

Well Location Sketch:

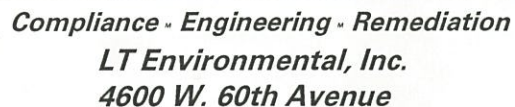
mw5

mw8

mw10

mw9

As Field



Boring/Well Number: MW09	Project: Berger Jack C GU 1
Date: 6/20/19	Project Number: 14215255
Logged By: D. Stanbeck	Drilled By: Dril Pro

Gravel Pack: Washed silica sand	Seal: Bentonite	Grout: N/A
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Screen Type:	Slot:	Diameter:	Length:	Total Depth:	Depth to Water:
PVC	0.01	1"	10'	16'	13'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8, no staining observed while portholing	
					4					
					6					
					8					
	moist	0.1	No		10			CL	8-12 clay w/ Fg Sands, low-med plasticity, moist, no stain/odor	
		0.0			12				12-13 clayey Fg-Mg Sands, more moist, no stain/odor	
	wet	0.2			14			SC	13-16' Fg-Mg Sands, some clay, wet 13-16, no stain/odor, grey color	
		0.4			16			SP		
		0.0			18				T/D @ 16', set w/ FM	

Well Location Sketch:



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See MW09

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW10/SB17</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/20/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Sturbeck</b>	Drilled By: <b>Dril Pro</b>
Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>
Slot: <b>0.01</b>	Length: <b>8'</b>
Diameter: <b>1"</b>	Hole Diameter: <b>2.25"</b>
Length: <b>10'</b>	Depth to Liquid: <b>-</b>
Total Depth: <b>18'</b>	Depth to Water: <b>12'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' no stain/odor observed while pitholing	
					4					
					6					
					8					
	moist		No		10			SC	8-12' Poor recovery, clayey Fg Sands, low-no cohesion, moist, no stain/odor	
	wet	0.1			12			SP	12-15 Fg-Mg Sands, wet, no stain/odor, increasing clay w/ depth	
		0.1			14				15-17' clayey Fg Sands, splashy stain/mottled stain observed w/ odor, low cohesion	
		5.1			16			SC	17-20' clay, med-high plasticity, etc Fg Sands, moist, no stain/odor	
		319	Yes	SB17 @ 15'	18			CL		
		14.1	gray							
	moist		None							
		0.0								
		0.0								

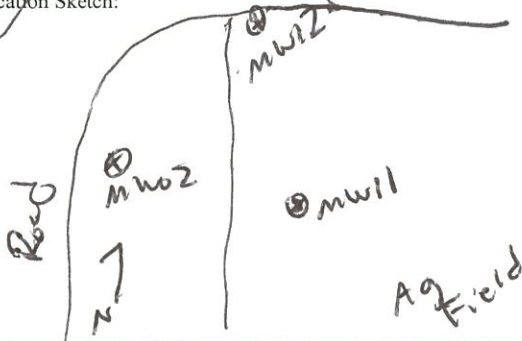
TID @ 20', Set @ 18' w/ FM

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW11</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/20/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Stainback</b>	Drilled By: <b>Dril Pro</b>
Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>
Slot: <b>0.01</b>	Length: <b>6'</b>
Diameter: <b>1"</b>	Hole Diameter: <b>2.25"</b>
Length: <b>10'</b>	Depth to Liquid: <b>-</b>
Total Depth: <b>16'</b>	Depth to Water: <b>~2'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8', no stain/odor observed while potholing	
					4					
					6					
					8					
	moist	0.0	None		10			CL	8-11.5' clay w/ Fg Sands, low-med plasticity, sands increase w/ depth, moist, no stain/odor observed	
		0.1			12			SC	11.5-14.5' Fg-Mg Sands, some clay, wet, no stain/odor	
	wet	0.0			14			CL	14.5-16' clay w/ Fg Sands, low plasticity, wet, no stain/odor	
		0.1			16					
		0.2			18					
									TD @ 16', set w/ FM	

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Well Location Sketch:

See  
mw13

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>mw12/5B16</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/21/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Steinhilber</b>	Drilled By: <b>Dril Pro</b>
Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>
Slot: <b>0.01</b>	Length: <b>8'</b>
Diameter: <b>1"</b>	Hole Diameter: <b>2.25"</b>
Length: <b>10'</b>	Depth to Liquid: <b>-</b>
Total Depth: <b>18'</b>	Depth to Water: <b>~11.5'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				Hydrovacced to 8'	
					4					
					6					
	moist	467	Yes		8					
					10			CL	8-9.5' clay w/ Fg Sands, moist, grey stain / w/ odor, low plasticity	
		7,570			11.216			SC	9.5-17' clayey Fg-Mg Sands, stain/odor observed, black stain @ 11.75, wet @ 11.5'-17'	
	wet	8,671	Black		12				17-20' clay w/ fine Fg Sand, moist, med plasticity, good cohesion, no stain/odor	
		2,100	grey		14					
		26.6	grey		16					
		62.3			18			CL		
	moist	2.2							TD @ 20', Set well @ 18' w/ FM cover	
		1.2								

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Well Location Sketch:

mw 8/SB14

mw 13/SB18

mw 12/SB16



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

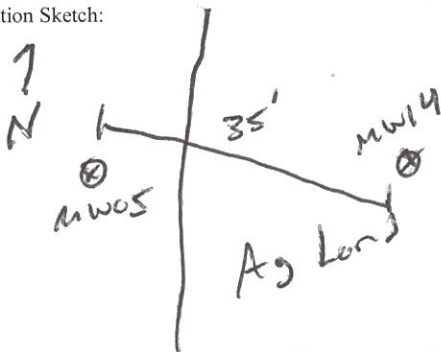
Boring/Well Number: <b>mw13/SB18</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/21/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Stunbeck</b>	Drilled By: <b>Dril Pro</b>
Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>
Slot: <b>0.01</b>	Length: <b>1"</b>
	Hole Diameter: <b>2.25"</b>
	Depth to Liquid: <b>-</b>
	Total Depth: <b>18'</b>
	Depth to Water: <b>~13'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				Hydrovaced to 8', no stain observed	
					4					
					6					
					8					
					10			SC	8-12 clayey Fg sands, poor cohesion, iron mottles, 12-13 clay w/ Fg sands, low-med plasticity, moist, no stain/odor	
					12			CL	13-17.5 clayey Fg-Mg sands, grey/black stain w/ odor, wet	
					14			SC	17.5'-20' clay, med-high plasticity, stiff, moist, no stain/odor	
					16				ID @ 20', set well @ 15' w/ FM	
					18			CL/CH		

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW14/SB19

Project:

Berger Jack C GU 1

Date:

6/21/19

Project Number:

14215255

Logged By:

D. Stanback

Drilled By:

Dril Pro

Elevation:

N/A

Detector:

MinirAE 3000

Drilling Method:

Geoprobe/Direct Push

Sampling Method:

Continuous

Gravel Pack:

Washed silica sand

Seal:

Bentonite

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

6'

Hole Diameter:

2-25"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

16'

Depth to Water:

12.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' Hydrocued, no staining observed	
					4					
					6					
					8					
					10				8-11.5' clay w/ Fg Sands, low plasticity, cohesive, moist, no stain/odor	
					12				11.5-16' clayey Fg-Mg Sands, wet @ 12.5', no stain/odor	
					14					
					16					
					18					

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW15/SB20</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/21/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Stucknack</b>	Drilled By: <b>Dril Pro</b>

Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>	Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
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Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>	Grout: <b>N/A</b>
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Casing Type: <b>PVC</b>	Diameter: <b>1"</b>	Length: <b>8'</b>	Hole Diameter: <b>2-25"</b>	Depth to Liquid: <b>-</b>
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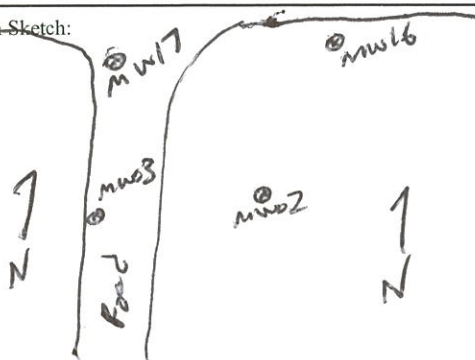
Screen Type: <b>PVC</b>	Slot: <b>0.01</b>	Diameter: <b>1"</b>	Length: <b>6'</b>	Total Depth: <b>18'</b>	Depth to Water: <b>~14'</b>
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Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8 Hydrovac, no stain/odor observed	
					4					
					6					
					8					
	moist	0.0	NO		10			CL	8-13.5' clay w/ some Fg sands, low plasticity, moist, no stain/odor	
		0.0			12				13.5-16' Fg - My Sands, wet, increasing clays w/ depth, no stain/odor	
	wet	0.1			14			SSP/SC	Push point to 18', set w/ FM	
		0.0			16					
					18					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW16</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/21/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Stainback</b>	Drilled By: <b>Dril Pro</b>

Elevation: <b>N/A</b>	Detector: <b>MinirAE 3000</b>	Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>	Grout: <b>N/A</b>	

Casing Type: <b>PVC</b>	Diameter: <b>1"</b>	Length: <b>8'</b>	Hole Diameter: <b>2.25"</b>	Depth to Liquid: <b>-</b>
Screen Type: <b>PVC</b>	Slot: <b>0.01</b>	Diameter: <b>1"</b>	Length: <b>10'</b>	Total Depth: <b>18'</b>
				Depth to Water: <b>~12'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				6-8 not logged, potholed	
					4					
					6					
					8					
	moist	0.0	None		10			CL	8-11' clay w/ Fg Sands, low plasticity, moist, no stain/odor	
		0.0			12			SC	11-14' clayey Fg Sands w/ some Mg, wet @ 12, no stain/odor	
	wet	0.1			14			CL	14-16' clay, med-high plast, moist-wet, no stain/odor, stiff	
		0.0			16				Push point to 18' & Set w/ FM water	
	moist	0.0			18					

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Well Location Sketch:

See MW16



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW17	Project: Berger Jack C GU 1
Date: 6/21/19	Project Number: 14215255
Logged By: D. Steinback	Drilled By: Dril Pro

Elevation: N/A	Detector: MinirAE 3000	Drilling Method: Geoprobe/Direct Push	Sampling Method: Continuous
Gravel Pack: Washed silica sand	Seal: Bentonite	Grout: N/A	

Casing Type: PVC	Diameter: 1"	Length: 6'	Hole Diameter: 2-25"	Depth to Liquid: -
Screen Type: PVC	Slot: 0.01	Diameter: 1"	Length: 16'	Total Depth: 16'
				Depth to Water: ~10'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0				0-8' potted, not logged	
					2					
					4					
					6					
					8					
	moist	0.0	None		10			CL	8-11' Clay w/ Fg Sands, moist, no stain/odor, low-med plasticity	
	wet	0.0			12			SC	11-13' Clayey Fg Sands, med, no stain/odor	
	moist	0.0			14			CL	13-16' Clay, med-high plast, wet-moist, no stain/odor, trace some Fg Sands 13-14'	
		0.0			16				TD @ 16', set w/ Fin cover	
					18					

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Well Location Sketch:

MW12/SB16  
MW18/SB21  
MW19/SB22  
Ag Field



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW18/SB21	Project:	Berger Jack C GU 1
Date:	6/21/19	Project Number:	14215255
Logged By:	D. Stankback	Drilled By:	Dril Pro

Elevation:	N/A	Detector:	MinirAE 3000	Drilling Method:	Geoprobe/Direct Push	Sampling Method:	Continuous
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Gravel Pack:	Washed silica sand	Seal:	Bentonite	Grout:	N/A
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Casing Type:	PVC	Diameter:	1"	Length:	8'	Hole Diameter:	2-25"	Depth to Liquid:	-
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Screen Type:	PVC	Slot:	0.01	Diameter:	1"	Length:	16'	Total Depth:	18'	Depth to Water:	~13'
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Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' hydrocarbon, no stain/odor observed	
					4					
					6					
					8					
					10			CL	8-9.5' clay w/ Fg Sands, moist, low plasticity, no stain/odor	
					12			SC	9.5-16' clayey Fg-Mg sands, w/ Cg Sands 14-16', grey stain, w/ odor, black stain 15-16'	
					14			SC	16-18' SAA, Fg - Cg Sands w/ clay, clumps up 17-18', wet	
					16			CL	18-20' clay, med-high plasticity, wet, no stain/odor	
					18			CL	TD @ 20', set @ 18' w/ FM	

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Well Location Sketch:

See mw18



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**BORING LOG/MONITORING WELL COMPLETION DIAGRAM**

Boring/Well Number: <b>MW19/5822</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>6/21/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Starnobuck</b>	Drilled By: <b>Dril Pro</b>
Elevation: <b>N/A</b>	Detector: <b>MinirRAE 3000</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Slot: <b>0.01</b>
Diameter: <b>1"</b>	Length: <b>8'</b>
Hole Diameter: <b>2.25"</b>	Depth to Liquid: <b>-</b>
Diameter: <b>1"</b>	Length: <b>10'</b>
Total Depth: <b>18'</b>	Depth to Water: <b>12.5'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' pothole d, no stain observed	
					4					
					6					
					8					
					10					
					12					
					14					
					16					
					18					

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Well Location Sketch:

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MW 22

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW20/SB23

Project:

Berger Jack C GU 1

Date:

11/20/19

Project Number:

14215255

Logged By:

P. Steinbeck, P.E.

Drilled By:

Dril Pro

Elevation:

N/A

Detector:

MinirAE 3000

Drilling Method:

Geoprobe/Direct Push

Sampling Method:

Continuous

Gravel Pack:

Washed silica sand

Seal:

Bentonite

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

8'

Hole Diameter:

2.25"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

18'

Depth to Water:

~8.5-9'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0				0-8' samples collected w/ hand auger	
					2			SW/SC	2' Mg-Cy sands w/ gravel, heavy clays, no stain/odor	
mist	0.0		None		4			SW/SC	4' Fy-Mg sands w/ gravel & clays, moist, no stain/odor	
mist	0.0		None		6			SW/SC	6' clay w/ Fy-Mg sands, low plasticity, moist, no stain/odor	
					8					
					10			SC	8-12' Clayey Fy-Mg sands, wet @ 9', stain/odor 9-12', poor recovery	
wet	13.4		Y.S.	SB23 @ 8.5' (1105)	12			SW	12-16' Fy-Mg sands, some cg, wet, black stain 12-14'	
	184.1				14				16-18', some us above, no stain/odor, wet	
	275			SB23 @ 13' (1115)	16					
	5.0		SC stain		18				TD @ 18', set w/ Flush	
	1.0		None							
	6.9									



Well Location Sketch:

See MW 22



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW 21/SB24

Project:

Berger Jack C GU 1

Date:

11/20/19

Project Number:

14215255

Logged By:

D. Stainback, P. G.

Drilled By:

Drill Pro

Elevation:

N/A

Detector:

MinirAE 3000

Drilling Method:

Geoprobe/Direct Push

Sampling Method:

Continuous

Gravel Pack:

Washed silica sand

Seal:

Bentonite

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

6'

Hole Diameter:

2.25"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

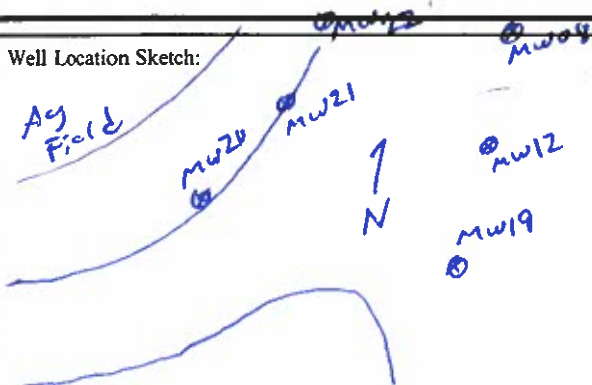
16'

Depth to Water:

14'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				6-8' potholed, no stain observed.	
					4					
					6					
					8					
					10				8-11 clayey Fg - Mq Sands, wet, stain/odor obs., poor recovery	
					12				11-16' Fg - Mq Sand w/ some cg & less clays, black stain	
					14				14-15, stain/odor throughout, wet, cleans up @ 15'	
					16				TD @ 16', set w/ FM	
					18					

Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <i>MW22/SB25</i>	Project: Berger Jack C GU 1
Date: <i>11/20/19</i>	Project Number: 14215255
Logged By: <i>D. Stornback, P.G.</i>	Drilled By: Dril Pro
Elevation: N/A	Drilling Method: Geoprobe/Direct Push
Detector: MinirAE 3000	Sampling Method: Continuous

Gravel Pack: Washed silica sand	Seal: Bentonite	Grout: N/A
------------------------------------	--------------------	---------------

Casing Type: PVC	Diameter: 1"	Length: 6'	Hole Diameter: 2-25'	Depth to Liquid: -
Screen Type: PVC	Slot: 0.01	Diameter: 1"	Length: 10'	Total Depth: 16'
				Depth to Water: ~9'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' pithick, no stain observed	
					4					
					6					
					8					
60+		284		SB25, 28.5, 1210	10			SC	8-13' Fg-mg clays/sands, wet, gk stain/odor, grain size coarsens w/ depth	
		251			12				13-15' Fg-cg sands, wet, black stain/odor, trace clay	
		1,049			14			SW	15-16' clay w/ Fg sands, low plasticity, less wet	
		1,304		SB25, 214, 1215	16			CL	TD @ 16', set w/ Flush	
less wet		19.2		Block No 1	18					



Well Location Sketch:

MW09  
②MW23  
②

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW23/5005	Project: Berger Jack C GU 1
Date: 11/20/19	Project Number: 14215255
Logged By: D. Stoinback, P.G.	Drilled By: Dril Pro
Drilling Method: Geoprobe/Direct Push	Sampling Method: Continuous

Elevation: N/A	Detector: MinirAE 3000
-------------------	---------------------------

Gravel Pack: Washed silica sand	Seal: Bentonite	Grout: N/A
------------------------------------	--------------------	---------------

Casing Type: PVC	Diameter: 1"	Length: 6'	Hole Diameter: 2.25"	Depth to Liquid: -
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Screen Type: PVC	Slot: 0.01	Diameter: 1"	Length: 10'	Total Depth: 16'	Depth to Water: ~10'
---------------------	---------------	-----------------	----------------	---------------------	-------------------------

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' pitholed, no stem observed	
					4					
					6					
					8					
	moist	0.0	NO		10			SC	8-9' clayey Fg sands, moist, no stem/odor	
	wet	0.0			12			CL	9-12' clay w/ Fg sands, low plasticity, moist, wet @ 10', no stem/odor	
		0.0			14			SW	12-16' Fg sandy sands, some cg sands, wet, no stem/odor	
		0.0			16			3'	TD @ 16', set w/ FM	
		0.0			18					

## Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <u>SB30 / SB30</u>	Project: <u>Jack Berger #11</u>
Date: <u>11-22-2019</u>	Project Number: <u>014215255</u>
Logged By: <u>Daniel Thomas</u>	Drilled By: <u>Drill Pro</u>
Drilling Method: <u>Geo Probe/Direct Push</u>	Sampling Method: <u>Continuous</u>
Seal: <u>Bentonite</u>	Grout: <u>N/A</u>
Casing Type: <u>PVC</u>	Diameter: <u>1"</u>
Screen Type: <u>PVC</u>	Slot: <u>0.01</u>
Hole Diameter: <u>2.25"</u>	Depth to Liquid: <u>-</u>
Total Depth: <u>16'</u>	Depth to Water: <u>11'</u>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0'-8' Hand Auger - Not logged.	
					4				No impacts observed	
					6					
					8					
	moist	2.1	NONE		10	4' 4"		CL	8'-9.5' clay some → trace Fg sand, brown → dark brown, moist, low plasticity, cohesive, no staining.	
	3.5			SB30 E10 (1005)	12			CL	9.5'-12.5' clay trace VFg. sand, brown, moist, saturated @ 11', low plasticity, cohesive, no staining.	
	Saturated	2.1			14	4' 3"		SP	12.5'-16' VFg-Mg. Sand trace clay, light brown, saturated, poorly-graded, no staining.	
	2.2				16					
	2.0				18					

Set as flushmount



Well Location Sketch:

mw18  
⊗

⊗ mw24

A9  
Field Nmw25  
⊗

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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: mw25/SB27 Project: Berger Jack C GU 1  
 Date: 11/20/19 Project Number: 14215255  
 Logged By: D. Steinbock, P.E. Drilled By: Drill Pro

Elevation: N/A Detector: MinirRAE 3000 Drilling Method: Geoprobe/Direct Push Sampling Method: Continuous

Gravel Pack: Washed silica sand Seal: Bentonite Grout: N/A

Casing Type: PVC Diameter: 1" Length: 6' Hole Diameter: 2.75" Depth to Liquid: -

Screen Type: PVC Slot: 0.01 Diameter: 1" Length: 11' Total Depth: 16' Depth to Water: ~11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2					
					4					
					6					
					8					
					10			SC	0-8' potholed, not layered, no staining	
					12			SW	8-12' clayey Fg Sands w/ some mg, iron nodules, no stain/odor, wet @ 11'	
					14				12-16' Fg-mg sand w/ some CB sand, wet, black @ 12', grey w/ odor 12.5-15', clean 15-16'	
					16					
					18					

mw18 0.0  
 wet 0.0  
 1,028  
 53.4  
 0.0

N/A  
 SB27 @ 11.5'  
 SB27 @ 12'  
 grey stain  
 None

SC  
 3.5  
 SW  
 3.5

Well Location Sketch:

See MW 27



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

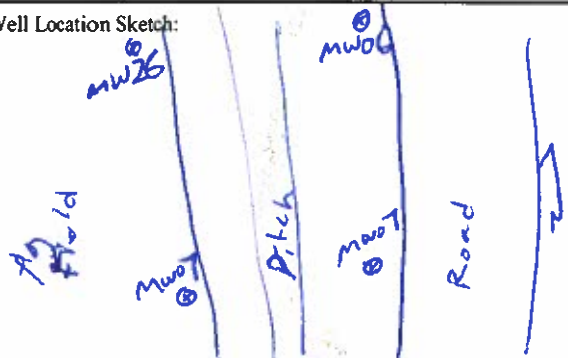
Boring/Well Number: <u>MW26</u>	Project: <u>Berger Jack C GU 1</u>
Date: <u>11/20/19</u>	Project Number: <u>14215255</u>
Logged By: <u>P. Steinback, P.G.</u>	Drilled By: <u>Dril Pro</u>
Elevation: <u>N/A</u>	Drilling Method: <u>Geoprobe/Direct Push</u>
Detector: <u>MinirAE 3000</u>	Sampling Method: <u>Continuous</u>
Gravel Pack: <u>Washed silica sand</u>	Seal: <u>Bentonite</u>
	Grout: <u>N/A</u>

Casing Type: <u>PVC</u>	Diameter: <u>1"</u>	Length: <u>2'</u>	Hole Diameter: <u>2-2.5"</u>	Depth to Liquid: <u>-</u>
Screen Type: <u>PVC</u>	Slot: <u>0.01</u>	Diameter: <u>1"</u>	Length: <u>10'</u>	Total Depth: <u>12'</u>
				Depth to Water: <u>~5'</u>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' potholed, not logged, no staining observed	
					4					
					6					
					8					
					10			SW	8-11' Fg-Mg Sands, some cg sand, wet, sturn w/ SC odor obs. 9-10.5'	
					12			CL	11-12' Clay w/ Fg Sands, low plasticity, wet, no sturn/odor	
					14				TD @ 12', set w/ flush mount	
					16					
					18					



Well Location Sketch:



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**BORING LOG/MONITORING WELL COMPLETION DIAGRAM**

Boring/Well Number: <b>MW27/5828</b>	Project: <b>Berger Jack C GU 1</b>
Date: <b>11/20/19</b>	Project Number: <b>14215255</b>
Logged By: <b>D. Steinbock, P. G.</b>	Drilled By: <b>Dril Pro</b>
Drilling Method: <b>Geoprobe/Direct Push</b>	Sampling Method: <b>Continuous</b>
Seal: <b>Bentonite</b>	Grout: <b>N/A</b>
Casing Type: <b>PVC</b>	Diameter: <b>1"</b>
Screen Type: <b>PVC</b>	Slot: <b>0.01</b>
	Length: <b>4'</b>
	Hole Diameter: <b>2.25"</b>
	Depth to Liquid: <b>-</b>
	Total Depth: <b>14'</b>
	Depth to Water: <b>12.5'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8' r. tholed, not logged no staining observed	
					4					
					6					
					8					
					10				8-14.5' clayey Fg Sands, Some Mg. wet @ 8.5-14.5', grey stain w/ organic odor 8.5-14.5' 14.5-16' clay w/ Fg Sands, wet, low-mud plast., no stain/odor	
					12					
					14				TD @ 16', set well @ 14' w/ Flush mud	
					16					
					18					

Well Location Sketch:



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Ref. MW31

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW28/SB29</b>	Project: <b>Jack Beger CH1</b>
Date: <b>11-22-2019</b>	Project Number: <b>014215255</b>
Logged By: <b>Daniel Thomas</b>	Drilled By: <b>Drill Pro</b>
Elevation: <b>N/A</b>	Drilling Method: <b>Geo Probe/Direct Push</b>
Detector: <b>MinirAE 3000</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>
Slot: <b>0.01</b>	Length: <b>5.75'</b>
	Hole Diameter: <b>2.25"</b>
	Depth to Liquid: <b>-</b>
	Total Depth: <b>18' set @ 16'</b>
	Depth to Water: <b>~9.5'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0'-8' Hand Auger - Not logged	
					4				PID readings that appear stained.	
					6					
		13.8			8					
					10	4' 4'		CL	8'-10' Clay some Fg. Sand, grey, moist → saturated @ 15', low plasticity, cohesive, stain color.	
	Moist ↓ Saturated	50.8 58.2	Yes ↓	SB24 @ 8' (1035)	12				10'-18' vfg. Mg. Sand trace clay, grey/black → light brown, saturating poorly-graded, stain color.	
		760.3		SB24 @ 12' (1042)	14	4' 3'		SP		
		469.7			16					
		3812	NONE ↓		18	2' 3'				
		13.0								

Set as flush mount



Well Location Sketch:

Ref. MW 31



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW29/SB31	Project: Jack Berger #1
Date: 11-22-19	Project Number: 014215255
Logged By: Daniel Thomas	Drilled By: Drill Pro
Elevation: N/A	Detector: MinirAE 3000
Drilling Method: Geo Probe/Direct Push	Sampling Method: Continuous
Gravel Pack: Washed silica sand	Seal: Bentonite
Casing Type: PVC	Grout: N/A
Screen Type: PVC	Slot: 0.01
Diameter: 1"	Length: 11.75'
Diameter: 1"	Length: 16'
Hole Diameter: 2.25"	Depth to Liquid: -
Total Depth: 16' Set @ 13'	Depth to Water: 49' (4')

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0				0'-8' Potholed - Not logged	
					2				GW sitting in pothole.	
					4				(GW 8' bgs.)	
					6				Hand Augered to 4' bgs (GW)	
					8				Sampled @ 3.5'	
					10	4' 2'			8'-16' Clay trace 7.14% LF5 Sand,	
					12			CL	gray/black → brown,	
					14	4' 3'			saturated, low → moderate	
					16				plasticity, stain/odor	
					18				ends @ -14'	
									Very loose/weak recovered (8-13')	
									Set as flush mount	

NOTES:

Page

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Well Location Sketch:



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Ref. MW31

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW30/5832</b>	Project: <b>Jack Berger CWI</b>
Date: <b>11-22-2019</b>	Project Number: <b>014215255</b>
Logged By: <b>Daniel Thomas</b>	Drilled By: <b>Drill Pro</b>
Elevation: <b>N/A</b>	Drilling Method: <b>Geo Probe/Direct Push</b>
Detector: <b>MinirAE 3000</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed silica sand</b>	Seal: <b>Bentonite</b>
	Grout: <b>N/A</b>

Casing Type: <b>PVC</b>	Diameter: <b>1"</b>	Length: <b>11.75'</b>	Hole Diameter: <b>2.25"</b>	Depth to Liquid: <b>-</b>
Screen Type: <b>PVC</b>	Diameter: <b>1"</b>	Length: <b>10'</b>	Total Depth: <b>16' Set @ 10'</b>	Depth to Water: <b>28'</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
------------------------	------------------	-------------	----------	----------	------------------	------------	----------	----------------	-------------------	-------------------------

					0					
					2				0'-8' Hand Auger - Not logged. NO impacts observed.	
					4					
					6					
					8					
					10	4'	4'	CL	8'-15.5' Clay trauc → some Fg. Sand, brown/orangeish brown, saturated, low plasticity, cohesive, intermittent iron-oxide staining, stain loder from 10'-15.5'	
					12				* more sand from 15-15.5'	
					14	4'	3'		15.5'-16' vfg-Mg, sand trauc clay, brown, saturated, partly-graded, no stain/loder.	
					16					
					18					

NOTES:



Well Location Sketch:

See MW 25



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: DS <del>11/24/19</del> 5826	Project: Berger Jack C GU 1
Date: 11/24/19	Project Number: 14215255
Logged By: D. Stinbeck, P.G.	Drilled By: Dril Pro
Drilling Method: Geoprobe/Direct Push	Sampling Method: Continuous
Seal: Bentonite	Grout: N/A

Elevation: N/A  
 Detector: MinirAE 3000

Gravel Pack:  
Washed silica sand

Casing Type:

PVC

Diameter:

Length: 6'

Hole Diameter:

Depth to Liquid:

1"

2-25"

-

Screen Type:

PVC

Slot:

0.01

Diameter:

Length: 10'

Total Depth:

Depth to Water:

1"

16'

~11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-8 pitted, no stain observed	
					4					
					6					
					8					
					10			SC	8-12' clayey Fy Sands, some Mg sand, moist, wet @ 11', no stain/odor	
				5826 C10.5 1330	12			SW	12-16' Fy-Mg Sands, some Cy sand, iron nodules, no stain/odor	
					14				TD @ 16', sat w/ FM cover	
					16					
					18					