Environmental Consultants & Contractors

SCS ENGINEERS

March 23, 2023 File No. 25222265.00

Mr. David Buser Wisconsin Department of Natural Resources 1027 W. St. Paul Ave. Milwaukee, WI 53233

Subject: Monitoring Well Abandonment Documentation – S302 Nest

WMWI Orchard Ridge RDF East Expansion

License #4491

Menomonee Falls, Wisconsin

Dear Mr. Buser:

On behalf of Waste Management of Wisconsin, Inc. (WMWI), SCS Engineers (SCS) is submitting the enclosed documentation for the abandonment of three monitoring wells located at the WMWI Orchard Ridge Recycling and Disposal Facility (RDF).

The wells were abandoned as proposed in the Plan of Operation for the Orchard Ridge RDF Eastern Expansion, Southern Unit, which was approved by the Wisconsin Department of Natural Resources (WDNR) on December 15, 2022.

The S302 nest, consisting of monitoring wells S302, S302A, and S302B, was abandoned because it was located within the footprint of the first phase of the Orchard Ridge RDF East Expansion, Southern Unit.

In accordance with Wisconsin Administrative Code NR 507.04(2), SCS provided a professional geologist or qualified technician directly supervised by a professional geologist to observe the abandonment of the wells. The monitoring well abandonment forms are included in **Attachment A**, along with the original well construction forms and soil boring logs. Details of the abandonment are presented below.

Well protective casings and covers were removed from the wells prior to abandonment. Dedicated well tubing and associated well wizard pumps were also removed prior to abandonment.

Each monitoring well was overdrilled utilizing a roto-sonic track rig equipped with a water rotary drill bit. The bit had a welded steel extension rod designed to keep the drill bit centered within the 2-inch PVC riser pipe and screen, preventing deviation from the original borehole. PVC fragments were observed in the drill cuttings for each well overdrill, indicating that the overdrill was aligned with the well. Once the target depth of each overdrill was reached, the drill crew pumped bentonite-cement grout to the bottom of the hole using the water rotary drill stem. The drill stem was then retracted in sections, with grout pumped as each section was withdrawn to displace the groundwater and seal the well bore from the bottom up. Grout reached the surface and was circulated within the borehole at each former well location.



Mr. David Buser March 23, 2023 Page 2

During final review of the well abandonment documentation, SCS determined that the target overdrill depths provided to the driller and field geologist did not account for the fact that the well casings for the S302 wells had been extended approximately 8 feet to accommodate perimeter berm construction after the initial installation. Due to this oversight in the abandonment planning, the PVC casing and screen were not completely removed by overdrilling; however, we believe the abandonment meets the intent of the NR 141 requirements. For water table well S302, the overdrill extended to approximately 1.5 feet above the bottom of the well screen. For piezometers S302A and S302B, the overdrill extended to approximately the top of the filter pack. Bentonite-cement grout pumped through the drill stem at the overdrill depth likely filled the well screen below and a portion of the filter pack. The piezometers were screened in permeable sand units; therefore, vertical migration within the screened interval is not a concern. The well casings were removed and the borehole was sealed above the filter packs, preventing vertical flow across the clay aquitard layers.

On March 20, 2023, SCS (Sherren Clark) contacted you to discuss the abandonment procedure and overdrill depths. Based on the information discussed, you indicated that you did not have concerns regarding the well abandonments.

If you have any questions or concerns regarding the enclosed documentation, please contact Eric Oelkers at 608-444-3934 or eoelkers@scsengineers.com.

Eric Oelkers, PG

SCS Engineers

Senior Project Manager / Hydrogeologist

Sincerely,

Aaron C. Lofberg Staff Professional SCS Engineers

ACL/jsn/EO/SCC

cc: BJ Leroy, WDNR
Dan Roche, WMWI
Brett Coogan, WMWI
Alicia Zewicki, WDNR
Ann Bekta, WDNR
Greg Konsionowski, WMWI

Encl. Attachment A – Monitoring Well Nest S302 Abandonment Forms, Well Construction Forms, and Soil Boring Logs

I:\25222265.00\Deliverables\221128 OR November 2022 Well Abandonment Documentation\230323_OR Well Abandonment Letter.docx

Attachment A

Monitoring Well Nest S302 Abandonment Forms, Well Construction Forms, and Soil Boring Logs

State of Wis., Dept. of Natural Resources SCS No. 25222265 dnr.wi.gov

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WI

53021

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

11/22/2022

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. Route to DNR Bureau: **Drinking Water** X Remediation/Redevelopment Watershed/Wastewater Verification Only of Fill and Seal X Waste Management Other: _ 1. Well Location Information 2. Facility / Owner Information County WI Unique Well # of Hicap # **Facility Name** Removed Well Orchard Ridge RDF Eastern Expansion Waukesha Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code 268262940 GPS008 DD N License/Permit/Monitoring# SCR002 License #4491 W OTH001 Section 1/4 / 1/4 SW ¹∕₄ NE Township Original Well Owner Range XE Waste Management of Wisconsin, Inc. 8 N or Gov't Lot# 1 20 Present Well Owner Well Street Address Waste Management of Wisconsin, Inc. W124 N9355, Boundary Rd Mailing Address of Present Owner Well City, Village or Town Well ZIP Code W124 N9355 Boundary Road Menomonee Falls 53051 City of Present Owner State ZIP Code Subdivision Name Lot# Menomonee Falls WI 53051 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? X N/A No Landfill Expansion Liner(s) removed? X N/A Yes No 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No X N/A Original Construction Date (mm/dd/yyyy) X Monitoring Well X N/A Screen removed? Yes No 12/15/2006 Water Well Casing left in place? Yes X No N/A If a Well Construction Report is available. Borehole / Drillhole Was casing cut off below surface? Yes X No N/A please attach. Did sealing material rise to surface? No X N/A Construction Type: Yes Did material settle after 24 hours? X N/A Yes No X Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes No X N/A Other (specify): If bentonite chips were used, were they hydrated X N/A Formation Type: with water from a known safe source? Required Method of Placing Sealing Material X Unconsolidated Formation Bedrock Conductor Pipe-Gravity X Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Screened & Poured Other (Explain): (Bentonite Chips) Lower Drillhole Diameter (in.) Casing Depth (ft.) Sealing Materials **Neat Cement Grout** Concrete 5.7 8.5 Sand-Cement (Concrete) Grout **Bentonite Chips** Was well annular space grouted? X Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) X Bentonite - Cement Grout **Bentonite Chips** 3.5 6.5 Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or Mix Ratio or 5. Material Used to Fill Well / Drillhole Bentonite-Cement Grout Surface 22 25 gallons 6. Comments S302, overdrilled and grouted well, DNR Well ID Number: 122 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing License # Date of Filling & Sealing or Verification Noted By (mm/dd/yyyy) 11/15/2022 Horizon Construction & Exploration Street or Route Telephone Number Comments 764 Tower Drive (262) 692-3348 City State ZIP Code Signature of Person Doing Work Date Signed

State of Wis., Dept. of Natural Resources SCS No. 25222265 dnr.wi.gov

Fredonia

WI

53021

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

11/22/2022

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. Route to DNR Bureau: **Drinking Water** Watershed/Wastewater |X | Remediation/Redevelopment Verification Only of Fill and Seal X Waste Management Other: _ 1. Well Location Information 2. Facility / Owner Information County WI Unique Well # of Hicap # **Facility Name** Removed Well Orchard Ridge RDF Eastern Expansion Waukesha VT567 Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code 268262940 GPS008 DD N License/Permit/Monitoring# SCR002 License #4491 W OTH001 Section 1/4 / 1/4 SW ¹∕₄ NE Township Original Well Owner Range XE Waste Management of Wisconsin, Inc. 8 N or Gov't Lot# 1 20 Present Well Owner Well Street Address Waste Management of Wisconsin, Inc. W124 N9355, Boundary Rd Mailing Address of Present Owner Well City, Village or Town Well ZIP Code W124 N9355 Boundary Road Menomonee Falls 53051 City of Present Owner State ZIP Code Subdivision Name Lot# 53051 Menomonee Falls WI 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? X N/A No VT567 Landfill Expansion Liner(s) removed? X N/A Yes No 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No X N/A Original Construction Date (mm/dd/yyyy) X Monitoring Well X N/A Screen removed? Yes No 12/15/2006 Water Well Casing left in place? Yes X No N/A If a Well Construction Report is available, Borehole / Drillhole Was casing cut off below surface? Yes X No N/A please attach. Did sealing material rise to surface? No X N/A Construction Type: Yes Did material settle after 24 hours? X N/A Yes No X Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes No X N/A Other (specify): If bentonite chips were used, were they hydrated X N/A Formation Type: with water from a known safe source? Required Method of Placing Sealing Material X Unconsolidated Formation Bedrock Conductor Pipe-Gravity X Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Screened & Poured Other (Explain): 48.6 (Bentonite Chips) Lower Drillhole Diameter (in.) Casing Depth (ft.) Sealing Materials **Neat Cement Grout** Concrete 44 8.5 Sand-Cement (Concrete) Grout **Bentonite Chips** Was well annular space grouted? X Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) X Bentonite - Cement Grout **Bentonite Chips** 40 Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or Mix Ratio or 5. Material Used to Fill Well / Drillhole To (ft.) Bentonite-Cement Grout Surface 50 55 gallons 6. Comments S302A, overdrilled and grouted well, DNR Well ID Number: 123 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing License # Date of Filling & Sealing or Verification Noted By (mm/dd/yyyy) 11/15/2022 Horizon Construction & Exploration Street or Route Telephone Number Comments 764 Tower Drive (262) 692-3348 City State ZIP Code Signature of Person Doing Work Date Signed

State of Wis., Dept. of Natural Resources SCS No. 25222265 dnr.wi.gov

City

Fredonia

State

WI

ZIP Code

53021

Signature of Person Doing Work

Date Signed

11/22/2022

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. Route to DNR Bureau: **Drinking Water** X Remediation/Redevelopment Watershed/Wastewater Verification Only of Fill and Seal ➤ Waste Management Other: _ 1. Well Location Information 2. Facility / Owner Information County WI Unique Well # of Hicap # **Facility Name** Removed Well Orchard Ridge RDF Eastern Expansion Waukesha VT568 Facility ID (FID or PWS) Latitude / Longitude (see instructions) Format Code Method Code 268262940 GPS008 DD N License/Permit/Monitoring# SCR002 License #4491 W OTH001 Section 1/4 / 1/4 SW ¹∕₄ NE Township Original Well Owner Range XE Waste Management of Wisconsin, Inc. 8 N or Gov't Lot # 1 20 Present Well Owner Well Street Address Waste Management of Wisconsin, Inc. W124 N9355, Boundary Rd Mailing Address of Present Owner Well City, Village or Town Well ZIP Code W124 N9355 Boundary Road Menomonee Falls 53051 City of Present Owner State ZIP Code Subdivision Name Lot# 53051 Menomonee Falls WI 4. Pump, Liner, Screen, Casing & Sealing Material Reason for Removal from Service WI Unique Well # of Replacement Well Pump and piping removed? X N/A No VT568 Landfill Expansion Liner(s) removed? X N/A Yes No 3. Filled & Sealed Well / Drillhole / Borehole Information Liner(s) perforated? Yes No X N/A Original Construction Date (mm/dd/yyyy) X Monitoring Well X N/A Screen removed? Yes No 12/14/2006 Water Well Casing left in place? X Yes No N/A If a Well Construction Report is available, Borehole / Drillhole X No Was casing cut off below surface? Yes N/A please attach. Did sealing material rise to surface? No X N/A Construction Type: Yes Did material settle after 24 hours? X N/A Yes No X Drilled Driven (Sandpoint) Dug If yes, was hole retopped? Yes No X N/A Other (specify): If bentonite chips were used, were they hydrated X N/A Formation Type: with water from a known safe source? Required Method of Placing Sealing Material X Unconsolidated Formation Bedrock Conductor Pipe-Gravity X Conductor Pipe-Pumped Total Well Depth From Ground Surface (ft.) Casing Diameter (in.) Screened & Poured Other (Explain): (Bentonite Chips) Casing Depth (ft.) Lower Drillhole Diameter (in.) Sealing Materials **Neat Cement Grout** Concrete 71.4 8.5 Sand-Cement (Concrete) Grout **Bentonite Chips** Was well annular space grouted? X Yes No Unknown For Monitoring Wells and Monitoring Well Boreholes Only: If yes, to what depth (feet)? Depth to Water (feet) **Bentonite Chips** X Bentonite - Cement Grout 67.6 17.5 Granular Bentonite Bentonite - Sand Slurry No. Yards, Sacks Sealant or Mix Ratio or 5. Material Used to Fill Well / Drillhole **Bentonite-Cement Grout** Surface 77 70 gallons 6. Comments S302B, overdrilled and grouted well, DNR Well ID Number: 124 7. Supervision of Work **DNR Use Only** Name of Person or Firm Doing Filling & Sealing License # Date of Filling & Sealing or Verification Noted By (mm/dd/yyyy) 11/15/2022 Horizon Construction & Exploration Street or Route Telephone Number Comments 764 Tower Drive (262) 692-3348

Note: Well casing extended to 765.02 due to berm construction

	Remediation/Redevelopment Oth	ste Managemen X Form 4400-113A	Rev. 7-98
Facility/Project Name	Local Grid Location of Well	Well Name	
NM Orchard Ridge RDF BT2 #31854		ft. w S3	302
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated:) or Well Location Wis. Unique Well No	o. DNR Well ID No.
4491	LatLong.	orVT 566	_122_
Facility ID		514748 ft. E. S/C/N Date Well Installed	N. A. Service W. T.
268262940	Section Location of Waste/Source	12 m m	15/2006 7 V V V
Type of Well	집 이 경우 아이들이 되었다. 그 아내의 경우 사고 하는 사람이 되어 되었다. 그리고 있다.	XIE Wall Installed Day V	lame (first, last) and Fir
Well Code 11 / MW	SW 1/4 of NE 1/4 of Sec. 1	Keyin McCumb	
Distance from Waste/ Enf. Stds.	Location of Well Relative to Waste/S u Upgradient s Side	gradient Gov. Lot Number	
Sourceft. Apply		Known Badger State Di	rilling
A. Protective pipe, top elevation _ 757.	41 ft MSL	1. Cap and lock?	X Yes No
757		2. Protective cover pipe:	
H. Well casing, top elevation	OF IL MSL	a. Inside diameter:	3.8 in.
Land surface elevation 754	8 ft MSL	b. Length:	5.0 R.
		c. Material:	Steel 0 4
D. Surface seal, bottom_ 7513 ft. MS	475-1775-14-M	Anodized Aluminum	Other X
12. USCS classification of soil near scree	m: N	d. Additional protection?	Yes X No
	SW SP I	If yes, describe:	
	CT X CH A H	1	Bentonite X 30
Bedrock		3. Surface scal:	Concrete 01
13. Sieve analysis performed?	Yes No	1	Other
14. Drilling method used: Ro	tery 50	4. Material between well casing and protect	
Hollow Stem At			Bentonite 3 0
	Other San	Pea Gravel	Other 🔲 💹
			ped Bentonite X 33
15. Drilling fluid used: Water 0 2	Air 01	bLbs/gal mud weight Bentoni	Toronto Contract
Drilling Mud 0 3 1	None X 99 88 88	cLbs/gal mud weight Ber	the state of the s
		d % Bentonite Bentonite	
16. Drilling additives used?	Yes No	e. 1.2 Ft 3 volume added for any	of the above
		f. How installed:	Tremie 01
Describe			emie pumped 02
17. Source of water (attach analysis, if requ	uired):		Gravity X 08
		6. Bentonite seal: a. Bento	mite granules 33
		b. /4 in. 3/8 in. 1/2 in. B	
E. Bentonite seal, top _ 754.8 _ ft. MS	SL orft.	/ c	Other 🔲
		/	
F. Fine sand, top751.3 _ ft. MS	SL or 3.5 ft.	7. Fine sand material: Manufacturer, prod	luct name & mesh size
		Sidley Ohio Silica #40.	/60
G. Filter pack, top 750.8 ft. MS	12 or4.0 ft	b. Volume added 0.2	63
		8. Filter pack material: Manufacturer, proc	duct name & mesh size
H. Screen joint, top 749.1 _ ft. MS	L or 5.7 ft.	Sidley Ohio Silica #	5 🗵
		/	ft3
Well bottom 739.6 ft. MS	Lor 15.2a	9. Well casing: Flush threaded PVC:	The second secon
		Flush threaded PVC	
Filter pack, bottom 739.3 ft. MS	L or 15.5ft.		Other 🔲 📖
, 200-5-00-00-0-0-0-0-0-0-0-0-0-0-0-0-0-0-		10. Screen material: PVC Schedu	T 7.00
C. Borehole, bottom 739.3 ft. MS	L or 15.5m.	a. Screen type:	
		The state of the s	
_ Borehole, diameter 8.5 in.		Col	=
III.		b. Manufacturer Monoflex	Other 🔲 🧱
		c. Slot size:	0, 010 in.
A OD well casine 2.38		d. Slotted length:	9.5_ft.
M. O.D. well casing			
- C		11. Backfill material (below filter pack):	None X 14
	form is true and correct to the hear of	11. Backfill material (below filter pack):	

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR offics and bureau. Completion of these reports is required by chs. 160, 281, 283, 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.

Note: Well casing extended to 765.34 due to berm construction

Facility/Project Name WM Orchard Ridge RDF BT2 #3185A Facility License, Permit or Monitoring No. Local 4491 Lat. St. Pi	diation/Redevelopment I Grid Location of Well ft Grid Origin (estim	Waste Managemen X Other	Form 4400-113A Rev. 7-98 Well Name
WM Orchard Ridge RDF BT2 #3185A Facility License, Permit or Monitoring No. Local 4491 Lat. Facility ID 259262040 St. Pi	n.	N. DE	The state of the s
Facility License, Permit or Monitoring No. Local 4491 Lat. Facility ID St. P. St. P.	Grid Origin (estim	6 paragram	
Facility ID Lat. St. P	Grid Origin / setim	pw.	S302A
269262040		ated: or Well Location Long. or	
	lane 437656 ft N on Location of Waste/Sou	I. 2514753 ft E. S/C/N	m m d d v v v v
Type of Well Code 12 / PZ SW	1/4 of NE 1/4 of Sec.	1 T. 8 N.R. 20 W	Well Installed By: Name (first, last) and Fin Kevin McCumber
Distance from Waste/ Enf. Stds. u Sourceft. Apply d	Upgradient s Downgradient n	Sidegradient Not Known	Badger State Drilling
A. Protective pipe, top elevation _ 757 6	8 ft MSL	1. Cap and lock?	X Yes No
or and and the statement	1 ft. MSL	2. Protective cover	2.0
(12 Belling 1980 - 1980 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 - 1987 -	9 ft MSL	b. Length:	8.0 ft. Steel 0 4
D. Surface seal, bottom_ 749_ & ft. MSL or	_ 5.2_ ft. g _ 5.1	1 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	zed Aluminum Other X
12. USCS classification of soil near screen: GP GM GC GW SW SM SC ML MH CL	SP CH	d. Additional pro If yes, describ	election? Yes XNo
Bedrock 13. Sieve analysis performed? Yes	TNo No	3. Surface scal: 4. Material between Per Standard space see b. Lbs/gal m c. Lbs/gal m d. % Benton e. 11.0 Ft f. How installed:	Concrete 01
14. Drilling method used: Rotary	50	4 Material between	Other Other well casing and protective pipe:
Hollow Stem Auger	X41 W	4. Malerial Decweed	Bentonite 3 0
Other		Pe	ea Gravel Other X
		5. Annular space ser	- Interiest
	01	I helgel w	and weight Bentonite-sand slurry 35
Drilling Mud 0 3 None	₹99 👹	c I he/gal m	nud weight Bentonite slurry X 31
16 Dellies additions and 10	B	d. % Benton	ite Bentonite-cement grout 50
16. Drilling additives used?	_No	e 11.0 Ft	volume added for any of the above
Describe		f. How installed:	
17. Source of water (attach analysis, if required):	-		Tremie pumped X 02
27. Double de Water (accent analysis, it icquired).			Gravity 08
		6. Bentonite seal:	a. Benumite granules 33
E. Bentonite seal, top719.8 _ ft. MSL or _	No 5 0 3 4 1 0 1 9 9 No 35.0 ft.	b/4 in. 🔀:	3/8 in. 1/2 in. Bentonite chips X 3 2 Other
F. Fine sand, top	_ 40.3 ft.	BOOD /	d: Manufacturer, product name & mesh size
G. Filter pack, top713.3 _ ft. MSL or _	_41.5 ft.	b. Volume added	dley Ohio Silica #40/60
H. Screen joint, top711.0 _ ft. MSL or _	43.9 ft		al: Manufacturer, product name & mesh size
		b. Volume added	
I. Well bostom706.3 _ ft. MSL or		9. Well casing:	Flush threaded PVC schedule 40 \(\simeq 23 \) Flush threaded PVC schedule 80 \(\simeq 24 \)
J. Filter pack, bottom705.8 _ ft. MSL or _	49.0ft.		Other 🔲 💹
K. Borehole, bottom705.8 _ ft. MSL or _	49.0ft.	10. Screen material: a. Screen type:	PVC Schedule 40 Factory cut 🗵 1 1
L Borehole, diameter 8.5 in.			Continuous slot 0 1
M. O.D. well casing2.38 in.		b. Manufacturer . c. Slot size:	
N. I.D. well casing2.05 in.		d. Slotted length:	_4 <i>J</i> _ft.
		11. Backfill material ((below filter pack): None X 14 Other
I hereby certify that the information on this form is	s true and correct to the b	est of my knowledge.	

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.

Note: Well casing extended to 765.41 due to berm construction

	Remediation/Redevelopment Other	57	Form 4400-113A Rev. 7-98
Facility/Project Name	Local Grid Location of Well	□E.	Well Name
WM Orchard Ridge RDF BT2 #3185A		ft. W.	S302B
Facility License, Permit or Monitoring No. 4491	Local Grid Origin (estimated: Lat. "Long.	or or	Wis, Unique Well No. DNR Well ID No. VT 568 124
Facility ID 268262940		14/59 ILE. S/C/N	Date Well Installed 12/14/2006 m m d d y y y y
Type of Well Well Code 12 / PZ	SW 1/4 of NE 1/4 of Sec. 1 .T Location of Well Relative to Waste/So	N, K_ 20 UW	Well Installed By: Name (first, last) and Fir Kevin McCumber
Distance from Waste/ Enf. Stds. Sourceft. Apply	u Upgradient s Sideg	radient	Badger State Drilling
L. Protective pipe, top elevation 757.		1. Cap and lock?	X Yes No
Well casing, top elevation	28 ft. MSL	2. Protective cover pi	pe: 3.8 in.
2. Land surface elevation 755	1 ft.MSL	b. Length:	8.0 _ ft.
D. Surface seal, bottom_ 748_ & ft. MS	SLor 5.4 ft.	c. Material:	Steel 0
12. USCS classification of soil near screen	2000 A C 1000	STATE OF THE PARTY	d Aluminum Other 🗵 🐃
	SW SP T	d. Additional prote	
SM X SC ML MH	TO CHO UNITED IN	11	Bentonite X 30
Bedrock		3. Surface scal:	Concrete 0 01
13. Sieve analysis performed?	Yes No	1	Other 🗍
	tary 150	4. Material between w	vell casing and protective pipe:
Hollow Stem Ax	ager ×41	14.5	Bentonite 3
	ther 🗆 🔛 📓		Gravel Other
15. Drilling fluid used: Water 0 2	Air 01	5. Annular space seal:	
	None X 99		d weight Bentonite-sand slurry 35
			d weight Bentonite slurry X 3 1
16. Drilling additives used?	Yes No	21.0 Ft 3	volume added for any of the above
Describe		f. How installed:	Tremie 0
17. Source of water (attach analysis, if requ	lined):	4	Tremie pumped X 02
the second secon		A SECURITY OF THE SECURITY OF	Gravity 0 8
		6. Bentonite seal:	a. Bentunite granules 3 3
Bentonite seal, top692.4 _ ft. MS	Lor 62.4 ft.	b. 14 in. 3/4	8 in. 1/2 in. Bentonite chips X 3 2 Other
Fine sand, top687.2 _ ft. MS	Yes No tary 50 ager X41 ther 01 None X99 Yes No aired): Lor 67.6 ft.		Manufacturer, product name & mesh size ey Ohio Silica #40/60
i. Filter pack, top686.0 ft. MS	Lor 68.8 ft.	b, Volume added _	1.2 ft ³
I. Screen joint, top683.7 _ ft. MS	Lor 71.4 ft.	8S	: Manufacturer, product name & mesh size idley Ohio Silica #5
. Well bottom 679.0 ft. MS	Lor 76.1 ft.	The second secon	3.3 ft ³ Flush threaded PVC schedule 40 🔀 2.3
Filter pack, bottom676.8 _ fr. MS	Lor78.0ft	\	Flush threaded PVC schedule 80 2 4 Other :
Borchole, bottom664.8 _ ft. MS	Lor90.0ft	10. Screen material: a. Screen type:	PVC Schedule 40 Factory cut 11
Borehole, diameter8.5 in.		2.5	Continuous slot 0 1
A. O.D. well easing2.38 in.		b. Manufacturer _ c. Slot size:	Monoflex 0. 010 in.
I. I.D. well casing		d. Slotted length: 11. Backfill material (be	4.7_ ft. elow filter pack): None
			tonite Chips Other X

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.

Depar	tment o	f Natu	ral Resou	irces	Solid Waste Emergency Respo Wastewater	nse	Haz. Was Undergro Water Re Other	und Tan	ıks	Forn	1 4400	-122				10-92 Page 1
Wi Boring Ba	g Drilled dger St	ard Rio By (Fi ate Dr	dge RDF rm name illing		chief) n McCumber		44 Drillin 12	g Starte /15/200	d 96	Dri	lling C 12/15/	omplet '2006	ed	S302 Dri 41/4	lling Me "HSA	
			o. wit	/T566	Common Well N	vame	Static	Water L eet	evel	Sur	face El 754.8	evatior Feet	1	Bor 8.5	ehole Di Inches	am.
State P SV	V 1/4 of		437656 4 of Sec	5 N, 25 tion 1, T. 8 N., R	14748 E . 20 E.		Lat. Long.				cal Gric	The second representation		appli	cable)	with 1122
County	Wa	ukesh	na			DNR	County C 68	ode	Civil	own/C enomo	ity/or V	Village alls			,	
Sar	nple	s	1							F	Q	Soil	Prope	rties	-	
Number	Length Recovered	Blow Counts	Depth in Feet	i	Soil/Rock Descrip nd Geologic Origi Each Major Uni	n For		nscs	Graphic Log	Well Diagram	Max. PID/FID	Standard Penetration	Moisture Content	P200	RQD/	Comments
I hereb	y certify	that the	10	See boring description End of bori Set 10' PV	d 0 to 15.5'; log S302B for sols. ng @ 15.5'; C screen at 15.2'	•	of my knov	wledge.								
Signatu		10	Zh.	For		Firm	BT ² , Inc		Т	erry M	arch		THE RELEASE OF MAINTAIN	*	A (A	
than \$1	0 nor m	re thai	n \$5,000 t	for each violation.	162, Wis. Stats. C Fined not less tha plation is a separate	n \$10 or n	nore than \$	100 or i	mpriso	ned not	less th	an 30 d	ot less lays, o	5 r		

State of Wisconsin

Route To:

SOIL BORING LOG INFORMATION

Route To: State of Wisconsin SOIL BORING LOG INFORMATION Department of Natural Resources Haz. Waste Form 4400-122 Solid Waste Underground Tanks **Emergency Response** Water Resources Wastewater Other Page 1 Facility/Project Name License/Permit/Monitoring Number Boring Number WM Orchard Ridge RDF Eastern Expansion 3185A 4491 S302A Boring Drilled By (Firm name and name of crew chief) **Drilling Started** Drilling Completed Drilling Method **Badger State Drilling** Kevin McCumber 12/15/2006 12/15/2006 41/4"HSA DNR Facility Well No. WI Unique Well No. Common Well Name Surface Elevation 754.9 Feet Static Water Level Borehole Diam. VT567 8.5 Inches **Boring Location** Local Grid Location (If applicable) Lat. State Plane 437656 N. 2514753 E Long. SW 1/4 of NE 1/4 of Section 1, T. 8 N., R. 20 E. Civil Town/City/or_Village County **DNR County Code** Waukesha 68 Menomonée Falls Sample Soil Properties Well Diagram Max. PID/FID Blow Counts Depth in Feet Soil/Rock Description Graphic Log Standard Penetration Recovered Comments And Geologic Origin For Moisture Content Number Length Each Major Unit USCS P200 Blind drilled 0 to 49': See boring log S302B for soil descriptions. 20 25 I hereby certify that the information on this form is true and correct to the best of my knowledge. Signature Firm BT2, Inc. Terry March tor

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this form is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or

both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06 Wis. Stats.

ring	Number	S30	2A	Use only as an attachment to Form	4400-122.						Pag
San	nple	•						Soil	Proper	ties	. 45
Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	nscs	Graphic Log Well Diagram	Max. PID/FID	Standard Penetration			RQD/ Comments
			30	Blind drilled 0-49'; See boring log S302B for soil descriptions.			NA PARAKANANANANANANANANANANANANANANANANANAN				
			40-				f				
				End of boring @ 49'; Set 5' PVC screen at 48.6'.							
			55-								
			65-						MINOR THE REPORT OF THE PROPERTY OF THE PROPER		

State of Wisconsin

Department of Natural Resources

Route To:

SOIL BORING LOG INFORMATION

Solid Waste

Haz. Waste

Form 4400-122

Underground Tanks

Terry March

Emergency Response

Water Resources

Wastewater

Other _

Page 1

Facility/Project Name WM Orchard Ridge	RDF Eastern Expans	ion BT ² # 3185A	License/Permit/Moni 4491	toring Number B	oring Number S302B
Boring Drilled By (Firm Badger State Drilling)	name and name of crew		Drilling Started 12/13/2006	Drilling Completed 12/14/2006	Drilling Method 41/4"HSA & 3 7/8" RWB
DNR Facility Well No. 124	WI Unique Well No. VT568	Common Well Name	Static Water Level Feet	Surface Elevation 755.1 Feet	Borehole Diam. 8.5 Inches
	37657 N, 251 of Section 1, T. 8 N., R	14759 E . 20 E.	Lat. Long.	Local Grid Location	(If applicable)
County		DVD	C	P /01: / 3 !!!!	

County	ounty DNR County Code Civil Town Waukesha 68 Menon							ity/or \ nee Fa	ty/or Village nee Falls					
San	nple								Soil	Prope	rties			
Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Standard Penetration	Moisture Content	P200	RQD/ Comments		
S1				FILL - RAILROAD GRADE.	FILL				•	М		No Split Spoon Sample		
S2									-	М				
S3	14	04- 10 12- 15	5-	CLAY, brown (10YR 5/3); some fine to coarse sand and gravel; stiff.	FILL				1.5	M				
S4	22	07-14 17-20	} -	LEAN CLAY, dark yellowish brown	ļ				2.5	М				
S5	24	07-09 11-15	- 10	(10YR 4/4); some fine to coarse sand; little gravel; very stiff. At 8' to 10'; % g-s-si-cl=10-13-35-42.	CL				2.5	М	77			
S6	24	07-11 15-22	9	LL = 29 PI = 15 LEAN CLAY, dark grayish brown (10YR 4/2); very stiff to hard.	CL				3- 4.5	М				
S7	24	10-17 16-19		SILT, grayish brown (10YR 5/2); very stiff.	ML				2.5	М				
S8	24	08-09 10-13	15-	LEAN CLAY, dark grayish brown (10YR 4/2); very stiff.					4.5+	w				
S9	24	05-12 12-14		TOLI, VOLY SUII.				·	2.5	w				
S10	24	09-15 18-22	20						4.0	w				
S11	24	09-16 25-31			CL				3.5	w				
S12	24	10-17 20-25							3.25	w				
S13	24	06-09 13-18	25-						3.0	w				
			<u> </u>											

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

Signature Firm BT², Inc.

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this form is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06 Wis. Stats.

Boring Number S302B Use only as an attachment to Form 4400-122. Page 2 Sample Soil Properties Well Diagram Max. PID/FID Blow Counts Depth in Feet Soil/Rock Description Graphic Log Recovered Standard Penetration Comments And Geologic Origin For Moisture Content Number Length Each Major Unit RQD/ S14 24 10-10 LEAN CLAY, dark grayish brown (10YR 2.5 W 14-18 09-15 4/2); very stiff. S15 24 CL 2.5 W 19-24 30 13-18 **S16** 24 W 0 14-15 Interbedded layers of SILT and LEAN CLAY, grayish brown (10YR 5/2); soft. 07-09 **S17** 24 09-11 0 W ML-CL 80-80 S18 24 35 0 W 12-13 no POORLY GRADED SAND, grayish S19 0 recov brown (10YR 5/2), fine to medium; little W ery silt; loose. SP 01-02 S20 24 W 03-04 POORLY GRADED SAND, gray (10YR 10-14 S21 15 5/1), fine to coarse; some gravel; trace W 3 10-11 silt; medium dense to dense. 05-17 S22 17 W 12-16 At 42' to 46': % g-s-si & cl=27-70-3. 11-11 S23 19 45 SP W 13-16 18-18 S24 18 W 18-18 19-29 S25 16 W 34-41 50 POORLY GRADED SAND, grayish 33-44 S26 13 brown (10YR 5/2) fine to medium; little W SP 50/2 silt; very dense. 11-22 LEAN CLAY, gray (10YR 5/1); little to **S27** 20 3.5 W 27-33 some fine to coarse sand; trace to little gravel; very stiff to hard. S28 3" Shelby 55 3.5 W Tube 31-31 S29 CL 24 4.5+ W 36-44 45-S30 NR 4.5+ W 50/4 60 S31 3 50-3 1.0 W LEAN CLAY, grayish brown (10YR 5/2); medium stiff. 21-20 **S32** 19 .75 W 35-41 CL 27-39 S33 24 65 1.0 W 41-47

10-92 Boring Number S302B Use only as an attachment to Form 4400-122. Page 3 Sample Soil Properties Max. PID/FID Depth in Feet Well Diagram Blow Counts Soil/Rock Description Graphic Log Length Recovered Standard Penetration Comments And Geologic Origin For Moisture Content Number Each Major Unit **NSCS** RQD/ S34 24 30-46 LEAN CLAY, grayish brown (10YR 5/2); 1.0 W (blow counts medium stiff. 47-50/2 at 67 CL 14-22 S35 24 to 68') 1.0 W 37-45 70 SILTY SAND, gray (10YR 5/1) fine; little 34-42 S36 24 W 46-50 38at 72' to 76': % g-s-si & cl=0-86-14. S37 10 SM 50/5 W 14 32-32 S38 15 75 W 35-40 LEAN CLAY, dark grayish brown (10YR 13-15 S39 24 5/2); stiff to very stiff. 2.5 W 24-31 11-14 S40 24 1.5 W 19-24 80 13-14 S41 24 12-15 1.0 W 10-13 S42 24 CL 1.5 W 17-20 11-20 S43 24 85 1.75 W 18-23 12-17 **S44** 24 2.0 W 23-27 13-19 S45 24 2.0 W 22-26 90 End of boring @ 90'; Set 5' PVC screen to 76.1'. 95 100 105