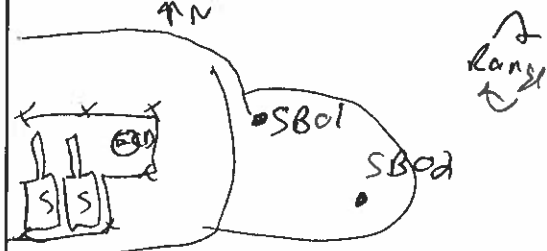


Well Location Sketch:



Compliance - Engineering - Remediation

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4600 W. 60th Avenue

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring Well Number:

SBO1

Project:

Aristocrat 41-9

Date:

4-29-19

Project Number:

014219041

Logged By:

Daniel Thomas

Drilled By:

LTE

Drilling Method:

Hand Auger

Sampling Method:

Continuous

Seal:

Bentonite

Grout:

-

Elevation:

Detector:

Gravel Pack:  
Silica Sand

Casing Type:

PVC

Diameter:

Length:

1"

Hole Diameter:

Depth to Liquid:

Screen Type:

PVC

Slot:

0.01

Diameter:

Length:

1"

Total Depth:

6'

Depth to Water:

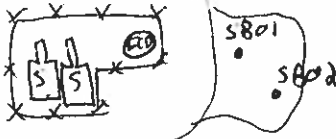
N/A

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Sl. Moist ↓ 0.2							SP	0'-6' Vfg. Mg Sand trace clay, brown, moist, poorly-graded, stain static 2.5', slight odor @ 2.5'	
	10.51 ↓	0.3			2					
		109.4								
		155.5			4					
		236.6								
	436.5 ↓				6				Abandoned w/ bentonite	
					8					
					10					
					12					
					14					
					16					
					18					

Well Location Sketch:

↑ N

Range



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring Well Number:

S802

Project:

Aristocrat 41-9

Date:

4-29-17

Project Number:

014219041

Logged By:

Daniel Thomas

Drilled By:

LTE

Drilling Method:

Hand Auger

Sampling Method:

Continuous

Seal:

Bentonite

Grout:

-

Elevation:

Detector:

Gravel Pack:

Silica Sand

Casing Type:

PVC

Diameter:

Length:

1"

Hole Diameter:

Depth to Liquid:

Screen Type:

PVC

Slot:

0.01

Diameter:

Length:

1"

Total Depth:

6'

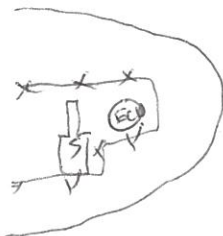
Depth to Water:

N/A

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	↓ Moist	1.2	↓					SP	0' - 6' vts. my sand from clay, brown, moist, poorly-sorted, stain 21.5% color 0.15-0.2, trace gravels & yf	
	↓ Moist	57.2	↓		2					
		120.3			4					
		107.4								
		174.5								
		360.3			6				Abandoned w/ bentonite	
					8					
					10					
					12					
					14					
					16					
					18					

Well Location Sketch:

N



SB03



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB03	Project:	Asistocrat 41-9
Date:	5-22-19	Project Number:	014219041
Logged By:	Daniel Thomas	Drilled By:	Drill Pro
Drilling Method:	Direct Push	Sampling Method:	Continuous
Seal:		Grout:	
Elevation:	N/A	Detector:	PID
Gravel Pack:	Silica Sand	Diameter:	Length:
Casing Type:	PVC	Hole Diameter:	Depth to Liquid:
Screen Type:	PVC	Slot:	Diameter:
		Length:	Total Depth:
			Depth to Water:

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			SP	6'-17' Fg-Mg Sand, trace clay, grey, poorly-graded, stain, odor, saturated @ 16'	
	moist	288.3	Y		6	2'	2'			
		325.1			8				Hydrovacted/Not Logged (DT)	
		492.7			10	4'	4'			
	v. moist	382.2			12			CH	17'-18' clay, grey, saturated, high plasticity, cohesive, stain, odor.	
		848.3		SB03E	14	4'	4'			
	saturated	394.2			16			CH	18'-22' Clay Some Fg-Mg Sand, grey, saturated, moderate - high plasticity, cohesive, stain, odor.	
		378.6			18	4'	4'			
		658.1			20					
		325.0			22	4'	4'	CH	22'-32' clay few Fg Sand trace gravels, grey, saturated high plasticity, cohesive, stain, odor	
		491.4			24					
		381.9			26	4'	5'			
		197.0			28					
		67.2			30	4'	4'			
	moist	35.4			32					
					34					
					36					
					38					
					40					

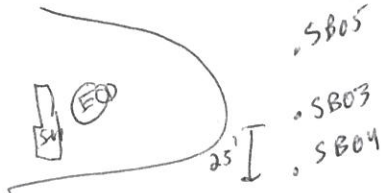
Set as temp SU.

\* Issue setting sand pack with water to the hole, potentially bentonite around screen.

NOTES:

Page \_\_\_\_ of \_\_\_\_

Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB04	Project:	Aristocrat 41-9
Date:	5-22	Project Number:	014219041
Logged By:	Daniel Thomas	Drilled By:	Drill Pro
Drilling Method:	Direct Push	Sampling Method:	Continuous
Seal:		Grout:	
Elevation:	N/A	Detector:	PID
Gravel Pack:	Silica Sand		
Casing Type:	PVC	Diameter:	Length:
Screen Type:	PVC	Diameter:	Length:
		Hole Diameter:	Depth to Liquid:
		Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	moist	1.0	2		2			SP	0'-15' FS-Mg Sand, trace clay, li. brown, moist, poorly graded, no stain, no odor.	
		1.9			4					
		1.7			6					
		4.6			8	2'	2'			
		4.9			10	4'	4'		Hydrovacted/Not Logged	
		2.5			12			CH	15'-28' Clay few FS-Mg Sand trace gravels, grey → li. brown, saturated, high plasticity, cohesive, stain ends e ar, odor ends e 37'	
	Saturated	11.8	Yes	SB04-11	14	4'	4'			
		9.9			16					
		721.6			18	4'	4'			
		710.0			20					
		600.4			22	4'	4'			
		1185			24					
		117.5			26	4'	4'			
		92.11			28					
					30					
					32					
					34					
					36					
					38					
					40					

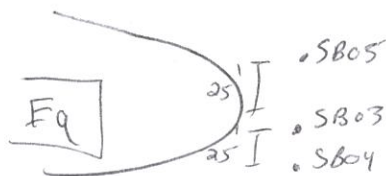
NOTES:

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Well Location Sketch:

NW



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB05

Project:

Aristocrat 419

Date:

5-22-19

Project Number:

014219041

Logged By:

Daniel Thomas

Drilled By:

Drill Pro

Elevation:

N/A

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Grout:

Casing Type:

PVC

Diameter:

Length:

10'

Hole Diameter:

Depth to Liquid:

Screen Type:

PVC

Slot:

Diameter:

Length:

15'

Total Depth:

24' (+1)

Depth to Water:

~13'

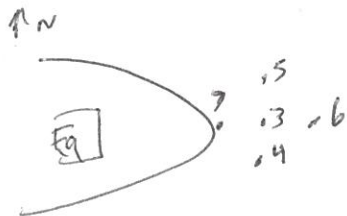
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	1.5			2			SP	0'-14' Fg-Mg Sand trace clay, brown, saturated @ 13', poorly-graded, NO stain, NO odor, A Stain @ 18'	
		1.8			4					
		1.5			6					
		1.6			8	2'				
		2.1			10	4'	4'		Hydrovaccated/Not Logged	
	Saturated	5.0		SB0512	12			CH	14'-24' clay few Fg Sand trace gravels, grey/brown, light brown @ depth, saturated, High plasticity, cohesive, Stain @ 18', odor.	
		1.4			14	4'	4'			
		1.7			16					
		163.8	Yes		18	4'	4'			
		110.7			20	4'	4'			
		31.9	No		22	4'	4'			
		42.8			24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Set as temp SU

NOTES:

Page \_\_\_\_ of \_\_\_\_

Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

5806

Project:

Aristocrat 41-9

Date:

5-22-19

Project Number:

014219041

Logged By:

Daniel Thomas

Drilled By:

D. Miller

Elevation:

N/A

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Grout:

Casing Type:

PVC

Diameter:

Length:

10'

Hole Diameter:

Depth to Liquid:

Screen Type:

PVC

Slot:

Diameter:

Length:

20'

Total Depth:

38' (Ctd)

Depth to Water:

~14.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	1.1	N		2			SP	0'-17' Fg-Mg Sand trace clay, dark brown, moist, saturated @ 14.5', poorly-graded, stone 15', odor 17'	
		1.6			4					
		1.2			6					
		1.3			8	2' 4"				
		1.4			10	4' 4"			Hydrovaccated/Not Logged (DT)	
					12			Cl	17'-28 Clay trace -> few Fg, Sand, stained dark gray, saturated, high plasticity, polishing, stain, odor.	
	Saturated	1.2		5806 14' e15	14	4' 4"				
		1.8			16					
		17.9			18	4' 4"			* @ 24-26 Gravel some Fg Sand, dark gray, saturated, strong stain/odor, Heavy-shun.	
		655.9			20					
		523.6			22	4' 4"				
		217.2			24					
		141.9			26	4' 4"				
		734.4			28					
		40.1			30					
					32					
					34					
					36					
					38					
					40					

Set as temp SU



Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB07	Project:	Aristocrat 41-9
Date:	5-22-19	Project Number:	014219041
Logged By:	Daniel Thomas	Drilled By:	Drillco
Drilling Method:	Direct Push	Sampling Method:	Continuous
Seal:		Grout:	

Elevation:	N/A	Detector:	PID
------------	-----	-----------	-----

Gravel Pack:	Silica Sand
--------------	-------------

Casing Type:	PVC	Diameter:	Length:	Hole Diameter:	Depth to Liquid:
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Screen Type:	PVC	Slot:	Diameter:	Length:	Total Depth:	Depth to Water:
--------------	-----	-------	-----------	---------	--------------	-----------------

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	1.1	~		2			SP	0' - 12.5' Fg-Mg Sand trace clay, dark brown, moist, saturated @ 12', poorly-graded, stain @ 12', odor @ 11'	
		1.2			4					
		1.2			6					
		1.4			8	2'	2'			
		2.0			10	4'	4'		Hydrovacted/Not Logged (DT)	
	Saturated	2.4	4.25		12			CH	12.5' - 24' clay few Fg sand, li. brown, saturated, High plasticity, cohesive, stain, odor. Heavy shear @ 22-23'	
		1.2			14	4'	4'			
		2.7			16					
		338.0			18	4'	4'			
		136.6			20					
		92.2	4.25		22	4'	4'		Set as temp SU	
		78.2			24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page 1 of 1

Location Map:



**Compliance M Engineering M Remediation**  
**LT Environmental, Inc.**  
**4400 W. 46th Avenue**  
**Denver, Colorado 80212**

**BORING LOG/MONITORING WELL COMPLETION DIAGRAM**

Boring/Well Number: <i>SBO8</i>	Project: <i>Aristocrat 41-9</i>
Date: <i>5-22-19</i>	Project Number: <i>014219041</i>
Logged By: <i>Daniel Thomas</i> ✓	Drilled By: <i>Drill Pro</i>
Drilling Method: <i>Direct Push Hand Auger</i>	Sampling Method: <i>Continuous</i> ✓
Gravel Pack:	Seal: <i>Bentonite</i>
	Grout:

Elevation: <i>N/A</i>	Detector: <i>PID</i>	Casing Type:	Diameter:	Length: <i>10'</i>	Hole Diameter: <i>5"</i>	Depth to Liquid:
		Screen Type:	Slot:	Diameter:	Length: <i>15'</i>	Total Depth: <i>29' (+2)</i>
						Depth to Water: <i>-8.5'</i>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	<i>MOES</i>	<i>3.0</i>	<i>2</i>		0		<i>SP</i>	<i>0'-17' Fg Sand frac clay, brown, moist (sat. @ -8.5'), poorly-graded, stain e8, odor e 6'</i>	
		<i>2.2</i>			4				
	<i>soil moisture</i>	<i>6.1d</i>	<i>Yes e 7'</i>	<i>SBO8 e 8'</i>	8	<i>2 2</i>			
		<i>302.4</i>			12	<i>4 4</i>			
		<i>304.7</i>			16	<i>4 4</i>	<i>CH</i>	<i>17'-24' Clay few Fg Sand trace gravels, gray, -7 brown, saturated, high plasticity, cohesive, stain eads e 20', odor e 18'</i>	
		<i>466.6</i>			20	<i>4 4</i>			
		<i>390.2</i>			24	<i>4 4</i>			
		<i>399.5</i>			28				
		<i>397.2</i>			32				
		<i>16.3</i>			36				
					40				
					44				
					48				
					52				
					56				
					60				

*Set as temp SU*



Well Location Sketch:

See SB10



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>SB09</b>	Project: Aristocrat 41-9 1
Date: 5/24/2019	Project Number: 19041
Logged By: David Stainback	Drilled By: Drill Pro
Elevation: N/A	Detector: PID
Gravel Pack: Washed Silica Sand	Seal: Bentonite Chips
Casing Type: PVC	Hole Diameter: 2.25"
Screen Type: PVC	Depth to Liquid: N/A
Slot: 0.1	Total Depth: 24'
Diameter: 1"	Depth to Water: ~14'
Length: 9'	
Length: 15'	

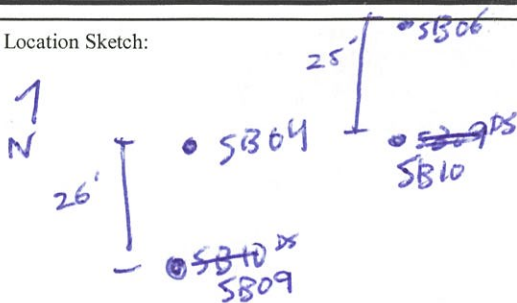
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Dry	0.0	No		2	X		SM	0-4' Fgr-Mgr Silty sands, dry, brown, no stain/odor	
		0.1			4	X				
					6				Cleared to 6' Not Logged	
	Moist	6.0			8	X	2'	SP-SC	6-12' Fgr Sands w/ trc Mgr, moist, no stain/odor, clayey w/ depth	
		0.0			10	X	4'			
		0.1			12	X			12-16' SAA, wet @ 14', stain/odor observed @ 16'	
	wet	0.1			14	X	3'		16-19' Clayey Fgr Sands w/ some Mgrs, wet, stain/odor observed	
		20.7	Yes		16	X		SC		
		60.9			18	X	4'		19-24' clay, moist, med-high plasticity, stain/odor observed, trc Fgr Sand, 1" clayey Fgr Sand lense obs 20-21' w/ stain/odor, wet	
	Moist	989			20	X		CL		
		1,826			22	X				
		233			24	X				
		110			26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD @ 24', set w/ temp prc stickup

NOTES:

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB10	Project: Aristocrat 41-9 1		
Date: 5/24/2019	Project Number: 19041		
Logged By: David Stainback	Drilled By: Drill Pro		
Drilling Method: Direct Push/Geoprobe	Sampling Method: Continuous		
Seal: Bentonite Chips	Grout:		
Diameter: 1"	Length: 9'	Hole Diameter: 2.25"	Depth to Liquid:
Diameter: 1"	Length: 15'	Total Depth: 24'	Depth to Water: 15'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Dry	0.0	No		2			SM	0-4' Fgr silty sands, some mgr, dry, brown, no stain/odor	
		0.0			4				w/ HA	
					6				Cleared to 6' Not Logged DS	
	moist	6.1	No		8	X 2'		SP	6-8' Fgr sands w/ some mgrs	
		6.0			10	X 4'		SC	trc silt, moist, no stain/odor	
		0.0			12	X 4'		SP	8-10.5' clayey fgr sands, drk brown, moist, no stain/odor	
	wet				14	X 4'			10.5-18' Fgr-mgr sands, loose, re/orange w/ iron nodding, moist, no stain/odor, wet @ 15'	
		2.1			16				18-19 clay, med-high plasticity, wet, stain/odor, stiff, less wet	
		126	Yes		18	X 4'		CL	19-20.5' clayey fgr sands, wet, strong stain/odor observed	
	less wet	3,904			20			SC	20.5-24'	
		1,204	grey		22	X 4'		CH	20.5-24' grey clay w/ trc fgr sands, less wet, grey odor stain & odor, med-high plasticity	
		775			24				TD @ 24', set as temp PVC stick-up	
		40			26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

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Well Location Sketch:

SB04  
SB10  
SB09  
N  
SB11  
SB12



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB11		Project: Aristocrat 41-9 1	
Date: 5/24/2019		Project Number: 19041	
Logged By: David Stainback		Drilled By: Drill Pro	
Drilling Method: Direct Push/Geoprobe		Sampling Method: Continuous	
Seal: Bentonite Chips		Grout: N/A	
Diameter: 1"	Length: 9'	Hole Diameter: 2.25"	Depth to Liquid:
Diameter: 1"	Length: 15'	Total Depth: 24'	Depth to Water: 15'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	dry	0.0	no		2	X		SM	0-4' Fgr silty brown sand, dry, no stain/odor, organics	
		0.0			4	X			w/ HA	
					6				Cleared to 6'/Not Logged	
	moist	0.0			8	X	2'		6-8' Fgr V Fgr - Fgr silty	
		0.4			10	X	4'	SW	sands w/ fine mgr, moist, no stain/odor	
		0.1			12	X			8-10.5' clayey Fgr sands, moist, no stain/odor	
	wet	0.1			14	X	4'		10.5-16' Fgr - mgr sand, fine	
		1.7			16	X			mgr sands, moist, wet @ 15'	
		3.0			18	X	3'	SC	16-20' clayey Fgr - mgr sands, wet, no stain/odor	
	moist	292			20	X			20-24' clay w/ fine Fgr	
		7.3			22	X	4' EL		sands, moist, med-high plast., stiff, no stain & SC odor.	
					24	X				
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD @ 24', set w/  
temp PVC stick-up



Well Location Sketch:

See SB11



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

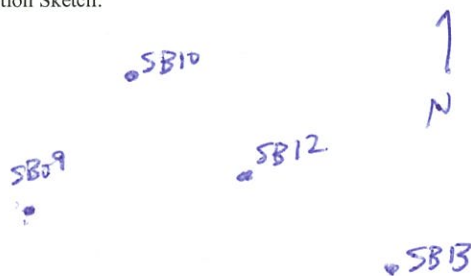
Boring/Well Number: <b>5812</b>	Project: <b>Aristocrat 41-9 1</b>
Date: <b>5/24/2019</b>	Project Number: <b>19041</b>
Logged By: <b>David Stainback</b>	Drilled By: <b>Drill Pro</b>
Elevation: <b>N/A</b>	Detector: <b>PID</b>
Drilling Method: <b>Direct Push/Geoprobe</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed Silica Sand</b>	Seal: <b>Bentonite Chips</b>
Casing Type: <b>PVC</b>	Grout: <b>N/A</b>
Screen Type: <b>PVC</b>	Slot: <b>0.1</b>
Diameter: <b>1"</b>	Length: <b>9'</b>
Hole Diameter: <b>2-2.5"</b>	Depth to Liquid: <b>N/A</b>
Diameter: <b>1"</b>	Length: <b>15'</b>
Total Depth: <b>24'</b>	Depth to Water: <b>N/A</b>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Dry	6.0	No		2	X		SM	0-4' Fgr brown silty sands, dry, no stain/odor, organic	
		0.0			4	X			w/ HA	
					6				Cleared to 6' Not Logged	
	moist	0.0			8	X		2' SM	6-8' VFg - Fg silty sands, moist, no stain/odor, some mgr	
		0.0			10	X		4'	8-12' SAA, w/ iron mottling	
		0.1			12	X			obs 9-12', no stain/odor	
					14	X		4'	12-18' VFg - Fg silty sands, SAA, wet @ 15'	
	wet	0.0			16	X			18.5-24' clay w/ Fgr sands, low-med plasticity, stain/odor observed 19-21', stiffens w/ depth	
		0.1			18	X		4'		
		2662	Yes		20	X		CL		
	moist	1.754			22	X				
		42.3	grey		24				TD @ 24' bgs, set w/ temp pre stick-up	
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB13	Project: Aristocrat 41-9 1		
Date: 5/24/2019	Project Number: 19041		
Logged By: David Stainback	Drilled By: Drill Pro		
Drilling Method: Direct Push/Geoprobe	Sampling Method: Continuous		
Seal: Bentonite Chips	Grout: N/A		
Diameter: 1"	Length: 9'	Hole Diameter: 2.25"	Depth to Liquid: 2.25'
Diameter: 1"	Length: 15'	Total Depth: 24'	Depth to Water: 214.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Dry	0.0	NO		2	X		SM	0-8' Fgr silty sands w/ some mgrs, dry 0-4', moist 4-8', no stain/odor w/ HA	
		0.1			4	X				
					6				Cleared to 6'/Not Logged	
	Moist	0.0			8	X	2'		8-16' SAA, w/ iron mottling observed, no stain/odor, wet @ 14.5'	
		0.0			10	X	4'			
		0.0			12	X			16-20' clayey Fgr-mgr sands, wet, no stain/odor	
	wet	0.0			14	X	4'		odor 18-20', 9" clay lense obs @ 17.5', med plast.	
	oil	0.0			16	X				
		0.0			18	X	4'	SC	20-24' clay w/ some Fgr Sands, med plasticity, wet then moist, clay stiffens w/ depth. 3" clayey sand lense w/ stain/odor obs @ 21.5'	
		784	Yes		20	X				
	moist	99	NO		22	X	4'	CL		
		76			24	X				
					26				TD @ 24', set w/ temp PVC stick-up	
					28					
					30					
					32					
					34					
					36					
					38					
					40					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB14		Project: Aristocrat 41-9 1	
Date: 5/24/2019		Project Number: 19041	
Logged By: David Stainback		Drilled By: Drill Pro	
Drilling Method: Direct Push/Geoprobe		Sampling Method: Continuous	
Seal: Bentonite Chips		Grout: N/A	
Diameter: 1"	Length: 11'	Hole Diameter: 2-2.5"	Depth to Liquid: N/A
Diameter: 1"	Length: 15'	Total Depth: 26'	Depth to Water: N/A

Elevation: N/A	Detector: PID	Drilling Method: Direct Push/Geoprobe	Sampling Method: Continuous		
Gravel Pack: Washed Silica Sand	Seal: Bentonite Chips	Grout: N/A			
Casing Type: PVC	Diameter: 1"	Length: 11'	Hole Diameter: 2-2.5"	Depth to Liquid: N/A	
Screen Type: PVC	Slot: 0.1	Diameter: 1"	Length: 15'	Total Depth: 26'	Depth to Water: N/A

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Dry	0.0	NO		2			SM	0-4' Fgr silty sands, dry, organics, brown, no stain/odor	
		0.0			4				W HA	
					6				Cleared to 6' Not Logged	
	moist	0.0			8	X 2'			6-12' SAA, moist, no stain/odor	
		0.0			10	X 4'			12-18' SAA, no stain/odor, wet	
		0.0			12				@ 15.5'	
		0.0			14	X 4'			18-24' clay w/ Fgr sands, less wet, med plasticity, mottled	
	wet	0.1			16	X 4'			stain 21-24', interbedded mgr	
		0.1			18	X 4'			sands 21-22'	
	less wet	0.2			20	X 4'		CL	24-28' Clay w/ Fgr	
		43	Mottled stain		22	X 4'			sand laminations 24-26, mottled	
		324			24	X 4'			stain obs 24-26', low-med plasticity	
		149			26	X 4'			24-26, high plasticity	
		1250			28	X 4'			26-28'	
	1.8		NO		30				TD @ 28, Set well	
					32				@ 26' bgs w/ temp pr	
					34				Stick-up	
					36					
					38					
					40					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <i>MW1/SB03</i>	Project: <i>ArStoCret 41-9</i>
Date: <i>10/22/19</i>	Project Number:
Logged By: <i>David Stainback</i>	Drilled By: <i>Dell Pro</i>
Elevation: <i>N/A</i>	Detector: <i>PID</i>
Gravel Pack: <i>Silica Sand</i>	Drilling Method: <i>Direct Push</i>
Casing Type: <i>PVC</i>	Seal: <i>Bentonite</i>
Screen Type: <i>PVC</i>	Grout:
Diameter: <i>1"</i>	Length: <i>12'</i>
Hole Diameter: <i>2.75"</i>	Depth to Liquid: <i>-</i>
Diameter: <i>1"</i>	Length: <i>20'</i>
Total Depth: <i>32'</i>	Depth to Water: <i>~8'</i>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				Hand Augered/Not Logged	
					4					
					6					
					8	X		SM	6-12' silty Fg sands, moist	
					10	X			6-8' wet 8'-12' no stain/odor	
					12	X			12-16' SAA, w/ grey color & some Mg sand	
					14	X			16-24' Fg - Cy sands, wet,	
					16	X			black stain @ 17.5' bgs, no	
					18	X		SW	odor, clay lense @ 23' w/	
					20	X			strong odor	
					22	X			24-27' SAA, Fg - Cy sands,	
					24	X			wet, grey, increasing clay w/	
					26	X			depth, strong odor @ 26.5'	
					28	X		CH	28-32' Clay, moist, med-	
					30	X			high plasticity, no stain/odor	
					32	X			ess	
					34				TD @ 32', set w/	
					36				FM cover	
					38					
					40					

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Well Location Sketch:

Replacement well



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: M W02 / SB08	Project: Aristocrat 41-9 1
Date: 10/22/19	Project Number: 19041
Logged By: David Stainback	Drilled By: Drill Pro

Elevation: N/A	Detector: PID	Drilling Method: Direct Push/Geoprobe	Sampling Method: Continuous
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Gravel Pack: Washed Silica Sand	Seal: Bentonite Chips	Grout: —
------------------------------------	--------------------------	-------------

Casing Type: PVC	Diameter: 1"	Length: 9'	Hole Diameter: 2-2.5"	Depth to Liquid: —
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Screen Type: PVC	Slot: 0.1	Diameter: 1"	Length: 15'	Total Depth: 24'	Depth to Water: ~12'
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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					
					4					
					6				Cleared to 6'/Not Logged	
					8				6-8' lost recovery	
					10				8-16' Fg sands, moist, wet	
					12				12-16' block stone 14-16' clayey	
					14				16-24' Fg - Cy Sands, wet,	
					16				grey - tan, 2" clay lenses w/	
					18				Stagnant obs @ 22.5'	
					20				TD @ 24' bgs,	
					22				Set w/ FM cover	
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <i>MW03/SB04</i>	Project: Aristocrat 41-9 1
Date: <i>10/22/2019</i>	Project Number: 19041
Logged By: David Stainback	Drilled By: Drill Pro
Elevation: N/A	Detector: PID
Gravel Pack: Washed Silica Sand	Seal: Bentonite Chips
Casing Type: PVC	Hole Diameter: 2.25"
Screen Type: PVC	Total Depth: 28'
Slot: 0.1	Depth to Liquid: —
Diameter: 1"	Depth to Water: ~13'
Length: 2'	

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				Cleared to 6'/Not Logged	
	<i>moist</i>	<i>0.1</i>	<i>no</i>		8	<i>X</i>	<i>2</i>	<i>SC</i>	<i>6-8' clay w/ Fg Sands, mostly no stain/odor</i>	
					10	<i>X</i>	<i>4</i>	<i>SP</i>	<i>8-10' Fg Sands, moist, wet e</i>	
					12	<i>X</i>			<i>13'</i>	
	<i>moist</i>	<i>0.4</i>			14	<i>X</i>			<i>17-19.5' clay w/ Fg Sands, med plasticity, stain/odor, less wet</i>	
		<i>0.1</i>			16	<i>X</i>			<i>Fg Sand lens (19.5-20' w/ stain/odor</i>	
		<i>0.9</i>			18	<i>X</i>			<i>20-24' clay, med plasticity, grey stain/odor obs., less wet</i>	
	<i>less wet</i>	<i>218</i>	<i>Yes</i>		20	<i>X</i>			<i>24-28' clay, med plast, SC odor, no stain, moist,</i>	
	<i>moist</i>	<i>174</i>			22	<i>X</i>				
		<i>703</i>			24	<i>X</i>				
		<i>202</i>			26	<i>X</i>				
	<i>moist</i>	<i>20.1</i>	<i>no</i>		28	<i>X</i>	<i>2.5</i>		<i>TD @ 28', set w/ FM cover</i>	
		<i>45.1</i>			30					
					32					
					34					
					36					
					38					
					40					

NOTES:



Well Location Sketch:

Red all



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: M.W. 4 / SB09	Project: Aristocrat 41-9 1
Date: 10/22/2019	Project Number: 19041
Logged By: David Stainback	Drilled By: Drill Pro
Elevation: N/A	Detector: PID
Drilling Method: Direct Push/Geoprobe	Sampling Method: Continuous
Gravel Pack: Washed Silica Sand	Seal: Bentonite Chips
Casing Type: PVC	Hole Diameter: 2.25"
Screen Type: PVC	Total Depth: 24'
Slot: 0.1	Depth to Liquid: —
Diameter: 1"	Depth to Water: ~12'
Length: 9'	
Diameter: 1"	
Length: 15'	

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				Cleared to 6'/Not Logged	
	moist	0.1	no		8	X	2'	SL	6-12' Clayey Fg Sands, moist, no staining, less clay w/ depth	
		6.6			10	X	3'	SP		
	moist	0.7			12	X			12-16' Fg Sands, wet, no staining, brown	
		0.4			14	X	4'		16-17.5' clay, low/mid plasticity, some Fg sand, SL odor/brown, moist	
	moist	107	yes		16	X		CL		
	wet	25.5	no		18	X		SP	17.5-20' Fg Sands, mottled stain 12.5-18, wet	
	moist	169	grey		20	X		CL	20-24' clay, med plasticity, grey, SL odor, moist	
		9.9	no		22	X				
					24	X				
					26					
					28					
					30				TD @ 24', set w/ FM	
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

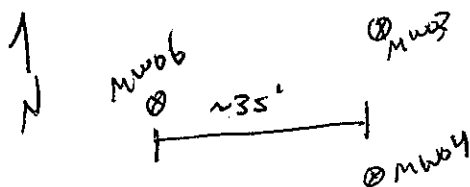
Boring/Well Number: <b>MWD 5/5806</b>	Project: <b>Aristocrat 41-9 1</b>
Date: <b>10/22/19</b> <del>5/22/2019</del> <b>AS</b>	Project Number: <b>19041</b>
Logged By: <b>David Stainback</b>	Drilled By: <b>Drill Pro</b>
Elevation: <b>N/A</b>	Detector: <b>PID</b>
Drilling Method: <b>Direct Push/Geoprobe</b>	Sampling Method: <b>Continuous</b>
Gravel Pack: <b>Washed Silica Sand</b>	Seal: <b>Bentonite Chips</b>
Casing Type: <b>PVC</b>	Hole Diameter: <b>2.25"</b>
Screen Type: <b>PVC</b>	Total Depth: <b>28'</b>
Slot: <b>0.1</b>	Depth to Liquid: <b>---</b>
Diameter: <b>1"</b>	Depth to Water: <b>~14'</b>
Length: <b>26'</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					
					4					
					6				Cleared to 6'/Not Logged	
					8	X	0'	N/A	6-8' lost recovery	
	moist	6.0	no		10	X	4'	SP	8-14' Fg Sands, moist, fines, no stain/odor	
		0.0			12	X	4'		14-16' Fg - Cy Sands, wet, no stain/odor	
	wet	0.1			14	X	2'	SW	16-17.5' SAA	
		0.0			16	X			17.5-18' Fg clayey sands, stain/odor obs., wet	
	moist	49.5	yes		18	X	4'	SC	18-24' clay w/ some Fg	
		482	grey		20	X			sands, stain/odor & grey, low	
		34.2	no		22	X	4'		me & plasticity	
		1.1			24	X	4'		24-28' clay, SAA, wet	
	wet	2.0			26	X	4'			
		20.5			28	X			TD @ 28', Set w/ FM cover	
					30					
					32					
					34					
					36					
					38					
					40					

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Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <b>MW06</b>	Project: <b>Aristocrat 41-9 1</b>
Date: <b>10/22/19</b> <b>5/27/2019 DS</b>	Project Number: <b>19041</b>
Logged By: <b>David Stainback</b>	Drilled By: <b>Drill Pro</b>
Elevation: <b>N/A</b>	Detector: <b>PID</b>
Gravel Pack: <b>Washed Silica Sand</b>	Seal: <b>Bentonite Chips</b>
Casing Type: <b>PVC</b>	Drilling Method: <b>Direct Push/Geoprobe</b>
Screen Type: <b>PVC</b>	Sampling Method: <b>Continuous</b>
Slot: <b>0.1</b>	Grout: <b>—</b>
Diameter: <b>1"</b>	Hole Diameter: <b>2-25"</b>
Length: <b>10'</b>	Depth to Liquid: <b>—</b>
Diameter: <b>1"</b>	Total Depth: <b>20'</b>
Length: <b>10'</b>	Depth to Water: <b>~14'</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					
					4					
					6				Cleared to 6'/Not Logged	
					8	X 6'		N/A	6-8', 1st recovery	
					10	X 3.5'		SC	8-13' clayey Fg Sands, moist, no stain/odor, brown	
					12	X 4'		SP	13-16' Fg Sands, wet @ 14', no stain/odor	
					14	X 4'		SP	16-18.5' clayey Fg Sands, wet, no stain/odor	
					16	X 4'		SC	18.5-20' clay w/ some Fg	
					18	X 4'		SC	Sand, med plasticity, no stain, SC odor, moist	
					20			CL		
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD @ 20', set w/  
FM cover

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Well Location Sketch:

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N

mw06

mw07

mw08

mw09



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW07

Project:

Aristocrat 4191

Date:

10/23/19

Project Number:

1904

Logged By:

D. Stankovic

Drilled By:

Drill Pro

Elevation:

N/A

Detector:

MinirAE 3000

Drilling Method:

Direct Push/Geoprobe

Sampling Method:

Continuous

Gravel Pack:

Washed silica sand

Seal:

Bentonite

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

10'

Hole Diameter:

2.25"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

20'

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				0-6' hydrous, nothing observed	
					4					
					6					
					8			N/A	6-8' no recovery	
					10			SP	8-12' Fg sands, trace Mg, increasing clay w/ depth, moist, no stain/odor obs, iron mottles	
					12			SC	12-16' SAA, wet @ 14', no stain/odor	
					14				16-20' SAA, wet, no stain/odor	
					16				TD @ 20', set w/ FM	
					18					

Well Location Sketch:

See MW07



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW08 Project: Aristocrat 4191  
 Date: 10/23/19 Project Number: 1904  
 Logged By: D. Starnback Drilled By: Drill Pro

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

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

Casing Type: PVC Diameter: 1" Length: 10' Hole Diameter: 2.25" Depth to Liquid: -

Screen Type: PVC Slot: 0.01 Diameter: 1" Length: 10' Total Depth: 20' Depth to Water: ~14.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-6' nothing observed, in recovery	
					4					
					6					
					8				6-8' recovery lost	
					10				8-12' Fy Sands, clayey 9-11', green mottles, moist, no strong odor	
					12				12-16' Fy Sands w/ little mag sands, wet @ 14.5', no strong odor	
					14				16-20' SAA, wet, no strong odor	
					16				FD @ 20', set w/ FM	
					18					

Well Location Sketch:



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## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW09 Project: Aristocrat 41-91  
 Date: 10/23/19 Project Number: 7964  
 Logged By: D. Starnbrook Drilled By: Drill Pro

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

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

Casing Type: PVC Diameter: 1" Length: 10' Hole Diameter: 2.25" Depth to Liquid: -

Screen Type: PVC Slot: 0.01 Diameter: 1" Length: 10' Total Depth: 20' Depth to Water: 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				0-6' hydro welded, nothing observed	
					4					
					6					
					8	X	0'	N/A	6-8' lost recovery	
	moist	6.0	NO		10	X		SP	8-12' Fg sands, moist, no stain below	
		6.0			12	X			12-16' SAA, wet @ 13', no stain below	
	wet				14	X			16-20' SAA, SL stain below	
		6.0			16	X			16.5-17', wet	
		1.7	yes		18	X			TD @ 20', set w/ FM	
		6.0								





Well Location Sketch:

① mws

② mwi

③ mw0



Compliance - Engineering - Remediation  
 LT Environmental, Inc.  
 4600 W. 60th Avenue

## BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

mwi

Project:

Aristocrat 41-91

Date:

10/23/19

Project Number:

1904

Logged By:

D. Stornburg

Drilled By:

Drill Pro

Elevation:

N/A

Detector:

MinirAE 3000

Drilling Method:

Direct Push/Geoprobe

Sampling Method:

Continuous

Gravel Pack:

Washed silica sand

Seal:

Bentonite

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

10'

Hole Diameter:

2.25"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

1'

Total Depth:

20'

Depth to Water:

~14.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				0-6' hydraulics	
					4					
					6					
					8			N/A	6-8' lost recovery	
					10			SP	8-12' Fg sands, moist, no stain/odor	
					12			25	12-19' SAA, wet @ 14.5', no stain/odor	
					14				19-20' clay w/ Fg Sands, low plasticity, wet, no stain/odor	
					16					
					18					