From: Cathy Warner <Catherine.Warner@ghd.com>
Sent: Tuesday, July 05, 2022 4:15 PM
To: Michalets, Linda M - DNR
Cc: Scott Thompson (sthomson@solenis.com); Dustin Zedaker
Subject: FW: Solenis - Aquapel Area SIR Addendum BRRTS #02-41-577350
Attachments: 2021 Boring Logs.pdf; MW-15 Field Notes - 10-Screen.pdf; MW-16 Field Notes - 10-Screen.pdf; December 2021 Solenis Well Development.pdf

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Linda,

The requested boring logs and development logs are attached. MW-15 and -16 were installed with 10' screens, drillers log incorrect in stating 5 foot screens, field notes attached to confirm screen intervals.

The revised PG certification is being completed.

If you need anything else please let me know.

Thanks,
Cathy

From: Michalets, Linda M - DNR <Linda.Michalets@wisconsin.gov>
Sent: Wednesday, June 22, 2022 12:48 PM
To: Cathy Warner <Catherine.Warner@ghd.com>
Subject: Solenis - Aquapel Area SIR Addendum BRRTS #02-41-577350

Hi Cathy,
I received the SIR Addendum report for the Solenis – Aquapel Area site. I'm taking a first look at it, but I don't see the boring logs and well development forms for the new wells in Appendix C. Could you email those to me as soon as you can?

Also, verify the well-screen lengths on the replacement wells MW-15 and 16. The report text and groundwater elevation table indicate that they have 10-ft well screens, but the Monitoring Well Construction forms appear to indicate that they are 5-ft screens. All the well construction forms are missing the slotted length information in 10.d., so I am looking at the "screen joint, top" and "well bottom" numbers to determine that.

For a site investigation report with soil and groundwater, we need the hydrogeologist certification. Walter Pochron signed the report and included his Professional Geologist stamp; however, the certification statement is for an Engineer. We will need a revised page with the hydrogeologist certification statement.

The first two items are needed for me to complete my initial review of the report. The revised cert page should be provided as soon as you can, but within a month would be acceptable.

Thank you!
Linda

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Linda Michalets
she/her/hers
Hydrogeologist – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1027 W. St. Paul Ave.
Milwaukee, WI 53233
Phone: 414-435-8010
linda.michalets@wisconsin.gov

dnr.wi.gov

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STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW15
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL pavement						0.2
2	CH-CLAY, medium stiff, compact, plastic, reddish-brown	2.00					0
4							
6							
8							
10							0
12							
14							0
16	CH-CLAY, soft, compact, plastic, brown, wet	16.00					0
18							
20							
22							
24							
26	END OF BOREHOLE @ 25.00ft BGS	25.00					0
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW16
DATE COMPLETED: 4 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	CH-CLAY, soft, red-brown, wet						0.1
2							
4							
6							
8							
10							
	CH-CLAY, soft, high plasticity, compact, brown-grey	11.00					0
12							
14							
16							
18							0.2
20							
22							
24							
	END OF BOREHOLE @ 25.00ft BGS	25.00					0
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17A
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL, sludge, black						330
2							
	CH-CLAY, mixed with gravel, grey	3.00					27.2
4							
	CH-CLAY, medium stiff, compact, high plasticity, light red/brown	5.00					6.4
6							
8							
10	- soft, brown, wet at 10.00ft BGS						2.7
12							
14							
							1.1
16							
18							
20							0.6
22							
24							
							0.4
26							
28							
30							0.2
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17A
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	END OF BOREHOLE @ 35.00ft BGS	35.00					0.2
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17B
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL, building waste						278
2							
4							
	CH-CLAY, medium stiff, plastic, dense, brownish-red, wet	5.00					5.7
6							
8							
10							3.2
12							
14							
	CH-CLAY, soft, brown, wet	15.00					1.7
16							
18							
20							0.2
22							
24							
							2.5
26							
28							
30							0.4
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17B
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
							0.2
36							
38							
40	- medium stiff, brown at 40.00ft BGS						0.3
42							
44							0.1
46							
48							
50	END OF BOREHOLE @ 50.00ft BGS	50.00					0.1
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17C
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL, topsoil, building debris						15
2							
4	CH-CLAY, high plasticity, soft, compact, dark grey	4.00					7
6							
	CH-CLAY, dense, light brown	7.00					4
8							
10	- wet clays at 10.00ft BGS						1.2
12							
14							
16							
18							
20							1.4
22							
24							
							1.1
26							
28							
30	CH-CLAY, muddy, very plastic, very soft, light brown	30.00					0.6
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17C
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	CH-CLAY, trace gravel, very soft, compact, grey	35.00					0.1
36							
38							
40							0
42							
44							0
46							
48							
50							0
52							
54							
56							
58							
60	CH-CLAY, soft, compact, light grey, rounded dolomite/limestone cobbles and gravel	60.00					0
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17C
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
72							
74							
	CH-CLAY, trace gravel, compact, soft, very plastic, light grey, wet	75.00					0
76							
78							
80							
82							
84							
86							
88							
90							
92							
94							
96							
98							
100	GRAVELLY CLAY, stiff, compact, medium plasticity, grey	100.00					0
102							
104							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17C
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
106							
108							
110	CH-CLAY, compact, medium stiff, high plasticity, grey	110.00					0
112							
114							
116							
118							
120							
122							
124							
126							
128							
130	LIMESTONE, mixed with grey clay, plastic	130.00					0
132							
134							
136							
138							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

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STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW17C
DATE COMPLETED: 1 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	LIMESTONE, shattered, grey	140.00					0
142							
144	END OF BOREHOLE @ 144.00ft BGS	144.00					0
146							
148							
150							
152							
154							
156							
158							
160							
162							
164							
166							
168							
170							
172							
174							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18B
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	CONCRETE, gravel						
2	CL-CLAY, stiff, grey/brown	2.00					0.2
4	CH-CLAY, medium stiff, red-brown	4.00					0.9
6							
8							
10							0.5
12	CH-CLAY, compact, high plasticity, brown, wet	12.00					0.3
14							
16							
18							
20							0.2
22							
24							
26							
28							
30							0.1
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18B
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
36							
38							
40							
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.00ft BGS	50.00					0
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18C
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	CONCRETE, topsoil						0.1
2	CL-CLAY, hard, medium plasticity, brown	2.00					0.1
4							
6	CH-CLAY, soft, high plasticity, brown-red, wet	6.00					0
8							
10							
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18C
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
36							
38							
40	CH-CLAY, soft, brown, limestone gravel	40.00					0
42							
44							
46							
48							
50							0
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18C
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
72							
74	- brown, wet at 75.00ft BGS						0
76							
78							
80							
82							
84							
86							
88							
90							
92							
94							
96							
98							
100	GRAVELLY, limestone gravel increases, some cobbles	100.00					0
102							
104							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18C
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
106							
108							
110							
112							
114							
116							
118							
120							
122							
124							
126							
128							
130							
132							
134							
136							
138							0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW18C
DATE COMPLETED: 3 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	LIMESTONE, grey	140.00					0
	END OF BOREHOLE @ 141.00ft BGS	141.00					0
142							
144							
146							
148							
150							
152							
154							
156							
158							
160							
162							
164							
166							
168							
170							
172							
174							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19B
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL, concrete, black soil						0.1
2	CH-CLAY, trace gravel, stiff, compact, brown-red	2.00					0
4							
6							
8							
10							
12							
	CH-CLAY, compact, soft, brown, wet	13.00					0
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19B
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
36							
38							
40	- more gravel at 40.00ft BGS						0
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.00ft BGS	50.00					0
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19C
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	GRAVEL, topsoil						0.2
2							
	CH-CLAY, stiff, medium plasticity, compact, brown	3.00					0.1
4							
6							
8							
10							0.1
12	CH-CLAY, compact, soft, high plasticity, brown	12.00					0
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19C
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
36							
38							
40							
42							
44							
46							
48							
50	- trace limestone gravel, light brown, wet at 50.00ft BGS						0
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19C
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
72							
74	- increase in limestone gravel and cobbles at 75.00ft BGS						0
76	SC-CLAYEY SAND, soft, compact, light brown	76.00					0
78							
80							
	CH-CLAY., soft, compact, brown, wet	81.00					0
82							
84							
86							
88							
90							
92							
94							
96							
98							
100							
102							
104							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19C
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
106							
108							
110							
112							
114							
	GRAVELLY CLAY, stiff, light brown, limestone gravel and cobbles	115.00					0
116							
118							
120							
122							
124							
126							
128							
130							
132							
134							
136							
138							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: Solenis Milwaukee
PROJECT NUMBER: 11229941
CLIENT:
LOCATION:

HOLE DESIGNATION: MW19C
DATE COMPLETED: 2 December 2021
DRILLING METHOD: Sonic
FIELD PERSONNEL: Nick Naimo

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' Value	SAMPLE PID (ppm)
	LIMESTONE, crumbled, grey	140.00					0
	END OF BOREHOLE @ 141.00ft BGS	141.00					0
142							
144							
146							
148							
150							
152							
154							
156							
158							
160							
162							
164							
166							
168							
170							
172							
174							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

File: \\GHDNET\GHD\US\RICHMOND-VA\PROJECTS\565\11229941\TECH\GINT\11229941-MI.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 1/3/22

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-15

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 25. ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 122.2 gal.

7. Volume of water removed from well 36. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 2.7 ft.	24. ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 08:00 ☒ a.m. ☐ p.m.	08:30 ☒ a.m. ☐ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-16

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 0 min.

4. Depth of well (from top of well casisng) 25. ft.

5. Inside diameter of well 2.04 in.

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

7. Volume of water removed from well ___.__ gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 0.0 ft.	0. ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 08:45 ☒ a.m. ☐ p.m.	08:45 ☒ a.m. ☐ pm.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:
Dry well

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-17A

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 35. ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 131.1 gal.

7. Volume of water removed from well 40. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 3.3 ft.	34. ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 09:00 ☒ a.m. ☐ p.m.	10:00 ☒ a.m. ☐ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:
Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-17B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 50. ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 156 gal.

7. Volume of water removed from well 456 gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 4.7 ft.	49. ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 10:10 ☒ a.m. ☐ p.m.	11:10 ☒ a.m. ☐ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:
Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-17C

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 140. ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 230.0 gal.

7. Volume of water removed from well 1000.0 gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 62.9 ft.	62.9 ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 11:20 ☒ a.m. ☐ p.m.	12:20 ☐ a.m. ☒ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-18B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 50. ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 101.1 gal.

7. Volume of water removed from well 306. gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 370. ft.	490. ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 1:00 ☐ a.m. ☒ p.m.	2:00 ☐ a.m. ☒ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-18C

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 1400 ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 223.3 gal.

7. Volume of water removed from well 560.0 gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 59.0 ft.	139.0 ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 2:20 ☐ a.m. ☒ p.m.	3:20 ☐ a.m. ☒ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

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

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-19B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 500 ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 155.5 gal.

7. Volume of water removed from well 470 gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 370 ft.	490 ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 3:45 ☐ a.m. ☒ p.m.	4:45 ☐ a.m. ☒ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

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

Facility/Rroject Name	County Name	Well Name
Solenis Milwaukee	Milwaukee	MW-19C

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41	_____	___

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

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

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 1400 ft.

5. Inside diameter of well 2.04 in.

6. Volume of water in filter pack and well casing 295 gal.

7. Volume of water removed from well 610 gal.

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

9. Source of water added _____

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 138 ft.	139.0 ft.
Date	b. 12/05/2022 (mm/dd/yyyy)	12/05/2022 (mm/dd/yyyy)
Time	c. 5:00 ☐ a.m. ☒ p.m.	6:00 ☐ a.m. ☒ pm.
12. Sediment in well bottom	0.6 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

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

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dave Last Name: Gordon
Firm: Cascade Drilling

17. Additional comments on development:

Well pumped dry, let recharge and pumped dry again for three well volumes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Daniel O'Mara
Print Name: Daniel O'Mara
Firm: Cascade Drilling

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

1330- Sample at 50ft BGS
S-120121-NN-06

1340- Setting well, 50ft, screen 45-50ft
Then grout/sand 17B
3 bags of sand, 1 bag of ~~bentonite~~ choked,
2 bags of ~~sand~~ bentonite

1400- 17B set, 17A, B, C complete,
Cleaning up site

1445- drilling at MW15-25ft

1515- drilled to 25ft, will set well at
25- 10ft screen from 15-25ft BGS

- 5 bags of sand, 2 bags of bentonite,
1 bag of choker

1530- Cleaning up and moving to next location

1600- Offsite

Scale: 1 square = _____

11229941 12/4/21 12

Personnel: Nick N. Cascade

Weather: 30°F, Clear

Task: Install well at MW-16, make well pads and put in covers

0700: GHD onsite

0730: Cascade onsite - got auger from home depot

0745: Installing Bollards around MW-17, Then well pad

1200 - Pads, bollards, stick ups/flushmounts done - lunch

1230

~~1300~~ - return from lunch - Set up on MW 16 - 25 ft bore hole

~~1300~~

1240 - Started drilling

1300 - drilling Complete, Setting well for MW16 Screen 15-25ft

1400 - Offsite

Scale: 1 square = _____