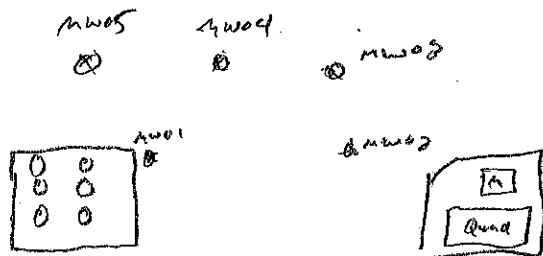


Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: mwo1	Project: UPRR 53 Pan Am J 1
Date: 4-15-09	Project Number: JCMG 09458
Logged By: MD	Drilled By: Dillera

Elevation:	Detector:	Drilling Method: Direct push	Sampling Method: Continuous
Gravel Pack: 10-20 Silica sand	7 - 28' bgs.	Seal: Bentonite chips	Grout:
Casing Type: PVC	Diameter: 1"	Length: 8'	Hole Diameter: 2.5"
Screen Type: PVC	Slot: 0.010	Diameter: 1"	Length: 20'
			Total Depth: 28'
			Depth to Liquid: 19'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
	dry		No		0				0-8 silty sand w/ gravel, brown, dry, no odor	
		5.7			2		2'			
					4				8-12 silty sand, brown, moist, no odor	
					6		2'			
		5.4			8				12-16' silty sand w/ gravel, brown, moist, no odor	
	moist				10		2'			
150		4.5			12				18-19' sandy-clay, brown, moist, no odor	
		2.8			14		2'			
					16				19'-23' sandy-clay, orange-gray, wet, odor	
		28.4			18		3'			
	wet		Yes clay		20				23'-26' sand, coarse, black & gray staining, odor, wet	
			Yes black & gray		22		3'			
150					24				26-28' sand, coarse; no staining, no odor, wet, orange-brown	
			NO		26		4'			
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

See MW01



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW03	Project: UPRR 53 Pan Am J 1
Date: 4-15-04	Project Number: KM 609458
Logged By: MO	Drilled By: DrillPro

Elevation:	Detector:	Drilling Method: Direct push	Sampling Method: Continuous
Gravel Pack: 10-20 Silica sand	Seal: Bentonite chips	Grout:	
Casing Type: PVC	Diameter: 1"	Length: 8'	Hole Diameter: 2.5"
Screen Type: PVC	Slot: 0.010	Diameter: 1"	Length: 20'
		Total Depth: 28'	Depth to Liquid: 19'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
Low	Dry		No		0				0-1' - No recovery	
					2		0'		4-11' Silty-sand w/ clay, some gravel, dry, no odor	
					4					
					6		2		14-17' Sand f-m, moist, no odor, brown	
		17.8			8					
					10		2		17-19' clay w/ sand, moist, gray staining, odor	
		27.8			12					
					14		3'		19-27' Sand, coarse, black & gray staining, odor	
MEQ	moist	13.8			16					
			Yes Gray		18		3'		27-28' Sand coarse, wet, orange-brown, no odor	
		16.90			20					
	wet		Yes, Black		22		4'			
					24					
					26		4'			
					28					
			NO		30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

MW05

Sec. Mwa1



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW05	Project: WRE 53 An An J #1
Date: 4-15-09	Project Number: KMG09458
Logged By: MO	Drilled By: Drillers

Elevation: _____	Detector: _____	Drilling Method: Direct push	Sampling Method: Continuous
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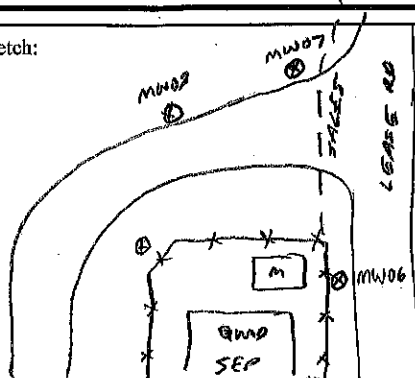
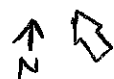
Gravel Pack: 10-20 Silica sand	Seal: Bentonite chips	Grout: _____
-----------------------------------	--------------------------	--------------

Casing Type: PVC	Diameter: 1"	Length: 8'	Hole Diameter: 2.5"	Depth to Liquid:
---------------------	-----------------	---------------	------------------------	------------------

Screen Type: PVC	Slot: 0.010	Diameter: 1"	Length: 20'	Total Depth: 28	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
LOW	Dry	14.6	No		0				0-8' silty sand w/ clay, dry, brown, no odor some gravels	
					2		3			
					4				8-16' silty sand some clay dry, brown, no odor	
					6		2			
					8				16-18' sand m-c, moist no odor, brown	
					10		1"			
					12				18-22' sand m-c, some clay wet, no odor, brown	
					14		0.5			
MED	Moist	39.4			16				22'-26' sand m-c, black & gray staining, odor, wet	
					18		2			
					20				26'-28' sand r.c., orange-tan wet, no odor	
					22		4			
					24					
					26		4			
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW06	Project:	UPRR 53 PAN AM
Date:	12/11/2009	Project Number:	KMG 69458
Logged By:	J. Solomon	Drilled By:	Drill Pro
Drilling Method:	Direct Push	Sampling Method:	CONTINUOUS
Seal:	BENTONITE CRUMBLES	Grout:	Sakrete
Gravel Pack:	10-20 Silica Sand	Hole Diameter:	2.5"
Casing Type:	Schedule 40 PVC	Depth to Liquid:	—
Screen Type:	Schedule 40 PVC	Total Depth:	24'
Slot:	0.01	Depth to Water:	~16'
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					
LOW	MOIST	0.3			2		3	SP	SAND, POORLY-GRADED, M-GRAIN, MOIST	
					4			CL	SANDS-CLAY, MED, PLAST, FAT, DRK GRAY, NO STAIN / ODOR.	
LOW		0.9			6		2.5	SP	SAND, POORLY-GRADED, F-M GRAIN, MOIST ORANGE-BROWN.	
					8					
				NS	10		3	CL	SANDS-CLAY	
LOW		0.4			12			SP	SAND, POORLY-GRADED, F-GRAIN, MOIST, TAN	
	VM				14		3			
	WET	0.5			16			CL	SANDS-CLAY, VM-WET, MED PLAST, FAT, OLIVE-BROWN, NO STAIN / ODOR	
					18		4			
MED					20			SP	SANDS-CLAY, FAT, AS ABOVE, STAIN (17-27)	
	VM	GLI SAND			22		4	CL	SAND LENS, BLK, STRONG ODOR	
	WET				24					
	SAND LENS				26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TD = 24' bgs

Well Location Sketch:

SEE MW06 MAP



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW07	Project:	UPRR 53 PAN AM
Date:	12/11/2009	Project Number:	KMG-09458
Logged By:	J. Solomon	Drilled By:	Drill Pro
Drilling Method:	Direct Push	Sampling Method:	CONTINUOUS
Gravel Pack:	10-20 Silica Sand	Seal:	BENTONITE CRUMBLES
Casing Type:	Schedule 40 PVC	Hole Diameter:	2.5"
Screen Type:	Schedule 40 PVC	Total Depth:	24'
Slot:	0.01	Depth to Liquid:	—
Diameter:	1"	Depth to Water:	~18'
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					
LOW	MOIST	0.3			2	2.5		CL	SANDS-CLAY, LOW PLAST, MOIST, DRK BROWN.	
					4			SP	SAND, PEBBLES-GRADED, F-GRAIN, DRK BROWN, MOIST, NO FINES	
LOW	SLIGHT MOIST	0.4			6	3		SP	SAND AS ABOVE, ORANGEISH BROWN.	
				NS	8			SP	SAND AS ABOVE, TAN.	
LOW		0.0			10	3.5		SP	SAND AS ABOVE, TAN.	
					12					
LOW					14	3		CL	SANDS-CLAY, FAT, F-GRAIN SAND, MED PLAST, MOIST, STAINED (15' → 24')	
VM	95				16					
					18	3		SP	SAND LENSE, BLCK, STRNG ODR, WET	
MED	VM	3996			20			CL	SANDS-CLAY AS ABOVE	
	WET	(SAND LENSE)			22	4		SP	SAND, WELL GRADED, DRK-GREY TO BLACK, STRNG ODR, NO FINES, WET	
MED	(SAND LENSE)	306			24					
					26				TD = 24' bgs	
					28				PROTECTIVE STEEL CASING	
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page 1 of 1

Well Location Sketch:

See MW06 MAP



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW08		Project: UPRR 53 PAN Am	
Date: 12/11/2009		Project Number: KMG-09458	
Logged By: J. Solomon		Drilled By: Drill Pro	
Drilling Method: Direct Push		Sampling Method: CONTINUOUS	
Seal: BENTONITE CRUMBLES		Grout: Sakrete	
Diameter: 1"	Length: 9'	Hole Diameter: 2.5"	Depth to Liquid: —
Diameter: 1"	Length: 15'	Total Depth: 24'	Depth to Water: ~ 18

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2		3	ML	SLT, F-G SAND, PEA GRVL, DR3, BRWN	
Low	moist	0.2			4				CLAYS - SAND, SLIGHT, PLAST, MOIST, BRWN.	
		0.0			6		3	SL		
		0.0			8				SAND, POORLY-GRADED, F-GRAIN, SLIGHT MOIST → DR3	
		0.0		NS	10		3	SP		
		19			12					
		1640			14		3.5	SP	SAND AS ABOVE	
		35			16				SANDS - CLAS, UM, FAT, MED → HIGH PLAST, BRWN	
					18		4	CL		
					20			CL	SANDS - CLAS AS ABOVE, LIGHT GRSS STAIN, MID ODOE	
					22					
					24			SW	SAND, COARSE, WELL-GRADED, NO FINE, QUARTZ, DRK GRSS-BLCK, MOD ODOE	
					26				TD = 24' 55"	
					28				Protective Steel Casing w/ Lock	
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW10

Project:

UPRR 53 Pan Am J #1

Date:

4-8-10

Project Number:

KMG 09458

Logged By:

MO

Drilled By:

ACE

Elevation:

Detector:

MIRA 2000

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

9'-25' bgs

Seal:

Bentonite chips

0'-9' bgs

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

10' +

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

Depth to Water:

17'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
Low	Dry	2.2			0				0-1 Sandy clay, brown, dry, no odor	
					2					
					4		4		4-5 Sand, fine grained, dry, no odor	
	Moist	1.2			6				5-9 Sand, some clay, orange-brown, moist, no odor	
					8		4			
					10				9-12.5 Sandy-clay, moist, gray & black staining, odor	
		7.2			12					
					14		5		12.5-14 AA, Sand, fine grained	
					16					
					18		5		14-17 AA, sat.	
		36.7			20				17-20 Sandy-clay, wet, gray staining, odor	
					22					
		87.8			24		5		20-24 Sand, m-c grained, saturated, black staining, odor	
					26					
					28				24-25 Sand, m-c grained, sat., tan, no odor	
					30				TD = 25' bgs	
					32				Screen = 10'-25' bgs	
					34					
					36					
					38					
					40					

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

11W12

Project:

UPRR53 Pan Am J1

Date:

4-8-10

Project Number:

KMG 09458

Logged By:

JE

Drilled By:

AGL

Elevation:

Detector:

MiniPac 2000

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

Seal:

Bentonite chips

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

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
		1.6			0					
LOW	moist				2				SAND, porous - GRAINED, moist, BROWN	
					4				SANDS. CLAY	
					6				RETURN TO SAND AS ABOVE	
LOW	moist	15.1			8				Sandy clay / Light tan	
					10					
					12					
		25.			14					
LOW	wet				16				sand clay stained / odor / gray stained	
		30.6			18					
					20				Sandy clay	
					22				Saturated / Gray stained	
		60.8			24				Dark stained / odor	
					26				Sand tan colored	
		8.0			28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

See MW-10



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW13

Project:

GPR53-RA-J#1

Date:

4-8-10

Project Number:

Logged By:

CR

Drilled By:

ACE

Elevation:

Detector:

MiniRoc 2000

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

9-25' bgs

Seal:

Bentonite chips

0-9' bgs

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

10'

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

Depth to Water:

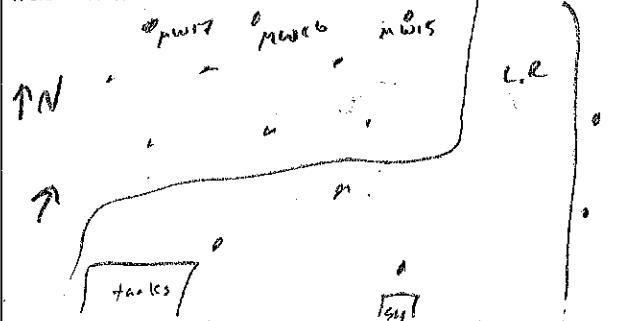
13.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
	Moist	0.8	none		0				Dark Brown Fine Sand, no odor until 6.5 feet	
					2	0 to 5	4'			
					4					
	Moist		none		6	5 to 10	4'		6.5'-7' Gray sand clay w/ orange sand	
		4.5			8				7'-10' Light Brown-Gray Fine Sand w/ a lens of gray sandy clay	
	very moist				10				Light Brown/Tan Fine Sand until 14.5'	
	wet @ 13.5'	7.6	stained @ 15'		12	10 to 15	4'			
					14				14.5' Dark Gray Sandy Clay	
	wet	170	to 23'		16				15'-17' Brown Clayey Sand	
					18		5'		17'-19' Gray/Brown Sandy Clay	
					20				19'-23' Coarse Sand, Gray, odor	
		15.1			22				23'-25' Light Brown Coarse Sand no odor, wet	
					24		5'			
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Screen

↓

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: <i>mw15</i>	Project: <i>UPRR 53 Pan Am J #1</i>
Date: <i>4-29-10</i>	Project Number: <i>KM 09458</i>
Logged By: <i>MA</i>	Drilled By: <i>ACE</i>

Elevation:	Detector: <i>minirae 2000</i>	Drilling Method: Direct push	Sampling Method: Continuous
Gravel Pack: 10-20 Silica sand	<i>9-25' bgs</i>	Seal: Bentonite chips	Grout: <i> </i>

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
<i>Low</i>	<i>moist</i>	<i>0.0</i>			0				0-4 Sand, fine, moist, brown, no odor	
					2				4-5 AA, w/orange nodules	
					4		4		5-10 AA, tan	
		<i>0.0</i>			6		4		10-13 AA, w/orange nodules	
					8				13-18 Sandy clay, brown, moist, no odor	
					10				15-18 AA, some gray staining	
<i>MED</i>		<i>0.0</i>			12		4		18-19 Sand, m-cemented, wet, brown w/ some staining, no odor	
					14				19-24.5 AA, saturated, gray staining, odor	
	<i>Wet</i>	<i>13.8</i>	<i>Some gray</i>		16		4		24.5-25 AA, no staining	
	<i>Sat</i>				18				TD = 25' bgs	
		<i>46.2</i>	<i>Gray</i>		20				screen = 10'-25' bgs	
					22		5			
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

See MW15



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW16 Project: UPRR 58 Pn Am J W 1

Date: 7-29-10 Project Number: 1000000000

Logged By: MD Drilled By: A. C.

Elevation: Detector: miniRee 2000 Drilling Method: Direct push Sampling Method: Continuous

Gravel Pack: 10-20 Silica sand 9-25' bgs Seal: Bentonite chips 0-9' bgs Grout: —

Casing Type: PVC Diameter: 1" Length: 10' f Hole Diameter: 2.5" Depth to Liquid: —

Screen Type: PVC Slot: 0.010 Diameter: 1" Length: 15' Total Depth: 25' Depth to Water: 20'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
LOW	MOIST	0.0			0				0-6 Sand F-n, moist, brown, no odor	
					2		4		6-13 AA, tan w/ orange nodules	
					4					
					6				13-16 clay w/sand, moist, brown w/ orange nodules, no odor	
					8		4			
					10				16-18.5 AA, wet	
MED		0.0			12		3		18.5-20 sand, med-coarse, wet orange-brown, w some gray silt/clay	
					14					
					16				20-25 AA, black & gray staining, odor	
	WET	0.0			18		4			
					20					
HIGH					22					
	SAT.	39.6			24		3.5			
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

TO = 25

Screen = 18'-25' bgs

Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW17

Project:

11 PRP 53P. An T#1

Date:

4-29-10

Project Number:

11M609450

Logged By:

MO

Drilled By:

ACE

Drilling Method:

Direct push

Sampling Method:

Continuous

Seal:

Bentonite chips

0-9' bgs

Grout:

Elevation:

Detector:

min'Rac 2000

Gravel Pack:

10-20 Silica sand

9-25' bgs

Casing Type:

PVC

Diameter:

1"

Length:

10'

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

Depth to Water:

20'

Penetration Resistance	Moisture Content	Staining Vapor (ppm)	Vapor Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
Low	moist		0.0		0				0-2 Sand, fine, moist, dk brown, no odor	
					2		4		2-6 AA, lt brown	
					4				6-12 AA, orange brown, 3" clay layer @ 7.5' bgs	
			0.0		6		4.5		12-13 Sandy-clay, wet, brown, no odor	
					8				13-14 Sand, med-coarse, wet, orange-brown, no odor	
	WET		0.0		10		4.5		14-16 Sandy-clay, brown, wet, no odor	
MEP					12				16-17 Sand, med, wet, orange brown w/ some black staining, odor	
			4.1		14		3.5		17-20 Sandy clay, wet, gray stained, odor	
	SAT		16.3 or 3		16				20-22.5 Sand, med, get. black & gray staining, odor	
					18		5		22.5-25 AA, Orange-tan	
					20				TO=25'	
					22				Screen = 10'-25'	
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

MW20
⊕MW19
⊕L.
R.MW18
⊕

⊕ MW16



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

MW 19/MW18

Project:

UPRR 53 P.A. J #1

Date:

10/5/10

Project Number:

HMG-09458

Logged By:

PH

Drilled By:

ACI

Elevation:

Detector:

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

Seal:

Bentonite chips

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

10' 15"

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

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				Native T.D. to 10' PGS	
					2				10/20 Sand 10'-8' PGS	
					4				Bentonite clay	
					6				8' Surface	
					8				Not cored	
					10				Steel protective casing installed.	
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

NW21
 NW20
 NW22
 NW17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW 20

Project: UPRR 53 P.A.T.#1

Date: 10/5/10

Project Number: RMG09458

Logged By: PH

Drilled By: ACT

Elevation:

Detector:

Drilling Method:

Sampling Method:

Direct push

Continuous

Gravel Pack:

10-20 Silica sand

Seal:

Bentonite chips

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

10' 15"

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

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				Not Corred	
					2					
					4				Native to 11' RGS	
					6				10/20 sand to 8' RGS	
					8				8' to surface Bentonite	
					10					
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30				No steel casing	
					32					
					34					
					36					
					38					
					40					

Well Location Sketch:

See MW 22



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW 21

Project: UPRR53 P.A. J.#1

Date: 10/5/10

Project Number: RMG09458

Logged By: PH

Drilled By: ACI

Elevation:

Detector: PDD

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

Seal:

Bentonite chips

Grout:

N/A

Casing Type:

PVC

Diameter:

1"

Length:

15'

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

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
used	Dry	0.0	NO		0				Drilled and then used gravel	
					2				Sand 10 fines	
	moist				4				to 8' BGS	
	moist	0.0	NO		6				8-8.5' H. plasticity	
					8				8.5-9.5' med. grained grey sand	
					10				w/ orange discoloration few	
		0.0			12				fines	
	Sat				14				9.5 to 10' Sandy clay med.	
					16				Plast. grey/orange	
					18				10-13' BGS Grey med grained sand	
					20				13-15' Dk brn highly plastic	
		0.0	NO		22				fat clay minor sand	
					24				15-19' Grey med grained sand	
									" To T.D. 2' clay loose	
					26				@ 22'	
					28					
					30				Native to 14' BGS	
					32				Sand 10/20 to 8' BGS	
					34				Bentonite 8 to surface	
					36					
					38					
					40					

Well Location Sketch:

MW21



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW22

Project: VPRR5 P.A. J#1

Date: 10/5/10

Project Number: K1609458

Logged By: PH

Drilled By: ACI

Elevation:

Detector:

Drilling Method:

Direct push

Sampling Method:

Continuous

Gravel Pack:

10-20 Silica sand

Seal:

Bentonite chips

Grout:

Casing Type:

PVC

Diameter:

1"

Length:

Hole Diameter:

2.5"

Depth to Liquid:

Screen Type:

PVC

Slot:

0.010

Diameter:

1"

Length:

15'

Total Depth:

25'

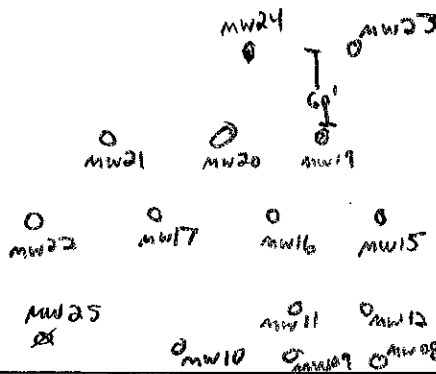
Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0				Not cored	
					2					
					4					
					6					
					8					
					10					
					12					
					14					
					16					
					18					
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

Steel protective casing
15' screen

Location Map:

N



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW23	Project:	UPRR S3 PAJ #1
Date:	10-20-10	Project Number:	KMG-09458
Logged By:	Chris Roy	Drilled By:	ACI
Elevation:		Drilling Method:	Direct Push
Detector:	MiniRae 2000 PID	Sampling Method:	Continuous
Gravel Pack:		Seal:	Bentonite
		Grout:	None
Casing Type:		Diameter:	
		Length:	
Screen Type:		Hole Diameter:	2.25"
		Depth to Liquid:	10'
		Total Depth:	25
		Depth to Water:	10'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry	2.0	none	NA	0			0'-4' Sand, Brown, M-F Grained, No stain, No odor, Dry	25' stickup
					2	5'		4'-6.5' Silty Sand, Brown, No stain, No odor, Dry, Hard, Slightly Cohesive	
		1.4			4			6.5'-10' Sandy Clay, Tan and Dark Brown, Hard, Moderately Plastic, Very Cohesive, No stain, No odor, Dry	
		2.2			6	5'		10'-13' M-C Grained Sand, Tan, Moist, No odor, No stain	
					8			13'-14' Silt, Light Brown, Moist, No stain, No odor	
		1.0			10	5'		14'-15' Silty Clay, Brown, Hard, Slightly Plastic, Very Cohesive, No stain, No odor	
					12			15'-20' Clayey Sand, Light and Dark Brown, Moderately Hard, No Plasticity, Slightly Cohesive, Moist, No stain, No odor	
					14	5'			
					16				
					18	5'			
					20				
					22	No sample			
					24				
					26				
					28				
					30				

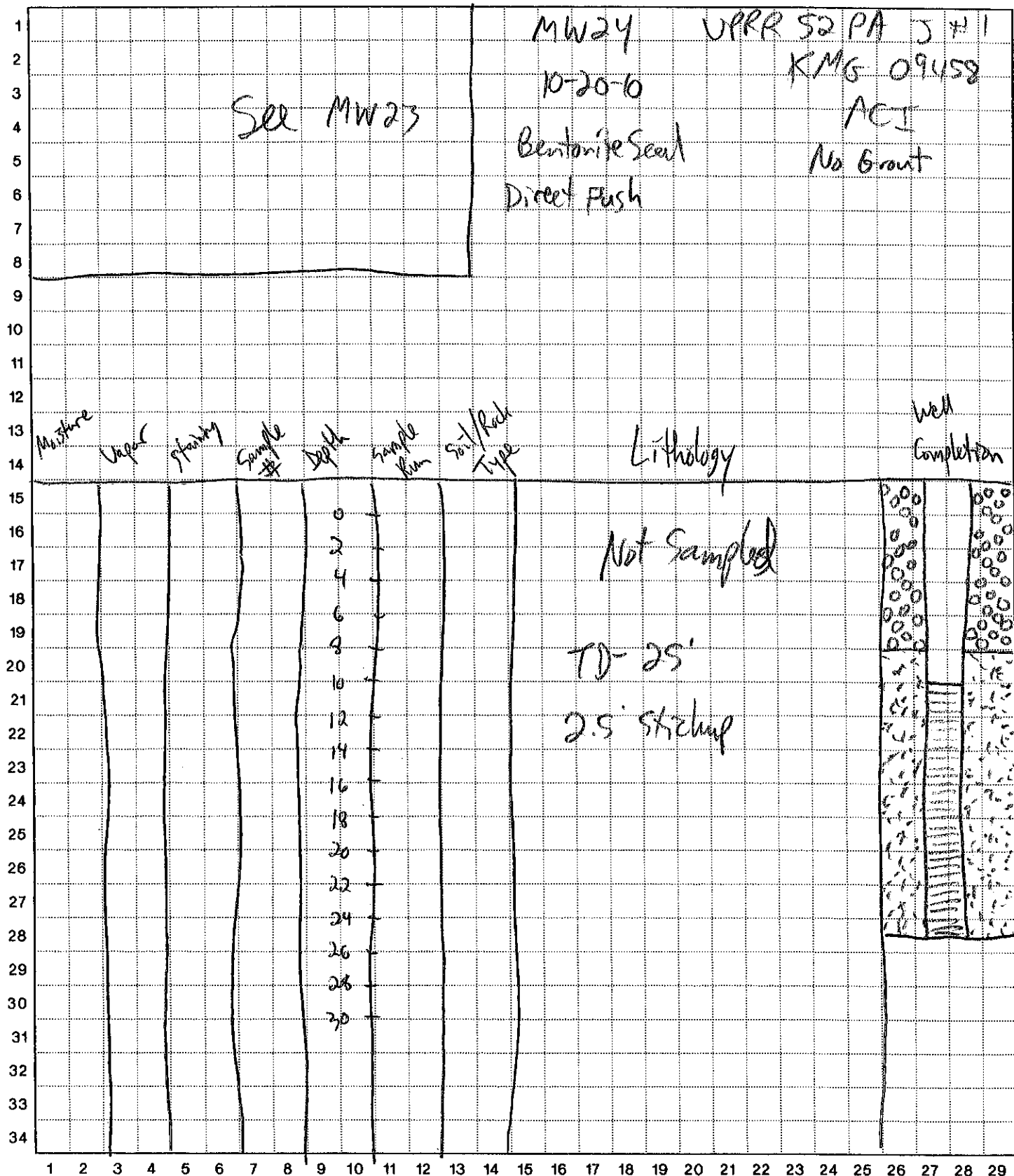
Case-in @ 11'; no sample collected from 20'-25' / TD-25'



PROJECT _____
PROJECT MANAGER _____
JOB No. _____
LOCATION _____

DATE _____
CONT. No. _____
BY _____ CHK'D _____
SHEET No. _____ OF _____

95L T0038 10/1997



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Location Map:

See MW23



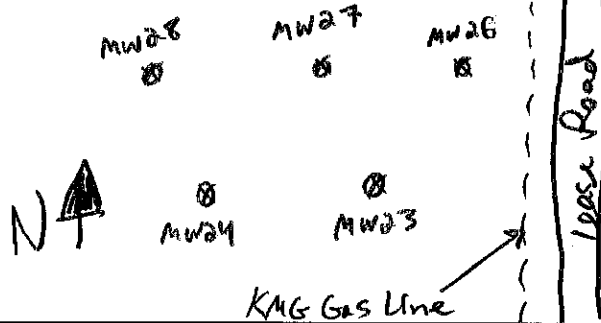
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW25	Project: UPRRS3 PA 541
Date: 10-20-10	Project Number: KMG 09458
Logged By: Chris Roy	Drilled By: ACI
Elevation:	Detector: MiniRae 2000 PID
Gravel Pack:	Drilling Method: Direct Push
Casing Type:	Seal: Bentonite
Screen Type:	Slot:
Diameter:	Length:
Hole Diameter: 2.25"	Depth to Liquid: 11'
Total Depth: 25'	Depth to Water: 11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry		None	NA	0			0'-17.5' M-F Grained Sand, Light Brown, No stain, No odor, Dry; wet @ 11.5'	
		3.0			2	5'			
					4				
		2.2			6	5'		17.5'-20' Sandy & Silty clay, stained @ 18'; odor, moderately-very plastic, moderately cohesive, moist	
					8				
		1.2			10	5'			
					12				
		1.2			14	5'		20'-25' C-F Grained Sand, Gray, wet, stained until 23.5'; odor	
					16				
		24.4			18	5'		23.5'-25' SAA, except Tan and No odor	
					20				
		8.7			22	5'			
					24				
					26			TD-25'	
					28			Stickup - 2.5'	
					30				

Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW26	Project: UPRR 53 Pa. Am J#1
Date: 12-09-10	Project Number: KMG 09458
Logged By: Chris Roy	Drilled By: DP
Drilling Method: Direct Push	Sampling Method: Continuous
Seal: Bentonite	Grout: None
Casing Type:	Diameter: Length:
Screen Type:	Slot: Diameter: Length:
	Hole Diameter: 2.25"
	Depth to Liquid: 11'
	Total Depth: 24'
	Depth to Water: 11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	Dry		None	NA	0			0'-4' Fine Sand, Medium Brown, Some Silt, No stain, No odor	2.5' stickup
		0.8			2	4'			
					4			4'-9.5' sandy silt, Brown, Red mottles, Moist, Cohesive, Moist @ 7', No stain, No odor	
		0.4			6	4'			
					8				
		0.9			10	4'		9.5'-11' Sandy clay, Olive, Moist, No stain, No odor, slightly plastic, Cohesive	
		0.9			12				
					14	4'			
		0.6			16				
					18	4'		11'-13' M-F Sand, Light Brown-Tan-Orange, Moist, No stain, No odor	
					20				
		0.8			22	4'		13'-20' silty clay, Dark Brown, Moist, soft, Mod plasticity, No stain, No odor	
					24				
					26				
					28			20'-24' Sandy clay, coarse-grained, Light Brown-Tan w/ Brick-Red mottles, Wet, No stain, No odor, High plasticity, Cohesive	
					30				

Location Map:

See MW26



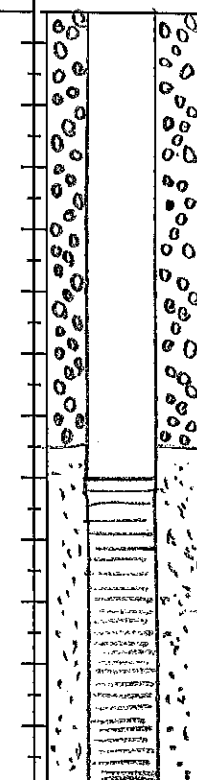
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW27	Project:	UPRR S3 Pan Am J #1
Date:	12-09-10	Project Number:	KMG-09458
Logged By:	Chris Roy	Drilled By:	DP
Elevation:		Drilling Method:	Direct Push
Detector:	MiniRae 2000 PID	Sampling Method:	Continuous
Gravel Pack:		Seal:	Bentonite
		Grout:	None
Casing Type:		Diameter:	
		Length:	
		Hole Diameter:	2.25"
		Depth to Liquid:	NM
Screen Type:		Slot:	
		Diameter:	
		Length:	
		Total Depth:	24'
		Depth to Water:	NM

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Not Sampled	
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

TD = 24'
Screen = 14'-24'
Sand = 13'-24'
Bentonite = 0'-13'
2.5' Steel Riser Stickup



Location Map:

See MW26



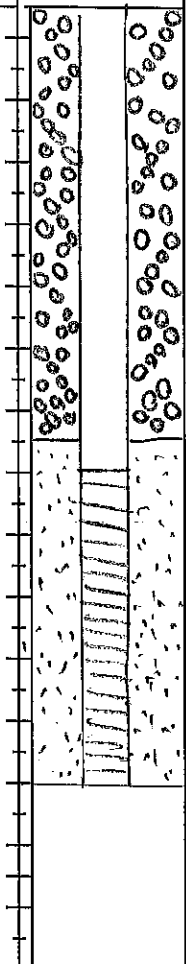
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	MW28	Project:	UPRR S3 Pan Am J #1
Date:	12-09-10	Project Number:	KMG 09458
Logged By:	Chris Roy	Drilled By:	DP
Elevation:		Drilling Method:	Direct Push
Detector:	MiniRae 2000 PID	Sampling Method:	Continuous
Gravel Pack:		Seal:	Bentonite
		Grout:	None
Casing Type:		Diameter:	
		Length:	
Screen Type:		Hole Diameter:	2.25"
		Depth to Liquid:	NM
		Total Depth:	24'
		Depth to Water:	NM

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Not Sampled	
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

TD = 24'
Screen = 14' - 24'
Sand = 13' - 24'
Bentonite = 0' - 13'
2.5' Steel Riser Stickup



Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

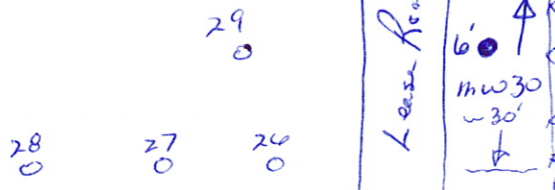
Boring/Well Number: mw 29	Project: UPRR 53 Pen Am J #1				
Date: 4/6/12	Project Number: KMG 09458				
Logged By: M. Unger	Drilled By: ACI				
Drilling Method: Direct Push	Sampling Method: continuous				
Seal: Bentonite 0-6'	Grout:				
Casing Type: PVC	Diameter: 1"	Length: 10' (2' stickup)	Hole Diameter: 2 1/2"	Depth to Liquid:	
Screen Type: PVC	Slot: 0.010	Diameter: 1"	Length: 10'	Total Depth: 18'	Depth to Water: 11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Completion
					0				
		0	NO		2		SW	Sand, v.f.g. - c.g., l. brown, dry to medium moist, no odor	
					4	1205	SC		
		0	NO		6			Sand, v.f.g. - c.g., clayey, brown to reddish brown, moist, no staining or odor; 3" clay lens from 7'6" to 7'9" bgs	
					8	1210			
		0	NO		10		SW	Sand, v.f.g. - c.g., l. brown to brown, wet @ 11' bgs, no staining or odor	
					12	1215			
		0	NO		14		SC	Sand, v.f.g. - c.g., clayey, brown, wet, no staining or odor	
					16	1220			
					18	1225			
					20				
					22				
					24				
					26				
					28				
					30				

TA = 18' BGS

stickup well
protector
Well
Completion

Location Map:

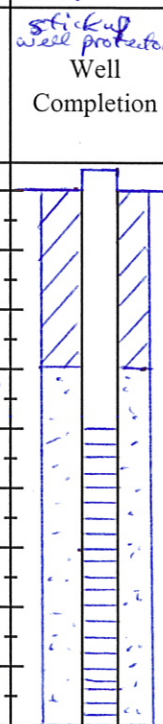


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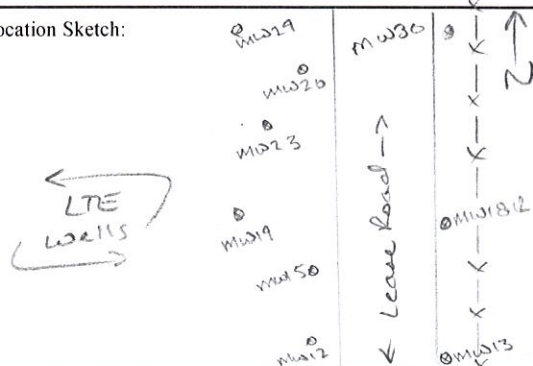
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: mw30	Project: UPRR 53 Pan Am J #1
Date: 4/6/12	Project Number: KMG-09458
Logged By: M. Unger	Drilled By: ACI
Drilling Method: Direct Push	Sampling Method: Continuous
Gravel Pack: 10-20 silica sand 6'-18'	Seal: bentonite 0-6'
Casing Type: PVC	Diameter: 1"
Screen Type: PVC	Slot: 0.010
	Length: 10'
	Hole Diameter: 2 1/2"
	Depth to Liquid: 11'
	Depth to Water: 11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2		SW	Sand, v.fg.-c.g., l.brown, dry to medium moist, no staining or odor	
					4	1300			
					6		SC	Sand, v.fg.-c.g., clayey, brown to reddish brown, moist, no staining or odor	
					8	1305			
					10		SW	Sand, v.fg.-c.g., l.brown to l. gray, moist, no staining or odor, wet at 11' bgs.	
					12	1310			
					14				
					16	1320			
					18	1725	CL	Clay, slightly sand, moist, gray-brown, no staining or odor	
					20				
					22				
					24				
					26				
					28				
					30				



Well Location Sketch:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	Project:
MW182	UPRR 53 Pan Am J #1
Date:	Project Number:
7/30/2015	KMG09458
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"	4'	3"	-

Screen Type:	Slot:	Diameter:	Length:	Total Depth:	Depth to Water:
PVC	0.01	1"	12'	16'	~8'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion Diagram
					0					
					2				Hydrovac, Not Logged	
					4					
					6					
	Moist ↓ Wet ↓ Moist	0.0 0.1 0.0 0.5 0.1	none ↓ ✓		8	6'	6'	SD	6' → 15.5' fg → 8 Mg sand, brown, no odor, no stain, moist → wet @ ~8' bgs → light tan @ 11.5' bgs → gray @ 12.5' bgs, no odor	
					10					
					12					
					14	4'	4'		15.5' → 16' clay, brown, mod. cohesion, high plasticity, no stain, no odor, moist	
					16				→ Push point to 16'	
					18				→ Steel Riser Protector	
					20					
					22					
					24					
					26					
					28					
					30					
					32					
					34					
					36					
					38					
					40					

NOTES:

Page ____ of ____

Location Map:

OB-1
SUE-1
AS-1
OB-2
MW07
N↑



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS-1	Project:	UPRR 53 Pan Am J #1
Date:	6/6/2012 / 6-07-12	Project Number:	KMG09458
Logged By:	Chris Roy	Drilled By:	ACI
Drilling Method:	GeoProbe Direct Push / H5 Anger	Sampling Method:	Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite Plug
Casing Type:	PVC	Hole Diameter:	8.25" / 2.25"
Screen Type:	PVC	Slot:	0.020
Diameter:	2"	Length:	22.5'
Diameter:	2"	Length:	1.5'
Total Depth:	22'	Depth to Liquid:	11'
Depth to Water:	11'		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-1.5' Clayey Sand, Brown, Dry, No stain, No odor	
		0.0			2	5'		1.5'-3' Sandy Clay, Dark Brown, Dry, No stain, No odor, Slightly Cohesive, Low Plasticity	
		0.0			4			3'-5' M-F Sand, Dark Brown, Dry, No stain, No odor	
		0.0			6			5'-8' F Sand, Rust-Brown, Dry, No stain, No odor	
		0.0			8	5'		8'-9' Clayey Sand, Rust-Brown, Olive, Dry, No stain, No odor, Mod Cohesive, Low Plasticity	
		0.0			10			9'-11' F Sand, Light Brown, Dry, No stain, No odor	
	wet	0.0			12			11'-12' Sandy Clay, Olive w/ Rust, Wet, No stain, No odor, Mod Plastic, Mod-Hi Cohesion	
		0.5			14	5'		12'-14' F Sand, Olive-Brown, Wet, No stain, No odor	
		0.0			16			14'-15' Silty Clay, Olive-Brown, Wet, No stain, No odor, Very Cohesive, Hi Plasticity	
	moist	20.8			18	5'		15'-16' C-F Sand, Olive-Blue w/ Black Staining, wet, odor, Hard + Crumbly	
		33.9			20			16'-18.5' Clay, Olive-Blue, Moist, No stain, odor, Very Plastic, Very Cohesive	
	wet	3.6			22	2'		18.5'-20' Fine Sandy Silt, Little Clay, Tan-Brown, Wet, No stain, No odor, soft	
		17.9			24			20'-22' C-F Sand, Black stained, Wet, odor	
					26				
					28				
					30				

Location Map:



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See AS-1

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	OB-1	Project:	UPRR 53 Pan Am J #1
Date:	6/7/2012	Project Number:	KMG09458
Logged By:	Chris Roy	Drilled By:	ACI
Elevation:	Not Measured	Drilling Method:	GeoProbe Directflush
Detector:	MiniRae 2000 PID	Sampling Method:	Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite
		Grout:	None
Casing Type:	PVC	Diameter:	1"
		Length:	12.5'
		Hole Diameter:	2.25"
		Depth to Liquid:	10.5'
Screen Type:	PVC	Slot:	0.010
		Diameter:	1"
		Length:	5'
		Total Depth:	15'
		Depth to Water:	10.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	Dry	0.0	None		0			0'-9' Fine Sand, Dark Brown turning to Rust Brown, Dry, No Stain, No odor	
		0.0			2	5'			
		0.0			4				
		0.0			6	5'		9'-10.5' Sandy Clay, Olive-Brown w/ Light Tan mottles, Dry, No stain, No odor, Mod Cohesion, Mod-Hi Plasticity	
		0.0			8				
		0.0			10				
	wet	0.0			12	5'		10.5'-14' Fine Sand, Tan, Wet, No stain, No odor	
		0.0			14			14'-15' Silty Clay, Light Brown, Moist, No stain, No odor, Soft, Hi Cohesion, Hi Plasticity	
	moist				16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

See AS-1



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: OB-2	Project: UPRR 53 Pan Am J #1
Date: 6/7/2012	Project Number: KMG09458
Logged By: Chris Roy	Drilled By: ACI
Drilling Method: GeoProbe Direct Push	Sampling Method: Continuous
Gravel Pack: Silica Sand	Seal: Bentonite
Casing Type: PVC	Grout: None
Screen Type: PVC	Slot: 0.010
Diameter: 1"	Length: 21.5'
Hole Diameter: 2.25"	Depth to Liquid: 12'
Total Depth: 22'	Depth to Water: 12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-12' Silty Sand, Little Clay, Trace Gravel, Brown, Dry, No stain, No odor	
		0.0			2	5'			
					4				
		0.0			6			12'-13' Gravelly Fine Sand, Little Silt, Brown, Wet, No stain, No odor, Soft	
					8	5'			
					10			13'-17' Fine Sand, Olive-Brown, Wet, Minor staining, odor	
	wet	221			12	5'			
					14			17'-17.5' Sandy clay, Olive-Blue, Moist, No stain, odor, Hi Cohesion, Hi Plasticity	
		132			16				
	moist wet				18	5'		17.5'-22' C-F Sand, wet, odor, Black stained	
		1722			20				
					22	2'			
					24				
					26				
					28				
					30				

See AS-1



Boring/Well Number:	SVE-1	Project:	UPRR 53 Pan Am J #1
Date:	6/7/2012	Project Number:	KMG09458
Logged By:	Chris Roy	Drilled By:	ACI

Drilling Method: GeoProbe HS Auger

Gravel Pack: Silica sand

Seal: Bentonite

Grout:	None
--------	------

Casing Type: PVC

Diameter: 2" Length: 6.5'

Hole Diameter: 8.25"	Depth to Liquid: N/M
-------------------------	-------------------------

Screen Type: PVC Slot: 61010

Diameter: 2" Length: 5'

Total Depth: 9.5'	Depth to Water: NM
-------------------	--------------------

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Not Cored	
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

OB-5



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N ↑

MW10

⊗

SUE-2

AS-2

OB-4

OB-3

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:

AS-2

Project:

UPRR 53 Pan Am J #1

Date:

6/6/2012 / 6-07-12

Project Number:

KMG09458

Logged By:

Chris Roy

Drilled By:

ACI

Elevation:

Not Measured

Detector:

MiniRae 2000 PID

Drilling Method:

GeoProbe Direct Push / HS Auger

Sampling Method:

Continuous

Gravel Pack:

Silica Sand

Seal:

Bentonite Plug

Grout:

Portland Cement / 10% Bentonite

Casing Type:

PVC

Diameter:

2"

Length:

22.5'

Hole Diameter:

8.25" / 2.25"

Depth to Liquid:

12'

Screen Type:

PVC

Slot:

0.020

Diameter:

2"

Length:

1.5'

Total Depth:

22'

Depth to Water:

12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-9' M-F Sand, Brown to Rust-Brown, Dry, No stain, No odor	
		0.0			2				
					4			9'-10' Sandy clay, Olive w/ Multi-colored mottles, Dry, Hard, Very Cohesive, No stain, No odor, Mod-Hi Plasticity	
		0.8			6				
		0.2			8			10'-12' SAA, except no sand and very hi plasticity	
		24.8			10				
	wet	1432			12			12'-15' M-F Sand, Wet, Grey + Black Stained, odor	
	↓				14				
	moist	158			16			15'-18' Sandy clay, Olive, odor, Moist, Very Cohesive, Hi plasticity	
	↓				18				
	wet	2148			20			18'-22' C-F Sand, Grey + Black Stained, odor, wet	
	↓				22				
					24				
					26				
					28				
					30				

10'-15'
 15.5'-17.5'
 19'-22'

Location Map:

See AS-2



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: 0B-3 Project: UPRR 53 Pan Am J #1

Date: 6/7/2012 Project Number: KMG09458

Logged By: Chris Roy Drilled By: ACI

Elevation: Not Measured Detector: MiniRae 2000 PID Drilling Method: GeoProbe DirectPush Sampling Method: Continuous

Gravel Pack: Gilica Sand Seal: Bentonite Grout: None

Casing Type: PVC Diameter: 1" Length: 18' Hole Diameter: 2.25" Depth to Liquid: 12'

Screen Type: PVC Slot: 0.010 Diameter: 1" Length: 2' Total Depth: 17.5' Depth to Water: 12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-8' C-F Sand, Light Brown, Dry, No stain, No odor	
		0.0			2	5'			
		0.0			4			8'-10' Clayey Sand, Tan, Dry, No stain, No odor, Low Cohesion, Low Plasticity	
		0.0			6	5'			
		0.0			8			10'-12' Sandy clay, Olive-Blue, Moist, odor, Hi Plasticity, Hi Cohesion	
	moist				10				
	wet	1644			12	5'		12'-14.5' Fine Sand, Olive-Blue, Wet, odor, Stained from 12.5'-13'	
					14				
	moist	298			16	2.5'		14.5'-17.5' Silty clay turning to Sandy Clay, Olive-Blue, Moist, odor, Very Cohesive, Very Plastic	
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



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See AS-2

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: OB-4	Project: UPRR 53 Pan Am J #1
Date: 6/7/2012	Project Number: KMG09458
Logged By: Chris Roy	Drilled By: ACI
Elevation: Not Measured	Detector: MiniRae 2000 PID
Gravel Pack: Silica Sand	Seal: Bentonite
Casing Type: PVC	Drilling Method: GeoProbe Direct Push
Screen Type: PVC	Sampling Method: Continuous
Slot: 0.010	Grout: None
Diameter: 1" Length: 12.5'	Hole Diameter: 2.25" Depth to Liquid: 11'
Diameter: 1" Length: 5'	Total Depth: 15' Depth to Water: 11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-9' M-F Sand, Brown, Dry, No stain, No odor	
		0.0			2	5'			
					4			9-11' Sandy Clay, Olive-Blue, Dry, No stain, No odor, Hard, Mod Cohesion, Mod Plasticity	
		0.0			6				
					8	5'			
		0.5			10			11'-14.5' C-F Sand, Tan, Stained from 12.5'-14.5', wet @ 11', odor	
	wet				12	5'			
		82.1			14			14.5'-15' Silty Clay, Olive-Blue, Moist, odor, soft, Mod-Hi Plasticity, Low Cohesion	
	moist				16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



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See AS-2

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	OB-5	Project:	UPRR 53 Pan Am J #1
Date:	6/7/2012	Project Number:	KMG09458
Logged By:	Chris Roy	Drilled By:	ACI
Drilling Method:	GeoProbe Direct Push	Sampling Method:	Continuous
Gravel Pack:	Silica Sand	Seal:	Bentonite
Casing Type:	PVC	Grout:	None
Screen Type:	PVC	Diameter:	1"
Slot:	0.010	Length:	21.5'
		Hole Diameter:	2.25"
		Depth to Liquid:	11'
		Total Depth:	22'
		Depth to Water:	11'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			0'-9' Fine Sand, Dark Brown Turning to Rust-Brown, Dry, No stain, No odor	
		0.0			2	5'			
					4				
		0.0			6			9'-10' Sandy clay, Olive-Brown, Dry, No stain, No odor, Med-Hr cohesion, Hi Plasticity	
		0.0			8	5'			
		0.6			10			10'-14' Fine Sand, Tan, wet @ 11', stained w/ odor from 12'-14'	
	wet	1243		12'	12	5'			
	moist			14'	14			14'-18' Clay, Olive-Blue, Moist, odor, Very Cohesive, Very Plastic	
					16				
		143		18'	18	5'		18'-22' M-F Sand, Black stained, Wet, odor	
	wet				20				
		1969		22'	22	2'			
					24				
					26				
					28				
					30				

Location Map:

See AS-2



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SUE-2	Project: UPRR 53 Pan Am J #1
Date: 6/7/2012	Project Number: KMG09458
Logged By: Chris Roy	Drilled By: ACI
Elevation: Not Measured	Detector: None Mini Probe 2000-215
Gravel Pack: Silica Sand	Seal: Bentonite
Casing Type: PVC	Drilling Method: GeoProbe HS Auger
Screen Type: PVC	Sampling Method: Continuous
Slot: 0.010	Grout: None
Diameter: 2" Length: 6.5'	Hole Diameter: 8.25" Depth to Liquid: NM
Diameter: 2" Length: 5'	Total Depth: 9.5' Depth to Water: NM

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Not Cored	
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

AS03
mw15 12'



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS03	Project:	UPRR 53 PanAm J #1
Date:	8/22/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Gravel Pack:	silica sand 19-22'	Seal:	bentonite 14-19'
Casing Type:	PVC	Diameter:	2"
Screen Type:	PVC	Length:	20.5'
Slot:	0.020	Hole Diameter:	8"
Diameter:	2"	Length:	1.5'
Total Depth:	22'	Depth to Liquid:	
Depth to Water:	~12'		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
			NO		2		SW	Sand, v.f.g. - m.g., 1.brown, dry	
					4				
					6				
			NO		8				
					10		SW	Sand, v.f.g. - m.g., slightly clayey, brown, med. moist	
					12				
					14		SW	Sand, v.f.g. - f.g., 1.brown, moist to wet	
			yes		16			~ 13-18' - 1.gray stained	
					18				
			NO		20		SC	Sand, v.f.g. - f.g., clayey, brown, wet	
					22		SW	Sand, f.g. - m.g., brown, wet	
					24			TD=22' BGS	
					26				
					28				
					30				

Location Map: <div style="text-align: center;"> </div>		<div style="text-align: center;"> </div> <p>Compliance • Engineering • Remediation LT Environmental, Inc. 4600 W. 60th Avenue Arvada, Colorado 80003</p>	
BORING LOG/MONITORING WELL COMPLETION DIAGRAM			
Boring/Well Number: SVE 03		Project: UPRR 53 PanAm J #1	
Date: 8/22/12		Project Number: KMG 09458	
Logged By: Unger		Drilled By: Site Services	
Elevation:	Detector: mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 3.5'-9.5'		Seal: bentonite 0-3.5'	Grout: cement-bentonite
Casing Type: PVC	Diameter: 2"	Length: 4.5'	Hole Diameter: 8" Depth to Liquid: ---
Screen Type: PVC	Slot: 0.010	Diameter: 2"	Length: 5' Total Depth: 9.5' Depth to Water: dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2		SW	Sand, v.f.g.-m.g., brown, dry	
			NO		4				
					6				
					8		SW	Sand, v.f.g.-m.g., slightly clayey, brown, medium moist	
			NO		10				
					12			TD=9.5' BGS	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map: <div style="text-align: center; margin-top: 20px;"> </div> <div style="position: relative; height: 100px;"> AS03 MWS SVE03 SVE04 AS04 </div>		<div style="margin-top: 10px;"> Compliance » Engineering » Remediation LT Environmental, Inc. 4600 W. 60th Avenue Arvada, Colorado 80003 </div>	
BORING LOG/MONITORING WELL COMPLETION DIAGRAM			
Boring/Well Number: AS04		Project: UPRR 53 Pan Am J #1	
Date: 8/22/12		Project Number: KMG09458	
Logged By: Unger		Drilled By: Site Services	
Elevation:		Drilling Method: H.S. Augers	
Detector: mini-Rae 2000		Sampling Method: Grab	
Gravel Pack: silica sand 19'-22'		Seal: bentonite 14'-19'	
Casing Type: PVC		Diameter: 2"	Length: 20.5'
Screen Type: PVC		Slot: 0.020	Grout: cement-bentonite 2'-19'
Diameter: 2"		Length: 1.5'	Hole Diameter: 8"
Total Depth: 22'		Depth to Liquid: 12'	
Depth to Water: 12'			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
					4		SW	Sand, v.fg - fg, brown, dry	
			NO		6				
					8				
					10		SW	Sand, v.fg - fg, l. brown, med. moist	
			NO		12				
			yes		14			wet @ 12' BGS	
					16		SC	Sand, v.fg - fg, l. gray, wet, slight odor	
			yes		18				
					20		SW	Sand, v.fg - m.g., brown, wet	
			NO		22				
					24			TD = 22' BGS	
					26				
					28				
					30				

Location Map: 4503 <div style="text-align: center;"> N </div> <div style="position: relative; height: 100px;"> MWIS SVE03 SVE04 </div>		Compliance « Engineering « Remediation LT Environmental, Inc. 4600 W. 60th Avenue Arvada, Colorado 80003	
BORING LOG/MONITORING WELL COMPLETION DIAGRAM			
Boring/Well Number: SVE04		Project: UPRR 53 PanAm J #1	
Date: 8/22/12		Project Number: KMG09458	
Logged By: Unger		Drilled By: Site Services	
Elevation:	Detector: mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 6'-9.5'		Seal: bentonite 0-6'	Grout: cement-bentonite
Casing Type: PVC	Diameter: 2"	Length: 4.5'	Hole Diameter: 8"
Screen Type: PVC	Slot: 0.010	Diameter: 2"	Length: 5'
			Depth to Liquid: dry
			Depth to Water: dry
Penetration Resistance	Moisture Content	Vapor (ppm)	Staining
Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type
Lithology/Remarks			
Well Completion			
	0		<div style="text-align: center;"> Sand, v. fig. - m. g., brown, dry </div>
	2		
	4		
	6		
	8		
	10		
	12		
	14		
	16		
	18		
	20		
	22		
	24		
	26		
	28		
	30		
		SW	<div style="text-align: center;"> Sand, v. fig. - fig., slightly clayey, brown, medium moist TD = 9.5' BGS </div>
		SW	

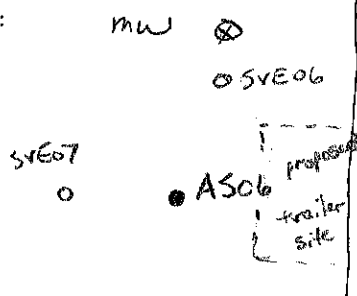
Location Map: <div style="text-align: center;"> </div>		<div style="text-align: center;"> </div> <p>Compliance « Engineering « Remediation LT Environmental, Inc. 4600 W. 60th Avenue Arvada, Colorado 80003</p>	
BORING LOG/MONITORING WELL COMPLETION DIAGRAM			
Boring/Well Number: AS05		Project: UPRR 53 PanAm J #1	
Date: 8/22/12		Project Number: KMG09458	
Logged By: Unger		Drilled By: Site Services	
Elevation:	Detector: mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 19'-22'		Seal: bentonite 14'-19'	Grout: cement-bentonite 2'-14'
Casing Type: PVC	Diameter: 2"	Length: 20.5'	Hole Diameter: 8" Depth to Liquid:
Screen Type: PVC	Slot: 0.020	Diameter: 2"	Length: 1.5' Total Depth: 22' Depth to Water: 10'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
			NO		4		SW	Sand, v.f.g. - m.g., brown, dry	
					6				
					8				
			NO		10		SW	Sand, v.f.g. - f.g., l. brown, medium moist	
					12				
			yes		14		SC	Sand, v.f.g. - f.g., clayey, brown to orange-brown, wet	
					16				
					18				
			NO		20		SW	Sand, v.f.g. - f.g., brown wet	
					22				
					24			TD = 22' BSS	
					26				
					28				
					30				

Location Map: <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> AS04.0 SVE05 ● AS05.0 MW/LD </div> <div style="text-align: center;"> </div> </div>		Compliance » Engineering » Remediation LT Environmental, Inc. 4600 W. 60th Avenue Arvada, Colorado 80003	
BORING LOG/MONITORING WELL COMPLETION DIAGRAM			
Boring/Well Number: SVE05		Project: UPRR 53 PanAm J #1	
Date: 8/22/12		Project Number: KMG09458	
Logged By: Unger		Drilled By: Site Services	
Elevation:	Detector: Mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 3'-9.5'		Seal: bentonite 0-3'	Grout: cement-bentonite
Casing Type: PVC	Diameter: 2"	Length: 4.5'	Hole Diameter: 8"
Screen Type: PVC	Slot: 0.010	Diameter: 2"	Length: 5'
Total Depth: 9.5'			Depth to Liquid: dry
Depth to Water: dry			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
			No		2		SW	Sand, v.f.g. - med. g., brown, dry to medium moist	
					4				
					6				
					8		SW	Sand, v.f.g. - f.g., light brown, medium moist	
			NO		10			TD = 9.5' BGS	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS06		Project:	UPRR 53 PanAm J #1	
Date:	8/23/12		Project Number:	KMG09458	
Logged By:	Unger		Drilled By:	Site Services	
Drilling Method:	H.S. Augers		Sampling Method:	Grab	
Gravel Pack:	silica sand 19'-22'		Seal:	bentonite 15'-19'	
Casing Type:	PVC		Diameter:	2"	
Screen Type:	PVC		Slot:	0.020	
			Diameter:	2"	
			Length:	20.5'	
			Hole Diameter:	8"	
			Total Depth:	22'	
			Grout:	cement-bentonite 0-15'	
			Depth to Liquid:	w/12'	
			Depth to Water:	w/12'	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1220		
			NO		2		SW	Sand, v.f.g. - m.g., brown, dry to medium moist	
					4				
					6				
			NO		8				
					10		SW	Sand, v.f.g. - f.g., 1/brown to brown, medium moist to moist	
					12				
			yes		14				
					16		SC	Sand, v.f.g. - c.g., dark gray, stained, odor, wet	
					18				
			yes		20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

1325

Location Map:

AS05
0
MW 12
SVE06



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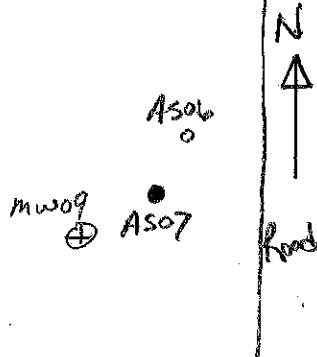
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE06			Project:	UPRR 53 PanAm J #1		
Date:	8/22/12			Project Number:	KMG 09458		
Logged By:	Unger			Drilled By:	Site Services		
Drilling Method:	H.S. Augers			Sampling Method:	Grab		
Gravel Pack:	silica sand 3'-9.5'			Seal:	bentonite 0-3'		
Casing Type:	PVC			Grout:	cement-bentonite		
Screen Type:	PVC			Diameter:	2"	Length:	4.5'
	Slot: 0.010			Hole Diameter:	8"	Depth to Liquid:	
				Diameter:	2"	Length:	5'
				Total Depth:	9.5'	Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
			No		2		SW	Sand, v.fg - Fg, brown, dry to medium moist	
					4				
					6				
			No		8		SW	Sand, v.fg - Fg, brown, medium moist	
					10				
					12			TD = 9.5' bgs	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				



Location Map:

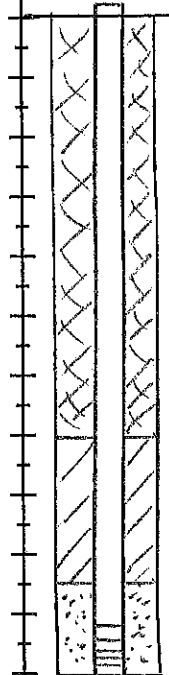


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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: AS07		Project: UPRR 53 Pan Am J #1	
Date: 8/24/12		Project Number: KMG 09458	
Logged By: Unger		Drilled By: Site Services	
Drilling Method: H.S. Augers		Sampling Method: Grab	
Elevation:	Detector: mini-Rae 2000	Seal: bentonite 14'-19'	Grout: cement-bentonite 2-14'
Gravel Pack: silica sand 19'-22'			
Casing Type: PVC	Diameter: 2"	Length: 20.5'	Hole Diameter: 8"
Screen Type: PVC	Slot: 0.020	Diameter: 2"	Length: 1.5'
		Total Depth: 22'	Depth to Liquid: —
			Depth to Water: ~12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
			NO		4				
					6				
					8		SW SC	Sand, v.f.g. - m.g., slightly clayey to clayey, brown, med. moist	
			NO		10				
					12				
					14				
			yes		16		SC	Sand, v.f.g. - m.g., clayey, gray stained, odor, wet	
					18				
			yes		20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				



Location Map:

mw12 
 0 SVE06
 0 AS06
 SVE07 
 0 mw08 

Road



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE07	Project:	UPRR 53 PanAm J #1
Date:	8/22/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Gravel Pack:	silica sand 3-9.5'	Seal:	bentonite 0-3'
Casing Type:	PVC	Diameter:	2"
Screen Type:	PVC	Slot:	0.010
		Length:	4.5'
		Hole Diameter:	8"
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
			No		0				
					2				
					4		SW	Sand, v.fg. - f.g., brown, dry to medium moist	
					6				
			No		8		SW	Sand, v.fg. - f.g., brown, medium moist	
					10			TD = 9.5' BGS	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

AS08

SV08

OB5



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: AS08 Project: UPRR 53 PanAm J #1

Date: 8/23/12 Project Number: RMG 09458

Logged By: Unger Drilled By: Site Services

Elevation: Detector: mini-Rae 2000 Drilling Method: H.S. Augers Sampling Method: Grab

Gravel Pack: 10-20 silica sand 19'-22' Seal: bentonite 13'-19' Grout: cement-bentonite 2-13'

Casing Type: PVC Diameter: 2" Length: 20.5' Hole Diameter: 8" Depth to Liquid: —

Screen Type: PVC Slot: 0.020 Diameter: 2" Length: 1.5' Total Depth: 22' Depth to Water: 12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0	0735			
			No		2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
			No		4				
			No		6		SW	Sand, v.f.g. - m.g., brown, medium moist to moist	
			No		8				
			yes		10				
			yes		12		SC	Sand, v.f.g. - f.g., clayey, gray stained, odor wet	
			yes		14				
					16				
					18				
					20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

0900

Location Map:

A508

SVF08

OB 5



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVF08	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Seal:	bentonite	Grout:	Cement-bentonite
Gravel Pack:	silica sand	Hole Diameter:	8"
Casing Type:	PVC	Length:	4.5'
Screen Type:	PVC	Slot:	0.010
		Diameter:	2"
		Length:	5'
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
					4				
					6				
					8		SW	Sand, v.f.g. - med. brown, medium moist to moist	
					10				
					12			TD = 9.5' bgs	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

A508

A509

0085



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	A509	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Elevation:		Drilling Method:	H.S. Augers
Detector:	mini-Rae 2000	Sampling Method:	Grab
Gravel Pack:	silica sand 17.5'-22'	Seal:	bentonite 14'-17.5'
Casing Type:	PVC	Grout:	Cement-bentonite 2'-14'
Screen Type:	PVC	Diameter:	2"
Slot:	0.020	Length:	20.5'
		Hole Diameter:	8"
		Total Depth:	22'
		Depth to Liquid:	
		Depth to Water:	12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
			No		2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
			No		4				
			No		6				
			No		8		SW	Sand, v.f.g. - f.g., brown, slightly clayey to clayey, brown, medium moist to moist	
			No		10				
			No		12				
			Yes		14		SC	Sand, v.f.g. - c.g., gray stained, clayey, odor, wet	
			Yes		16				
					18				
					20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

1000

Location Map:

SVE09

MWD 11

065



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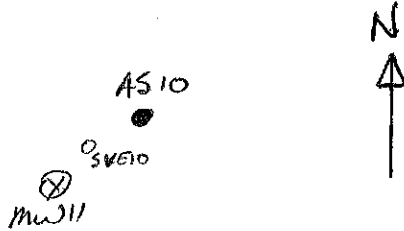
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE09	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Gravel Pack:	silica sand 3-9.5'	Seal:	bentonite 0-3'
Casing Type:	PVC	Diameter:	2"
Screen Type:	PVC	Slot:	0.010
		Length:	4.5'
		Diameter:	2"
		Length:	5'
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0	10/0			
					2		SW	Sand, v.fg.-fg., brown, dry to medium moist	
			NO		4				
					6				
			NO		8		SW	Sand, v.fg.-fg., slightly clayey, brown, medium moist	
					10				
					12			TD = 9.5' BGS	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

1025

Location Map:



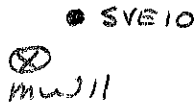
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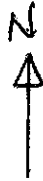
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS10	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Elevation:		Drilling Method:	H.S. Augers
Detector:	mini-Rae 2000	Sampling Method:	Grab
Gravel Pack:	silica sand 19'-22'	Seal:	bentonite 14'-19'
Casing Type:	PVC	Grout:	Cement-bentonite 2'-4'
Screen Type:	PVC	Diameter:	2"
Slot:	0.020	Length:	20.5'
		Hole Diameter:	8"
		Total Depth:	22'
		Depth to Liquid:	
		Depth to Water:	12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2		SW	Sand, v.fg.-fg., brown, dry to medium moist	
			no		4				
					6				
					8		SW	Sand, v.fg.-fg., brown to l. brown, medium moist	
			no		10				
					12				
					14				
			yes		16		SC	Sand, v.fg.-mg., clayey, gray stained, odor, wet	
					18				
			yes		20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

Location Map:

• SVE10

 mw11

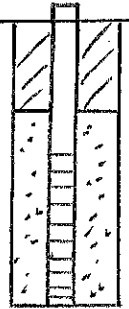


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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE 10	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Elevation:		Drilling Method:	H.S. Augers
Detector:	mini-Rae 2000	Sampling Method:	Grab
Gravel Pack:	silica sand 3-9.5'	Seal:	bentonite 0-3'
Casing Type:	PVC	Grout:	cement-bentonite
Screen Type:	PVC	Diameter:	2"
Slot:	0.010	Length:	4.5'
		Hole Diameter:	8"
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1025		
					2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
			NO		4				
					6				
			NO		8		SW	Sand, v.f.g. - f.g., slightly clayey, medium moist	
					10				
					12			TA = 9.5' BGS	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				



Location Map:

see site map



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS 11	Project:	UPRR 53 PanAm J #1
Date:	8/27/12	Project Number:	KMG 09458
Logged By:	Anger Verbovitz	Drilled By:	Site Services
Elevation:		Drilling Method:	H.S. Augers
Detector:	Mini-Rae 2000	Sampling Method:	Grab
Gravel Pack:	silica sand 19'-22'	Seal:	bentonite 14'-19'
Casing Type:	PVC	Grout:	cement-bentonite 2'-14'
Screen Type:	PVC	Diameter:	2"
Slot:	0.020	Length:	20.5'
		Hole Diameter:	8"
		Total Depth:	22'
		Depth to Liquid:	
		Depth to Water:	~12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
					4		SW	sand, very fine, brown, dry	
					6				
					8				
			no		10				
					12		SW	very fine to med, brown, moist w/ minor clays	
			yes		14				
					16		SC	clayey fine sand, stain, odor, wet	
					18				
					20		SW	fine to coarse sand, stain, odor, wet	
					22				
					24				
					26				
					28				
					30			TD - 22' bgs	

Location Map:

mw08 SVE11

Road



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE11	Project:	UPRR 53 PanAm J #1
Date:	8/23/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab

Elevation:	Detector:	Seal:	Grout:
	mini-Rae 2000	bentonite 0-3'	cement-bentonite
Gravel Pack:			
silica sand 3-9.5'			
Casing Type:	Diameter:	Length:	Hole Diameter:
PVC	2"	4.5'	8"
Screen Type:	Slot:	Diameter:	Length:
PVC	0.01	2"	5'
		Total Depth:	Depth to Liquid:
		9.5'	dry
			Depth to Water:
			dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1330		
			NO		2		SW	Sand, v.f.g. - f.g., brown, dry to medium moist	
					4				
					6				
			NO		8		SC	Sand, v.f.g. - m.g., brown, medium moist to moist, clayey	
					10			TD = 9.5' BGS	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

1400

Location Map:

AS12

mw10

mw09

mw08

Road



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS12	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Seal:	bentonite	Grout:	Cement-bentonite
Gravel Pack:	silica sand	Hole Diameter:	8"
Casing Type:	PVC	Length:	20.5'
Screen Type:	PVC	Slot:	0.020
		Diameter:	2"
		Length:	1.5'
		Total Depth:	22'
		Depth to Liquid:	
		Depth to Water:	w/2'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		cap		
			No		2		SW	Sand, v.fg.-fg., brown, dry to medium moist	
			No		4				
			No		6				
			No		8		SW	Sand, v.fg.-m.fg., slightly clayey to clayey, brown, moist	
			No		10		SC		
			Yes		12				
			Yes		14		SC	Sand, v.fg.-c.g., clayey, gray stained, odor, w/2'	
			Yes		16				
			Yes		18				
			Yes		20				
			Yes		22				
					24			TD = 22' BGS	
					26				
					28				
					30				

0450

Location Map:

AS12 MW10



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SVE-12	Project: UPRR 53 PanAm J #1
Date: 8/24/12	Project Number: KMG 09458
Logged By: Unger	Drilled By: Site Services
Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 3-9.5'	Seal: bentonite 0-3'
Casing Type: PVC	Grout: cement-bentonite
Screen Type: PVC	Slot: 0.010
Diameter: 2"	Length: 4.5'
Hole Diameter: 8"	Depth to Liquid: dry
Total Depth: 9.5'	Depth to Water: dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		0855		
			No		2		SW	Sand, v. fig. - fig., brown, dry to medium moist	
					4				
					6				
			ACQ		8		SW	Sand, v. fig. - m.g., brown, slightly clayey to clayey, medium moist	
					10				
					12			TA = 9.5' BGS	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

0925

Location Map:



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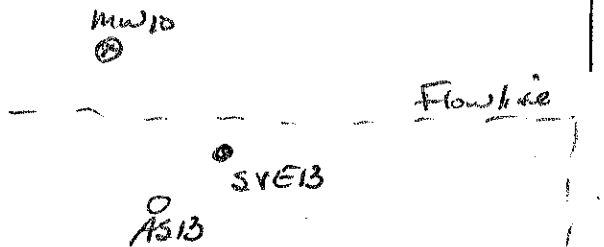
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS 13	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Seal:	bentonite 14'-18.5'	Grout:	Cement-bentonite 2-14'
Gravel Pack:	silica sand 18.5'-22'	Hole Diameter:	8"
Casing Type:	PVC	Length:	20.5'
Screen Type:	PVC	Depth to Liquid:	—
Slot:	0.020	Diameter:	2"
Length:	1.5'	Total Depth:	22'
Depth to Water:	W/D		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		0935		
			NO		2		SW	Sand, v.f.g. - m.g., brown, dry to medium moist	
					4				
					6				
			NO		8		SW SC	Sand, v.f.g. - m.g., brown, slightly clayey to clayey, medium moist	
					10				
			yes		12				
					14		SC		
					16				
			yes		18		SC	Sand, v.f.g. - c.g., clayey, gray stained, odor, wet	
					20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

1030

Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE13	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Seal:	bentonite 0-3'	Grout:	cement-bentonite
Gravel Pack:	silica sand 3'-9.5'	Hole Diameter:	8"
Casing Type:	PVC	Length:	4.5'
Screen Type:	PVC	Diameter:	2"
Slot:	0.010	Length:	5'
Total Depth:	9.5'	Depth to Liquid:	
Depth to Water:	dry		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1030		
					2		SW	Sand, v. fine - med., brown, dry to medium moist	
					4				
					6				
					8		SW	Sand, v. fine - med., brown, med. moist, slightly clay, to clayey	
					10			TD = 9.5' BGS	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

1055

Location Map:

MW10
⑧MW09
⑦SV13
AS14
SV14

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS14	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Gravel Pack:	silica sand 19-22'	Seal:	bentonite 14-19'
Casing Type:	PVC	Diameter:	2"
Screen Type:	PVC	Slot:	0.020
		Length:	20.5'
		Hole Diameter:	8"
		Total Depth:	22'
		Grout:	cement-bentonite 2-14'
		Depth to Liquid:	
		Depth to Water:	~12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1055		
			No		2		SW	Sand, v.f.g. - m.g., brown, dry to medium moist	
			No		4				
					6				
					8		SW	Sand, v.f.g. - m.g., brown, medium moist to moist	
					10				
					12				
			yes		14		SC	Sand, v.f.g. - c.g., clayey, gray stained, odor, wet	
					16				
					18				
					20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

1145

Location Map:

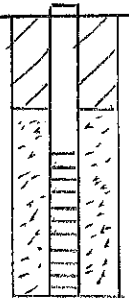


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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE 14	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG 09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Gravel Pack:	silica sand 3'-9.5'	Seal:	bentonite 0-3'
Casing Type:	PVC	Diameter:	2"
Screen Type:	PVC	Slot:	0.010
		Length:	4.5'
		Diameter:	2"
		Length:	5'
		Hole Diameter:	8"
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1145		
			NO		2		SW	Sand, v.f.g. - m.g., brown, dry to medium moist	
					4				
					6				
			NO		8		SW/SC	Sand, v.f.g. - m.g., slightly clayey to clayey, brown, medium moist	
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				



1210

Location Map:



• AS15
 @mw09

Flow line



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: AS15	Project: UPRR 53 PanAm J #1
Date: 8/24/12	Project Number: RMG 09458
Logged By: Unger	Drilled By: Site Services
Drilling Method: H.S. Augers	Sampling Method: Grab
Seal: bentonite 14'-19'	Grout: cement-bentonite 0'-14'
Casing Type: PVC	Diameter: 2" Length: 20.5'
Screen Type: PVC	Diameter: 2" Length: 15'
Slot: 0.020	Total Depth: 22'
	Depth to Liquid: ~12'
	Depth to Water: ~12'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				stickup
					2		SW	Sand, v.f.g. - m.g., brown, dry to medium moist	
			NO		4				
					6				
					8		SW/SC	Sand, v.f.g. - m.g., slightly clayey to clayey, brown, med. moist	
			NO		10				
					12				
			YES		14		SC	Sand, v.f.g. - c.g., clayey, gray stained, odor, wet	
					16				
			YES		18				
					20				
					22				
					24			TD = 22' BGS	
					26				
					28				
					30				

Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SVE15 Project: UPRR 53 PanAm J #1

Date: 8/21/12 Project Number: KMG09458

Logged By: Unger Drilled By: Site Services

Elevation: Detector: mini-Rae 2000 Drilling Method: H.S. Augers Sampling Method: Grab

Gravel Pack: silica sand 3'-9.5' Seal: bentonite 0-3' Grout: cement-bentonite

Casing Type: PVC Diameter: 2" Length: 4.5' Hole Diameter: 8" Depth to Liquid:

Screen Type: PVC Slot: 0.010 Diameter: 2" Length: 5' Total Depth: 9.5' Depth to Water: dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0		1230		
					2		SW	Sand, v.f.g. - med., brown, dry to medium moist	
			NO		4				
					6				
					8		SC	Sand, v.f.g. - med., clayey, brown, medium moist	
			NO		10		SW		
					12			TD = 9.5' BGS	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

1255

Location Map:

see site map



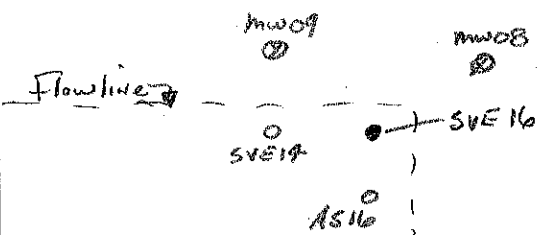
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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	AS16	Project:	UPRR 53 PanAm J #1
Date:	8/27/12	Project Number:	KMG09458
Logged By:	Eriger Verbortz	Drilled By:	Site Services
Elevation:		Drilling Method:	Grab
Detector:	mini-Rae 2000	Seal:	bentonite 12'-18'
Gravel Pack:	silica sand 18'-22'	Grout:	cement-bentonite 2'-12'
Casing Type:	PVC	Diameter:	2"
		Length:	20.5'
Screen Type:	PVC	Diameter:	2"
		Length:	1.5'
		Total Depth:	22.6'
		Depth to Liquid:	
		Depth to Water:	~13'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				stickup
					2				
					4				
			no		6		SW	very fine sand with minor clay, brown, dry to moist, no stain/odor	
					8				
					10				
					12				
	Δ				14		SC	clayey fine sand, odor/staining, wet	
			yes		16				
			↓		18				
					20		SW	fine to coarse sand with little to no clay, stain/odor, wet	
					22				
					24			22' TD, BGS	
					26				
					28				
					30				

Location Map:



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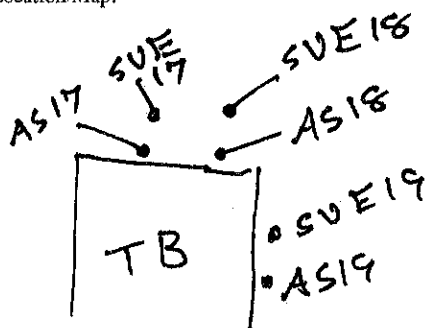
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE 16	Project:	UPRR 53 PanAm J #1
Date:	8/24/12	Project Number:	KMG09458
Logged By:	Unger	Drilled By:	Site Services
Drilling Method:	H.S. Augers	Sampling Method:	Grab
Seal:	bentonite 0-3'	Grout:	cement-bentonite
Gravel Pack:	silica sand 3'-9.5'	Hole Diameter:	8"
Casing Type:	PVC	Length:	4.5'
Screen Type:	PVC	Slot:	0.010
		Diameter:	2"
		Length:	5'
		Total Depth:	9.5'
		Depth to Liquid:	
		Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
			No		0				
					2		SW	Sand, v.f.g.-imp., brown, dry to medium moist	
					4				
					6				
			No		8		SW	Sand, v.f.g.-med., slightly clayey to clayey, brown, med. moist	
					10		SC	TD = 9.5' BGS	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				



Location Map:



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: AS17	Project: UPRR 53 PanAm J #1
Date: 8/27/12	Project Number: KMG09458
Logged By: Dan Verbanitz	Drilled By: Site Services
Drilling Method: H.S. Augers	Sampling Method: Grab
Seal: bentonite 14-19'	Grout: cement-bentonite 2'-14'
Gravel Pack: silica sand 19'-22'	
Casing Type: PVC	Diameter: 2" Length: 20.5'
Screen Type: PVC	Diameter: 2" Length: 1.5'
	Hole Diameter: 8" Depth to Liquid: 22'
	Total Depth: 22' Depth to Water: 214'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				stick up
					2				
					4				
			no		6		SW		
					8				
					10				
					12				
	Δ		yes		14		SC	fine sandy clay, wet @ 14' bgs, stinky odor	
					16				
					18				
					20		SW	fine to med. sand, wet, stain/odor, minor clays	
					22			TA - 22' - bgs	
					24				
					26				
					28				
					30				

Location Map:



see AS17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: ~~SVE~~ 17 Project: UPRR 53 PanAm J #1

Date: 8/27/12 Project Number: KMG 09458

Logged By: ~~Unger~~ Verbovitz Drilled By: Site Services

Elevation: Detector: mini-Rae 2000 Drilling Method: H.S. Augers Sampling Method: Grab

Gravel Pack: silica sand 3'-9.5' Seal: bentonite 0-3' Grout: cement-bentonite

Casing Type: PVC Diameter: 2" Length: 4.5' Hole Diameter: 8" Depth to Liquid:

Screen Type: PVC Slot: 0.010 Diameter: 2" Length: 5' Total Depth: 9.5' Depth to Water: dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
					4				
					6				
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

clayey fine sand,
 dark brown, moist
 @ 8', no stain/odor

SC

dry
moist

no

Location Map:

see AS 17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: AS18		Project: UPRR 53 PanAm J #1	
Date: 8/27/12		Project Number: KMG09458	
Logged By: Ginger Verbowitz		Drilled By: Site Services	
Elevation:	Detector: mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 19'-22'		Seal: bentonite 13'-19'	Grout: cement-bentonite 2'-13'
Casing Type: PVC	Diameter: 2"	Length: 20.5'	Hole Diameter: 8"
Screen Type: PVC	Slot: 0.020	Diameter: 2"	Length: 1.5'
		Total Depth: 22'	Depth to Liquid: ~13'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
					4				
					6		SC	fine to med clayey sand, dark brown, no stain/odor, moist at 8' bgs	
					8				
					10				
			no		12				
	Δ				14		SC/SW	fine to med clayey sand, black stain, odor, wet	
			yes		16				
			↓		18				
					20		SW	fine to med sand w/ minor clay, dark brow, wet, stain/odor	
					22				
					24			TD-22' bgs	
					26				
					28				
					30				

Location Map:

SEE AS 17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: SUE 18 Project: UPRR 53 PanAm J #1

Date: 8/27/12 Project Number: KMG 09458

Logged By: ~~Anger~~ Verban:tz Drilled By: Site Services

Elevation: Detector: mini-Rae 2000 Drilling Method: H.S. Augers Sampling Method: Grab

Gravel Pack: silica sand 3'-9.5' Seal: bentonite 0'-3' Grout: cement-bentonite

Casing Type: PVC Diameter: 2" Length: 4.5' Hole Diameter: 8" Depth to Liquid:

Screen Type: PVC Slot: 0.010 Diameter: 2" Length: 5' Total Depth: 9.5' Depth to Water: dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0				
	↓		no		2			clayey fine sand, dark brown, no stain/odor, moist @ 8'	
					4		SC		
					6				
					8				
	moist				10				
	↓				12			TD 9.5' bgs	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

SEE AS 17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: 4519		Project: UPRR 53 PanAm J #1	
Date: 8/27/12		Project Number: KMG09458	
Logged By: Anger Verban: tz		Drilled By: Site Services	
Elevation:	Detector: mini-Rae 2000	Drilling Method: H.S. Augers	Sampling Method: Grab
Gravel Pack: silica sand 17'-22'		Seal: bentonite 12'-17'	Grout: cement-bentonite 2'-12'
Casing Type: PVC	Diameter: 2"	Length: 20.5'	Hole Diameter: 8"
Screen Type: PVC	Slot: 0.020	Diameter: 2"	Length: 1.5'
		Total Depth: 22'	Depth to Liquid: ~13'
		Depth to Water: ~13'	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0				
					2				
					4				
					6				
					8		SL	clayey fine sand, dark brown, no stain until 14', moist @ 10', wet @ 13'	
			no		10				
					12				
					14				
			yes		16		SW	medium to coarse sand, stain/odor, wet	
			↓		18				
					20				
					22				
					24			TD 22' bgs	
					26				
					28				
					30				

Location Map:

SEAS 17



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SVE19	Project:	UPRR 53 PanAm J #1
Date:	8/27/12	Project Number:	KMG09458
Logged By:	Anger Verbonitz	Drilled By:	Site Services
Elevation:		Drilling Method:	H.S. Augers
Detector:	mini-Rae 2000	Sampling Method:	Grab
Gravel Pack:	silica sand 3'-9.5'	Seal:	bentonite 0'-3'
Casing Type:	PVC	Hole Diameter:	8"
Screen Type:	PVC	Length:	4.5'
Slot:	0.0	Total Depth:	9.5'
Diameter:	2"	Depth to Liquid:	
Length:	5'	Depth to Water:	dry

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry		no		0				stickup
					2			clayey fine sand, dark brown, no stain/odor, dry	
					4		SC		
					6				
					8				
					10				
					12			TD 9.5' bgs	
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				