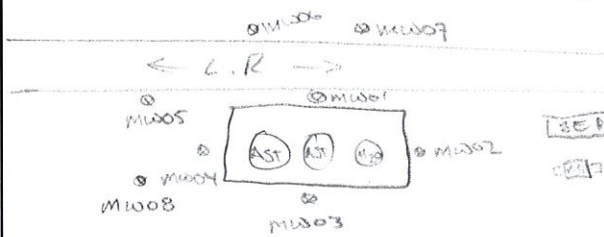


Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB01	Project: Clack 1-2A, Olson 2-2
Date: 8/4/15	Project Number: 14213044
Logged By: Kris Shepherd RZ	Drilled By: Drill Pro
Drilling Method: Hydraulic / Direct Push / HAND AUGER	Sampling Method: HAND AUGER Continuous
Seal: Bentonite	Grout: -
Casing Type: PVC	Diameter: 1" Length: 2
Screen Type: PVC	Hole Diameter: 3" Depth to Liquid: -
Slot: 0.01	Total Depth: 12' Depth to Water: 5.5'
Diameter: 1"	Length: 10

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0	NO		2			6" CL/gc	1' BROWN. SANDY CLAYS. GRAVELS. NO CDCK	AAA
5.5' gw	Moist	0.0	NO		4			6" CL/gc	3' BROWN SANDY CLAYS. GRAVELS NO CDCK	AA
	Moist	355.7	YES	SB01E5	(945) 6			6" CL/gc	5' BLACK. SANDY CLAYS. GRAVELS. High CDCK	
	Moist	689.9	YES	SB01E7	(948) 8			2' CH	6-8 BLACK. CLAYS. High CDCK High PLASTICITY	
	Wet	873.7	YES		10			4' CH	8-10 SAA	
	Wet	1392	YES	SB01E12	955 12			SP.	10-12 SANDY GRAVELS well rounded GRAVELS SANDS mg-Cg	
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

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Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB02

Project: Clack 1-2A, Olson 2-2

Date: 8/4/2015

Project Number: 14213044

Logged By: Kris Shepherd / RZ

Drilled By: Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Hand Auger Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10

Total Depth:

12'

Depth to Water:

5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.9	NO	SB0201	11.0			6" SP/GC	0-1' BROWN. GRAVELY SANDS/CLAYS NO ODO	AAA
	Moist	0.1	NO		2			6" SP/GC	3' SAA	
					4					
	Moist	6.2	Slight.	SB0205	11.5			6" GP	5' grey/black GRAVELY SANDS well rounded. Slight degradation	
					6					
		6-5	YES		8			7' GP/SP CL	6-7 Black, gravelly SANDS slight odor. ODO	
		149.3			10				7-8 Black, sandy CLAYS. med plasticity. slight odor.	
		450.8		SB0206	11.30			2' GP/SP	8-12 Black. gravelly SANDS VEG ODO. well rounded SANDS/gravels.	
				12	12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD. 12
 Screen from (12-2') 10 feet screen
 Sand to 1 BGS
 Bentonite/ concrete
 Flush mant.

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB03	Project: Clack 1-2A, Olson 2-2
Date: 8/4/15	Project Number: 14213044
Logged By: Kris Shepherd / RZ	Drilled By: Drill Pro
Drilling Method: HAND AUGER Direct Push	Sampling Method: Continuous
Seal: Bentonite	Grout: -
Casing Type: PVC	Diameter: 1" Length: 2
Screen Type: PVC	Diameter: 1" Length: 10
Slot: 0.01	Hole Diameter: 3" Depth to Liquid: -
	Total Depth: 12 Depth to Water: 5.5

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.8	NO	SB0301	1126			CL	0-1' SANDY CLAYS. BROWN NOODLE. GRAVEL INCLUSIONS. MOD PLASTICITY.	
	Moist	0.1	Slight		2			CL/SP	3' SANDY CLAYS. GRAVEL INCLUSIONS. BACK/DARK ODOR.	
gw. 5.5'	Wet	0.5	YES	SB0305	1125			CL	5' BACK. ODOR. SANDY CLAYS. MOD PLASTICITY.	
					6					
	Wet	530	YES.	SB0307	1260		2'	GP	6' BACK. WELL ROUNDED GRAVELS/SANDS VEG	
					8			MH/C	6-8 BLACKY HIGH PLASTICITY. HIGH COHESION. SILTY CLAY. ODOR.	
					10		4'	GP/SP	8-12 GRAVELY SANDS/VG SANDS. WELL ROUNDED.	
	Wet	10.1	NO		12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD. 12'

SCREEN FROM 12-2 (10 FEET SCREEN)

SAND TO 1 Bys

BENTONITE/CONCRETE

FLUSH MOUNT.

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB04

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd/RE

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Hand Auger Direct Push

Sampling Method:

Hand Auger Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

20'

Depth to Water:

5.0'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.3	NO		2			6" SC	0-1 Brown. clayey SANDS. NO odor. low cohesion	
GW	Moist	10.5	Slight	SB0403	1145			6" SC/CL	3' Silty Sandy clay. med plasticity. med cohesion. slight odor. Brown/Med Brown.	
50	Moist	2.3	YES	SB0405	1150			6" SC/CL	5' Black. Silty Sandy clays med plasticity	
4	Wet	461	yes	SB0407	1215			2' SC/CL	med cohesion. odor.	
	Wet		yes		8			SC/CL	6-8 Black silty clays med plasticity med cohesion odor	
	Wet	46.7	Slight		10			3' GP/SP	8-9 S&A	
					12				9-12 Gravelly SANDS/VCG well rounded	
					14			4' GP/SP	12-14 Gravelly SANDS /VCG well rounded	
	Wet	3.3	NO		16			GP/SP	14-16 Gravelly SANDS mg/cg well rounded NO odor	
	Wet	2.7	NO		18			4' GP/SP	16-20' Gravelly SANDS mg/vcg well rounded NO odor	
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD. 20' Well Set AT TD 12'
 Screen from 12-2' (10 feet).
 Sand from 20-7'
 Flush mount

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SB05	Project: Clack 1-2A, Olson 2-2
Date: 8/4/15	Project Number: 14213044
Logged By: Kris Shepherd RZ	Drilled By: Drill Pro
Drilling Method: HANDAUGER Direct Push	Sampling Method: Continuous
Seal: Bentonite	Grout: -
Casing Type: PVC	Diameter: 1"
Screen Type: PVC	Slot: 0.01
Diameter: 1"	Length: 10
Hole Diameter: 3"	Depth to Liquid: -
Total Depth: 12	Depth to Water: 5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0	NO		2			6" GC	0-1' BROWN, CLAYEY SAND, GRAVEL INCLUSIONS NOODOR	
GW 3.5'	Moist	0.0	NO	SB0503	1305			6" GC	3' BROWN, DARK BROWN, GRAVELY SANDS, NOODOR	
4	Moist	0.0	NO	SB0505	1310			6" GC	5' SAA	
6										
	Wet	0.2	NO		8			4" SM	6-8' TAN, BROWN, SANDY SILTS, LOW PLASTICITY, LOW COHESION, SLIGHT ODOOR NOODOR	
					10				8-9' TAN, LIGHT BROWN, SILTY SANDS, mg gravel NOODOR	
	Wet	0.4	NO	SB0506	1325			3' GM	9-12' TAN, LIGHT BROWN SILTY SANDS GRAVELS mg > veg NOODOR	
				11'	12					
					14					
					16					
					18					
					20					
					22					
					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:

SB06

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push / Hand Auger

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

12'

Depth to Water:

~5.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist	0.0			2		x	SP	0-1' fg+mg sands, brown, no odor, no stain, moist	
		0.0		SB06 3/330	4		x	GC	3'-brown gravelly sands, no odor, no stain, moist	
		0.0		SB06 5/1735	6		x	GC	5'-SAA	
	Moist				8	2'	2'	MH	6'-11' silt, black, high plasticity, no odor, no stain, moist	
					10	4'	3'	GP	11'-12' gravelly sands, tan, no stain, no odor, moist	
					12					
					14					
					16					
					18					
					20					
					22					
					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:

SB07

Project:

Clack 1-2A, Olson 2-2

Date:

8/4/15

Project Number:

14213044

Logged By:

Kris Shepherd / RZ

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10

Total Depth:

12

Depth to Water:

5.5

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
SW	moist	0.0	NO		2			6" SP	0-1' BROWN. SANDS Fg-mg well rounded NO ODR	AA
SS	moist	0.0	NO	SB0703	1400			6" MH	3' BLACK. Inorganic silts. High plastic NO ODR	AA
Δ	moist	0.3	NO	SB0705	1405			6" MH/SP	5' BLACK. Inorganic SANDY silts. High plastic NO ODR	AA
	Wet	0.0	NO		8			2' MH.	6-8' BLACK Inorganic silts. High plastic NO ODR. MICACEOUS silts.	
	Wet	0.0	NO	SB0701	10			1' MH.	8-12' BLACK. Inorganic silts. High plastic NO ODR. MICACEOUS silts.	
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD 12'

Screen from 12-2 (10 ft screen)

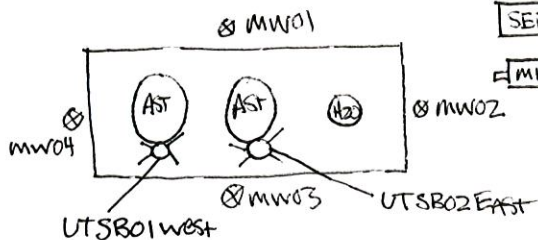
SAND TO 1895

Bentonite/concrete grade

High moisture

Well Location Sketch:

LEASE ROAD



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: UTSB01 West	Project: Clack 1-2A, Olson 2-2
Date: 8/4/15	Project Number: 14213044
Logged By: Kris Shepherd	Drilled By: Drill Pro

Elevation:	Detector: PID	Drilling Method: Direct Push	Sampling Method: Continuous
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Gravel Pack: Silica Sand	Seal: Bentonite	Grout: -
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Casing Type: PVC	Diameter: 1"	Length: NA	Hole Diameter: 3"	Depth to Liquid: -
---------------------	-----------------	---------------	----------------------	-----------------------

Screen Type: PVC	Slot: 0.01	Diameter: 1"	Length: NA	Total Depth: 5.0	Depth to Water: NA
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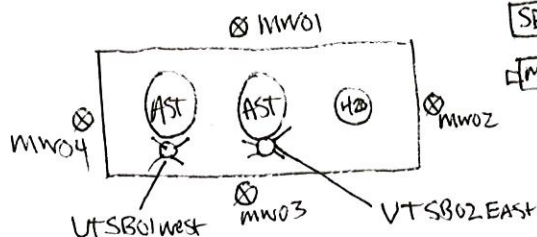
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
2'	Moist	890	yes		2				Hydrovac, Not Logged	2
3'	Moist	960	yes		4					4
4'	Moist	1033	yes		6					6
5'	Moist	990	yes	UTSB01 West	8				All depths were Sandy clay, odor, stain, moist — No well installed — Backfilled/sealed w/bentonite	8
					10					10
					12					12
					14					14
					16					16
					18					18
					20					20
					22					22
					24					24
					26					26
					28					28
					30					30
					32					32
					34					34
					36					36
					38					38
					40					40

NOTES:

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Well Location Sketch:

LEASE ROAD



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	Project:
UTSBO2 EAST	Clack 1-2A, Olson 2-2
Date:	Project Number:
8/4/15	14213044
Logged By:	Drilled By:
Kris Shepherd	Drill Pro

Elevation:	Detector:	Drilling Method:	Sampling Method:
	PID	Direct Push	Continuous

Gravel Pack:	Seal:	Grout:
Silica Sand	Bentonite	-

Casing Type:	Diameter:	Length:	Hole Diameter:	Depth to Liquid:
PVC	1"	NA	3"	-

Screen Type:	Slot:	Diameter:	Length:	Total Depth:	Depth to Water:
PVC	0.01	1"	NA	5.0'	NA

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
2'	Moist	830.7	YES		2				Hydrovac, Not Logged	
3'	Moist	896.3	YES		4					
4'	Moist	906.7	YES		6					
5'	Moist	940.9	YES	UTSBO2 EAST	8				All depths were sandy clay. stain dark moist.	
					14.55					
					10					
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

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Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

SB08

Project:

Clack 1-2A, Olson 2-2

Date:

8/6/2015

Project Number:

14213044

Logged By:

Kris Shepherd

Drilled By:

Drill Pro

Elevation:

Detector:

PID

Drilling Method:

Direct Push

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite

Grout:

-

Casing Type:

PVC

Diameter:

1"

Length:

2'

Hole Diameter:

3"

Depth to Liquid:

-

Screen Type:

PVC

Slot:

0.01

Diameter:

1"

Length:

10'

Total Depth:

12'

Depth to Water:

~4'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
	Moist ↓ wet	5.2 2.1 0.9	none ↓ ↓	SB0801 (1325) SB0802 (1335)	2 4 6				- Sandy clay, brown, no odor/stain low cohesion/plasticity, moist - Hydrovac, Not Logged - well graded sands, tan, no odor/stain, moist - SAA	
	↓ ↓	0.3 1.1 0.9	↓ ↓ ↓	SB0803 (1345)	8 10 12	2' 4'	2' 3'		6'-9' sand fg - coarse, tan, no stain, no odor 9'-12' gravelly sands, fg - v. coarse, tan, no stain, no odor, wet - flush mount - Push point to 12'	
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

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