine to fine sand, trace medium to coarse sand, rounded sand. no medium to coarse sand							M/W				Samples from: 22-27', 27-32' 32-37' might have hit water, going to confirm with next 5' run. Water receding very shallow only on high sensitivity, stuck in casing.
S7	16		33-37		SM						M/W				Felt very different at 38'
S8	13		38-40								W				DTW at 38' measured at 20',

Boring Number **MW-319** Use only as an attachment to Form 4400-122. Page **3** of **3**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S9	43		41						3.5	W			but stuck in casing	
			42		SM									
			43											
			44											
			45											
			46	LEAN CLAY, yellowish brown (10yr 5/4), some red mottling	CL									
			47	Original End of boring at 47', ended up dropping to 50' when pulling rods. EOB at 50'.										
			48											
			49											
			50											

Attachment B

Well Construction, Development, and Abandonment Forms

Facility/Project Name WPL-COL Dry Ash	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name MW-317
Facility License, Permit or Monitoring No. 03025	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/> Lat. 45° 16' 16.7629" Long. -70° 24' 07.5014" or	Wis. Unique Well No. <u>VZ439</u> DNR Well ID No. _____
Facility ID 111049180	St. Plane 543466.051 ft. N, 2124519.41 ft. E. S/C/N	Date Well Installed <u>04</u> / <u>11</u> / <u>2024</u> m m d d y y y y
Type of Well Well Code <u>11</u> / MW	Section Location of Waste/Source NW 1/4 of NE 1/4 of Sec. <u>27</u> , T. <u>12</u> N, R. <u>9</u> E <input checked="" type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Adam Sweet
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Horizon _____
Enf. Stds. Apply <input checked="" type="checkbox"/>	Gov. Lot Number _____	

- A. Protective pipe, top elevation --- 819.37 ft. MSL
- B. Well casing, top elevation --- 818.88 ft. MSL
- C. Land surface elevation --- 816.6 ft. MSL
- D. Surface seal, bottom --- 816.6 ft. MSL or --- 0 ft.

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

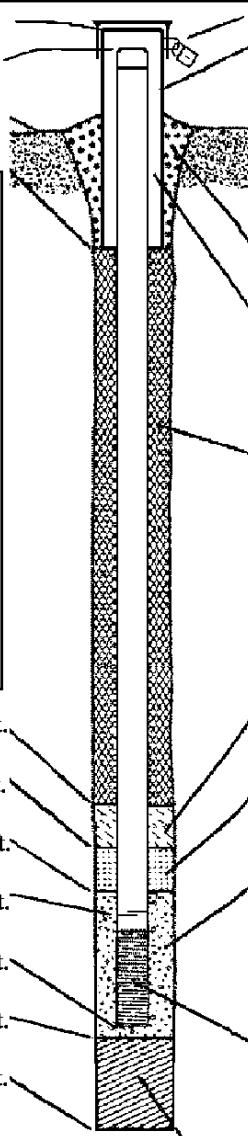
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 5 0
 Hollow Stem Auger 4 1
 Rotosonic Other

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):
 Tap water horizon office



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: _____ in.
 - b. Length: _____ ft.
 - c. Material: Steel 0 4
anodized aluminum Other
 - d. Additional protection? Yes No
If yes, describe: cement blocks
- 3. Surface seal: Bentonite 3 0
Concrete 0 1
Other
- 4. Material between well casing and protective pipe: Bentonite 3 0
Red flint #40 Other
- 5. Annular space seal: a. Granular/Chipped Bentonite 3 3
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 3 5
c. _____ Lbs/gal mud weight Bentonite slurry 3 1
d. 10 % Bentonite Bentonite-cement grout 5 0
e. 5.347 Ft³ volume added for any of the above
f. How installed: Tremie 0 1
Tremie pumped 0 2
Gravity 0 8
- 6. Bentonite seal: a. Bentonite granules 3 3
b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 3 2
c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #15
b. Volume added 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #40
b. Volume added 1.5 ft³
- 9. Well casing: Flush threaded PVC schedule 40 2 3
Flush threaded PVC schedule 80 2 4
Other
- 10. Screen material: PVC schedule 40
a. Screen type: Factory cut 1 1
Continuous slot 0 1
Other
b. Manufacturer Johnson
c. Slot size: 10 slot
d. Slotted length: 10 ft.
- 11. Backfill material (below filter pack): None 1 4
Other

- E. Bentonite seal, top --- 793.6 ft. MSL or --- 23 ft.
- F. Fine sand, top --- 788.6 ft. MSL or --- 28 ft.
- G. Filter pack, top --- 786.6 ft. MSL or --- 30 ft.
- H. Screen joint, top --- 784.6 ft. MSL or --- 32 ft.
- I. Well bottom --- 774.6 ft. MSL or --- 42 ft.
- J. Filter pack, bottom --- 771.6 ft. MSL or --- 45 ft.
- K. Borehole, bottom --- 771.6 ft. MSL or --- 45 ft.
- L. Borehole, diameter --- 6.0 in.
- M. O.D. well casing --- 2.25 in.
- N. I.D. well casing --- 2.0 in.

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

Signature Bridget Brunell 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.

Facility/Project Name WPL-COL Dry Ash	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name MW-318
Facility License, Permit or Monitoring No. 03025	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/> Lat. 45° 16' 16.2735" Long. -70° 24' 00.9814" or	Wis. Unique Well No. <u>VZ438</u> DNR Well ID No. _____
Facility ID 111049180	St. Plane 543484.464 ft. N, 2124661.211 ft. E. S/C/N	Date Well Installed <u>04</u> / <u>10</u> / <u>2024</u> m m d d y y y y
Type of Well Well Code <u>11</u> / MW	Section Location of Waste/Source NW 1/4 of NE 1/4 of Sec. <u>27</u> , T. <u>12</u> N, R. <u>9</u> E <input checked="" type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Adam Sweet
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Horizon _____
Enf. Stds. Apply <input checked="" type="checkbox"/>	Gov. Lot Number _____	

- A. Protective pipe, top elevation --- 820.94 ft. MSL
- B. Well casing, top elevation --- 820.37 ft. MSL
- C. Land surface elevation --- 818.0 ft. MSL
- D. Surface seal, bottom --- 818.0 ft. MSL or --- 0 ft.

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

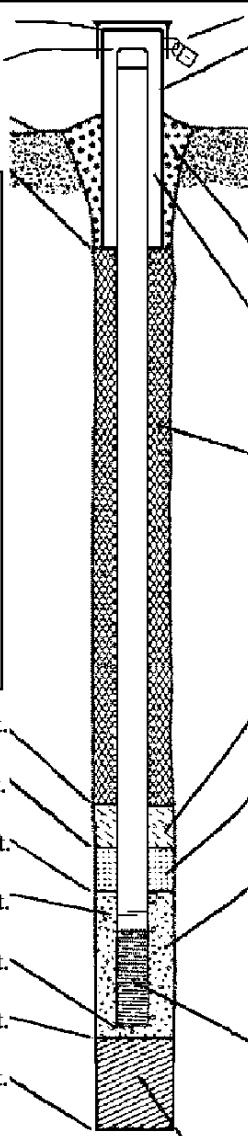
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 5 0
 Hollow Stem Auger 4 1
rotasonic Other

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):
Tap water horizon office



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: _____ in.
 - b. Length: _____ ft.
 - c. Material: Steel 0 4
anodized aluminum Other
 - d. Additional protection? Yes No
 If yes, describe: cement blocks
- 3. Surface seal: Bentonite 3 0
 Concrete 0 1
 Other
- 4. Material between well casing and protective pipe: Bentonite 3 0
Red flint #40 Other
- 5. Annular space seal: a. Granular/Chipped Bentonite 3 3
 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 3 5
 c. _____ Lbs/gal mud weight Bentonite slurry 3 1
 d. 10 % Bentonite Bentonite-cement grout 5 0
 e. 5.347 Ft³ volume added for any of the above
 f. How installed: Tremie 0 1
 Tremie pumped 0 2
 Gravity 0 8
- 6. Bentonite seal: a. Bentonite granules 3 3
 b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 3 2
 c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 a. Red Flint #15
 b. Volume added 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 a. Red Flint #40
 b. Volume added 1.5 ft³
- 9. Well casing: Flush threaded PVC schedule 40 2 3
 Flush threaded PVC schedule 80 2 4
 Other
- 10. Screen material: PVC schedule 40
 a. Screen type: Factory cut 1 1
 Continuous slot 0 1
10 slot Other
 b. Manufacturer Johnson
 c. Slot size: 0. _____ 1 in.
 d. Slotted length: _____ 10 ft.
- 11. Backfill material (below filter pack): None 1 4
 Other

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

Signature Bridget Brunell 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.

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

Facility/Project Name COL	County Name Columbia	Well Name MW-317	
Facility License, Permit or Monitoring Number 03025	County Code 11	Wis. Unique Well Number VZ439	DNR Well ID Number --

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 4 1
 - surged with bailer and pumped 6 1
 - surged with block and bailed 4 2
 - surged with block and pumped 6 2
 - surged with block, bailed and pumped 7 0
 - compressed air 2 0
 - bailed only 1 0
 - pumped only 5 1
 - pumped slowly 5 0
 - Other
3. Time spent developing well 262 min.
4. Depth of well (from top of well casing) 44.3 ft.
5. Inside diameter of well 2.0 in.
6. Volume of water in filter pack and well casing 9.2 gal.
7. Volume of water removed from well 15.0 gal.
8. Volume of water added (if any) 0.0 gal.
9. Source of water added N/A
10. Analysis performed on water added? Yes No
(If yes, attach results)

- | | | |
|--|---------------------------|--------------------------|
| | <u>Before Development</u> | <u>After Development</u> |
|--|---------------------------|--------------------------|
11. Depth to Water (from top of well casing)
- a. 35.23 ft. 43.17 ft.
- Date b. 05/20/2024 06/05/2024
m m d d y y y y m m d d y y y y
- Time c. 1:14 a.m. p.m. 12:30 a.m. p.m.
12. Sediment in well bottom 4.5 inches 1.5 inches
13. Water clarity
- | | |
|--|--|
| Clear <input type="checkbox"/> 1 0 | Clear <input type="checkbox"/> 2 0 |
| Turbid <input checked="" type="checkbox"/> 1 5 | Turbid <input checked="" type="checkbox"/> 2 5 |
| (Describe) | (Describe) |
| <u>Black</u> | <u>grayish brown</u> |
| <u></u> | <u>very turbid</u> |
| <u></u> | <u>no odor</u> |
| <u></u> | <u></u> |
- Fill in if drilling fluids were used and well is at solid waste facility:
14. Total suspended solids 495.00 mg/l -- mg/l
15. COD -- mg/l -- mg/l

16. Well developed by: Name (first, last) and Firm
 First Name: Bridget / Paul Last Name: Russell / Grover
 Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

5/20/2024 (1314-1440): DTW: 35.23 / TD 44.3 / 4.5 inches sediment / 16 W in casing 10 ft filter pack = 9.12x10=91.2 gallons / black color and turbid / Developed for 86 min / Purged dry 3 times / Purged 4.5 gallons / light brown and turbid / DTW after: 37.64 / 0.5 inches of sediment / Bridget Russell

6/05/2024 (934-1230): DTW: -- / TD: 44.5 / volume of water in filter pack: 9.2 gallons / Developed for 176 minutes / Purged 10.5 gallons / grayish brown, very turbid, no odor / 1.5 inches of sediment / DTW 43.17 / Paul Grover

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Brian Last Name: Clepper

Facility/Firm: Alliant Energy - Columbia

Street: W8375 Murray Rd

City/State/Zip: Pardeeville, WI 53954

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

Signature: Bridget Russell

Print Name: Bridget Russell and Paul Grover

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.

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

Facility/Project Name COL	County Name Columbia	Well Name MW-318	
Facility License, Permit or Monitoring Number 03025	County Code 11	Wis. Unique Well Number VZ438	DNR Well ID Number _____

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input checked="" type="checkbox"/> 4 1
surged with bailer and pumped	<input checked="" type="checkbox"/> 6 1
surged with block and bailed	<input type="checkbox"/> 4 2
surged with block and pumped	<input type="checkbox"/> 6 2
surged with block, bailed and pumped	<input type="checkbox"/> 7 0
compressed air	<input type="checkbox"/> 2 0
bailed only	<input type="checkbox"/> 1 0
pumped only	<input type="checkbox"/> 5 1
pumped slowly	<input type="checkbox"/> 5 0
Other _____	<input type="checkbox"/> _____

3. Time spent developing well _____ 149 min.

4. Depth of well (from top of well casing) _____ 42.95 ft.

5. Inside diameter of well _____ 2.0 in.

6. Volume of water in filter pack and well casing _____ 8.27 gal.

7. Volume of water removed from well _____ 13.0 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____ N/A

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

	<u>Before Development</u>	<u>After Development</u>
11. Depth to Water (from top of well casing)	a. _____ 36 _____ 6 ft.	_____ 41 _____ 97 ft.
Date	b. <u>05</u> / <u>20</u> / <u>2024</u>	<u>06</u> / <u>05</u> / <u>2024</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ 2 : 55 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ 11 : 15 <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ 14 _____ 0 inches	_____ 1 _____ 5 inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input type="checkbox"/> 2 0 Turbid <input checked="" type="checkbox"/> 2 5 (Describe) _____
	very turbid _____	grayish brown _____
	thick with sediment _____	very turbid _____
	brown _____	no odor _____

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

14. Total suspended solids _____ 3410 _____ 0 mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Bridget / Paul Last Name: Russell / Grover

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:

5/20/2024 (1455-1524): DTW: 36.6 / TD 42.95 / 14.0 inches of sediment / 8.27 gallons rose for volume in filter pack + casing = 8.27x10=82.7 gallons / brown color, thick with sediment and very turbid / Developed for 29 min / Purged dry 3 times / Purged 2.0 gallons / brown color, thick with sediment and very turbid / DTW after: 37.12 / 2.5 inches of sediment / Bridget Russell

6/05/2024 (915-1115): DTW: -- / TD: 43.1 / volume of water in filter pack: 8.3 gallons / Developed for 120 minutes / Purged 11 gallons / grayish brown, very turbid, no odor / DTW 41.97 / 1.5 inches of sediment / Paul Grover

Name and Address of Facility Contact / Owner / Responsible Party

First Name: Brian Last Name: Clepper

Facility/Firm: Alliant Energy - Columbia

Street: W8375 Murray Rd

City/State/Zip: Pardeeville, WI 53954

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

Signature: Bridget Russell

Print Name: Bridget Russell and Paul Grover

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.

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 **2. Facility / Owner Information**

County Columbia	WI Unique Well # of Removed Well W C 1 8 8	common well name MW-313	Facility Name WPL - Columbia Energy Center		
Latitude / Longitude (see instructions) 43.4882067 N 89.4119296 W			Facility ID (FID or PWS)		
Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM			License/Permit/Monitoring # License #03025, GEMS Well ID #110		
Method Code <input checked="" type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input type="checkbox"/> OTH001			Original Well Owner Wisconsin Power and Light Company		
¼ / ¼ NW ¼ SE or Gov't Lot #			Present Well Owner Wisconsin Power and Light Company		
Section 27			Township 12 N		
Range 9			<input checked="" type="checkbox"/> E <input type="checkbox"/> W		
Well Street Address W8375 Murray Rd			Mailing Address of Present Owner W8375 Murray Rd		
Well City, Village or Town Pardeeville, WI			Well ZIP Code 53954		
Subdivision Name			City of Present Owner Pardeeville		State WI
Lot #			ZIP Code 53954		

Reason for Removal from Service
 Within landfill expansion area

WI Unique Well # of Replacement Well _____

3. Filled & Sealed Well / Drillhole / Borehole Information

Monitoring Well Original Construction Date (mm/dd/yyyy)
 12/19/2022

Water Well

Borehole / Drillhole 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.) 43	Casing Diameter (in.) 2
Lower Drillhole Diameter (in.) 8.25	Casing Depth (ft.) 33

Was well annular space grouted? Yes No Unknown

If yes, to what depth (feet)? Depth to Water (feet)
 29 34

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	1.5	3/4 Bag	N/A
Bentonite Cement Grout	1.5	47	3.5 bgs port, .5 bg. bent	90:10

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing Adam Sweet, Horizon Construction & Exploration, LLC	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) 05/22/2024	DNR Use Only	
			Date Received	Noted By
Street or Route 764 Tower Drive		Telephone Number (262)692-3347	Comments	
City Fredonia	State WI	ZIP Code 53021	Signature of Person Doing Work SCS Engineers (on behalf of Horizon) <i>Bridget Powell</i>	Date Signed 05/22/2024

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

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

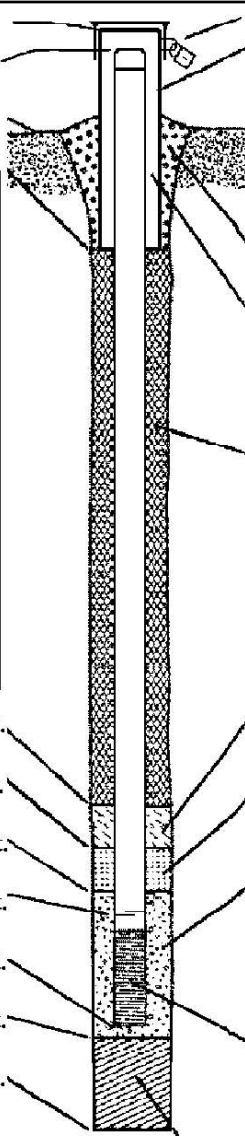
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 5 0
 Rotosonic Hollow Stem Auger 4 1
 Other

15. Drilling fluid used: Water 0 2 Air 0 1
 Drilling Mud 0 3 None 9 9

16. Drilling additives used? Yes No
 Describe NA

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



1. Cap and lock? Yes No

2. Protective cover pipe:
 a. Inside diameter: _____ in.
 b. Length: 5 ft.
 c. Material: Steel 0 4
 Other
 d. Additional protection? Yes No
 If yes, describe: Three bollards

3. Surface seal: Bentonite 3 0
 Concrete 0 1
 Other

4. Material between well casing and protective pipe:
 Filter sand Bentonite 3 0
 Other

5. Annular space seal: a. Granular/Chipped Bentonite 3 3
 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 3 5
 c. _____ Lbs/gal mud weight Bentonite slurry 3 1
 d. _____ % Bentonite Bentonite-cement grout 5 0
 e. 5.22 Ft³ volume added for any of the above
 f. How installed: Tremie 0 1
 Tremie pumped 0 2
 Gravity 0 8

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

7. Fine sand material: Manufacturer, product name & mesh size
 a. Red Flint #5
 b. Volume added 0.36 ft³

8. Filter pack material: Manufacturer, product name & mesh size
 a. Red Flint #7
 b. Volume added 2.52 ft³

9. Well casing: Flush threaded PVC schedule 40 2 3
 Flush threaded PVC schedule 80 2 4
 Other

10. Screen material: PVC
 a. Screen type: Factory cut 1 1
 Continuous slot 0 1
 Other
 b. Manufacturer Monoflex
 c. Slot size: _____
 d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None 1 4
 SP- native, cave in

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.

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

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Verification Only of Fill and Seal

Route to DNR Bureau:

Drinking Water Watershed/Wastewater Remediation/Redevelopment

Waste Management Other: _____

1. Well Location Information **2. Facility / Owner Information**

County Columbia	WI Unique Well # of Removed Well W C 1 9 9	common well name MW-314	Facility Name WPL - Columbia Energy Center
Latitude / Longitude (see instructions) 43.4882614 N 89.4111030 W	Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM	Method Code <input checked="" type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input type="checkbox"/> OTH001	Facility ID (FID or PWS)
1/4 1/4 NW 1/4 SE or Gov't Lot #	Section 27	Township 12 N	Range 9
			<input checked="" type="checkbox"/> E <input type="checkbox"/> W
Well Street Address W8375 Murray Rd			Original Well Owner Wisconsin Power and Light Company
Well City, Village or Town Pardeeville, WI			Present Well Owner Wisconsin Power and Light Company
Well ZIP Code 53954			Mailing Address of Present Owner W8375 Murray Rd
Subdivision Name			City of Present Owner Pardeeville
Lot #			State WI
			ZIP Code 53954

Reason for Removal from Service
Within landfill expansion area

WI Unique Well # of Replacement Well

3. Filled & Sealed Well / Drillhole / Borehole Information

Monitoring Well Original Construction Date (mm/dd/yyyy)
12/01/2022

Water Well

Borehole / Drillhole 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.)
43.5 2

Lower Drillhole Diameter (in.) Casing Depth (ft.)
8.25 33.5

Was well annular space grouted? Yes No Unknown

If yes, to what depth (feet)? Depth to Water (feet)
29.5 34

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
Bentonite Chips	Surface	1.5	3/4 Bag	N/A
Bentonite Cement Grout	1.5	45	3 bags port. 0.25 bent.	90:10

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing Adam Sweet, Horizon Construction & Exploration, LLC	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) 05/22/2024	DNR Use Only	
Date Received		Noted By		
Street or Route 764 Tower Drive	Telephone Number (262)692-3347	Comments		
City Fredonia	State WI	ZIP Code 53021	Signature of Person Doing Work (SCS Engineers on behalf of Horizon) <i>Bridget Powell</i>	Date Signed 05/22/2024

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 **2. Facility / Owner Information**

County Columbia		WI Unique Well # of Removed Well P M 2 8 9		common well name MW-315		Facility Name WPL - Columbia Energy Center	
Latitude / Longitude (see instructions) 43.4883708 N 89.4100212 W		Format Code <input checked="" type="checkbox"/> DD <input type="checkbox"/> DDM		Method Code <input checked="" type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input type="checkbox"/> OTH001		Facility ID (FID or PWS)	
¼ / ¼ NW ¼ SE or Gov't Lot #		Section 27		Township 12 N		Range 9 <input checked="" type="checkbox"/> E <input type="checkbox"/> W	
Well Street Address W8375 Murray Rd				License/Permit/Monitoring # License #03025, GEMS Well ID #114			
Well City, Village or Town Pardeeville, WI				Original Well Owner Wisconsin Power and Light Company			
Subdivision Name				Well ZIP Code 53954			
Well Street Address W8375 Murray Rd				Present Well Owner Wisconsin Power and Light Company			
Well City, Village or Town Pardeeville, WI				Mailing Address of Present Owner W8375 Murray Rd			
Subdivision Name				City of Present Owner Pardeeville		State WI	ZIP Code 53954

3. Filled & Sealed Well / Drillhole / Borehole Information **4. Pump, Liner, Screen, Casing & Sealing Material**

Reason for Removal from Service Within landfill expansion area		WI Unique Well # of Replacement Well		Pump and piping removed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____		Original Construction Date (mm/dd/yyyy) 12/02/2022		Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		If a Well Construction Report is available, please attach.		Liner(s) perforated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Total Well Depth From Ground Surface (ft.) 43		Casing Diameter (in.) 2		Screen removed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Lower Drillhole Diameter (in.) 8.25		Casing Depth (ft.) 33		Casing left in place? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Was well annular space grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		If yes, to what depth (feet)? 29		Was casing cut off below surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Depth to Water (feet) 33		Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____		Did sealing material rise to surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
5. Material Used to Fill Well / Drillhole		Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite Chips		Did material settle after 24 hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Bentonite Chips		From (ft.) To (ft.) No. Yards, Sacks Sealant or Volume (circle one) Mix Ratio or Mud Weight		If yes, was hole retopped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Bentonite Cement Grout		Surface 1.5 3/4 Bag N/A		If bentonite chips were used, were they hydrated with water from a known safe source? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
		1.5 45 3 bags port. 0.25 bent. 90:10		For Monitoring Wells and Monitoring Well Boreholes Only: <input checked="" type="checkbox"/> Bentonite Chips <input checked="" type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> 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
Bentonite Chips		Surface	1.5	3/4 Bag	N/A
Bentonite Cement Grout		1.5	45	3 bags port. 0.25 bent.	90:10

6. Comments

7. Supervision of Work **DNR Use Only**

Name of Person or Firm Doing Filling & Sealing Adam Sweet, Horizon Construction & Exploration, LLC		License #		Date of Filling & Sealing or Verification (mm/dd/yyyy) 05/22/2024		Date Received		Noted By	
Street or Route 764 Tower Drive				Telephone Number (262)692-3347		Comments			
City Fredonia		State WI		ZIP Code 53021		Signature of Person Doing Work \$CS Engineers (on behalf of Horizon) <i>Bridget Powell</i>		Date Signed 05/23/2024	

Attachment C
Site Photographs

Columbia Energy Center
W8375 Murray Rd, Pardeeville, WI
SCS Engineers Project #25224152.00



Photo 1: MW-317,
looking northwest.



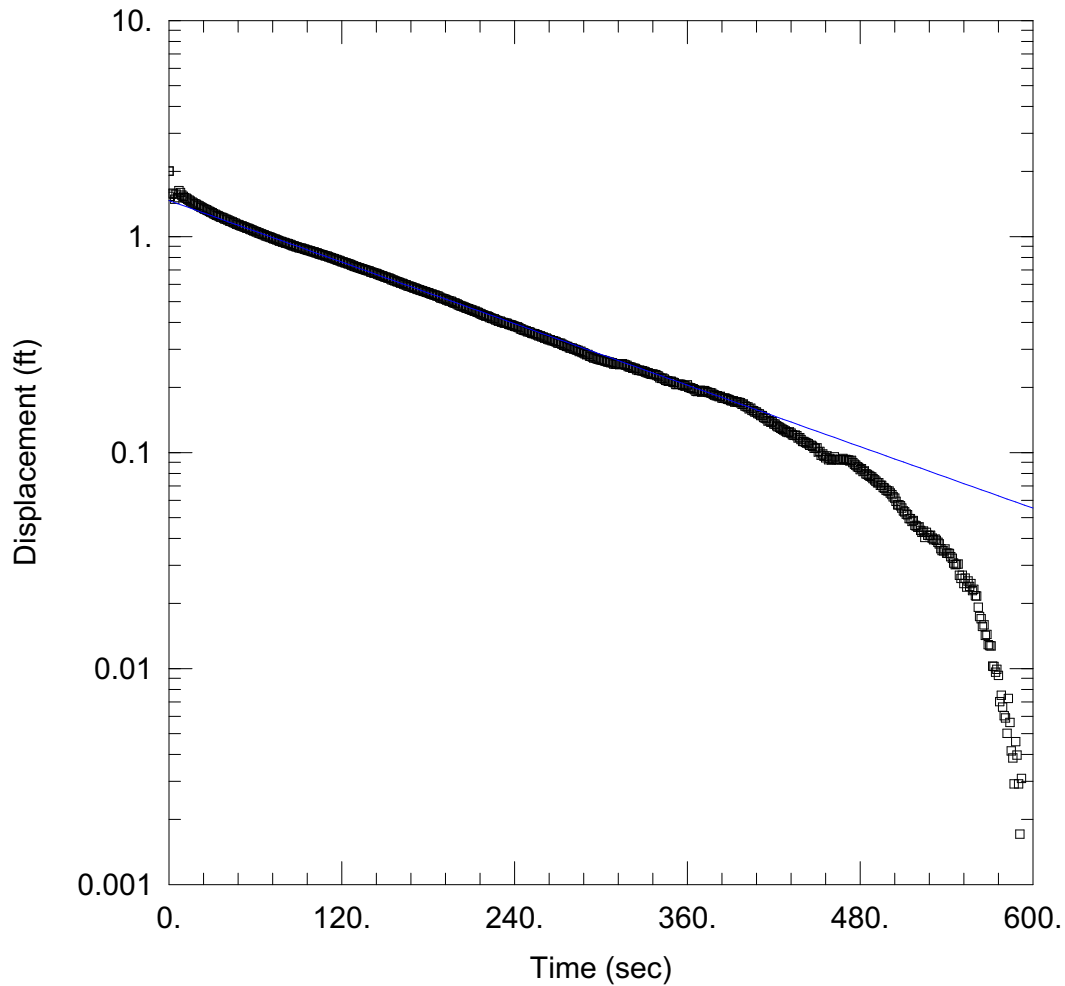
Photo 2: MW-318,
looking northwest.

Columbia Energy Center
W8375 Murray Rd, Pardeeville, WI
SCS Engineers Project #25224152.00



Photo 3: MW-319,
looking north.

Attachment D
Hydraulic Conductivity Test Results



WELL TEST ANALYSIS

Data Set: I:\25224152.00\Data and Calculations\K Tests\MW-317.aqt
 Date: 10/15/24 Time: 10:14:18

PROJECT INFORMATION

Company: SCS Engineers
 Client: WPL
 Project: 25224152.00
 Location: Columbia, Wisconsin
 Test Well: MW-317
 Test Date: 7/17/2024

AQUIFER DATA

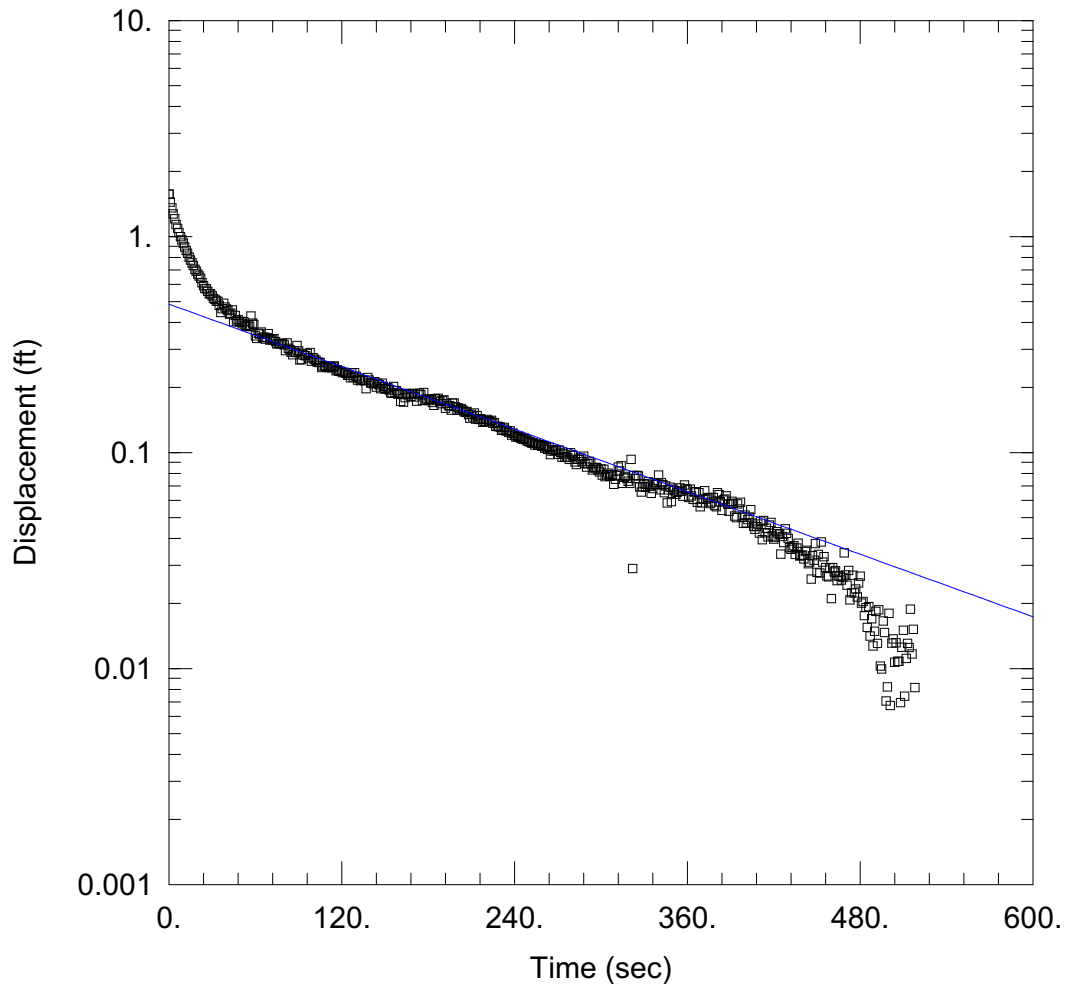
Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-317)

Initial Displacement: 2.008 ft Static Water Column Height: 13.2 ft
 Total Well Penetration Depth: 13.2 ft Screen Length: 10. ft
 Casing Radius: 0.085 ft Well Radius: 0.35 ft
 Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 $K = 0.0007333 \text{ cm/sec}$ $y_0 = 1.467 \text{ ft}$



WELL TEST ANALYSIS

Data Set: I:\25224152.00\Data and Calculations\K Tests\MW-318.aqt
 Date: 10/15/24 Time: 10:20:02

PROJECT INFORMATION

Company: SCS Engineers
 Client: WPL
 Project: 25224152.00
 Location: Columbia, Wisconsin
 Test Well: MW-318
 Test Date: 7/17/2024

AQUIFER DATA

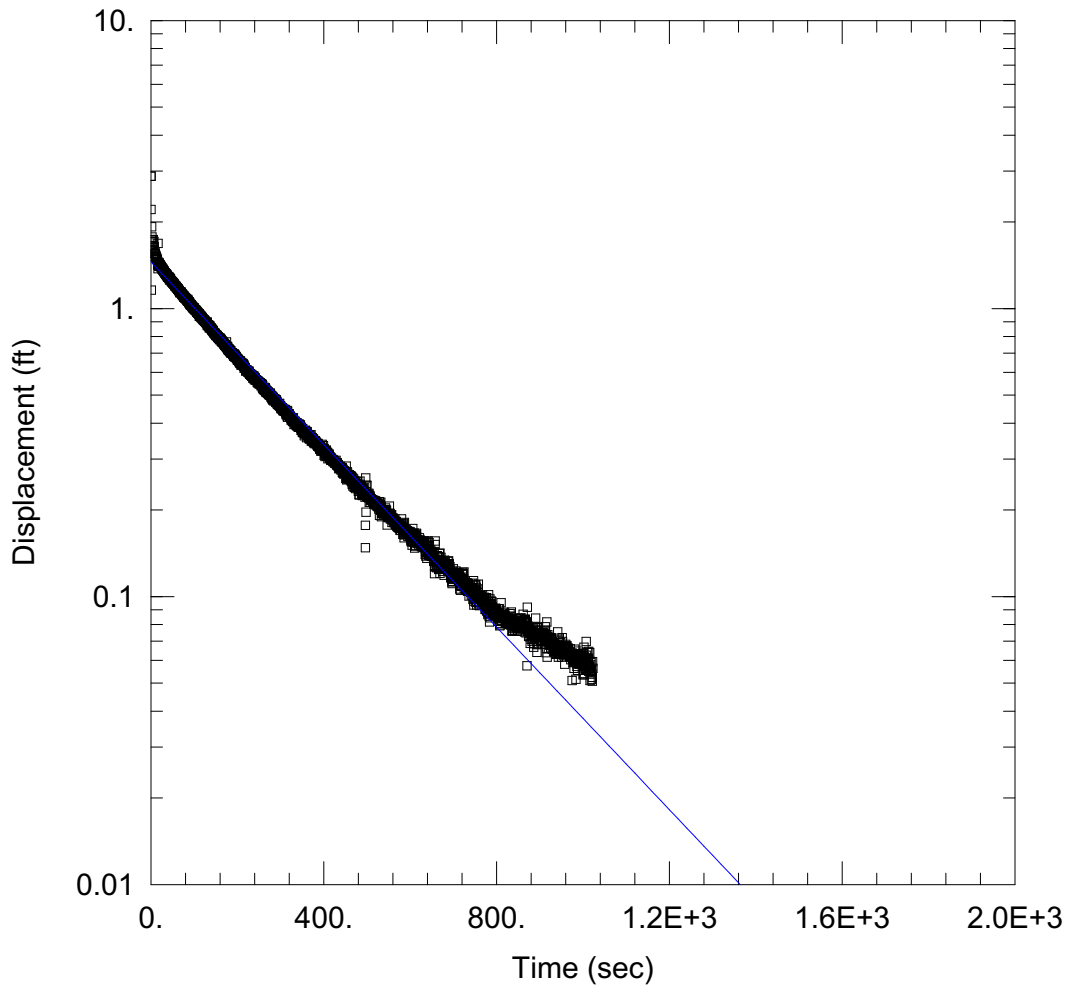
Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-318)

Initial Displacement: 1.571 ft Static Water Column Height: 10.81 ft
 Total Well Penetration Depth: 10.81 ft Screen Length: 10. ft
 Casing Radius: 0.085 ft Well Radius: 0.25 ft
 Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 K = 0.0004538 cm/sec y0 = 0.4864 ft



WELL TEST ANALYSIS

Data Set: I:\25224152.00\Data and Calculations\K Tests\MW-319.aqt
 Date: 10/15/24 Time: 10:28:07

PROJECT INFORMATION

Company: SCS Engineers
 Client: WPL
 Project: 25224152.00
 Location: Columbia, Wisconsin
 Test Well: MW-319
 Test Date: 7/17/2024

AQUIFER DATA

Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-319)

Initial Displacement: 2.881 ft Static Water Column Height: 9.6 ft
 Total Well Penetration Depth: 9.6 ft Screen Length: 9.6 ft
 Casing Radius: 0.085 ft Well Radius: 0.25 ft
 Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 K = 0.0002993 cm/sec y0 = 1.451 ft