

MEMO

To:

MDEQ Southeast MI District Office
Attn: Mr. Greg Barrows
2770 Donald Court

Copies:

Mr. Dave Favero (RACER)

Arcadis of Michigan, LLC

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Suite 500

Novi

Michigan 48377

Tel 248 994 2240

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From:

Brad Saunders

Date:

January 17, 2017

Arcadis Project No.:

B0064486.2017.00003

Subject:

Well Abandonment Memo and Documentation For File
RACER Trust Former Pontiac Employee Development Center (EDC) Site
Facility ID 6300600
65 East University, Pontiac, Oakland County, MI

The purpose of this memorandum is to provide documentation of proper abandonment for the remaining twenty-five (25) on-site monitoring wells located within the boundary of the RACER Trust owned Former Pontiac Employee Development Center (EDC) Site. Abandonment of the 25 remaining on-site wells was completed by Fibertec Environmental Services under the direction of Arcadis U.S., Inc. on January 3, 2017

RACER received Notice for Approval of No Further Action from MDEQ on December 6, 2016. The NFA Report and Approval encompassed the area within the RACER Trust owned 65 East University property, but did not encompass an area of west-adjacent land within the City of Pontiac's Mill Street. Therefore, while all remaining 25 wells within the Former Pontiac EDC site property boundary were abandoned, three (3) monitoring wells located in Mill Street and two (2) monitoring wells located on off-site properties across Mill Street were not abandoned as part of this event and remain in place as of the time of this memorandum.

The following 25 monitoring wells were abandoned as part of this event: MW-2, MW-4, MW-5, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-16, MW-17, MW-18, MW-21, MW-22, MW-23, MW-24S, MW-24D, MW-28, MW-29, MW-30, MW-31, MW-32S, MW-32D, and MW-33 (refer to the enclosed Site Map for locations). Abandonment activities included the following scope of work:

- Removal of the protective covers and concrete pads associated with each monitoring well

- Removal of the monitoring wells from the ground and backfilling of the remaining annulus' with bentonite, or alternatively when not able to be removed cutting the well casings off 2 feet below grade and backfilling the wells with bentonite.
- Resurfacing 23 of the well locations with topsoil to grade, and resurfacing two of the well locations (MW-9 and MW-11)) on sidewalks with concrete.
- Disposal of construction debris at a Republic Services recycling and disposal center.

The attached documentation includes the revised site map depicting the most recently abandoned monitoring wells, before and after photographs of each abandoned monitoring well location; original well construction logs and abandonment records for each abandoned monitoring well, a daily field work report, and Republic Services disposal documentation.

Monitoring wells remaining off-site include MW-25, MW-26, and MW-27 located in the City of Pontiac's Mill Street west of the property, and MW-19 and MW-20 located on off-site properties to the west across Mill Street.

Enclosures:

Attachments

- 1 Site Figure
- 2 Monitoring Well Abandonment Photo Log
- 3 Monitoring Well Abandonment Records and Well Logs
- 4 Daily Site Log
- 5 Republic Services Disposal Record

ATTACHMENT 1

Site Figure



ATTACHMENT 2

Monitoring Well Abandonment Photo Log



- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 1

Date:
01-03-2017

Description:
MW-2 Before

Location:
Pontiac, MI



Photo: 2

Date:
01-03-2017

Description:
MW-2 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 3

Date:
01-03-2017

Description:
MW-4 Before

Location:
Pontiac, MI



Photo: 4

Date:
01-03-2017

Description:
MW-4 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 5

Date:
01-03-2017

Description:
MW-5 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 6

Date:
01-03-2017

Description:
MW-8 Before

Location:
Pontiac, MI



Photo: 7

Date:
01-03-2017

Description:
MW-8 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016

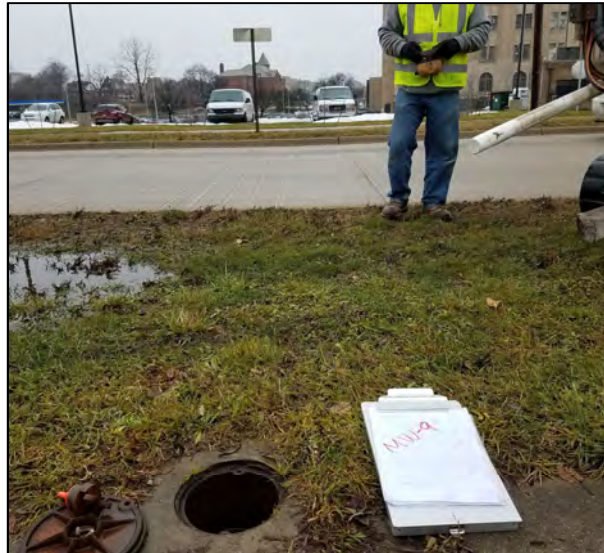


Photo: 8

Date:
01-03-2017

Description:
MW-9 Before

Location:
Pontiac, MI



Photo: 9

Date:
01-03-2017

Description:
MW-9 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 10

Date:
01-03-2017

Description:
MW-10 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 11

Date:
01-03-2017

Description:
MW-11 Before

Location:
Pontiac, MI

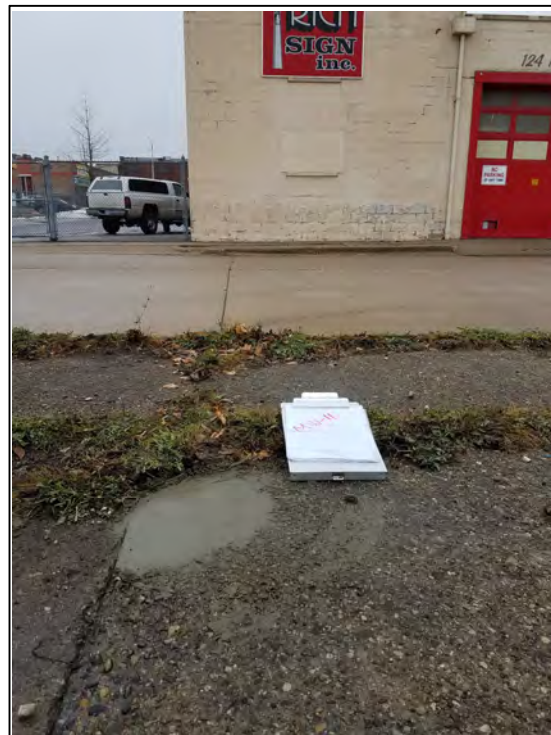


Photo: 12

Date:
01-03-2017

Description:
MW-11 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 13

Date:
01-03-2017

Description:
MW-12 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016

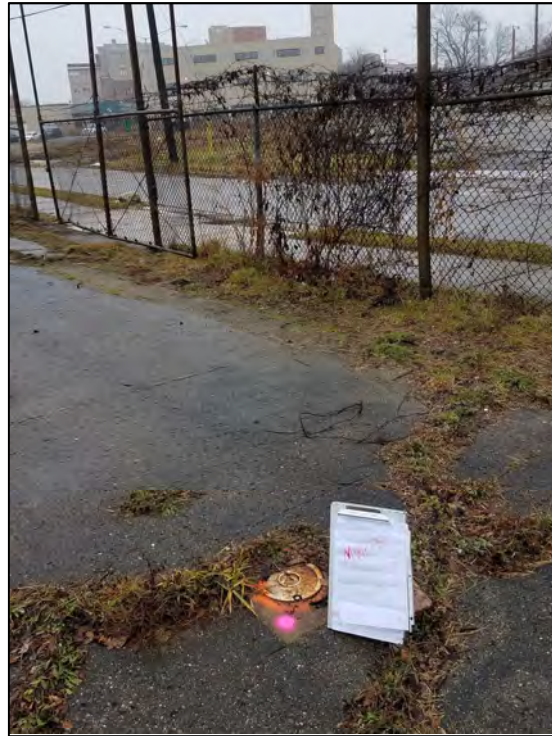


Photo: 14

Date:
01-03-2017

Description:
MW-13 Before

Location:
Pontiac, MI



Photo: 15

Date:
01-03-2017

Description:
MW-13 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 16

Date:
01-03-2017

Description:
MW-14 Before

Location:
Pontiac, MI



Photo: 17

Date:
01-03-2017

Description:
MW-14 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 18

Date:
01-03-2017

Description:
MW-16 Before

Location:
Pontiac, MI



Photo: 19

Date:
01-03-2017

Description:
MW-16 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 20

Date:
01-03-2017

Description:
MW-17 Before

Location:
Pontiac, MI



Photo: 21

Date:
01-03-2017

Description:
MW-17 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 22

Date:
01-03-2017

Description:
MW-18 Before

Location:
Pontiac, MI



Photo: 23

Date:
01-03-2017

Description:
MW-18 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 24

Date:
01-03-2017

Description:
MW-21 Before

Location:
Pontiac, MI



Photo: 25

Date:
01-03-2017

Description:
MW-21 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 26

Date:
01-03-2017

Description:
MW-22 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 27

Date:
01-03-2017

Description:
MW-23 Before

Location:
Pontiac, MI



Photo: 28

Date:
01-03-2017

Description:
MW-23 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 29

Date:
01-03-2017

Description:
MW-24S Before

Location:
Pontiac, MI



Photo: 30

Date:
01-03-2017

Description:
MW-24S After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 31

Date:
01-03-2017

Description:
MW-24D Before

Location:
Pontiac, MI



Photo: 32

Date:
01-03-2017

Description:
MW-24D After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 33

Date:
01-03-2017

Description:
MW-28 Before

Location:
Pontiac, MI



Photo: 34

Date:
01-03-2017

Description:
MW-28 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 35

Date:
01-03-2017

Description:
MW-29 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 36

Date:
01-03-2017

Description:
MW-30 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 37

Date:
01-03-2017

Description:
MW-31 After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 38

Date:
01-03-2017

Description:
MW-32S Before

Location:
Pontiac, MI

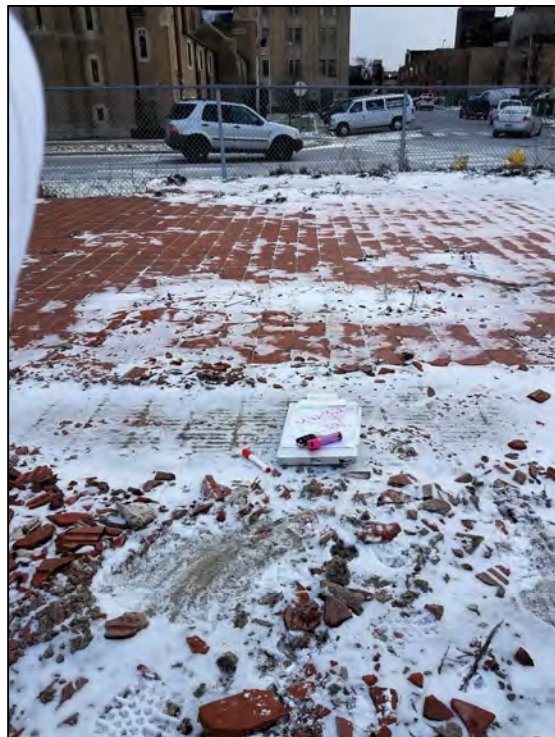


Photo: 39

Date:
01-03-2017

Description:
MW-32S After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 40

Date:
01-03-2017

Description:
MW-32D Before

Location:
Pontiac, MI



Photo: 41

Date:
01-03-2017

Description:
MW-32D After

Location:
Pontiac, MI

- RACER Trust
- Pontiac, MI
- B0064486.2016



Photo: 42

Date:
01-03-2017

Description:
MW-33 Before

Location:
Pontiac, MI



Photo: 43

Date:
01-03-2017

Description:
MW-33 After

Location:
Pontiac, MI

ATTACHMENT 3

Monitoring Well Abandonment Records and Well Logs



MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-2

Date Installed: 12-1-06 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 13 ft

Screen Depth from TOC: 12.78 ft

Water Table Depth from TOC: 5.69 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 13 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 12/1/06 Drilling Company: Fibertec Driller's Name: Nathan Keller Drilling Method: Direct Push/HSA Sampling Method: Macrocore Rig Type: NA	Northing: 417694.9 Easting: 13412826.7 Casing Elevation: 917.46 Borehole Depth: 15' bgs Surface Elevation: 917.9 Descriptions By: Wayne Patterson	Well/Boring ID: MW-2 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
920									
0								ASPHALT.	
								Brownish gray LEAN CLAY (CL), roots, medium plasticity, stiff, moist, no odor, becoming wet and soft at 5'.	Portland Cement (0-1' bgs) Bentonite Seal (1-2' bgs)
915		1	0-5'	3'	0.0	CL			
5								Brown fine to coarse SILTY SAND (SM), predominately fine to medium grained, wet, loose, no odor.	
		2	5-10'	4'	0.0	SM			Sand Pack (2-13' bgs) 0.010" Wire Wrapped PVC Screen (3-13' bgs)
910									
10									
		3	10-15'	4.5'	0.0	CL		Brownish gray LEAN CLAY (CL), trace fine SAND, medium stiff, medium plasticity, wet, no odor.	Natural Collapse (13-15' bgs)
905									
15								End of boring at 15' bgs.	



Remarks: NA = not applicable/ not available
bgs = below ground surface
No odors detected and no staining observed.

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-4

Date Installed: 12-1-06 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 13 ft

Screen Depth from TOC: 12.21 ft

Water Table Depth from TOC: 2.71 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 13 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

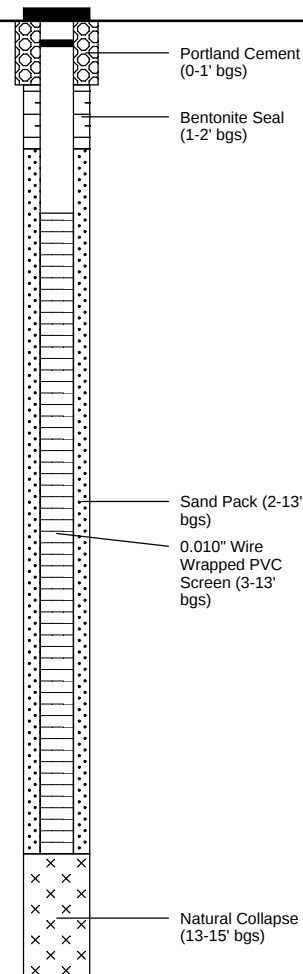
Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 12/1/06 Drilling Company: Fibertec Driller's Name: Nathan Keller Drilling Method: Direct Push/HSA Sampling Method: Macrocore Rig Type: NA	Northing: 417541.2 Easting: 13413172.1 Casing Elevation: 912.78 Borehole Depth: 15' bgs Surface Elevation: 913.1 Descriptions By: Wayne Patterson	Well/Boring ID: MW-4 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
915									
0								ASPHALT.	
								Grayish brown LEAN CLAY with SAND, fine to coarse subangular to angular Sand, few fine gravel, soft, moist, medium plasticity, no odor.	
								Wet.	
910		1	0-5'	3'	0.0				
5									
								Brown, medium stiff.	
905		2	5-10'	4'	0.0	CL			
10								Gray, becoming stiff.	
900		3	10-15'	4'	0.0				
15								End of boring at 15' bgs.	



Remarks: NA = not applicable/ not available
 bgs = below ground surface
 No odors detected and no staining observed.

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-5

Date Installed: 12-1-06 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 17 ft

Screen Depth from TOC: 16.69 ft

Water Table Depth from TOC: 4.09 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 17 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

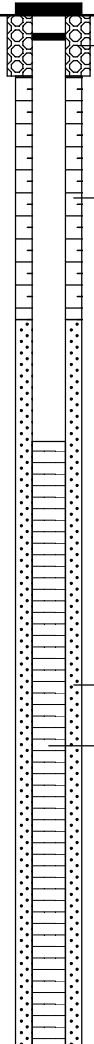
Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 12/1/06 Drilling Company: Fibertec Driller's Name: Nathan Keller Drilling Method: Direct Push/HSA Sampling Method: Macrocore Rig Type: NA	Northing: 417422.5 Easting: 13412930.9 Casing Elevation: 916.14 Borehole Depth: 17' bgs Surface Elevation: 916.8 Descriptions By: Wayne Patterson	Well/Boring ID: MW-5 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0									
915								No soil samples collected. See B-2 for soil description.	 Portland Cement (0-1' bgs) Bentonite Seal (1-5' bgs) Sand Pack (5-17' bgs) 2" ID PVC Riser Pipe (0.3' bgs - 7' bgs)
5									
910									
10									
905									
15									
900									



Remarks: NA = not applicable/ not available
bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-8

Date Installed: 9-17-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 18 ft

Screen Depth from TOC: 17.81 ft

Water Table Depth from TOC: 3.53 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 18 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

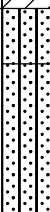
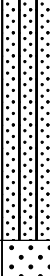
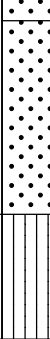
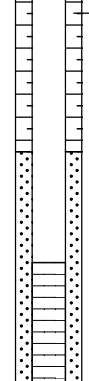
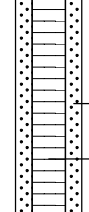
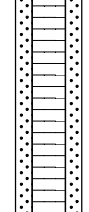
Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 9/17/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: NA Easting: NA Casing Elevation: NA Borehole Depth: 18' bgs Surface Elevation: NA Descriptions By: Beth Lindblade	Well/Boring ID: MW-8 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-5'	3.5'	0.0	CL		CONCRETE.	
					0.0			2.5Y 4/4 olive brown CLAY (CL), some very fine to medium Sand, hard, non-plastic, dry, no odor.	
					0.0			10YR 2/1 black, very fine to medium SAND and SILT (SM), dry, no odor.	
					0.0			2.5Y 5/6 light olive brown, very fine SAND and SILT (SM), some fine to medium Sand, loose, dry, no odor.	
-5	-5	2	5-10'	5'	0.0	SM			
					0.1				
-10	-10	3	10-14'	4'	136	SP		10YR 5/2 grayish brown, medium SAND (SP), some very fine to fine Sand, poorly sorted, loose, dry to moist, no odor.	
					2183			10YR 4/1 dark gray, very fine to medium SAND (SP), poorly sorted, little Silt, trace Clay, increasing Silt with depth, loose, wet, strong odor.	
-15	-15	4	14-18'	4'	1.9	ML		10YR 4/1 dark gray SILT (ML), some very fine to fine Sand and Clay, compact, moist to wet, moderately strong odor.	
					11.7	CL		10YR 4/1 dark gray CLAY (CL), few coarse, subangular Gravel and Cobbles, hard to very hard, non-plastic to low plasticity, dry to moist, slight odor.	
								End of boring at 18' bgs.	
									



Remarks: Soil samples collected from 0-2' bgs and 8.5-10.5' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-9

Date Installed: 9-19-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 13 ft

Screen Depth from TOC: 12.64 ft

Water Table Depth from TOC: 2.80 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 13 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

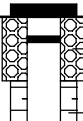
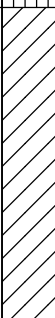
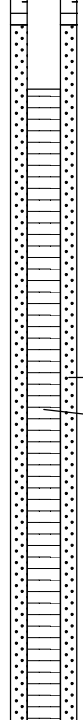
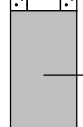
Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 9/19/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: NA Easting: NA Casing Elevation: NA Borehole Depth: 15' bgs Surface Elevation: NA Descriptions By: Beth Lindblade	Well/Boring ID: MW-9 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-5'	3'	0.0	CL		CONCRETE. 10YR 4/2 dark grayish brown SANDY CLAY (CL), soft, low plasticity, moist to wet, no odor.	
					0.0	ML		10YR 4/3 dark yellowish brown SANDY SILT (ML), few pebbles and medium to coarse Gravel, some Clay, compact, dry to moist, no odor. Moist to wet.	
-5	-5	2	5-10'	5'	0.0			10YR 4/3 dark yellowish brown SANDY CLAY (CL), some Silt, fine to medium Sand, little Gravel, compact, no odor. Wet at 8.5' bgs only in seams.	
-10	-10	3	10-15'	5'	0.0	CL		Grading into Clay with little Sand, hard, non-plastic, dry. 10YR 4/1 gray CLAY (CL), few subrounded Gravel, hard, non-plastic, dry to moist, no odor.	
-15	-15							End of boring at 15' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 3-5' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-10

Date Installed: 9-20-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 16 ft

Screen Depth from TOC: 15.74 ft

Water Table Depth from TOC: 9.19 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 16 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 9/20/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: NA Easting: NA Casing Elevation: NA Borehole Depth: 20' bgs Surface Elevation: NA Descriptions By: Beth Lindblade	Well/Boring ID: MW-10 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-5'	2.5'	0.0	SP		ASPHALT. 10YR 4/4 dark yellowish brown, fine to coarse SAND (SP), poorly sorted, some fine to medium Gravel, few 1-3" layers of plastic, soft to medium stiff Clay, loose, moist, no odor. Wet at 2.25' bgs.	
5	-5	2	5-10'	5'	0.0	ML		10YR 4/4 to 4/6 dark yellowish brown to yellowish brown, poorly sorted, fine to medium SAND (SP), some very fine to coarse Sand, little Silt and Clay, loose, wet.	
					0.0	CL		10YR 4/6 dark yellowish brown SILT (ML) with little Clay, few Sand, trace Gravel, compact, dry to moist, no odor.	
10	-10	3	10-15'	2.25'	0.0	SP		10YR 4/2 dark grayish brown CLAY (CL), few fine to medium subrounded Gravel, hard, non-plastic, dry, no odor.	
					0.0	CL		10YR 4/2 dark grayish brown, fine to coarse SAND (SP) with some Silt, compact, moist. At 10' bgs - Fine to medium Sand, few coarse Sand, little Clay, loose, wet.	
15	-15	4	15-20'	5'	0.0	SP		10YR 4/2 dark grayish brown CLAY (CL), few fine to medium subrounded Gravel, hard, non-plastic, dry, no odor.	
					0.0	CL		10YR 4/2 dark grayish brown SAND (SP), poorly sorted with some fine to coarse Gravel, trace Pebbles, moist to wet.	
20	-20							End of boring at 20' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 7.75-9.75' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-11

Date Installed: 9-21-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 19 ft

Screen Depth from TOC: 18.46 ft

Water Table Depth from TOC: 3.89 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 19 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 9/21/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417454.8 Easting: 13412773.2 Casing Elevation: 916.5 Borehole Depth: 20' bgs Surface Elevation: 917.1 Descriptions By: Beth Lindblade	Well/Boring ID: MW-11 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
920									
0								CONCRETE.	Portland Cement (0-1' bgs)
915		1	0-5'	3'	0.0	SW		7.5Y 2/0 black, fine SAND (SW), well sorted, loose, soft, dry, no odor.	
5					0.0				
910		2	5-10'	2.5'	0.0	CL		10YR 4/4 dark yellowish brown SANDY CLAY (CL), fine to medium Sand, few coarse Sand to coarse Gravel, couple Pebbles, soft to medium stiff, low plasticity, dry to moist, no odor.	
					0.0	SW		7.5Y 2/0 black, fine SAND (SW), well sorted, loose, soft, dry, no odor.	
					0.0			10YR 4/6 dark yellowish brown alternating layers of SANDY CLAY (CL) with Gravel as above and fine to medium, loose, dry SAND (SP), no odor.	
10					0.0	CL		19YR 4/2 dark grayish brown CLAY (CL), few fine to coarse Gravel, stiff to hard, low plasticity, dry, no odor.	
905		3	10-15'	4'	0.0			Grading into 10YR 4/1 dark gray CLAY.	
					0.0			At 14' bgs - 1-2" seam of CLAYEY SAND, moist to wet, no odor.	
15					0.0	SP		10YR 4/1 dark gray, very fine to fine SAND (SP), poorly sorted, loose, wet.	
900		4	15-20'	4.5'	0.0	ML		10YR 4/1 dark gray SANDY SILT (ML), few 1-2" seams of Sand, compact, wet, no odor.	
					0.0	CL		19YR 4/1 dark gray CLAY (CL), few fine to coarse Gravel, stiff to hard, low plasticity, dry to moist, no odor.	
20								End of boring at 20' bgs.	Bentonite (19-20' bgs)



Remarks: Soil samples collected from 0-2' bgs and 13-15' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-12

Date Installed: 9-21-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 19 ft

Screen Depth from TOC: 18.90 ft

Water Table Depth from TOC: 2.21 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 19 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 9/21/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417507.7 Easting: 13412903.5 Casing Elevation: 916.10 Borehole Depth: 19' bgs Surface Elevation: 916.9 Descriptions By: Beth Lindblade	Well/Boring ID: MW-12 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0									
915		1	0-5'	2.75'	0.0	SW		ASPHALT.	
					0.0	SP		7.5Y 2/0 black, fine SAND (SW), well sorted, loose, dry.	Portland Cement (0-1' bgs)
					0.0	SW		10YR 4/6 dark yellowish brown SAND AND GRAVEL (SP), poorly sorted, loose, dry, no odor.	
					0.0	SP		7.5Y 2/0 black, fine SAND (SW), well sorted, loose, dry.	
					0.0	SW		10YR 4/6 dark yellowish brown SAND AND GRAVEL (SP), poorly sorted, loose, dry, no odor.	
5					0.0	SW		7.5Y 2/0 black, fine SAND (SW), well sorted, loose, dry. At 5' bgs - Becoming poorly sorted (SP), loose to slightly compact, few subangular Gravel.	Bentonite Seal (1-7' bgs)
910		2	5-10'	2.5'	0.0	SW			
					0.0	SW			
10					0.0	SW			
905		3	10-15'	4'	0.0	SW		Wet at 11' bgs.	
					0.0	CL		10YR 4/2 dark grayish brown CLAY (CL), few fine to coarse Gravel, couple Pebbles, hard, non-plastic, dry.	Sand Pack (7-19' bgs)
15					0.0	CL			0.010" slot PVC Screen (9-19' bgs)
900		4	15-19'	3.5'	0.0	SP		7.5Y 2/0 black, fine SAND (SP), poorly sorted, loose, wet.	
					0.0	CL		10YR 4/1 to 4/2 dark gray to dark grayish brown CLAY (CL), few fine to coarse subrounded Gravel, hard, low plasticity, dry to moist.	
19								End of boring at 19' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 9-11' bgs.
NA = not applicable/ not available
bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-13

Date Installed: 10-2-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 18 ft

Screen Depth from TOC: 17.73ft

Water Table Depth from TOC: 4.10 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 18 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

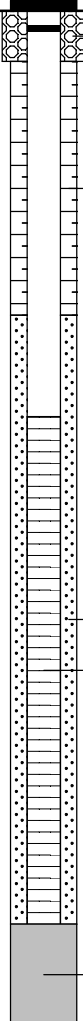
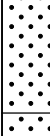
Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 10/2/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417740.5 Easting: 13412814.7 Casing Elevation: 915.12 Borehole Depth: 20' bgs Surface Elevation: 915.5 Descriptions By: Beth Lindblade	Well/Boring ID: MW-13 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	915	1	0-5'	2.5'	0.0	CL		ASPHALT and Fill Gravel, dry to moist. 10YR 4/6 dark yellowish brown CLAY (CL) and SAND, dry to moist, no odor. 10YR 4/2 dark grayish brown and 5Y 5/2 olive gray mottled CLAY (CL), some poorly sorted Sand and Gravel, soft, plastic, dry to moist, no odor.	 Portland Cement (0-1' bgs) Bentonite Seal (1-6' bgs)
5	910	2	5-10'	3.5'	0.0	CL		7.5Y 2/0 black CLAY (CL), stiff, medium plasticity to plastic, dry to moist, slight organic odor. 2.5Y 5/2 grayish brown CLAY (CL) with some fine to coarse Sand, medium stiff, low plasticity, dry, no odor.	
10	905	3	10-15'	5'	0.0	SP		10YR 5/2 to 2.5Y 5/2 grayish brown, very fine to medium SAND (SP), poorly sorted, very loose, wet, no odor.	
					0.0	CL		2.5Y 5/2 grayish brown CLAY (CL) and SILT, little fine to medium Sand, soft to medium stiff, dry to moist, no odor.	
					0.0	SP		10YR 5/1 gray, fine to medium SAND (SP), wet, no odor.	
					0.0	ML		10YR 4/1 dark gray, SAND (SP), poorly sorted.	
15	900	4	15-20'	5'	0.0	SP		10YR 5/3 brown SILT (ML), little very fine Sand, wet, no odor.	
					0.0	SP		10YR 4/1 dark gray, very fine to coarse SAND (SP) and fine to medium GRAVEL, poorly sorted, very loose, wet, no odor.	
					0.0	CL		10YR 5/3 brown, very fine to fine SAND (SP), loose to slightly compact, wet, no odor.	
					0.0	CL		10YR 5/3 brown SILT grading into CLAY (CL), compact, hard, low to medium plasticity, dry to moist, no odor.	
20	895							End of boring at 20' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 8-10' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-14

Date Installed: 10-2-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 15 ft

Screen Depth from TOC: 14.61 ft

Water Table Depth from TOC: 4.31 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 15 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

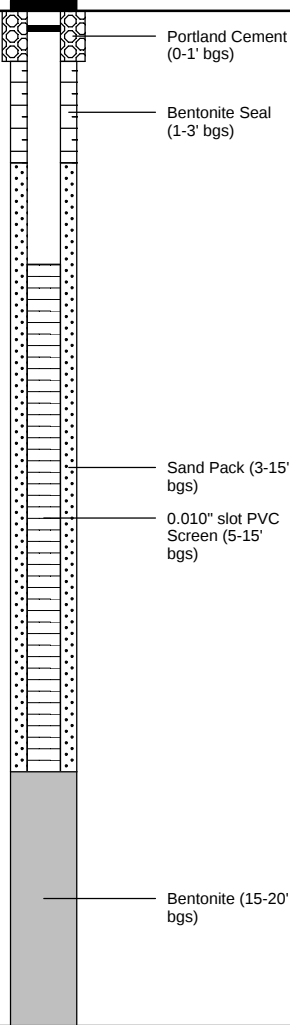
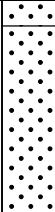
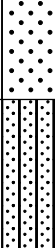
Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 10/2/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417713.1 Easting: 13412787.6 Casing Elevation: 915.34 Borehole Depth: 20' bgs Surface Elevation: 916.1 Descriptions By: Beth Lindblade	Well/Boring ID: MW-14 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0									
915		1	0-5'	2.5'	0.0	CL		ASPHALT and Fill Gravel, dry. 5Y 2.5/2 black SANDY CLAY (CL) mottled with some 10YR 5/2 grayish brown CLAY, some very fine to fine Sand, soft, non-plastic to low plasticity, dry to moist, no odor to slight organic odor.	
5									
910		2	5-10'	2.5'	0.0	SP		10YR 4/6 dark yellowish brown, fine to coarse SAND (SP) and fine to medium GRAVEL, poorly sorted, loose, dry to moist. 10YR 5/1 to 4/1 gray to dark gray, fine to medium SAND (SP), loose, dry to moist, no odor. Wet at 9' bgs.	
10									
905		3	10-15'	5'	0.0	SM		10YR 5/1 to 4/1 gray to dark gray, fine to coarse SAND (SP) and fine to medium GRAVEL, poorly sorted, few small Pebbles, loose, wet, no odor. 10YR 5/2 to 5/3 grayish brown to brown SILTY SAND (SM), loose to slightly compact, wet, no odor.	
15									
900		4	15-20'	2.25'	0.0	CL		10YR 5/2 grayish brown CLAY (CL), trace small subrounded Pebbles, medium stiff to stiff, medium plasticity to plastic, dry, no odor.	
20								End of boring at 20' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 7-9' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-16

Date Installed: 10-3-08 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 9 ft

Screen Depth from TOC: 8.41 ft

Water Table Depth from TOC: Surface ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 9 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 10/3/08 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417639.0 Easting: 13412963.5 Casing Elevation: 918.37 Borehole Depth: 15' bgs Surface Elevation: 918.8 Descriptions By: Beth Linblade	Well/Boring ID: MW-16 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
920									
0								ASPHALT, dry.	
		1	0-5'	2.5'	0.0	CL		10YR 5/2 to 5/3 grayish brown to brown CLAY (CL), soft to medium stiff, plastic, dry to moist, no odor. Wet from 1-1.25' bgs.	Portland Cement (0-1' bgs)
915					0.0				Bentonite Seal (1-2' bgs)
5								10YR 5/3 to 5/4 brown to yellowish brown, fine to coarse SAND and GRAVEL (SP), some Clay, trace small Pebbles, very poorly sorted, loose, wet, no odor.	Sand Pack (2-9' bgs)
		2	5-10'	5'	0.0	SP		10YR 5/4 yellowish brown CLAY (CL), little Sand and Silt, few small Pebbles, soft to very soft, plastic, moist to wet, no odor.	0.010" slot PVC Screen (4-9' bgs)
910					0.0			10YR 5/1 gray CLAY (CL), little fine to medium Sand, few small subrounded Pebbles, soft to medium stiff, medium plasticity, dry, no odor.	
10									
		3	10-15'	4.5'	0.0	CL			Bentonite (9-15' bgs)
905					0.0				
15								End of boring at 15' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 3-5' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-17

Date Installed: 10-3-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 7 ft

Screen Depth from TOC: 6.81 ft

Water Table Depth from TOC: 1.65 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 7 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 10/3/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: NA Easting: NA Casing Elevation: NA Borehole Depth: 15' bgs Surface Elevation: NA Descriptions By: Beth Lindblade	Well/Boring ID: MW-17 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0							ASPHALT, dry.	
		1	0-5'	4'	0.0	CL		10YR 4/1 to 3/2 dark gray to very dark grayish brown CLAY (CL) and SAND, some angular Gravel, loose, wet, no odor.	Portland Cement (0-0.75' bgs)
					0.0			10YR 5/4 yellowish brown CLAY (CL), few fine to medium Sand, soft to medium stiff, plastic, moist to wet.	Bentonite Seal (0.75-1.25' bgs)
-5	-5	2	5-10'	5'	0.0	SP		10YR 4/2 dark grayish brown SAND and GRAVEL (SP), few Clay, loose, moist to wet, no odor.	Sand Pack (1.25-7' bgs)
					0.0			10YR 5/4 yellowish brown CLAY (CL), some Silt and very fine to fine Sand, little medium Sand, trace to little subrounded Pebbles and medium to coarse Gravel, stiff to hard, non-plastic, dry to moist, no odor.	0.010" slot PVC Screen (2-7' bgs)
-10	-10	3	10-15'	5'	0.0	CL		10YR 5/1 gray CLAY (CL), stiff to hard, medium plasticity to plastic, dry, no odor.	Bentonite (7-15' bgs)
					0.0				
-15	-15							End of boring at 15' bgs.	



Remarks: NA = not applicable/ not available
bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-18

Date Installed: 10-3-07 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 14 ft

Screen Depth from TOC: 13.73 ft

Water Table Depth from TOC: 5.69 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 14 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 10/3/07 Drilling Company: Boart Longyear Driller's Name: Andrew Roberts Drilling Method: Direct Push Sampling Method: Macrocore Rig Type: NA	Northing: 417468.4 Easting: 13413028.0 Casing Elevation: 916.43 Borehole Depth: 15' bgs Surface Elevation: 916.9 Descriptions By: Beth Lindblade	Well/Boring ID: MW-18 Client: General Motors Worldwide Real Estate Location: Employee Development Center Pontiac, Michigan
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0									
915		1	0-5'	4'	0.0	SP		ASPHALT, dry. 10YR 4/6 dark yellowish brown SAND (SP) and angular to subangular GRAVEL, little Clay, very poorly sorted, loose, dry to moist. 10YR 4/1 to 5/2 dark gray to grayish brown CLAY (CL), some subrounded Pebbles, hard to very hard, non-plastic, dry to moist, no odor.	 Portland Cement (0-1' bgs) Bentonite Seal (1-2' bgs)
5					0.0	CL		10YR 4/1 dark gray mottled CLAY (CL), soft, dry to moist, no odor.	
910		2	5-10'	5'	0.0			2.5Y 4/4 olive brown CLAY (CL), some Silt, stiff to hard, non-plastic to low plasticity, dry to moist, no odor.	
					0.0	SM		2.5Y 5/6 light olive brown SILTY SAND (SM), compact, wet, no odor.	Sand Pack (2-14' bgs)
					0.0	CL		2.5Y 4/4 olive brown CLAY (CL), some Silt, stiff to hard, non-plastic to low plasticity, dry to moist, no odor.	0.010" slot PVC Screen (4-14' bgs)
10					0.0	SP		2.5Y 5/6 to 4/4 light olive brown to olive brown, very fine to fine SAND (SP), some Silt, loose, wet, no odor.	
905		3	10-15'	5'	0.0	CL		10YR 5/1 to 5/2 gray to grayish brown CLAY (CL), few small subrounded Pebbles and medium to coarse Gravel, hard, non-plastic to low plasticity, dry, no odor.	Bentonite (14-15' bgs)
15								End of boring at 15' bgs.	



Remarks: Soil samples collected from 0-2' bgs and 5.5-7.5' bgs.
 NA = not applicable/ not available
 bgs = below ground surface

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-21

Date Installed: 1-7-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 10.5 ft

Screen Depth from TOC: 10.12 ft

Water Table Depth from TOC: 2.14 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 10.5 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 1/7/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Geoprobe / Hollow Stem Auger Sampling Method: 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-21 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
0	-5	1	0-5'	3.0	4.0 6.7 4.0 0.5 0.2			(0-4) FILL, sand, fine to coarse, trace very coarse to granule; poorly sorted; moist; dark yellowish brown (10YR 4/6).	Sch-40 PVC Riser Bentonite Pellets (1.5-4.5' bgs) Sand Pack (4.5-10.8' bgs) 2" Sch-40 PVC 10 Slot Well Screen (5.5-10.5' bgs)
5	-5	2	5-10'	3.5	0.0 0.0 0.0 0.0 0.0 0.0			(4-5) CLAY, low plasticity, trace silt, trace medium to coarse sand; moist; medium stiff; dark yellowish brown (10YR 4/4). (5-6) SAND, medium to coarse, little clay, trace granule to medium pebble, subround to subangular; poorly sorted; wet; brown (10YR 4/3). (6-7) SILT, little clay, little very fine sand, trace granule to small pebble, subround to subangular; rapid dilatancy; wet; brown (10YR 5/3). (7-7.5) CLAY, medium plasticity, little silt, trace very fine sand, trace granule to small pebble, subround; moist; slow dilatancy; dark grayish brown (10YR 4/2). (7.5-10.5) SAND and CLAY, very fine to fine, medium plasticity, trace granule to small pebble; wet; grayish brown (10YR 5/2).	
10	-10	3	10-15'	4.1	0.0 0.0 0.0 0.0			(10.5-20) CLAY, medium plasticity, little silt, trace very fine to fine sand, trace granule to small pebble, subround to subangular; wet to moist; medium stiff; grayish brown (10YR 5/2).	
15	-15				0.0			NOTE: silt seams from 15-17' bgs.	



Remarks: bgs = below ground surface

No soil samples collected for laboratory analysis
Groundwater encountered at 5' bgs.
No staining or odor detected.

Date Start/Finish: 1/7/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Geoprobe / Hollow Stem Auger Sampling Method: 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-21 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	4	15-20'	3.9	0.0 0.0 0.0 0.0				
25	-25							End of boring at 20' bgs.	
30	-30								
35	-35								

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 5' bgs. No staining or odor detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-22

Date Installed: 1-7-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 14 ft

Screen Depth from TOC: 13.57 ft

Water Table Depth from TOC: Surface ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 14 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-23

Date Installed: 1-7-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 13 ft

Screen Depth from TOC: 12.74 ft

Water Table Depth from TOC: 1.94 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 13 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 1/7/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Geoprobe / Hollow Stem Auger Sampling Method: 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-23 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		4	15-20'	3.8	0.0 0.0 0.0 0.0				
20	-20							End of boring at 20' bgs.	
25	-25								
30	-30								
35	-35								

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 5' bgs. No staining or odor detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-24D

Date Installed: 1-9-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 20 ft

Screen Depth from TOC: 19.66 ft

Water Table Depth from TOC: 3.30 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 20 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 1/7/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Geoprobe / Hollow Stem Auger Sampling Method: 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 25' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-24D Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	4	15-20'	3.7	50.8			(15-20) SILT, little very fine sand; wet; rapid dilatancy; soft; grayish brown (10YR 5/2). NOTE: moderate odor.	 Sand Pack (14-20.3' bgs) 2" Sch-40 PVC 10 Slot Well Screen (15-20' bgs)
					707				
					91.8				
					534				
		5	20-25'	2.0	122			(20-25) CLAY, low plasticity, some silt; moist; medium stiff; dark grayish brown (10YR 4/2).	
					153				
					112				
					92.8				
25	-25				18.1			End of boring at 25' bgs.	
30	-30								
35	-35								

	Remarks: bgs = below ground surface Soil samples collected from 13-14' and 24-25' for laboratory analysis Groundwater encountered at 4.5' bgs. No staining detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-24S

Date Installed: 1-9-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 9 ft

Screen Depth from TOC: 8.78 ft

Water Table Depth from TOC: 0.96 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 9 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-28

Date Installed: 1-8-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 9 ft

Screen Depth from TOC: 8.69 ft

Water Table Depth from TOC: 1.17 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 9 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

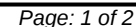
Signature of Consultant/Engineer 1-3-17
Date

Well/Boring ID: MW-28

Client: RACER Trust

Location: Former Pontiac Employment
Development Center

Remarks:	bgs = below ground surface
	No soil samples collected for laboratory analysis Groundwater encountered at 4' bgs. No staining or odor detected.



Date Start/Finish: 1/8/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Geoprobe / HSA Sampling Method: 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-28 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	4	15-20'	2.9	0.0 0.0 0.0 0.0			(15-20) CLAY, medium plasticity, little silt, trace granule to small pebble, subround to subangular; moist; medium stiff; grayish brown (10YR 5/2).	
25	-25							End of boring at 20' bgs.	
30	-30								
35	-35								

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 4' bgs. No staining or odor detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-29

Date Installed: 1-9-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 9.5 ft

Screen Depth from TOC: 9.21 ft

Water Table Depth from TOC: 4.86 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 9.5 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 1/9/13
Drilling Company: Fibertec
Driller's Name: Garrett Careth
Drilling Method: Air Knife / Geoprobe / HSA
Sampling Method: Air Knife / 5' Macrocore
Rig Type: 6620 DT Geoprobe

Northing:
Easting:
Casing Elevation:

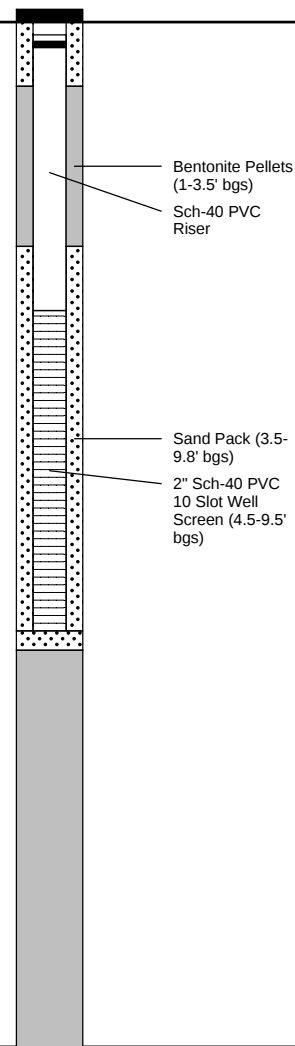
Borehole Depth: 20' bgs
Surface Elevation:

Descriptions By: Christine Snyder

Well/Boring ID: MW-29
Client: RACER Trust

Location: Former Pontiac Employment Development Center

DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-6'	6.0	NA			(0-0.5) ASPHALT. (0.5-2) CLAY, medium plasticity.	
					0.4				
					0.2			(2-8) SAND, very fine to fine, little silt; poorly sorted; dry; yellowish brown (10YR 5/4).	
					0.4				
5	-5				0.6				
					0.3				
		2	6-10'	4.0	0.2			NOTE: wet at 7' bgs and trace granules, subround to subangular.	
					0.3				
					0.0			(8-9.5) SILT, nonplastic, trace small to medium pebble, subround to subangular, trace clay; moist; grayish brown (10YR 5/2).	
					0.0				
10	-10				0.0			(9.5-20) CLAY, medium plasticity, trace silt, trace granule to small pebble, subround to subangular; moist; dark grayish brown (10YR 4/2).	
					0.0				
		3	10-15'	5.0	0.0				
					0.0				
					0.0				
15	-15				0.1				
					0.6			NOTE: high plasticity and soft from 15-20' bgs.	



Remarks: bgs = below ground surface

 No soil samples collected for laboratory analysis
 Groundwater encountered at 7' bgs.
 No staining or odor detected.



Date Start/Finish: 1/9/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Air Knife / Geoprobe / HSA Sampling Method: Air Knife / 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-29 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	4	15-20'	4.1	0.1 0.0 0.0 0.0			(9.5-20) CLAY, medium plasticity, trace silt, trace granule to small pebble, subround to subangular; moist; dark grayish brown (10YR 4/2).	
25	-25							End of boring at 20' bgs.	
30	-30								
35	-35								

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 7' bgs. No staining or odor detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-30

Date Installed: 1-9-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 13 ft

Screen Depth from TOC: 12.78 ft

Water Table Depth from TOC: 2.86 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 13 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer Date 1-3-17

Date Start/Finish: 1/9/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Air Knife / Geoprobe / HSA Sampling Method: Air Knife / 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-30 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-6'	6.0	0.0			(0-0.5) ASPHALT.	
					0.1			(0.5-2) CLAY, low plasticity, some silt, trace granule to small pebble, subround to subangular; moist; soft; grayish brown (10YR 5/2).	Bentonite Pellets (1-2' bgs)
					0.0				Sch-40 PVC Riser
					0.0			NOTE: wet at 4' bgs.	
5	-5				0.0			(5-8.5) SILT, some sand, very fine to fine, trace granule to medium pebble, subround to subangular; wet; rapid dilatancy; brown (10YR 5/3).	
		2	6-10'	3.4	0.0				
					0.0				
					0.2			(8.5-11.5) CLAY, low to medium plasticity, some silt; wet; slow to rapid dilatancy; grayish brown (10YR 5/2).	Sand Pack (2-13.3' bgs)
10	-10				0.0			NOTE: moist at 10' bgs.	2" Sch-40 PVC 10 Slot Well Screen (3-13' bgs)
					0.0				
		3	10-15'	3.2	0.0			(11.5-20) CLAY, low to medium plasticity, trace silt, trace granule to large pebble, subround to subangular; dry; stiff; dark grayish brown (10YR 5/2).	
					0.0				
					0.0				
15	-15				0.0				
					0.0				

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 4' bgs. No staining or odor detected.
--	--

Date Start/Finish: 1/9/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Air Knife / Geoprobe / HSA Sampling Method: Air Knife / 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-30 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	4	15-20'	3.0	0.0			(11.5-20) CLAY, low to medium plasticity, trace silt, trace granule to large pebble, subround to subangular; dry; stiff; dark grayish brown (10YR 5/2). NOTE: sand seam at 19.5' bgs.	
25	-25							End of boring at 20' bgs.	
30	-30								
35	-35								

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 4' bgs. No staining or odor detected.
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MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-31

Date Installed: 1-9-13 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 8 ft

Screen Depth from TOC: 7.70 ft

Water Table Depth from TOC: 5.37 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 8 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start/Finish: 1/9/13 Drilling Company: Fibertec Driller's Name: Garrett Careth Drilling Method: Air Knife / Geoprobe / HSA Sampling Method: Air Knife / 5' Macrocore Rig Type: 6620 DT Geoprobe	Northing: Easting: Casing Elevation: Borehole Depth: 20' bgs Surface Elevation: Descriptions By: Christine Snyder	Well/Boring ID: MW-31 Client: RACER Trust Location: Former Pontiac Employment Development Center
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								
		1	0-6'	6.0				(0-0.5) ASPHALT. (0.5-6) CLAY, low to medium plasticity, some silt; wet; soft to very soft; brown (10YR 5/3).	Bentonite Pellets (1-2' bgs) Sch-40 PVC Riser
5	-5								
		2	6-10'	4.1				(6-9) SILT, some sand, very fine; wet; rapid dilatancy; soft; yellowish brown (10YR 5/6).	
10	-10							(9-12) CLAY, medium plasticity, some silt; moist; medium stiff; olive brown (2.5Y 4/3). NOTE: silt seam (0.5' thick), wet, rapid dilatancy at 11.5' bgs.	Sand Pack (2-8.3' bgs) 2" Sch-40 PVC 10 Slot Well Screen (3-8' bgs)
15	-15	3	10-15'	5.0				(12-20) CLAY, low to medium plasticity, trace silt, trace granule to small pebble, subround to subangular; moist; stiff; dark grayish brown (10YR 5/2). NOTE: sand partings.	

	Remarks: bgs = below ground surface No soil samples collected for laboratory analysis Groundwater encountered at 0.5' bgs. No staining or odor detected.
--	--

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-32D

Date Installed: 9-24-14 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 19 ft

Screen Depth from TOC: 18.68 ft

Water Table Depth from TOC: 5.85 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 19 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer

Date

Date Start: 9/24/14 Date Finish: 9/24/14 Drilling Company: Fibertec Driller's Name: Nick and Richard Drilling Method: Direct Push/ Hand Auger Sampling Method: Macrocore/ Hand Auger Rig Type: 6620 DT Geoprobe Water Level Start (ft. bgs.): NA Water Level Finish (ft. btoc.): NA	Northing: NA Easting: NA Casing Elevation: Borehole Depth (ft. bgs.): 20.0 Surface Elevation: NA Descriptions By: Megan Castles-Humphrey	Well/Boring ID: MW-32D Client: RACER Trust Location: Former Pontiac Employment Development Center Weather Conditions: Sunny, 75 F
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0-5'	5.0	0.1			(0.0-0.5') CONCRETE.		
					0.1			(0.5-5.0') SAND, medium to coarse, subrounded; well sorted; dry; loose; black (10YR 2/1). Note: Brick and stone fragments from 4.0-5.0' bgs.		
5	-5				0.0					
		2	5-10'	4.42	0.0			(5.0-10.5') CLAY, low plasticity, no dilatancy; dry; some small to large pebbles, subangular; very stiff; yellowish brown (10YR 5/6).		Sch-40 PVC Riser
					0.0					Bentonite Pellets (0.5-12' bgs)
					0.0					
10	-10				0.0			(10.5-11.5') CLAY, high plasticity, slow dilatancy; and SAND, fine to coarse; subrounded; little small to large pebbles, subrounded; wet; soft; yellowish brown (10YR 5/6). Note: Some black discoloration.		
		3	10-15'	5.0	0.0			(11.5-16.0') CLAY, low plasticity, no dilatancy; little small to medium pebbles, subrounded; dry; very stiff; dark grayish brown (10YR 4/2).		
					0.0					
15	-15				0.0					
		4	15-20'	4.58	0.0			(16.0-17.0') SAND, medium to coarse, subrounded; well sorted; moist; medium dense; black (10YR 2/1).		Sand Pack (12-20' bgs)
					0.0			(17.0-20.0') CLAY, low plasticity, slow dilatancy; little small to medium pebbles, subrounded; dry; very stiff; very dark gray (10YR 3/1).		2" Sch-40 PVC 10 Slot Well Screen (14-19' bgs)
					0.0					
20	-20				0.0					
								End of boring at 20' bgs.		

	Remarks: bgs = below ground surface Hand auger from 0-5' bgs. Groundwater not encountered. No odor observed.
--	--

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-32S

Date Installed: 9-24-14 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 12 ft

Screen Depth from TOC: 11.90 ft

Water Table Depth from TOC: 6.40 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 12 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

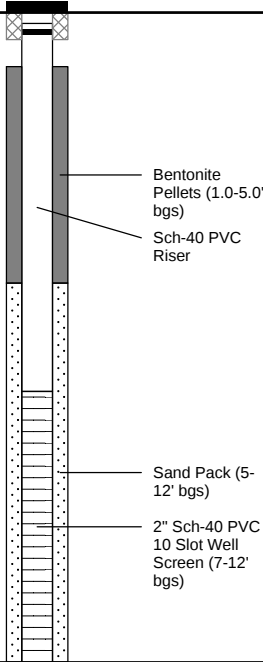
Comments:

Ashlee Charters

Signature of Consultant/Engineer

Date

Date Start: 9/24/14 Date Finish: 9/24/14 Drilling Company: Fibertec Driller's Name: Nick and Richard Drilling Method: Direct Push/ Hand Auger/HSA Sampling Method: Macrocore/ Hand Auger Rig Type: 6620 DT Geoprobe Water Level Start (ft. bgs.): NA Water Level Finish (ft. btoc.): NA	Northing: NA Easting: NA Casing Elevation: Borehole Depth (ft. bgs.): 12.0 Surface Elevation: NA Descriptions By: Megan Castles-Humphrey	Well/Boring ID: MW-32S Client: RACER Trust Location: Former Pontiac Employment Development Center Weather Conditions: Sunny, 75 F
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0							(0.0-12.0') No lithology recorded. See MW-32D.		
5	-5									
10	-10									
15	-15							End of boring at 12' bgs.		
20	-20									

	Remarks: bgs = below ground surface HSA = hollow stem auger Hand auger from 0-5' bgs. Groundwater not encountered. No odor observed.
--	---

MONITOR WELL ABANDONMENT RECORD

Site Name: RACER – Pontiac EDC County: Oakland

Section: 29 Town: 03N Range: 10E Well ID#: MW-33

Date Installed: 10-24-14 Date Abandoned: 1-3-17 Drilling Firm: Fibertec Environmental Services

Well Depth: 18 ft

Screen Depth from TOC: 17.71 ft

Water Table Depth from TOC: 3.91 ft

Casing Type: Galvanized ☐ PVC ☒ Stainless Steel ☐ ID: 2" ☒ 4" ☐

Screen Type: PVC ☒ Stainless Steel ☐ Length: ft

2" Annulus Grouted: Yes ☒ No ☐ from ft to ft Grout Type: Bentonite

4" Annulus Grouted: Yes ☐ No ☐ from ft to ft Grout Type:

Casing: Pulled ☒ Cut ☐ Depth BGS: 18 Well Grouted? Yes ☒ No ☐

Grout Type: Bentonite ☒ Cement ☐ Grouting Method: Through Casing ☐ Tremie ☐ Other ☒
(explain) Bentonite chips poured down annulus

Crew:

Location Sketch:

Ryan and Rhex - Fibertec Environmental Services

Comments:

Ashlee Charters

Signature of Consultant/Engineer 1-3-17
Date

Date Start: 9/24/14 Date Finish: 10/24/14 Drilling Company: Fibertec Driller's Name: Nick and Richard Drilling Method: Direct Push/ Hand Auger Sampling Method: Macrocore/ Hand Auger Rig Type: 6620 DT Geoprobe Water Level Start (ft. bgs.): NA Water Level Finish (ft. btoc.): NA	Northing: NA Easting: NA Casing Elevation: Borehole Depth (ft. bgs.): 20.0 Surface Elevation: NA Descriptions By: Megan Castles-Humphrey	Well/Boring ID: B-62/MW-33 Client: RACER Trust Location: Former Pontiac Employment Development Center Weather Conditions: Sunny, 75 F
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DEPTH (feet bgs.)	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Water Level (ft. bgs.)	Well/Boring Construction
0	0									
		1	0-5'	5.0	0.4			(0.0-0.5') CONCRETE.		
					0.7			(0.5-9.0') CLAY, medium plasticity, slow dilatancy; and SAND, fine to coarse, subrounded; some small to medium pebbles, subangular; trace granules, subangular; moist; soft; very dark grayish brown (10YR 3/2).		
5	-5				1.1					
		2	5-10'	1.08	0.0					
					0.0					
					0.0					
					0.0					
10	-10				0.0			(9.0-13.0') SAND, medium to coarse, subrounded; wet; well sorted; loose; black (10YR 2/1).		
		3	10-15'	3.58	0.0					
					0.0					
					0.0			(13.0-14.5') CLAY, medium plasticity, rapid dilatancy; and SAND; fine to coarse, subrounded; little small to medium pebbles, subrounded; wet; soft; brown (10YR 5/3).		
15	-15				0.0			(14.5-17.5') PEBBLES, small to large, rounded to subangular; little sand; trace clay, poorly sorted; wet; medium dense; dark gray (10YR 4/1). Note: Slight odor.		
		4	15-20'	2.33	0.0					
					0.0			(17.5-20.0') CLAY, high plasticity, no dilatancy; trace small to medium pebbles, subrounded; dry; medium stiff; dark gray (10YR 4/1).		
					0.0					
20	-20				0.0					
								End of boring at 20' bgs.		

	Remarks: bgs = below ground surface Hand auger from 0-5' bgs. Groundwater encountered at 2.0' bgs. No staining observed.
--	--

ATTACHMENT 4

Daily Site Log



DAILY SITE LOG

DATE: 01-23-17

Fibertec Project #: 114445

Client Name: ARCADIS

Rig Used: RS

Site Name & Address: 65 E. UNIVERSITY DR. Pontiac, MI

Fibertec Personnel On Site: RHEX, Ryan

Work Completed (please circle equipment used)

#	Item	Footage	Item	Footage	Item	Footage	Item	Footage	Item	Footage	Item	Amount
1	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
2	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
3	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
4	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
5	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
6	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
7	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
8	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
9	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
10	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
11	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
12	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	
13	HA / AK		SB		TW / SP		MW		SG / VP		Refusals	

Work Completed Continued

2.5 On Site Time
2.5 Travel Time
65 Mileage
 Delay Time
 Hotel Stays

Cones left onsite
 Dual Tube Liners

Well Abandonments

25 1" Well Abandonment
25 2" Well Abandonment
 4" Well Abandonment
 Debris Hauling

Concrete/Asphalt cutting

_____ pads cut
 _____ 4" cores
 _____ 6" cores
 _____ 12" Cores

Wells and Protective Covers

_____ 1" PVC Well
 _____ 1" Pre-Pack Well
 _____ Dual Tube Points
 _____ SP-16 Temp Well
 _____ 2" well Installation
 _____ 4" well installation
 _____ 8" flush mount
 _____ 12" flush mount install
 _____ 4" above grade install
 _____ R & R 8" flush mount
 _____ R & R 12" flush mount
 _____ R & R above grade

Supplies

_____ Vapor Pin
 _____ VP SS Covers
 _____ 6" SS Soil Gas Screen
 _____ Helium Chamber
 _____ Spanner Tool
 _____ 5" Flush Mount
 _____ Water filters
 _____ Drums

Notes:

Abandon 25 - 2" wells, Backfilled to top
 with BENTONITE CHIP. 12" below grade
 Patched to surrounding surface

Fibertec Representative

Name: RHEX moon
 Signature: RHEX moon
 Date: 01-23-17

Client Representative

Project Number: 250064486, 2016, 0003
 Name: ASHLEY CHIVERS
 Signature: ASHLEY CHIVERS
 Date: 01-23-17

ATTACHMENT 5

Republic Services Disposal Record





REPUBLIC
SERVICES, INC.

P 71373

CUSTOMER COPY

BILLING NAME FiBertec Environmental
SITE ADDRESS 65 University DR
CITY Bentley CONTACT _____
DATE 1-4-17 PHONE _____ ROUTE _____

ACCOUNT # _____ P.O. # _____

FRONT LOADER

☐ LOOSE ☐ COMPACTED
☐ EXTRA LIFT
☐ DELIVERY ☐ REMOVAL
QUANTITY _____ SIZE _____
QUANTITY _____ SIZE _____

REAR/SIDE LOADER

☐ LOOSE ☐ COMPACTED
☐ EXTRA LIFT
☐ DELIVERY ☐ REMOVAL
QUANTITY _____ SIZE _____
QUANTITY _____ SIZE _____

ROLL OFF/ LUGGER

☐ LOOSE ☐ COMPACTED
☐ DRY RUN ☐ RELOCATION
☐ DELIVERY ☒ REMOVAL
QUANTITY 1 SIZE 10
QUANTITY _____ SIZE _____

OTHER

QUANTITY _____
DESCRIPTION: _____

COMMENT

1- 10 yard JRM

TRUCK # 3024 DISPOSAL SITE Oakland Hills
DRIVER SIGNATURE [Signature]
AUTHORIZED CUSTOMER SIGNATURE [Signature] on Bentley
Base Schuler