Appendix E

Boring Logs and Monitoring Well Construction Diagrams

Boring Logs

SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B1 Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1200	0-5	60	5.1	11.4	0-12		uncon	SP	f/m/c	dry	qtz	10YR 5/ 2	1	grayish brown to very dark greyish brown to pale brown to yellowish brown, piney odor 12-22" strong, no staining on inside core but minor staining outside of core, organics and sand sized quartz grading into ~ 12" layer of silty sand with burnt wood pieces then grading into loose silty sand to semi-consolidated silty sand the last ~ 5" of core
												lithics			
				23.5	39.4	12-22		uncon	SM	f/m	dry	qtz	10YR 3/ 2		
												lithics			
				16.5	8	22-31		uncon	SM	f/m	moist	qtz	10YR 6/ 3		
						31-36	1	semi-con	SM	f/m	moist	lithics	10YR 6/ 6		
							1.5								

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B2 Lithologic Description										
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1240	0-5	68	6.4	19.2	0-12		uncon	SP	f/m/c	dry	qtz	10YR	5/ 2	1	grayish brown to very dark greyish brown to pale brown to yellowish brown, piney odor 12-16" low odor, no staining on inside core but minor staining outside of core, organics and sand sized quartz grading into ~ 4" layer of silty sand with burnt wood pieces then grading into loose silty sand to semi-consolidated silty sand the last ~ 16" of core
												lithics				
				13.4	21	12-16		uncon	SM	f/m	dry	qtz	10YR	3/ 2		
												lithics				
				3	19	16-24		uncon	SM	f/m	moist	qtz	10YR	6/ 3		
						24-40	1	semi-con	SM	f/m	moist	lithics	10YR	6/ 6		
							1.5									

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B3 Lithologic Description										
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1300	0-5	80	1.3	7.9	0-12		uncon	SP	f/m/c	dry	qtz	10YR	5/ 2	1	grayish brown to very dark greyish brown to yellowish brown to pale brown, faint piney odor 12-19", no staining on inside core but minor staining outside of core, organics and sand sized quartz grading into ~ 7" layer of silty sand with burnt wood pieces then grading into loose silty sand to semi-consolidated silty sand the last ~ 7" of core
												lithics				
				88.4	30.4	12-19		uncon	SM	f/m	dry	qtz	10YR	3/ 2		
												lithics				
				11.3	7.8	19-41		uncon	SM	f/m	moist	qtz	10YR	6/ 6		
				5.5	7.9	41-48	1	semi-con	SM	f/m	moist	lithics	10YR	6/ 3		
							1.5									

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B4 Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1315	0-5	70	1.1	5.7	0-10		uncon	SP	f/m/c	dry	qtz	10YR 5/ 2	1	grayish brown to pale brown to brownish yellow, no odor, organics and sands grading into loose silty sand
												lithics			
				1	6	10-16		uncon	SM	f/m	dry	qtz	10YR 6/ 3		
												lithics			
						16-42		uncon	SM	f/m	moist	qtz	10YR 6/ 6		
												lithics			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B5 Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1340	0-5	60	1.6	11.4	0-10		uncon	SP	f/m/c	dry	qtz	10YR 5/ 2	1	grayish brown to pale brown to brownish yellow, no odor, organics and sands grading into loose silty sand
												lithics			
				0.8	11.9	10-24		uncon	SM	f/m	dry	qtz	10YR 6/ 3		
												lithics			
						24-36		uncon	SM	f/m	moist	qtz	10YR 6/ 6		
												lithics			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B6 Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1400	0-5	70	3.7	12.8	0-12		uncon	SP	f/m/c	dry	qtz	10YR 5/ 2	1	grayish brown to pale brown to brownish yellow, no odor, organics and sands grading into loose silty sand
												lithics			
				0.8	12.8	12-22		uncon	SM	f/m	dry	qtz	10YR 6/ 3		
												lithics			
						22-42		uncon	SM	f/m	moist	qtz	10YR 6/ 6		
												lithics			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B7 Lithologic Description									
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1400	0-5	70	0.3	11.8	0-10		uncon	**SP**	f/m/c	dry	qtz	10YR 5/ 2	1	grayish brown to pale brown to brownish yellow, no odor, organics and sands grading into loose silty sand
												lithics			
				0.3	11.8	10-22		uncon	**SM**	f/m	dry	qtz	10YR 6/ 3		
												lithics			
						22-42		uncon	**SM**	f/m	moist	qtz	10YR 6/ 6		
												lithics			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		B8 Lithologic Description										
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1300	0-5	73			0-12		uncon	SP	f/m/c	dry	qtz	10YR	5/ 2	1	grayish brown to very dark greyish brown to pale brown to brownish yellow, faint piney odor 12-17", no staining on inside core but minor staining outside of core, organics and sand sized quartz grading into ~ 5" layer of silty sand with burnt wood pieces then grading into loose silty sand to semi-consolidated silty sand the last ~ 24" of core
												lithics				
				59.3	88.8	12-17		uncon	SM	f/m	dry	qtz	10YR	3/ 2		
												lithics				
						17-26		uncon	SM	f/m	moist	qtz	10YR	6/ 3		
						26-44	2	semi-con	SM	f/m	moist	lithics	10YR	6/ 6		

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BOREHOLE LOG

BOREHOLE NUMBER: SA-29

PAGE NO. 1 OF 1

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic with 6.5 inch bit.
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 9/21/2011 DATE COMPLETED: 9/21/2011

TOTAL DEPTH: 31feet
NORTHING: 253027
EASTING: 2659984
SURFACE ELEV.: 179.4 ft
INITIAL WATER LEVEL: 10.37 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID/FID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				thin soil cover over asphalt		*land surface*
						hand augered
5	10:45	3-8	60%	**organic material to sands** 0-12" black organic material 12-22" black organic material w/ dark brown sand size quartz grains 22-36" dark brown, med to fine sand sized quartz, semi-sorted, semi-rounded	highest reading 695 ppm	
10	11:10	8-13	73%	**sand** 0-44" brown, med sand sized quartz, semi-sorted, semi-rounded entire core unconsolidated, wet, with odor	highest reading 1743 ppm	
15	11:42	13-18	60%	**sand** 0-36" light brown to brown, medium to fine sand sized quartz grains with minor lithics entire core unconsolidated, wet, with odor	highest reading 149 ppm	0% recovery on first try
20	12:00	18-23	60%	**silty sand to sand** 0-16" dark brown fine sand sized quartz grains, semi-sorted, semi-rounded, mixed with some silts, semi-consolidated 16-36" brown, med sand sized quartz grains, semi-sorted, semi-rounded, unconsolidated	highest reading 14.74 ppm	
25	12:30	23-28	80%	**sand** 0-48" tan brown to tan, med to fine sand sized quartz grains, rounded and sorted entire core wet, unconsolidated, with strong odor	highest reading 122 ppm	
30	13:04	28-31	92%	**sand to sandy clay** 0-24" brown, fine sand sized quartz grains, sorted, rounded, unconsolidated 24-33" blue-green brown clay/sand mixture, visible grains semi-sorted, semi-rounded, fine sand sized quartz, stiff, consolidated	highest reading 380 ppm	drilling terminated @ 31 FT BLS

BOREHOLE LOG

BOREHOLE NUMBER: SA-30

PAGE NO. 1 OF 1

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainsville, GA
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic with 6.5 inch bit.
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~75°F
DATE BEGUN: 9/22/2011 DATE COMPLETED: 9/22/2011

TOTAL DEPTH: 29 feet
NORTHING: 253009
EASTING: 2659837
SURFACE ELEV.: 179.6 ft
INITIAL WATER LEVEL: 9.68 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID/FID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				thin soil cover over asphalt		*land surface*
						hand augered
5	08:00	3-8	90%	**organic material to sand** 0-18" black organic material w/sand sized glass fragment, angular 18-32" black organic material w/ dark brown sand size quartz grains, semi-sorted, semi-rounded, dry, unconsolidated 32-54" brown, sand sized quartz grains, semi sorted , semi-rounded, wet, unconsolidated, odor 22-36" dark brown, med to fine sand sized quartz, semi-sorted, semi-rounded, wet, odor, unconsolidated	highest reading 14.21 ppm	
10	08:25	8-13	80%	**sand** 0-24" brown, med sand sized quartz grains, semi-sorted, semi-rounded, with minor lithics, wet, strong odor, unconsolidated 24-48" dark brown, fine sand sized quartz, semi-rounded to angular, sorted, stiff and very blocky, slightly moist and crumbly	highest reading 500 ppm	
15	08:50	13-18	80%	**silty sand to sand to silty sand** 0-12" brown, medium to fine sand sized quartz grains with minor silt, sorted, semi-rounded, semi-consolidated but not ropey, wet, strong odor 12-36" brown, medium to fine sand sized quartz grains, sorted, rounded, unconsolidated, wet, strong odor 36-48" brown, medium to fine sand sized quartz grains, poorly sorted, semi-rounded,semi-consolidated, stiff but not ropey, wet, strong odor	highest reading 156 ppm	
20	09:15	18-23	80%	**silty sand to sand** 0-12" brown med to fine sand sized quartz grains, semi-sorted, semi-rounded, mixed with some silts, semi-consolidated but not formable, wet, strong odor 12-48" brown, fine sand sized quartz grains, semi-sorted, semi-rounded, with minor lithics, unconsolidated, wet, strong odor	highest reading 84.44 ppm	
25	09:49	23-28	80%	**silty sand** 0-49" brown to light grey fine sand sized quartz grains, rounded and sorted, with silts, consolidated but not ropey, wet, strong odor	highest reading 1302 ppm	
30	10:13	28-31	100%	**sandy clay** 0-36" blue green grey, fine sand sized quartz grains with clays, consolidated, ropey, wet, strong odor	highest reading 534 ppm	drilling terminated @ 29 FT BLS

BOREHOLE LOG

BOREHOLE NUMBER: SA-31

PAGE NO. 1 OF 1

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic with 6.5 inch bit.
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Sunny, ~75°F
DATE BEGUN: 9/26/2011 DATE COMPLETED: 9/26/2011

TOTAL DEPTH: 26 feet
NORTHING: 252108
EASTING: 2659398
SURFACE ELEV.: 184.5
INITIAL WATER LEVEL: 13.28 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID/FID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				asphalt and fill		*land surface*
						hand augered
5	10:13	3-8	78%	**sand to silty sand** 0-24" medium sand sized quartz grains, with minor lithics 24-48" medium to fine quartz grains, with minor lithics and silt entire core light brown with tan brown blotching, semi-sorted, semi-rounded, unconsolidated, wet, no odor	highest reading 16.7 ppm	
10	10:40	8-13	100%	**clayey sand to silty clayey sand** 0-24" fine sand sized quartz grains with clays, formable, ropey 24-60" med and fine sand sized quartz grains with silt and clay, formable, somewhat ropey entire core light greyish brown, semi rounded, semi sorted, no odor, wet, consolidated	highest reading 3.0 ppm	
15	10:59	13-18	100%	**clayey sand to silty sand** 0-30" med to fine sand sized quartz grains, with minor lithics and clay, ropey 30 -60" med to fine sand sized grains, with minor lithics and silt, unconsolidated entire core light greyish brown, wet, odor, semi sorted, semi rounded	highest reading 0 ppm	
20	11:15	18-23	100%	**silty sand to sand** 0-46" med to fine sand sized quartz grain, semi rounded, semi sorted with minor lithics and silt, semi consolidated 46-60" med to fine sand sized quartz grains with minor lithics, semi angular to semi rounded, semi sorted unconsolidated entire core light greyish brown, odor, wet	highest reading FID/PID 3.0/5.6 ppm	
25	11:35	23-26	100%	**clayey sand to sandy clay** 0-12" light grey brown with blue tint, mainly fine sand sized quartz grains, with clay 12-36" bluish green, clay with fine sand sized quartz grains with clays, stiff entire core consolidated, with semi rounded to angular grains, strong odor, wet	highest reading FID/PID 14.0/16.4 ppm	drilling terminated @ 26 FT BLS
30						

BOREHOLE LOG

BOREHOLE NUMBER: SA-32

PAGE NO. 1 OF 1

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainsville, GA
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic with 6.5 inch bit.
SAMPLING METHOD: Continuous logging with 4.5 inch hollow stem
LOGGED BY: Heath McGregor WEATHER: Sunny, ~75°F
DATE BEGUN: 9/20/2011 DATE COMPLETED: 9/20/2011

TOTAL DEPTH: 26'
NORTHING: 252598
EASTING: 2659404
SURFACE ELEV.: 182.2
INITIAL WATER LEVEL: 15.05 Ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID/FID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				vegetation and fill		*land surface*
						hand augered
5	16:05	3-8	80%	**sand** 0-6" brown 6-24" tan brown 24-48" light brown entire core mainly med to fine sand sized quartz grains, semi-sorted, semi-rounded, unconsolidated, wet, no odor	highest reading 5 ppm	
10	16:38	8-13	100%	**clayey sand to sand** 0-48" light sand sized quartz grains, semi-sorted with clays, stiff, formable, wet, low odor 48-60" brown, sand sized quartz grains with lithics, unconsolidated, wet, low odor	highest reading 0 ppm	
15	16:57	13-18	80%	**sand** 0-48" brown, sand sized quartz grains, sorted, semi-rounded, with lithics, unconsolidated, wet low odor	highest reading 5 ppm	
20	17:23	18-23	80%	**sand to silty sand** 0-18"light brown to brown, fine sand sized quartz grain with lithics, unconsolidated wet, low odor 18-48" brownish grey, fine sand sized quartz grains with some silt, semi-consolidated, wet, odor	highest reading 5 ppm	
25	17:44	23-26	100%	**silty sand to sandy clay** 0-20" light brown, fine sand sized quartz grains with silt 20-36" light brown grey with bluish green streaks, fine sand sized quartz grains with clays, wet	no reading	battery dead drilling terminated @ 26 FT BLS
30						

BOREHOLE LOG

BOREHOLE NUMBER: SA-33

PAGE NO. 1 OF 1

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, GA
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic with 6.5 inch bit.
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Sunny, ~75°F
DATE BEGUN: 9/20/2011 DATE COMPLETED: 9/20/2011

TOTAL DEPTH: 25 feet
NORTHING: 252880
EASTING: 2659386
SURFACE ELEV.: 182.5 ft
INITIAL WATER LEVEL: 16.41 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID/FID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				vegetation and fill		*land surface*
						hand augered
5	10:02	3-8	60%	**sand** 0-6" dark brown 6-18" light brown 18-30" tan brown 30-36" white entire core mainly med to fine sand sized quartz with minor lithics, semi-sorted, rounded, unconsolidated, wet, no odor	highest reading 14 ppm	
10	10:35	8-13	60%	**silty sand to clayey sand** 0-20" tan/brown grey, med sand sized quartz grains, rounded, with silt, wet, low odor, semi-consolidated 20-39" grey brown, fine sand sized quartz grains with clay, rounded, sorted, stiff, formable, wet, low odor	highest reading 14.44 ppm	
15	11:00	13-18	87%	**silty sand** 0-24" light brown 24-35" light brown grey 35-53" brown grey entire core sand sized quartz grains, sorted, semi-rounded with silt, unformable but malleable, wet, strong odor	highest reading 160 ppm	
20	11:33	18-23	100%	**silty sand** 0-60" brown grey, med to fine sand sized quartz grains, semi-sorted, semi-rounded to angular, mixed with silts, stiff, slightly formable, malleable, wet, strong odor	highest reading 144 ppm	
25	12:00	23-25	100%	**sandy clay** 0-24" brown with bluish green streaks, fine sand sized quartz grains , sorted, semi-rounded, with clays, stiff, formable, ropey, wet, odor	highest reading 34 ppm	drilling terminated @ 25 FT BLS
30						

SOIL BORING INFORMATION LOG

Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
1	0855	5-10	100	306	189	0-24	3	con	SP	f/m	moist	qtz	10YR	2/ 1	4	black to very dark greyish brown to light brownish grey, pine odor throughout, first 30 " of core pine tar, wood pieces mixed with sand sized quartz grading into semi consolidated then unconsolidated minor silty sand to sand with sporadic minor tar, brick debris encountered 24-32"
						24-32	0.5	semi-con	SM	f/m	moist	qtz	10YR	3/ 2	4	
						32-60	0.06	uncon	SP	vf/f	moist	qtz	10YR	6/ 2	4	
										med						
	0927	10-15	100	98	53.4	0-7	1	uncon	SM	f/m	wet	qtz	10YR	3/ 2	4	black to light greyish brown, low pine odor throughout, first 7" of core impacted with tar and wood debris, followed by clay/sand mixed layer with clay smelling like burnt wood/pine odor. Last 36" of core grading into saturated to wet sand with sporadic pieces of clay noted above
						7-24	1	uncon	SP	f/m	sat	qtz	10YR	6/ 2	4	
								con	SC				5Y	2.5/ 1	4	
						24-60	1.5	uncon	SP	f/m	wet	qtz	10YR	6/ 2	4	
	1008	15-20	100	4.4	81.1	0-18	0	uncon	SP	vf/f	sat	qtz	10YR	7/ 3	1	very pale brown to light brownish grey, campfire smell throughout, first 18" of core saturated washed sand with minor lithics, rest of core silty sand
										med		lithics				
						18-60	0.25	uncon	SM	vf/f	wet	qtz	10YR	6/ 2	1	
										f/m		lithics				

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1142	20-23	100	7.2	30.4	0-36	2	semi-con	SM	f/m	moist	qtz	10YR 4/ 2	1	dark greyish brown, campfire smell throughout, entire core clayey/silty sand will form slightly role
							2.5	semi-con	SM	vf		lithics			
	1150	23-26	100	3.7	442	0-36	2.5	con	SC	vf/f	moist	qtz	10YR 4/ 2	1	dark greyish brown to greyish green, campfire smell throughout, first 6" silty/clayey sand grading into sandy clay, then last 12" of core alternating from a light olive gray clayey sand back to greyish green sandy clay NOTE: Surficial/UH interface ~ 24-27 ft BGS
							2		CL				5GY 5/ 2	1	
													5Y 6/ 2	1	
	1208	26-30	100	11.2	208	0-7	1.5	con	SC	vf/f	moist	qtz	5GY 5/ 2	1	greyish green to light olive grey, campfire smell throughout, first 7" greyish green sandy clay grading into silty sand to clayey gravel, grading into silty/clayey sand, pea-sized to gravel sized phosphatic nodules and quartz,phosphatic, dolomitic sandstone from 20" to 48" NOTE: clayey gravel interval core is beginning to oxidize
											dry	lithics	5Y 6/ 2	1	
						7-20	1	semi-con	SM	vf/f		qtz	5Y 6/ 2	1	
										med		lithics			
												phos nod			
						20-32	1	uncon	GC	vf/f		qtz	5Y 6/ 2	1	
										grav		lithics			
												phos nod			
						32-48	1	semi-con	SM	vf/f		qtz	5Y 6/ 2	1	
										f/m/c		lithics			
										pebb		phos nod			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1230	30-35	100	4.8	24.6	0-60	0.25	semi-con	**SM**	f/m/c		qtz	5Y 7/ 2	1	light gray, low odor not campfire smell, brown staining noted top section of outside core, silty/clayey sand with pea-sized to gravel sized quartz,phosphatic,dolomitic sandstone, heavy phosphate throughout, noted fossilized teeth
										vf/f		lithics			
										pebb		phos nod			
										grav					
	1245	35-40	100	0.3	30.6	0-28	0.06	uncon	**GM**	f/m/c	wet	qtz	5Y 7/ 3	1	pale yellow to light olive grey, low odor, clayey/gravelly/silty sand grading into clayey sand. Dolostone with fossil imprints noted in top 0-28" of core
										vf/f		lithics			
										pebb		phos nod			
										grav		fossil			
						28-60	0.5	semi-con	**SC**	f/m/c	moist	qtz	5Y 6/ 2	1	
										vf/f		lithics			
												phos nod			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1415	40-45	100	1.4	50.4	0-60	1	semi-con	**SM**	f/m/c	moist	qtz	5Y 6/ 2	1	light olive gray with light greyish green, low odor (mothball?) clayey/silty sand to silty/clayey sand, light greyish green mottling noted top part of core, brown staining noted on outside of core
										vf		lithics	5GY 6/ 2	1	
												phos nod			
	1455	45-50	100	0.3	38	0-60	1.5	semi-con	**SC**	f/m	moist	qtz	5Y 6/ 2	1	light olive gray, low odor (mothball?), mainly fine/med with some very fine,silty/clayey sand
										vf		lithics			
												phos nod			
	1510	50-55	100	0.4	286	0-60	2	semi-con	**SM**	vf/f	moist	qtz	5Y 6/ 2	1	light olive gray, low odor (mothball?), mainly fine/very fine with some med,silty/clayey sand
							2.5			med		lithics			
												phos nod			
	1530	55-60	100	0.3	13.3	0-60	2.5	semi-con	**SM**	f/m/c	moist	qtz	2.5Y 6/ 2	1	light brownish grey, low odor, mainly fine/med minor coarse clayey/silty sand
							3					lithics			
												phos nod			

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1600	60-65	100	0	11.5	0-32	1	semi-con	**SM**	f/m/c	moist	qtz	2.5Y 6/ 2	1	light brownish grey to grayish olive with yellowish brown mottling, no odor, silty/clayey sand grading into grayish olive clayey sand with pieces of yellowish brown clay mottling
												lithics			
												phos nod			
						32-60	1.5	semi-con	**SC**	vf/f	dry	qtz	10Y 5/ 2	1	
										f/m		lithics	10YR 5/ 4	1	
												phos nod			
							3.5	con	**SC**	vf/f	dry	qtz	10Y 5/ 2	1	
												lithics	10YR 5/ 4	1	
															BORING TERMINATED

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
8	1418	5-10	60	0	0	0-22		uncon	SP	f/m	moist	qtz	5YR 6/ 3	1	light reddish brown to dark reddish brown to very dark brown, earthy odor,mainly med w/minor fines
												lithics			
				0	0	22-25	0.06	uncon	SP	f/m	moist	qtz	7.5YR 2.5/ 2		
												lithics			
				0	0	25-36	0.03	uncon	SP	f/m	moist	qtz	7.5YR 2.5/ 1		
8	1440	10-15	50	0	50	0-30	0.02	uncon	SP	f/m	wet	qtz	10YR 6/ 3	2	pale brown, no odor, light brown color on outside of core, mainly med w/minor fines
8	1511	15-20	80	0	0	0-48		uncon	SP	vf/f	wet	qtz	10YR 8/ 1	1	white, no odor, very loose mainly fine w/some very fine, washed sands
												lithics			
8	1524	20-25	80	3.8	2.5	0-48	0.03	uncon	SP	vf/f	wet	qtz	10YR 7/ 3	1	very pale brown, mainly fine/ minor lithics, very loose, minor silt, odor
												lithics			
8	1540	25-27	100	1.4	1.4	0-24	0.06	semi-con	SM	vf/f	sat	qtz	7.5YR 6/ 3	1	light brown to pinkish grey to light pinkish brown, strong odor,silty sands grading into sands grading into clayey sands/sandy clays, some mottling noted, 2% NAPL w/dye test, clayey layer oxydizing
8	1600	27-30	100	0.9	2	0-16	0.03	uncon	SP	vf/f	sat	qtz	7.5YR 7/ 2	2	
8	1600	27-30		3.9	173	16-36	2.5	con	SC	vf/f	moist	qtz	2.5Y 6/ 4		
															BORING TERMINATED

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SOIL BORING INFORMATION LOG

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)		Lithologic Description									
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
9	1100	5-10	80	425	79.1	0-48	0.13	uncon	**SP**	f/m	wet	qtz	7.5YR 3/ 3	3	dark brown, strong odor, very loose, wet mainly med sized grains, staining on sleeve and gloves, will form ball minor silt, sheen visible on water Note: burnt wood and pine smell ~2 -3 ft BGS, dye test confirms
	1240	10-15	100	129	414	0-16	3	semi-con	**SM**	f/m/c	wet	qtz	7.5YR 2.5/ 2	3	dark brown to brown to dark greyish brown, strong odor throughout, semi consolidated grading into consolidated silty to clayey/silty sands, minor clay will roll somewhat but not string towards botttom of core when wetted, visible pine tar on gloves and core sleeve, sheen on water, minor strings and speckling of pine tar visible as core dry in exposed air
						16-24	4.5	con	**SM**	f/m	moist	qtz	7.5YR 4/ 2		
						24-60	5	con	**SM**	f/m	moist	qtz	10YR 4/ 2		
															BORING TERMINATED

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SOIL BORING INFORMATION LOG

Soil Boring 2 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	0848	29-35	100	0.5	157.8	0-12	1	con	**SC**	vf/f	wet	qtz	5GY	5/ 2	1	light grey to grey, campfire smell throughout, bottom of greyish green sandy clay boundary 0-12" grading into silty/clayey sand grading clayey/silty sand w/minor sand sized coarse phosphate grains
						12-32	0.5	semi-con	**SC**	f/m	sat	qtz	10YR	7/ 1	1	
						32-60	1	semi-con	**SM**	f/m	wet	qtz	10YR	6/ 1	1	
												lithics				
												phos nod				
	0920	35-40	100	0	251	0-36	0.5	uncon	**SC**	f/m/c	wet	qtz	5Y	5/ 3	1	light olive gray to olive, campfire smell throughout, silty/clayey sand with indurated gravel sized quartz/phosphatic/dolomitic sandstone, some greyish green clay mottling, grading into clayey/silty sand to silty sand
									GC	grav		lithics				
												phos nod				
						36-60	0.5	uncon	**SM**	f/m	wet	qtz	5Y	6/ 2	1	
												lithics				
												phos nod				
	1010	40-45	80	1.4	51.9	0-48	0.02	uncon	**SM**	f/m/c	wet	qtz	5Y	6/ 2	1	light olive gray, campfire smell throughout, gravelly/clayey/silty sand with indurated pea/gravel sized quartz/phosphatic/dolomitic sandstone
									GM			lithics				
												phos nod				

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SOIL BORING INFORMATION LOG

Soil Boring 2 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
	1032	45-50	100	1.5	799.9	0-36	1	semi-con	SC	vf/f	moist	qtz	5Y 7/ 1	1	light grey, campfire smell throughout, clayey/silty sand grading into more silty/clayey sands w/minor med sand sized grains 0"-36", 36"-48" heavy gravelly layer with semi-rounded quartz,phosphatic, dolomitic sandstone, some fossil imprinting noted, grading back into vf/f silty/clayey sand
												lithics			
												phos nod			
						36-48	1	uncon	GC	vf/f	moist	qtz			
												lithics			
						48-60	1	semi-con	SC	vf/f	moist	phos nod			
	1050	50-55	100	4.7	255.3	0-60	1.5	semi-con	SM	vf/f	moist	qtz	5Y 7/ 1	1	light grey ,campfire smell throughout, clayey/silty sand 0"-24" grading into clayey silty sand with gravel sized quartz,phosphatic, dolomitic sandstone and discontinuous broken lenses of greyish green clay
												lithics			
												phos nod			
	1128	55-60	100	4.7	202.2	0-12	1.5	semi-con	SM	f/m	moist	qtz	5Y 6/ 2	1	light olive grey, low odor, clayey/silty sand, w/minor broken pieces of greyish green clay, some gravel sized phosphate as well, core grades into more silty/clayey sand towards end of core
										vf/f		lithics			
												phos nod			
						12-60	2	semi-con	SM	vf/f	moist	qtz			
							2.5		SC	f/m		lithics			
												phos nod			

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SOIL BORING INFORMATION LOG

Soil Boring 2 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1155	60-65	100	0.1	761	0-32	2	con	**SM**	f/m/c	moist	qtz	2.5Y 6/ 2	1	light brownish grey to grayish brown, low odor, clayey/silty sand mainly fine/med sand sized grains w/minor coarse grading into clayey sands, grayish brown mottling last 36" of core
												lithics			
												phos nod			
						32-60	1.5	con	**SC**	vf/f	moist	qtz	2.5Y 5/ 2	1	
												lithics			
												phos nod			
	1220	65-70	100	0	232	0-60	2	con	**CL**	vf/f	moist	qtz	5GY 5/ 2	1	greyish green, low odor, entire core sandy clay with some phophatic grains in the first 12"
												phos nod			
															TERMINATED BORING Top of UH/LH ~70 ftBGS

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Soil Boring 2 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												NAPL Extent	comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color				
2	1120	5-10	80	207	10412	0-24	0.13	uncon	SP	f/m	moist	qtz	10YR	3/ 1		4	very dark greyish to dark greyish brown, strong odor throughout (piney), sand interupted from 24"-32" w/clay mixed with burnt material then 32"-48" silty sand, tar visible throughout core, sheen on water, staining on gloves and core sleeve
						24-32			CH		wet	qtz					
						32-48		semi-con	SM	f/m	wet	qtz	10YR	4/ 2		4	
	1215	10-15	87	197	291.6	0-16	0.22	semi-con	SM	f/m	sat	qtz	10YR	4/ 3		4	brown to pale brown to light brownish grey strong odor throughout (piney grading to campfire smell), silty sandgrading into very stiff clayey sand then grading back into a silty/clayey sand, visible pine tar throughout as layers and lenses, sheen on water, staining on gloves and core sleeve
						16-36	4.5	con	SC	f/m	moist	qtz	10YR	7/ 3		4	
						36-55	3	semi-con	SC	f/m	wet	qtz	10YR	6/ 2		4	
	1255	15-20	80	23	312	0-24	0.13	uncon	SM	f/m	wet	qtz	10YR	5/ 2		4	grayish brown to very pale brown, campfire smell odor, clayey/silty sand grading into washed sands, tar visible 0-24" then not visible to end of core
												lithics					
						24-48	0.03	uncon	SP	f/m	wet	qtz	10YR	7/ 3		1	
												lithics					
	1555	20-25	100	3.9	80.5	0-48	0.5	uncon	SP	f/m	wet	qtz	7.5YR	5/ 2		1	brown to dark brown, strong campfire smell throughout, sand grading into silty/sand w/minor clay, no staining
						48-60	1	semi-con	SM	f/m	wet	qtz	7.5YR	3/ 3		1	
	1630	25-29	100	9.1	29.5	0-32	0.25	uncon	SM	f/m	wet	qtz	10YR	7/ 2		1	light grey grading into greyish green, campfire smell throughout, silty sand w/minor clay grading into sandy clay, no visible tar, clay layer/surficial-UH boundary ~27-30
						32-48	2.5	con	SC	f	moist	qtz	5GY	5/ 2		1	

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SOIL BORING INFORMATION LOG

SB# 3 3A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1036	29-35	100	4.2	1387	0-24	1	semi-con	GC	f/m/c	moist	qtz	5Y	6/ 2	1	light olive grey to olive grey, campfire smell throughout, semi consolidated 0-24 grading into unconsolidated, rounded pieces phosphate and quartz/phosphatic/dolomitic sandstone, silty/clayey gravelly sand throughout
						24-60	0.5	uncon		pebb	wet	phos nod	5Y	5/ 2		
												fossil				
												lithics				
	1055	35-40	100	3.5	135	0-60	0.5	uncon	SC	f/m/c	wet	qtz	5Y	7/ 2	1	light grey to light olive grey, low odor throughout, unconsolidated 0-55 grading into semi consolidated, silty/clayey sand throughout more clayey last 6"
							1	semi-con		vf/f	moist	phos nod	5Y	6/ 2		
												lithics				
	1115	40-45	100	9.7	2582	0-60	1	semi-con	SC	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey with olive mottling, low odor throughout, slight campfire smell last 20", first 30" heavy with phosphate pebble sized grains grading into more fine grained minor coarse last 30", silty/clayey sand
							0.5	uncon		f/m/c	wet	phos nod	5Y	5/ 3	1	
										pebb		lithics				
	1145	45-50	100	10.9	1992	0-50	0.5	uncon	SM	vf/f	wet	qtz	5Y	6/ 2	1	light olive grey, campfire smell throughout, semi consolidated 0-50" with pieces of greyish green sandy clay first 12" of core grading into consolidated last 10" of core, clayey/silty sand grading into silty/clayey sand
							1			med		phos nod				
										coarse		lithics				
						50-60	2.5	con	SC	vf/f	dry	qtz	5Y	6/ 2	1	
										f/m		phos nod				
												lithics				

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SOIL BORING INFORMATION LOG

SB# 3 3A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1300	50-55	100	15.3	899	0-60	0.5	uncon	SC	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey, campfire smell throughout, silty/clayey sand
							1	semi-con		f/m/c		phos nod				
												lithics				
	1315	55-60	100	8	2049	0-60	1	semi-con	SM	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey to light olive brown, campfire smell throughout, clayey/silty sand
										f/m/c		phos nod	2.5Y	5/ 3		
												lithics				
	1335	60-65	100	12.6	2193	0-18	1	semi-con	SM	vf/f	moist	qtz	2.5Y	5/ 3	1	light olive brown to gray to olive yellow mixed with dark greyish green, campfire smell throughout clayey/silty sand grading into clayey sand and sandy clay
										med		phos nod				
												lithics				
						18-34	2	semi-con	SM	f/m	dry	qtz	2.5Y	5/ 1	1	
								con		coarse		phos nod				
										f		fossil				
						34-60	3	con	SC	vf/f	dry	qtz	5Y	6/ 6	1	
							3.5					phos nod	5GY	4/ 2		
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB# 3 3A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
3	1230	5-10	80	433	125	0-32	0.13	uncon	SP	f/m	moist	qtz	10YR	5/ 3	4	brown, strong odor, visible pinetar first 12" of core, grading into loose sands, mainly fine/w minor silt then grading to semi consolidated silty sand grading into consolidated silty/clayey sand with no visible tar noted, will roll when wetted
						32-48	< 5	semi-con	SM	f	dry	qtz	10YR	4/ 3	1	
								con	SC		moist					
	1300	10-15	60	21.2	78.7	0-36	4.5	con	SC	f/m	moist	qtz	10YR	4/ 2	1	brown, strong odor, consolidated silty/clayey sand, no visible tar noted, blocky, will roll when wetted
												lithics				
	1425	15-20	53	3.8	445	0-16	0.03	semi-con	SM	f	wet	qtz	10YR	5/ 3	1	brown, campfire smell, semi consolidated silty sand grading into washed sands back into silty sand
						16-32	0	uncon	SP	vf/f	sat	qtz				
	1435	20-25	100	2.7	402	0-60	0.16	uncon	SM	vf/f	sat	qtz	10YR	5/ 3	1	brown, campfire smell, minor lithics, semi consolidated silty sand
												lithics				
	1453	25-29	100	4	272	0-24	0.22	semi-con	SM	vf/f	sat	qtz	10YR	4/ 3	1	brown to greyish green, campfire smell, minor lithics, semi consolidated silty sand grading to very sandy clay to clayey sand
												lithics				
						24-48	5	con	CL	vf/f	moist	qtz	5GY	4/ 2	1	
									SC							
																TERMINATED BORING

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SOIL BORING INFORMATION LOG

SB#4 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
4	0930	5-10	100	227	186	0-24	0	uncon	**SP**	f/m	moist	qtz	7.5YR 2.5/ 1	4	reddish black to light brown to dark brown, strong odor, visible pine tar, residual on gloves and micro roots 0-24" then sands w/minor silt grading into clayey/silty sand
												lithics			
						24-32	0.06	uncon	**SP**	f/m	moist	qtz	7.5YR 6/ 3	2	
												lithics			
						32-60	3.5	semi-con	**SM**	f/m	dry	qtz	7.5YR 3/ 2	2	
															BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB#4A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
4A	1230	5-10	60	227	186	0-24		uncon	**SP**	f/m	moist	qtz	7.5YR 2.5/ 1	4	reddish black to light brown, strong odor, visible pine tar 0-24", residual on gloves, sand
						24-36		uncon	**SP**	f/m	moist	qtz	7.5YR 6/ 3	2	
4A	1415	10-15	80	215	455	0-29		uncon	**SP**	f/m	sat	qtz	10YR 5/ 3	4	brown, strong odor, visible tar starting at 27" and continued throughout rest of core, residual on gloves, sand to silty sand
						29-48		semi-con	**SM**	f/m	wet	qtz		4	
															BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB #5 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
5	940	5-10	60	0.9	9.5	0-24	0	uncon	SP	f/m	moist	qtz	5YR	3/ 2	1	dark reddish brown to dark brown, no odor, minor staining on sleeve at top and gloves very top, heavy organic material minor silt
						24-36	2	semi-con		f/m	moist	qtz	7.5YR	3/ 3	1	
	1005	10-15	70	0.1	10	0-42	2	semi-con	SM		sat		7.5YR	5/ 2	1	brown to dark brown, no odor, mainly clayey/silty sand clay mix at top of core, minor clay at bottom
											wet		7.5YR	3/ 3		
	1040	15-20	53	0.2	90	0-32	0.13	uncon	SP	vf/f	wet	qtz	10YR	6/ 3	1	pale brown to brown, no odor, mainly wet sands very fine to fine, minor lithics
												lithics	10YR	4/ 3	1	
	1130	20-25	90	5.6	25	0-42	1.5	semi-con	SM	vf/f	wet	qtz	10YR	4/ 3	1	brown to dark greyish green, no odor, mainly fine clayey/silty sand grading into silty/clayey sands, last 12" of core grading into sandy clay. NOTE: Surficial/UH interface ~ 24.5 -26 ftBGS
							2.5			med	moist	lithics				
							3.5		SC	vf/f	moist		5GY	4/ 2	1	
	1200	25-30	100	5.3	950	0-15	3.5	con	SC	vf/f	moist	qtz	5GY	4/ 2	1	dark greyish green to brown, low odor, mainly fine clayey/silty sands grading into silty/clayey sand, minor lithics, top 12" of core sporadic, dark greyish green, sandy clay
						15-60	1.5	semi-con	SM	vf/f	moist	lithics	10YR	4/ 3	1	
							3	con	SM	f/m	moist					
	1220	30-35	100	58.6	241	0-24	2.5	con	SC	vf/f	moist	qtz	5Y	5/ 2	1	olive grey to dark greyish green grading into light gray to light brownish gray, campfire smell throughout, clayey/silty sands with sporadic sandy clay first 24" of core grading into clean sands 24"-36", then 36"-60" clayey/silty sand with minor lithics and pieces of same lithology but cemented (that will break apart easily)
									SM	vf/f	moist	lithics	5GY	4/ 2	1	
						24-36	1.5		SP	vf/f	moist		10YR	7/ 1	1	
						36-60	0.5						10YR	6/ 2	1	

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SB #5 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1240	35-40	100	40.2	525	0-36	1	semi-con	**SC**	f/m	wet	qtz	5Y	5/ 2	1	olive grey to light greyish green, strong campfire smell throughout, silty/clayey sands throughout, heavy phosphate, last 24" contain many pebble sized fossils and oxidizing
						36-60				f		lithics	5GY	5/ 2	1	
										pebb		phos nod				
												fossil				
	1415	40-45	100	81.6	1287	0-60	0.5	uncon	**SM**	vf/f	moist	qtz	5Y	5/ 6	1	pale olive to olive, strong campfire odor, clayey/silty sand NOTE: core oxidizing
										f/m		lithics	5Y	6/ 3		
												phos nod				
	1435	45-50	100	45.6	761	0-60	0.5	semi-con	**SM**	vf/f	moist	qtz	5Y	6/ 3	1	light olive grey to pale olive, strong campfire smell throughout, mainly fine to very fine silty/clayey sand NOTE: core oxidizing
										med		lithics	5Y	6/ 2		
												phos nod				
	1453	50-55	100	75.1	3615	0-60	1	semi-con	**SC**	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey to dark to light greyish green, strong campfire smell throughout, mainly fine to very fine/ silty/clayey sand w/ broken pieces of dark reyish green sandy clay NOTE: core oxidizing
							0.5			med		lithics	5GY	6/ 2		
												phos nod	5GY	4/ 2		
	1510	55-60	100	66.3	2149	0-60	0.5	semi-con	**SM**	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey to pale olive, strong campfire smell throughout, mainly fine to very fine silty/clayey sand NOTE: core oxidizing
							1			med		lithics	5Y	6/ 3		
												phos nod				

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SB #5 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1530	60-65	100	36	319	0-24	1	semi-con	**SM**	vf/f	moist	qtz	5Y	6/ 2	1	light olive gray to grayish olive to brownish yellow, strong campfire smell throughout, silty/clayey sand first 24" with sporadic pieces dark greyish green pieces of sandy clay, last 36" mixed sandy clays to clayey sands that areolive gray and brownish yellow NOTE: first 24" of core oxidizing
										f/m		lithics				
												phos nod				
						24-60	2	con	**SC**	vf/f	dry	qtz	10YR	6/ 6	1	
							2.5	con	**SC**	vf/f	moist	phos nod	10Y	5/ 2	1	
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB#6 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	
	955	5-10	90	562	1325	0-18	1	semi-con	SP	f/m	wet	qtz	10YR	2/ 1	4	black to pale brown to brown, strong pine odor, visible pine tar, wood and brick debris 0-18", then rest of core unconsolidated sands, staining along outside of core in sand interval minor staining on core sleeve NOTE: core oxidizing
												lithics				
						18-54	0	uncon	SP	f/m	moist	qtz	10YR	6/ 3	3	
													10YR	4/ 3		
	1015	10-15	80	671	1212	0-24	3.5	con	SM	f/m	moist	qtz	10YR	5/ 3	3	brown to very pale brown, strong pine odor throughout, consolidated clayey/silty sands, staining in core throughout, staining on core sleeve and gloves NOTE: core oxidizing
						24-48							10YR	7/ 3	3	
	1045	15-20	100	24	201	0-8	3.5	con	SM	f/m	moist	qtz	10YR	7/ 3	3	very pale brown, piney odor not as strong, sheen noted on water, minor staining inside core, consolidated first 8" of core then unconsolidated and saturated rest of core, clayey/silty sand to washed sands minor silt NOTE: core oxidizing first 8"
						8-60	0	uncon	SP	vf/f	sat	lithics	10YR	7/ 3	2	
	1145	20-25	92	15.7	397	0-6	2	semi-con	SM	vf/f	moist	qtz	10YR	7/ 3	2	very pale brown to brown, piney odor present only in first 6" of core, then low campfire smell throughout, clayey/silty tight sand then unconsolidated saturated sand minor silt.
						6-55	0	uncon	SP	vf/f	sat	qtz	10YR	7/ 3	1	
												lithics	10YR	5/ 3	1	
	1230	25-30	100	224	237	0-16	0	uncon	SP	vf/f	wet	qtz	10YR	7/ 4	2	very pale brown to brown, slight piney odor and staining inside core first 10", low odor throughout rest of core, sand grading into silty sand w/minor clay
												lithics				
						16-60	1.5	semi-con	SM	vf/f	moist	qtz	10YR	5/ 3	1	
												lithics				

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SB#6 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1315	30-33	100	15.1	218	0-6	2.5	con	SM	vf/f	moist	qtz	10YR	7/ 2	1	light grey to grayish olive to brown, campfire smell throughout, clayey/silty sand mixed with sandy clay grading into sandy clay then back into clayey/silty sand mixed with sandy clay NOTE: Surficial/UH interface ~ 31-33 ftBGS, DUPLICATE COLLECTED
										med		lithics				
						6-24	3.5	con	SC	vf/f	moist	qtz	10Y	5/ 2	1	
						24-36	2.5	con	SM	vf/f	moist	qtz	10YR	5/ 3	1	
												lithics				
	1430	33-39	100	32	997	0-12	0.25	semi-con	SM	vf/f	wet	qtz	2.5Y	6/ 2	1	light brownish grey to light olive gray, campfire smell throughout, clayey/silty sand grading into clayey/silty gravelly sand, some fossils noted, some indurated material with same mineralogy
												lithics				
						12-60		uncon	GC	vf/f	wet	qtz	5Y	6/ 2	1	
										f/m		lithics				
										pebb		phos nod				
	1500	39-45	100	42.7	1209	0-60	0.5	uncon	SM	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey, strong campfire smell throughout, clayey/silty sand some med to coarse up to pebble sized phosphatic grains and nodules. NOTE: core oxidizing
										f/m		lithics				
										pebb		phos nod				
	1510	45-50	100	82	542	0-60	0.25	uncon	SM	vf/f	moist	qtz	5Y	6/ 2	1	light olive grey, strong campfire smell throughout, clayey/silty sand some med to coarse phosphatic grains and nodules NOTE: core oxidizing
										f/m		lithics				
												phos nod				

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SOIL BORING INFORMATION LOG

SB#6 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1540	50-55	100	86.6	947	0-60	1	semi-con	**SM**	vf/f		qtz	5Y	6/ 2	1	light olive grey, strong campfire smell throughout, clayey/silty silty/clayey sand, mainly fine to very fine w/minor med sized phosphatic grains NOTE: core oxidizing
										med	moist	lithics				
												phos nod				
	1600	55-60	100	104	839	0-60	1	semi-con	**SM**	vf/f	moist	qtz	5Y	6/ 3	1	pale olive, strong campfire smell throughout, clayey/silty sand heavy phosphate NOTE: core oxidizing
										med		lithics				
												phos nod				
	1628	60-65		84.8	2112	0-24	2	con	**SM**	f/m		qtz	5Y	6/ 2	1	light olive grey with light greyish green and yellowish brown, campfire smell throughout, clayey/silty sand with light greyish green pieces of sandy clay, 24-48 clayey sand with yellowish brown pieces of sandy clay, 48-60 clayey sand mixed with greyish green sandy clay
									SC	vf/f		lithics	5GY	6/ 2	1	
												phos nod				
						24-48	2	con	**SC**	vf/f		qtz	5Y	6/ 2	1	
										med		lithics	10YR	5/ 8	1	
												phos nod	5GY	6/ 2	1	
						48-60	3.5	con	**SC**	vf/f		qtz	5Y	6/ 2	1	
										f/m		lithics	5GY	6/ 2	1	
												phos nod				
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB #7 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											NAPL Extent	comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color			
7	0911	5-10	87	427	1414	0-18	1.5	semi-con	SP	f/m	moist	qtz	10YR	2/ 1	4	black to very dark grey to light brownish grey, strong pine odor throughout, visible tar blebs, staining, roots and wood debris 0-18 grading into minor tar and soil staining from 18-24, then visible staining of outside core 24-48, staining on gloves and core sleeve, sands with minor silt NOTE: core oxidizing
						18-24	2	semi-con		f/m		qtz	10YR	3/ 1	4	
										vf/f						
						24-48	0.25	uncon		vf/f		qtz	10YR	6/ 2	3	
	0942	10-15	100	694	1001	0-32	2	semi-con	SM	f/m	moist	qtz	10YR	6/ 3	3	pale brown to grayish brown, pine odor along with burnt wood smell, soil staining throughout, minor staining on gloves and sleeve, clayey/silty sand to silty sand NOTE: core oxidizing
							2.5	con		vf/f		lithics				
						32-60	1.5	semi-con		vf/f	wet	qtz	10YR	5/ 2	3	
							0.25	uncon		med						
	1020	15-20	88	60	597	0-53	0.13	uncon	SM	vf/f	sat	qtz	7.5YR	4/ 2	2	brown, slight pine odor top 6" of core grading into strong chemical odor (degraded fuel?) throughout, no visible staining noted, minor lithics, silty sand
										med		lithics				
	1100	20-25	100	91.6	1893	0-24	0.13	uncon	SM	vf/f	sat	qtz	7.5YR	4/ 2	1	brown, slight campfire smell top 24", low organic smell throughout rest of core,silty sand, mainly fine to very fine with minor lithics and med grains top 24", silty sand
										med		lithics				
						24-32	0.5	uncon		vf/f	wet	qtz	7.5YR	4/ 3	1	
						32-60	1	uncon		vf/f	wet	qtz				
								semi-con								

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SB #7 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	
	1145	25-30	100	7	71	0-24	1	semi-con	SM	vf/f	moist	qtz	10YR	4/ 3	1	brown to greyish green to brown mixed with greyish green, low organic odor, silty sand grading into sandy clay with brown mottling in sandy pockets, grading into a mix of clayey sand and pieces of sandy clay NOTE: surficial/UH interface 27-29 ft BGS
						24-44	2.5	con	CL	vf/f	moist	qtz	5GY	5/ 2	1	
						44-60	3.5	con	SC	vf/f	moist	qtz	10YR	5/ 3	1	
													5GY	5/ 2	1	
	1315	30-35	100	15.3	160	0-12	2	con	SC	vf/f	moist	qtz	10YR	6/ 2	1	greyish green mixed with light brownish grey grading to greyish brown to light olive brown, campfire smell, clayey sand mixed with sandy clay grading into gravelly silty/clayey sand with rounded gravel to pebble sized indurated phosphate/quartz/lithics grading into clayey/silty sand
								semi-con					5GY	5/ 2		
						12-36	1	semi-con	GC	pebb	wet	qtz	2.5Y	6/ 2		
										f/m/c		lithics				
												phos nod				
												fossil				
						36-60	0.5	uncon	SM	f/m/c	moist	qtz	2.5Y	5/ 3		
												lithics				
												phos nod				

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SB #7 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
	1320	35-40	100	39.2	240	0-60	1	semi-con	SM	f/m/c	moist	qtz	5Y	6/ 2	1	light olive grey throughout, campfire smell, silty clayey sand throughout, mainly vf/f/m grains, some coarse top 12 " where there is more clay NOTE: core oxidizing
							0.5	uncon		f/m	moist	phos nod				
												lithics				
	1340	40-45	50	39.8	730	0-30	0.16	uncon	SM	vf/f	sat	qtz	5Y	6/ 2	1	light olive grey with some greyish green, campfire smell, silty/clayey sand grading to clayey/silty sand last 12" of core NOTE: core oxidizing
										f/m	wet	phos nod	5GY	5/ 2		
										coarse		lithics				
	1420	45-50	100	44.1	351	0-60	0.5	uncon	SM	vf/f	moist	qtz	5Y	6/ 2	1	Light olive grey, campfire smell, silty/clayey sand mostly very fine to fine grain size with minor medium NOTE: core oxidizing
							1			f/m		phos nod				
												lithics				
	1443	50-55	100	40.5	819	0-60	0.5	uncon	SM	f/m	moist	qtz	5Y	6/ 2	1	light olive grey, strong campfire smell, silty/clayey sand NOTE: core oxidizing
							1			f		phos nod				
												lithics				
	1453	55-60	100	89.5	1699	0-60	0.5	uncon	SM	f/m	moist	qtz	5Y	6/ 2	1	light olive grey, strong campfire smell, clayey/silty sand NOTE: core oxidizing
							1			f		phos nod				
												lithics				

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SB #7 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1515	60-65	100	35	1068	0-12	1	semi-con	**SM**	f/m	moist	qtz	5Y	5/ 2	1	olive grey mixed with light yellowish brown then gradinng to dark greyish green, strong campfire smell, silty/clayey sand grading into clayey sand with yellowish brown sandy clay then last 4" of core sandy clay NOTE: top 12" of core oxidizing
						12-60	2	con	**SC**	vf/f	moist	phos nod	10YR	6/ 4		
												lithics	5GY	4/ 2		
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB#9A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
9A	1650	5-10		433	234	0-60	0.09	uncon	SP	f/m/c	wet	qtz	7.5YR	4/ 3	3	brown, very loose, strong pine odor, somewhat forms, minor lithics, minor coarse grains mainly med/fine, visible tar as speckling well mixed throughout but no defined layering, evident on core sleeves and gloves
	1750	10-15		354	376	0-24	3.5	semi-con	SM	vf/f	wet	qtz	10YR	4/ 3	4	brown to dark yellowish brown, semi-consolidated grading into consolidated at ~24" to more consolidated 36-60, will roll when wetted from 24" to 60", visible tar at top 3", staining on top 24" sleeve and on gloves, piney smell at top of core changing to a campfire smell at bottom
						24-36	4.5	con	SC	vf/f	moist	qtz	10YR	4/ 4	3	
						36-60	5	con	SC	f/m	moist	qtz	10YR	4/ 4	2	
	1830	15-20		270	769	0-24	4.5	con	SC	f/m	moist	qtz	7.5YR	4/ 2	3	brown, strong odor, consolidated grading into unconsolidated, staining on sleeve and gloves, sheen and visible tar floating on water
						24-60	0.03	uncon	SM	f/m	sat	qtz	7.5YR	4/ 3	3	
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB#10 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1000	5-10	100	535	5870	0-16	0.25	uncon	**SP**	f/m	moist	qtz	7.5YR 2.5/ 1	4	black to brown, strong burnt wood piney odor throughout, first 16" of core black organics , tar, and quartz grading into silty sands, staining on gloves, core sleeve and core, NOTE: consolidated clayey sand in shoe of barrel R value above 5
										vf					
						16-60	0.25	uncon	**SM**	f/m	dry	qtz	10YR 4/ 3	4	
										vf					
	1115	10-15	90	497	602	0-20	3	con	**SM**	f/m	wet	qtz	10YR 4/ 4	3	dark yellowish brown, strong odor throughout, alternating between silty/clayey sand consolidated and less consolidated clayey/silty sand back to more consolidated silty/clayey sand layer, heavy staining on soils throughout, sheening observed NOTE: core oxydizing
										vf					
						20-28	2	con	**SM**	f/m	wet	qtz	10YR 4/ 4	3	
										vf					
						28-54	3	con	**SM**	f/m	wet	qtz	10YR 4/ 4	3	
										vf					
	1140	15-20	60	719	1182	0-16	0	uncon	**SM**	f/m	sat	qtz	10YR 4/ 3	3	brown, strong odor throughout (fuel smell?) clayey/silty sand throughout with ~ 2" layer of consolidated silty/clayey layer 16-18" from top of core, sheening on water entire core stained, staining on gloves and sleeve
										vf					
						16-18	4	con	**SC**	f/m	sat	qtz	10YR 4/ 3	3	
										vf/f					
						18-36	0	uncon	**SM**	f/m	sat	qtz	10YR 4/ 3	3	
										vf/f					

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SB#10 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
															BORING TERMINATED

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SB#10A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	
	1415	5-10	70	574	944	0-27	0	uncon	**SM**	f/m	moist	qtz	10YR	2/ 2	3	very dark brown to brown to brown, strong piney odor and other fuel smell?, staining on gloves and core sleeve, blebs of dark stains throuout top 27" of core, clayey/silty sands throughout grading into consolidated silty/clayey sand last ~ 6 " of core NOTE: strong piney odor while postholing
										vf						
						27-38	0.5	uncon	**SM**	f/m	moist	qtz	7.5YR	5/ 2	3	
										vf						
						38-42	3	con	**SM**	f/m	moist	qtz	10YR	4/ 2	3	
										vf						
	1510	10-15	100	197	161	0-60	5	con	**SM**	f/m/c	moist	qtz	10YR	4/ 3	2	brown, piney odor and bio odor mixed throughout, staining intermitent layered throughout, silty/clayey sand
										vf/f	dry					
	1535	15-20	80	370	216	0-12	3.5	con	**SM**	f/m/c	moist	qtz	10YR	6/ 2	2	light brownish grey to grayish brown to pale brown, piney odor throughout, staining throughout (minor blebs and lenses), silty/clayey sand grading into clayey/silty sand grading into minor silty sands
										vf/f						
						12-24	2.5	semi-con	**SM**	f/m	moist	qtz	10YR	5/ 2	2	
								uncon								
						24-48	0	uncon	**SP**	f/m	wet	qtz	10YR	6/ 3	2	

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SOIL BORING INFORMATION LOG

SB#10A Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	1615	20-25	90	446	795	0-18	0	uncon	**SP**	vf/f	sat	qtz	10YR 7/ 3	1	very pale brown grading into very dark greyish brown, piney odor throughout (strong 18-54), heavy staining 18-54 w/ tar almost continuous, washed sands grading into silty/sands
										med					
						18-24	0.5	uncon	**SM**	vf/f	wet	qtz		4	
						24-54	1	semi-con	**SM**	vf/f	wet	qtz	10YR 3/ 2	4	
	1630	25-30	100	628	1367	0-33	1.5	semi-con	**SM**	vf/f	moist	qtz	7.5YR 3/ 3	4	dark brown to light brownish grey, piney odor throughout (strong 0-33), heavy staining 0-33 w/tar almost continuous, silty sand grading into silty/clayey sands
										med					
						33-60	2.5	con	**SM**	vf/f	moist	qtz	2.5Y 6/ 2	3	
															BORING TERMINATED

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SB11 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1000	25-30	80	3.6	86.3	0-12	0	uncon	**SP**	vf/f	sat	qtz	10YR	7/ 3	1	very pale brown to brown, low piney smell in saturated 0-12, campfire smell rest of core, loose sand grading into minor silty sand
												lithics				
						12-48	0.5	uncon	**SM**	vf/f	wet	qtz	7.5YR	5/ 3	1	
												lithics				
	1040	30-33	100	1.9	55.7	0-12	3.5	con	**SC**	vf/f	moist	qtz	10YR	7/ 3	1	very pale brown to greyish green to pale brown, campfire smell throughout, clayey sand grading into sandy clay (surficial/UH boundary ~31-32 ftBGS) then grading into clayey sand
						12-24	3	con	**CL**	vf/f	moist	qtz	5GY	5/ 2	1	
						24-36	1.5	con	**SC**	vf/f	moist	qtz	10YR	6/ 3	1	
	1115	33-35	100	1.9	296	0-24	0.19	uncon	**SC**	vf/f	sat	qtz	10YR	5/ 2	1	grayish brown, campfire smell throughout, silty/clayey sand with minor pebble sized quartz,phosphatic, dolomitic sandstone
										med		lithics				
												phos nod				
	1200	35-40	100	4.3	111	0-12	0.03	uncon	**SC**		wet	qtz	10YR	5/ 2	1	grayish brown to brown to light olive gray, campfire smell throughout, silty/clayey sand , very plastic, with sporadic phosphatic nodules coarse sand sized up to pebble sized NOTE: core oxydizing after exposure to ambient air
						12-36	0.06					lithics	10YR	5/ 3		
						36-60	0.13					phos nod	5Y	6/ 2		

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SOIL BORING INFORMATION LOG

SB11 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	
	1315	40-45	80	6.6	871	0-18	0.09	uncon	SC				10YR	5/ 2		grayish brown to olive gray, campfire smell throughout, silty/clayey sand with pebble sized quartz,phosphatic, dolomitic sandstone which broken pieces that are rounded, core oxydizing after exposure to ambient air
						18-48							5Y	5/ 2		
	1410	45-50	100	23.3	147		0.19	uncon	SM	f/m/c	wet	qtz	5Y	6/ 1		gray to light grey, campfire smell throughout, clayey silty sand grading into a semiconsolidated silty/clayey sand, core oxydizing after exposure to ambient air
												lithics				
												phos nod				
							0.5	semi-con		f/m	moist	qtz	5Y	7/ 1	1	
										vf/f		lithics				
												phos nod				
	1415	50-55	100	37.1	2994		1	uncon	SM	f/m	moist	qtz	5Y	6/ 1	1	grey, campfire smell throughout, clayey/silty sand, at ~ 52-60" brownish streaking on outside of core and staining on core sleeve, odor from this area campfire w/slightly sweet
										vf/f		lithics				
												phos nod				
	1500	55-60	100	74.1	3359		1	uncon	SM	f/m	moist	qtz	5Y	6/ 2	1	light olive gray, campfire smell throughout, silty sands with little clay, minor brown stain noted towards bottom of core no significant change in odor
												lithics				
												phos nod				

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SOIL BORING INFORMATION LOG

SB11 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1530	60-65	100	16.5	2219		1	semi-con	**SM**	f/m	moist	qtz	5Y	5/ 2	1	olive gray, campfire smell throughout, clayey/silty sand, w/yellowish brown clayey sand mottling and lenses
										vf/f	moist	lithics	10YR	5/ 4	1	
												phos nod				
	1630	65-68	100	6.5	497		0.5	con	**SC**	vf/f	moist	qtz	10YR	5/ 4	1	same olive gray clayey/silty sand, but brown clayey sand more pervasive throughout core
										f/m		phos nod	5Y	5/ 2	1	
												lithics				
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB11 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
11	1720	5-10	100	400	5443	0-60	1	uncon	**SP**	f/m	moist	qtz	7.5YR	5/ 2	4	brown, strong pine odor, sand grading into minor silty sand towards bottom of core, visible pine tar throughout core, staining on gloves and core sleeve
									SM	f/m	moist	qtz			4	
	1740	10-15	100	329	2030	0-16	2	uncon	**SP**	f/m	wet	qtz	10YR	4/ 6	4	dark yellowish brown, strong pine odor, sand grading into clayey/silty sand then to silty/sand w/minor clay, staining on core sleeve and gloves, visible tar at top of inside core then visible on outside of core throughout
						16-36	4.5	con	**SC**	f/m	moist	qtz				
						36-60	1.5	uncon	**SM**	f/m	moist	qtz				
	1810	15-20	70	198	424	0-32	0	uncon	**SP**	vf/f	sat	qtz	7.5YR	4/ 4	2	brown, pine odor grading into campfire smell towards bottom of core, oil sheen on water 0-20", minor staining on glove and core sleeve,
						32-48	0	uncon	**SP**	med	sat	qtz	7.5YR	4/ 4	1	
										vf/f						
	1850	20-25	70	32.9	15	0-6	3	semi-con	**SM**	f/m	sat	qtz	10YR	5/ 4	1	yellowish brown, campfire smell, clayey/silty sand layer 0-6" top of core then very loose saturated sands rest of core, minor pieces of burnt material noted ~6-36" in core
												lithics				
						6-42	0	uncon	**SP**	f/m/c	sat	qtz				
												lithics				

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SOIL BORING INFORMATION LOG

SB#12 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	comments
12	0925	5-10	80	949	883	0-48	0.5	uncon	SM	f/m/c	moist	qtz	7.5YR	3/ 2	3	dark brown, strong fuel smell throughout, no tar present but sheening on water when sprayed, mainly med to fine w/minor coarse sand sized quartz, silty sands
							1									
	0940	10-15	80	923	640	0-48	0	uncon	SP	f/m	sat	qtz	7.5YR	4/ 3	3	brown, strong fuel smell throughout, no tar present but sheening on water when sprayed, med to fine sand sized quartz minor lithics, silty sands to sands
							0.25		SM			lithics				
	1015	15-20	80	371	329	0-20	0	uncon	SP	f/m/c	sat	qtz	10YR	8/ 2	1	very pale brown to pale brown to dark brown, fuel smell first 20 " grading into bio smell last 10" of core, mainly med/fine quartz w/minor coarse, and minor lithics, washed sands to silty sands
												lithics				
						20-38	0	uncon	SM	f/m	wet	qtz	10YR	6/ 3	1	
						38-48	0.5	uncon	SM	f/m/c	moist	qtz	7.5YR	3/ 2	1	
												lithics				
	1049	20-25	90	11.1	369	0-12	0	uncon	SP	f/m/c	moist	qtz	10YR	7/ 3	1	very pale brown to brown to pale brown, slight unidentifiable odor 0-12 then bio smell rest of core, washed sands grading into vf to fine silty sands
												lithics				
						12-21	0	uncon	SM	f/m	moist	qtz	10YR	5/ 3	1	
							0.5									
						21-54	0	uncon	SM	vf/f	moist	qtz	10YR	6/ 3	1	
							0.5									

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SOIL BORING INFORMATION LOG

SB#12 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												comments
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color		NAPL Extent	
	1120	25-30	100	10.2	266	0-22	0.5	semi-con	SM	vf/f	moist	qtz	10YR	8/ 2	1	very pale brown to brown with greyish green, bio smell throughout, silty sands grading into silty clayey sands with discontinuous pieces of sandy clay NOTE: surficial/UH interface discontinuous from ~ 28 to 30 ftBGS
							1					lithics		7/ 2		
						22-32	2.5	semi-con	SC	f/m/c	moist	qtz	10YR	4/ 3	1	
							1.5	con				lithics				
						32-60	2.5	con	CL	f/m	moist	qtz	10YR	5/ 4	1	
							2		SC	f						
	1200	30-35	60	3.7	36.5	0-36	1	con	SC	vf/f	moist	qtz	2.5Y	6/ 3	1	light yellowish brown, , bio smell throughout, silty clayey sand to clayey sands
							2.5									
	1215	35-40	100	5.6	471	0-60	0	uncon	SC	f/m/c	moist	qtz	2.5YR	5/ 2	1	olive gray, bio smell throughout, silty/clayey sands, pebble sized quartz/phosphatic indurated pieces top part of core, heavy phosphate towards bottom of core
							0.5	uncon		f	wet	phos nod				
										pebb						
	1315	40-45	100	6.3	339	0-60	0.5	uncon	SC	f/m/c	wet	qtz	5Y	6/ 2	1	light olive grey, light fuel smell? with slight bio smell, silty/clayey sands throughout, large pebble sized fossils noted 0-16"
										pebb		phos nod				
												lithics				

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SOIL BORING INFORMATION LOG

SB#12 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1400	45-50	100	6.5	405	0-32	0.5	uncon	**SC**	f/m	moist	qtz	5Y	6/ 2	1	light olive grey, very faint fuel smell? silty clayey sands grading into clayey sands last 24" of core NOTE: brown staining with outside of core but not inside
										f		phos nod				
						32-60	1	uncon				lithics				
	1500	50-55	100	14.7	949	0-32	0.5	uncon	**SC**	f/m	moist	qtz	5Y	5/ 2	1	olive grey to greyish olive, very faint fuel smell? Silty/clayey sands
										vf		phos nod	10Y	5/ 2		
						32-60	1	uncon	**SC**		dry	lithics				
	1520	55-60	100	5.3	786	0-60	1	semi-con	**SC**	f/m	moist	qtz	5Y	6/ 2	1	light olive grey, faint fuel smell grading into campfire smell last 12" of core, silty/clayey sands
								uncon			dry	phos nod				
												lithics				
	1550	60-65	100	36	148	0-24	1.5	semi-con	**SC**	f/m	moist	qtz	5Y	6/ 2	1	light olive grey with pieces of greyish green, campfire smell throughout, silty/clayey to clayey sand w/pieces of clay last 36" of core
												phos nod				
												lithics				
						24-60	3	con	**CL**	f/m	dry		5GY	5/ 2	1	
									SC	vf						
																BORING TERMINATED NOTE: sleeved sample collected 65-70 @ 1714

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SOIL BORING INFORMATION LOG

SB#14 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	0930	5-10	80	108	341	0-12	0.25	uncon	**SM**	vf/f	moist	qtz	10YR 2/ 1	2	black to brown, petroleum odor (different from source area), silty sands throughout, staining in soils 0-12" (slight sheen) and last 6"of core NOTE: slight pine odor detected while postholing
										med					
						12-48	0	uncon	**SM**	vf/f	moist	qtz	10YR 4/ 3	2	
							0.5			med					
	1100	10-15	65	51.1	838	0-12	0	uncon	**SM**	vf/f	sat	qtz	10YR 4/ 3	1	brown, petroleum odor, silty sands throughout somewhat clayey towards bottom of core, first 12" of core washed silty sand, then heavy staining and product in soils
										med					
							1	semi-con	**SM**	f/m	wet	qtz	10YR 4/ 3	4	
							0.5	uncon		vf					
	1220	15-20	90	23.8	150	0-30	5	con	**SM**	f/m	moist	qtz	10YR 7/ 2	3	light grey to light brownish grey,petroleum/bio odor, silty/clayey sands heavily stained and concentrated product 22-26", grading into unconsolidated wahsed minor silt layer then semi consolidated last 6" of core
							3			vf				4	
						30-54	0	uncon	**SM**	f/m	wet	qtz	10YR 6/ 2	2	
							2.5	semi-con		vf		lithics			

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SOIL BORING INFORMATION LOG

SB#14 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)												
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**		**NAPL Extent**	**comments**
	1245	20-25	80	24.1	NA	0-14	0.25	uncon	**SP**	f/m	wet	qtz	10YR	7/ 2	2	
										vf		lithics				light grey, low odor, minor staining on soils 0-14, minor silty sands grading into washed sands
							0	uncon	**SP**	vf/f	wet	qtz	10YR	7/ 2	1	
										med		lithics				
	1540	25-30	100	120	68.6	0-19	0	uncon	**SP**	vf/f	sat	qtz	10YR	7/ 3	1	
												lithics				
						19-34	1.5	uncon	**SM**	vf/f	wet	qtz	10YR	6/ 2	1	
								semi-con		med		lithics				alternating between very pale brown washed sand to light brownish grey silty sands, minor odor (lift station/bio smell)
						34-48	0	uncon	**SM**	vf/f	wet	qtz	10YR	7/ 3	1	
												lithics				
						48-60	2	semi-con	**SM**	vf/f	wet	qtz	10YR	6/ 2	1	
										med		lithics				
	1630	30-33	100	4.1	669	0-12	2	con	**CH**	vf/f	wet	qtz	5GY	5/ 2	1	greyish green to light olive grey, mix of bio/lift station and low odor (unidentifiable), sandy clay very plastic grading into clayey sand NOTE: surficial/UH interface ~ 30-31.5 ftBGS purple/black staining noted in sandy parts of greyish green clay
						12-36	0.5	semi-con	**SC**	vf/f	wet	qtz	2.5YR	6/ 2	1	
																BORING TERMINATED

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SOIL BORING INFORMATION LOG

SB# 17 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	FID	inches from top of core	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
17	0815	5-10	90	0.2	7	0-7	0	uncon	SP	f/m	dry	qtz	5YR 2.5/ 1	2	black to gray to very dark grey to reddish brown to dark reddish brown, burnt wood to earthy smell, minor staining on gloves, unconsolidated and micro roots throughout, top 7" of core burnt wood/charcoal grading into quartz/charcoal mix, then more silty sand last 26" of core
												lithics			
						7-22	0	uncon	SP	f/m	dry	qtz	7.5YR 5/ 1	1	
												lithics			
						22-28	0	uncon	SP	f/m	dry	qtz	7.5YR 3/ 1	1	
												lithics			
						28-36	0	uncon	SM		moist	qtz	5YR 4/ 3	2	
												lithics			
						36-54	0	uncon	SM		moist	qtz	5YR 3/ 2	2	
												lithics			

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SOIL BORING INFORMATION LOG

SB# 17 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	0854	10-15	80	4	224	0-24	0	uncon	**SP**	f/m	sat	qtz	7.5YR 2.5/ 1	2	black to very pale brown, low earthy odor, minor staining on gloves, unconsolidated black silty sand grading into washed sands/minor lithics
										f		lithics			
						24-48	0	uncon	**SP**	vf/f	sat	qtz	10YR 7/ 3	1	
										med					
	0900	15-20	70	11.2	290	0-24	0	uncon	**SP**	vf/f	sat	qtz	10YR 7/ 2	1	light grey to brown, low odor 24-32, unconsolidated washed sands with minor lithics interupted by ~8" layer of silty sand that's smells, back into unconsolidated sands last part of core
										med		lithics			
						24-32	0.25	uncon	**SM**	vf/f	wet	qtz	10YR 5/ 3	1	
										med		lithics			
						32-42	0	uncon	**SP**	vf/f	wet	qtz	10YR 5/ 3	1	
										med		lithics			
	0915	20-25	37	4.2	63.1	0-12	0	uncon	**SP**	vf/f	wet	qtz	10YR 7/ 2	1	light grey to brown, low odor 12-22, unconsolidated silty sands with minor lithics grading into layer of clayey/silty sand that's smells, back into unconsolidated sands last part of core
										med		lithics			
						12-22	0.5	uncon	**SM**	vf/f	wet	qtz	10YR 5/ 3	1	
										med		lithics			

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SOIL BORING INFORMATION LOG

SB# 17 Lithologic Description

Hole #	Time	Interval (ft BGS)	Recovery %	Volatile Oraganic Vapors (ppm)											
				PID	**FID**	**inches from top of core**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	0930	25-30	80	14.2	159	0-9	0	uncon	**SP**	vf/f	wet	qtz	10YR 7/ 2	1	light grey to brown, campfire smell 9-48" washed sand/minor lithics first 9", rest of core silty sands with semi consolidated silty/clayey layers, bubbles with iridescence seen with hand lense, minor staining on gloves
										med		lithics			
						9-48	0.5	uncon	**SM**	vf/f			10YR 5/ 3	2	
							1			med					
	0945	30-35	100	45.1	60.3	0-36	1	semi-con		f/m	moist	qtz	10YR 4/ 2	1	dark greyish brown to greyish green, strong campfire smell throughout, silty/clayey sands grading into very sandy clay NOTE: surficial/UH interface ~ 33.5 to 35 ftBGS
							1.5	con		vf					
						36-60	2	con		vf/f	moist	qtz	5GY 5/ 2	1	
							2.5								BORING TERMINATED

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SUPPLEMENTAL HAWTHORNE INVESTIGATION

SOIL BORING LOG

Time	Core Interval (ft BGS)	Recovery Ft.	Volatile Oraganic Vapors (ppm)		Yes/No/NA	Ft. BGS	Ft.. BGS	Boring Designation:									SB-25 (Soil)
			PID	FID	Sand/Gravel Stringers	Stringer Interval	Stained Interval	Lithologic interval	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
1330	0-3.5	3.5	0	0	No	NA	NA	0-0.5		uncon		coarse	dry	qtz	10YR 8/ 4	1	Asphalt & sandy gravel subbase for parking lot
			0	0	No	NA	NA	0.5-1.0		uncon	SM	f/m	dry	qtz	10YR 2/ 1	1	Black sand and charcoal
			0	0	No	NA	NA	1.0-3.5	0	uncon	SM	f/m	dry	qtz	10YR 6/ 3	1	sand. No odr
1420	3.5-10	5.5	0	0	No	NA	NA	3.5-4.5	0	uncon	SM	f/m	moist	qtz	10YR 6/ 3	1	Sand. No od0r
					No	NA	NA	4.5-10	0	uncon	SM	f/m	moist	qtz	10YR 3/ 1	1	Sand. No Odor
1450	10-15	3	488	NA	No	NA	NA	10-15	0	uncon	SM	f/m	sat	qtz	10YR 3/ 1	1	Sand with small root fragments . Pine tar like odor. No stainng observed. No sheen.
1600	15-20	3	13.8	7.3	No	NA	NA	15-20	0	uncon	SM	f/m	sat	qtz	10YR 5/ 3	1	Sand wiith silt. Silt content increasing with depth
1630	20-25	4	2.6	35.7	No	NA	NA	20-25	1	uncon	SM	f/m	sat	qtz	10YR 8/ 1	1	Sand with silt. Zones of discoloration. No sheen.
1645	25-30	5	1.1	10.5	No	NA		25-27	0	uncon	SM	f/m	sat	qtz	10YR 8/ 1	1	Sand with silt. Zones of discoloration. No sheen.
								27-30	2.5	semi-con	SC	f/m	sat	qtz	10YR 8/ 1	1	Sand with blue green clay and silt. Zones of discoloration. No sheen
1715	30-35	5	0.7	18.8	Yes	30-30.5	NA	30-30.5	3	semi-con	CH		moist		5GY 6/ 2	1	Blue green Clay with sand Upper Clay
					No	nA	NA	30.5-32	0	uncon	SM	vf/f	sat	qtz	10YR 8/ 1	1	Fine sand
					No	NA	NA	32-35	0.5	semi-con	SC	f/m/c	sat	phos nod	5Y 7/ 2	1	Gray Sand with silt,clay and phosphate grains. Naptha like odor
0840	35-40	5	0.6	42.1	Yes	35-40	NA	35-40	0.5	semi-con	CH	f/m/c	sat	phos nod	5Y 7/ 2	1	Clay with sand, silt and phosphate grains including fossils. Slight odor.
0900	40-45	4.5	0.5	12.2	No	NA	44-45?	40-45	0.25	semi-con	SC	f/m	sat	qtz	5Y 7/ 2	1	Sand with clay and silt. Possible discoloration at 44-45. Slight odor
0915	45-50	4.5	11.5	34.1	Yes	45-50		45-50	0.5	semi-con	CH	f/m	sat	qtz	5Y 7/ 2	1	Clay with sand, silt. Possible staining in sandy zones. Naphtha like odor.
0930	50-55	4	3.6	6.3	Yes	50-55	Na	50-55	0.5	semi-con	CH	f/m	sat	dolo	5Y 7/ 2	1	Clay with sand & silt. Blue green clay lenses and occasional gravel . Possible faint staining in sandy zones. No odor
1045	55-60	5	1.2	75.3	No	NA	NA	55-60	1.5	semi-con	CH	f/m	sat		5Y 7/ 2	1	Clay with sand and silt. Blue green clay lenese at 59-60 ft..

WESTON SOLUTIONS
an employee-owned company

SUPPLEMENTAL HAWTHORNE INVESTIGATION

SOIL BORING LOG

Time	Core Interval (ft BGS)	Recovery Ft.	Volatile Oraganic Vapors (ppm)		Yes/No/NA	Ft. BGS	Ft.. BGS	Boring Designation:									SB-25 (Soil)
			PID	**FID**	**Sand/Gravel Stringers**	**Stringer Interval**	**Stained Interval**	**Lithologic interval**	**R value**	**consolidation**	**USCS**	**grain size**	**moisture**	**minerals**	**color**	**NAPL Extent**	**comments**
	60-65	6	0	1.3	No	NA	NA	60-65	3	con	**CH**	f/m	moist		2.5Y 7/ 3	1	Tan & gray (10y 5/2) clay stiff & dense. Some sand and phosphate grains. No odor. Top of Middle Clay 65 ft. bls

WESTON SOLUTIONS
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BORING LOG

BOREHOLE NO.: **SB-33**

TOTAL DEPTH: **65 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**6/1/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**10:00**

Top of Casing Elev.: **181.6 Ft. msl**

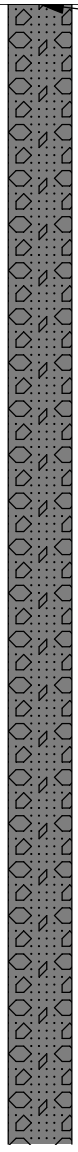
Datum: **National Geodetic Vertical Datum 1929**

▽ Initial Water Level: **35 Ft. bgs**

Northing **252457 US Ft.** Easting **2659738 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0	0	6.1	100	1		SM	2.5YR	2.5YR 2.5/1 Black sand with fill material, no clay, unconsolidated, moist
5				-		-	-	No recovery
	60	754	788	1		SM	10YR	Soil sample collected: 10YR 4/2 Dark grayish-brown sand, no clay, turpentine odor, unconsolidated, moist
10	80	46	13.1	1		SM	10YR	Soil sample collected: 10YR Dark grayish-brown sand, no clay, smokey odor, unconsolidated, moist
				-		-	-	No recovery
15	80	18.4	1.2	1		SM	10YR	Soil sample collected: 10YR Dark grayish-brown sand, no clay, smokey odor, but less than above, unconsolidated, moist
				1		-	-	No recovery
20	80	15.9	13.9	1		SM	10YR	10 YR 6/1 Medium to fine sand with silt, smokey odor, no staining, more consolidated with depth, semi-consolidated, wet
				-		-	-	No recovery. Groundwater sample collected from 23 - 25 ft. bgs.
25	100	13.5 1.1	42.5 11.5	1		ML	5GY	5GY 6/1 Medium to fine sand with silt, smokey odor, no staning, more clay and consolidated with depth, semi-consolidated, wet
				1		CL	5GY	5GY 5/1 Greenish-gray clay with minor sand stringers, top of upper clay
30		3.2	1.8	1		ML	5GY	

WELL CONSTRUCTION:



6 in. boring filled from bottom to top with cement grout upon completion

NOTES:

BORING LOG

BOREHOLE NO.: **SB-33**

TOTAL DEPTH: **65 Ft. bgs**

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**6/1/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**10:00**

Top of Casing Elev.: **181.6 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

▽ Initial Water Level: **35 Ft. bgs**

Northing **252457 US Ft.** Easting **2659738 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
30				-		-	-	= 28 Ft. bgs, bottom of upper clay = 29.2 Ft. bgs, consolidated, moist	
	40							5GY 6/1 Greenish-gray silty, sandy clay, slight odor, semi-consolidated, moist	
		0.5	107	1		ML	5GY	No recovery	
35								5GY 6/1 Dark greenish-gray silty, sandy clay with phosphate nodules, smokey odor, semi-consolidated, moist	
	60	0.4	0	1		ML	5GY		
		3.2	142	1		ML	5GY	5GY 5/1 Dark greenish-gray sandy clay with phosphate nodules, mothball odor, unconsolidated, saturated. Groundwater sampled collected from 37 - 39 ft. bgs.	
40									
		0.2	0	1		SM	5GY	5GY 6/1 Greenish gray silty, sandy clay with phosphate nodules, smokey odor, semi-consolidated, moist	
	100	0.6	92.7					5GY 6/1 Sand with clay and silt, small phosphate grains, faint smokey odor, unconsolidated, saturated	
45									
		4.7	87.8					5GY 5/1, 5GY 6/1 Greenish-gray clayey, sandy silt with phosphate nodules, slight odor, semi-consolidated, moist. Groundwater samples collected from the following intervals: 47 - 49, and 57 - 59 ft. bgs.	
	100								
50									
	100	0.9	258	1		ML	5GY		
55									
	100	0	112						
60									

NOTES:

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BORING LOG

BOREHOLE NO.: **SB-33**

TOTAL DEPTH: **65 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**6/1/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**10:00**

Top of Casing Elev.: **181.6 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

▽ Initial Water Level: **35 Ft. bgs**

Northing: **252457 US Ft.** Easting: **2659738 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
60									
	100	0	0						
				1		CL	5GY	5GY 5/1 Middle clay at 63.5 Ft. bgs, semi-consolidated, moist	
65									

NOTES:

BORING LOG

BOREHOLE NO.: **WS-33**

TOTAL DEPTH: **65 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **6/3/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **6 in.**
TIME OF BORING: **08:00**

Top of Casing Elev.: **181.5 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **9.00 Ft. bgs**

Northing **252443 US Ft.** Easting **2659726 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
0	0	6.1	100	1		SM	2.5YR	2.5YR 2.5/1 Black sand, fill material, no clay, unconsolidated, moist	6 in. boring filled from bottom to top with cement grout upon completion
5				-		-	-	No recovery	
	80	754	788	1		SM	10YR	10YR 4/2 Dark-grayish brown sand, no clay, turpentine odor, unconsolidated, moist	
10	80	46	13.1	1		SM	10YR	10YR 4/1 Dark-grayish brown sand, no clay, smokey odor, unconsolidated, moist	
15				-		-	-	No recovery	
								No core sample collected. Groundwater samples collected from the following intervals: 23 - 25, 37 - 39, 47 - 49, 57 - 59 ft. bgs.	
20									
25									
30									
35									

NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BORING LOG

BOREHOLE NO.: **WS-33**

TOTAL DEPTH: **65 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT:	**Hawthorn Grp. Characterization**
PROJECT NO.:	**05791.017.001.0002**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY:	**Edward Mackey, P.G.**
APPROVED BY:	**Mark Taylor, P.G.**
DATE(S) DRILLED:	**6/3/15**

DRILLING INFORMATION

DRILLING CO.:	**Cherokee/EDS, Inc.**
DRILLER:	**K. Rogers**
RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD:	**Rotary Sonic**
SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.:	**6 in.**
TIME OF BORING:	**08:00**

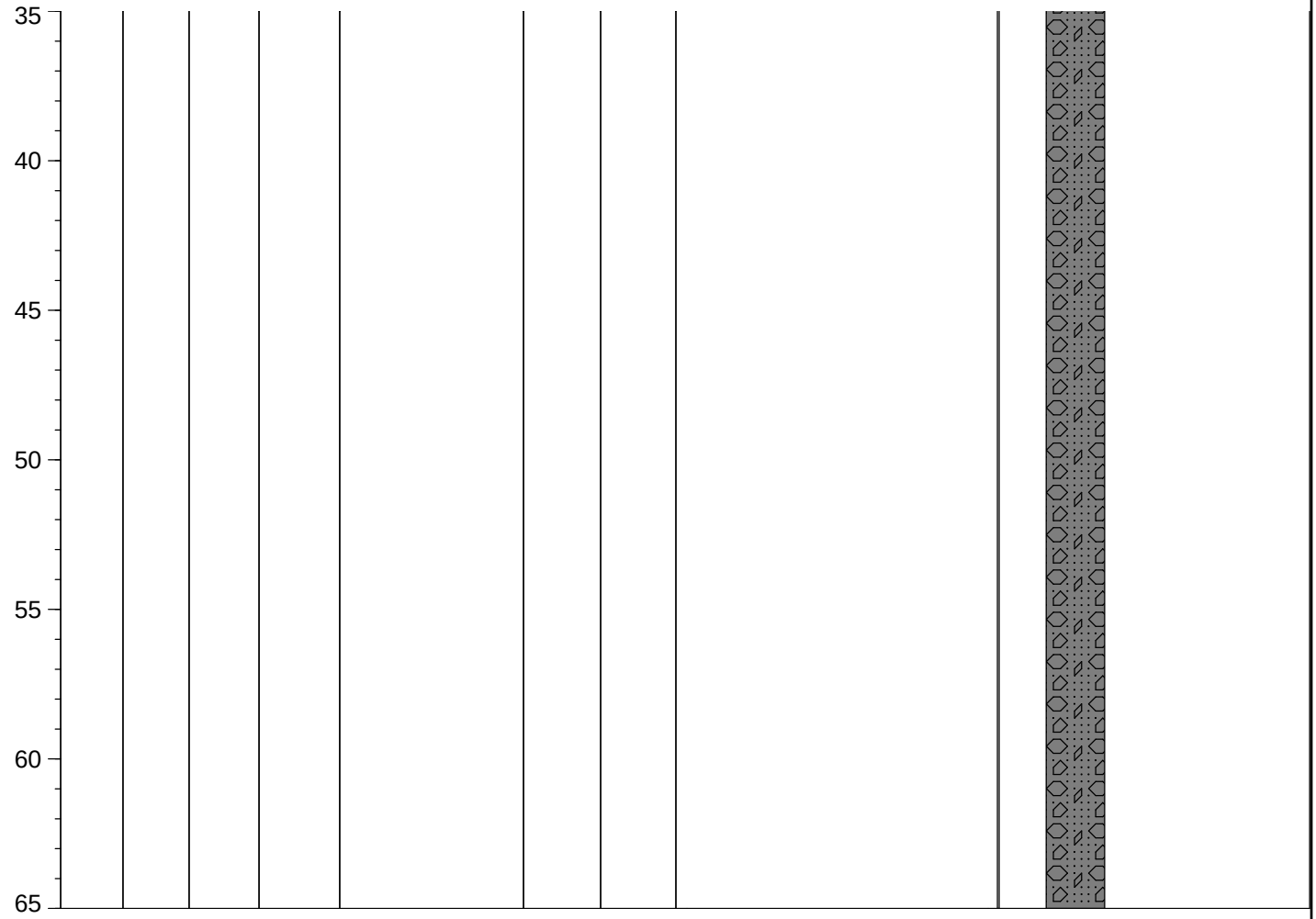
Top of Casing Elev.: **181.5 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **9.00 Ft. bgs**

Northing **252443 US Ft.** Easting **2659726 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:



NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

BORING LOG

BOREHOLE NO.: **WS-34**

TOTAL DEPTH: **60 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**6/2/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**09:15**

Top of Casing Elev.: **182.2 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **9.30 Ft. bgs**

Northing: **252328 US Ft.** Easting: **2659670 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	100	0	0	1		SM	10YR	10 YR 7/2 Light gray sand, no clay, no odor, unconsolidated, moist
				1		SM	10YR	10YR 6/2 Light gray silty sand, well cemented with little clay, no odor, consolidated, moist
10	80	46	13.1	1		SM	10YR	10YR 6/2 Light gray silty sand, cementation diminishes with depth, no clay, no odor, consolidated, moist
				-		-	-	No recovery
15				-		-	-	No core sample collected. Groundwater sample collected from the following interval: 23 - 25 ft. bgs.
20								
25	70	4.2	65.8	1		ML	5GY	5GY 6/1 Greenish gray clay with sand stringers, top of upper clay = 25 Ft. bgs, consolidated, moist
				-		-	-	No recovery
30								

WELL CONSTRUCTION:

6 in. boring filled from bottom to top with cement grout upon completion

NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

BORING LOG

BOREHOLE NO.: **WS-34**

TOTAL DEPTH: **60 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**6/2/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**09:15**

Top of Casing Elev.: **182.2 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **9.30 Ft. bgs**

Northing **252328 US Ft.** Easting **2659670 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
30								No core sample collected. Groundwater samples collected from the following intervals: 37 - 39, 47 - 49, 57 - 59 ft. bgs.	
35									
40									
45				-		-	-		
50									
55									
60									

NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

BORING LOG

BOREHOLE NO.: **WS-35**

TOTAL DEPTH: **59 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Edward Mackey, P.G.**
DATE(S) DRILLED: **5/28/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **6 in.**
TIME OF BORING: **14:21**

Top of Casing Elev.: **180.6 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **19.60 Ft. bgs**

Northing **252657 US Ft.** Easting **2659982 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
0		105	115	-		SM	2.5YR	2.5YR Black sand with fill material, no clay, unconsolidated, moist	6 in. boring filled from bottom to top with cement grout upon completion
5	40			-		-	-	No recovery	
		981	925	1		SM	10YR	10YR 4/4 Dark yellowish-brown sand, no clay, turpentine/pine odor, unconsolidated, moist	
10	100	427	426	1		SM	10YR	10 YR 5/3 Brown sand, no clay, turpentine/pine odor, FID/PID readings decrease markedly with depth, saturation at 13.5 Ft. bgs, no sheen, unconsolidated, saturated	
15				-		-	-	No core sample collected. Groundwater sample collected at the following interval: 23 - 25 ft. bgs.	
20									
25	80	3.6	5.7	1		SM	2.5YR	2.5YR 6/3 Medium to fine sand with smokey odor but no staining, top of upper clay = 29.0 Ft. bgs	
30				-		-	-	No recovery	

NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

BORING LOG

BOREHOLE NO.: **WS-35**

TOTAL DEPTH: **59 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Edward Mackey, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**5/28/15**	BOREHOLE DIA.:	**6 in.**
		TIME OF BORING:	**14:21**

Top of Casing Elev.: **180.6 Ft. msl**

Datum: **National Geodetic Vertical Datum 1929**

▽ Initial Water Level: **19.60 Ft. bgs**

Northing **252657 US Ft.** Easting **2659982 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
30								No core sample collected. Groundwater samples collected at the following intervals: 37 - 39, 47 - 49, and 57 - 59 ft. bgs.	
35									
40									
45				-		-	-		
50									
55									

NOTES: Limited soil cores collected because water samples must be collected from undisturbed soils.

BOREHOLE LOG

BOREHOLE NUMBER: HG28-D

PAGE NO. 1 OF 3

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 9/23/2011 DATE COMPLETED: 9/23/2011

TOTAL DEPTH: 92 feet
NORTHING: 253260
EASTING: 2660261
SURFACE ELEV.: 175.3 ft
WATER LEVEL: 42.54 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: FID & PID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
0				vegetation and fill		*land surface*
						hand augered
5	10:37	3-8	80%	**organic material to sands** 0-20" mainly black organic material w/ fine sand size quartz grains, poorly sorted, moist, staining on gloves 20-48" dark brown, med to fine sand sized quartz grains, semi-sorted, semi-rounded, with organic material, wet entire core unconsolidated, strong odor	highest reading 2000 ppm	
10	10:54	8-13	100%	**sand to clayey sand** 0-36" light brown, med sand sized quartz grains, semi-sorted, semi-rounded, unconsolidated, wet, with odor 36-60" blueish brown grey, fine sand size quartz grains, sorted, rounded, with clay, consolidated, stiff, blocky, moist, ropey when hydrated, odor	highest reading 282 ppm	
15	11:27	13-18	90%	**clayey sand** 0-54" blueish brown grey, fine sand sized quartz grains, semi sorted, round to semi rounded, with clay, consolidated, formable but not ropey, wet, strong odor	highest reading 305 ppm	
20	11:56	18-23	90%	**clayey sand** 0-24" grey brown fine sand sized quartz grains, semi-sorted, semi-rounded, mixed with clay, consolidated, somewhat ropey, odor, wet 24-54" brown, fine sand sized quartz grains, semi-sorted, semi-rounded, with minor clay, unconsolidated but formable, wet, strong odor	highest reading 631 ppm	
25	12:30	23-28	100%	**silty sand** 0-60" light grey brownish, med to fine sand sized quartz grains, rounded and sorted, with minor silt, unconsolidated, slightly malleable, wet, strong odor	highest reading 5200 ppm	
30	12:41	28-33	80%	**silty sand to sandy clay** 0-40" light brown, fine sand sized quartz grains, semi sorted, semi rounded, semi consolidated to unconsolidated, minor silt, wet, strong odor 40-48" blue-green brown clay/sand mixture, visible grains semi-sorted, semi-rounded, fine sand sized quartz, stiff, formable, ropey, consolidated, wet, strong odor	highest reading 1100 ppm	drilling terminated @ 33 FT BLS

BOREHOLE LOG

BOREHOLE NUMBER: HG28-D

PAGE NO. 2 OF 3

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 10/6/2011 DATE COMPLETED: 10/6/2011

TOTAL DEPTH: 92 feet
NORTHING: 253260
EASTING: 2660261
SURFACE ELEV.: 175.3 ft
WATER LEVEL: 42.54 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: FID & PID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
35	09:09	33-38	100%	**sandy clay to clayey sands** 0-24" brownish grey med to fine sand size quartz grains, semi-sorted, semi-rounded, med to fine sand size phosphatic grains and nodules, wet, consolidated with clay 24-48" brownish grey to light greenish brown grey, clay, fine sand sized quartz grains, semi-sorted, semi-rounded, fine sand size phosphatic grains and nodules, wet, consolidated, stiff, ropey 48-60" brownish grey to light greenish brown grey, minor clay, fine sand sized quartz grains, semi-sorted, semi-rounded, fine sand size phosphatic grains and nodules, wet, consolidated, somewhat ropey odor throughout entire core	highest reading 94 ppm FID, 12 ppm PID	
40	09:48	38-43	100%	**silty/clayey sand** 0-41" light brown, med to fine sand sized quartz grains, semi-sorted, semi-rounded, semi-consolidated, minor silt and clay, wet, somewhat ropey with strong odor 41-60" greenish-grey, fine sand size quartz grains, semi-sorted, semi-rounded, semi-consolidated, silt and clay, wet, somewhat ropey with strong odor	highest reading 80 ppm FID, 29 ppm PID	
45	10:16	43-48	80%	**silty sand** 0-48" slightly brownish to blueish-grey, med to fine sand sized quartz and phosphatic grains, semi sorted, with silt, unconsolidated, somewhat formable but not malleable, slightly ropey, wet with strong odor	highest reading 1200 ppm FID, 2.2 ppm PID	
50	10:42	48-53	80%	**silty sand** 0-48" grey brown to greenish, med to fine sand sized quartz and phosphatic grains, mixed with minor silt, unconsolidated, loose, wet with strong odor	highest reading 225 ppm FID, 4.6 ppm PID	
55	11:16	53-58	100%	**clayey sand to silty sand** 0-28" blueish-grey, fine sand sized quartz grains, minor phosphatic grains, with clay, consolidated, stiff and wet 28-60"greenish-brown, fine sand sized quartz grains, minor phosphatic grains, silt, semi-consolidated, formable but not ropey, wet	highest reading 58 ppm FID, 0.0 ppm PID	
60	12:30	58-63	100%	**clayey sand** 0-60" light brown greyish, no odor, med to fine sand sized quartz grains, phosphatic grains, fossiliferous, consolidated, moist and blocky, pieces of blue-green clay at end of section	highest reading 0.0 ppm FID, 0.0 ppm PID	
65	12:58	63-68	100%	**clayey sand to clay** 0-18" light brown greyish, no odor, med to fine sand sized quartz grains, minor phosphatic fragments, moist, blocky 18-40" tan-brown clay, stiff 40-60" dark-grey clay, stiff	highest reading 0.0 ppm FID, 0.0 ppm PID	drilling terminated @ 68 FT BLS

BOREHOLE LOG

BOREHOLE NUMBER: HG28-D

PAGE NO. 3 OF 3

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 10/11/2011 DATE COMPLETED: 10/11/2011

TOTAL DEPTH: 92 feet
NORTHING: 253260
EASTING: 2660261
SURFACE ELEV.: 175.3 ft
WATER LEVEL: 42.54 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: PID & FID
BOREHOLE DIAMETER: 6.0 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
	10:13	68-72	80%	**clay** 0-12" grout and clay mix 12-48" grey with slight greenish tint clay, stiff, consolidated, minor sand sized quartz and phosphatic grains, wet with no odor	highest reading 0.0 ppm FID, 0.0 ppm PID	
70	10:57	73-78	90%	**sandy/clay to semi-consolidated sand** 0-32" grey with slight greenish tint clay with sand sized quartz and phosphatic grains throughout clay, wet with no odor 32-54" light brownish grey, semi-consolidated, dry, crumbles readily with hammer, sand sized quartz and phosphatic grains, cemented with silt and clay sized dolomite	highest reading 240 ppm FID, 0.0 ppm PID	
75	11:33	78-83	80%	**gravel to clayey/silty sand** 0-30" light brown with greyish green tint, angular to sub-angular gravel consisting of med to fine sand sized quartz and phosphatic grains, fossil mold impressions, cemented with silt and clay sized dolomite 30-48" light brown with greyish green tint, med to fine sand size quartz and phosphatic grains with clast material from 0-30", minor clays and silts, wet, unconsolidated with no odor	highest reading 224 ppm FID, 0.0 ppm PID	
80	12:33	83-88	85%	**silty/sand to clayey sand** 0-30" light brown greyish, med to fine sand sized quartz and phosphatic grains, mixed with minor silt, unconsolidated, loose, wet with odor, indurated clasts pebble to gravel size near bottom of 30" cemented with silt and clay sized dolomite 30-51" grey with slight green/brown tint, med to fine sand sized quartz and phosphatic grains, mixed with clay, semi-consolidated, stringers of blue-green clay, wet with odor	highest reading 440 ppm FID, 0.0 ppm PID	
85						
90	13:30	88-92	80%	**gravel to clayey gravel** 0-6" grey with slight green/brown tint, gravel consisting of med to fine sand sized quartz and phosphatic grains cemented with dolomite, mixed with stringers of blue-green clay, wet with odor 6-24"same as above with black mottled spots in clay 24-48" pebble to gravel sized clasts described above with more clay	highest reading 200 ppm FID, 0.0 ppm PID	drilling terminated @ 92 FT BLS
95						
100						

BOREHOLE LOG

BOREHOLE NUMBER: HG30-D

PAGE NO. 1 OF 3

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 10/4/2011 DATE COMPLETED: 10/4/2011

TOTAL DEPTH: 103 feet
NORTHING: 253010
EASTING: 2659818
SURFACE ELEV.: 179.3 ft
WATER LEVEL: 44.37 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: FID & PID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
35	08:08	28-33	100%	**clayey sand to clayey/gravelly sand** 0-10" light brown greyish, med to fine sand size quartz grains, semi-sorted, rounded, moist, consolidated with clay, malleable and ropey, odor 10-20" light brown greyish, fine sand sized quartz grains, sorted, rounded, semi-consolidated with silt, not ropey, odor 20-60" light brown greyish, med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, moist, consolidated with clay, malleable and ropey, odor, with minor semi-indurated clasts (same mineralogy) cemented with dolomite.	highest reading 1102 ppm FID, 42 ppm PID	
40	08:44	33-38	100%	**gravelly/silty sand to gravelly/clayey sand** 0-60" light brown grey, strong odor, moist, med to fine sand sized quartz and phosphatic grains, semi-sorted, semi-rounded, with indurated, gravel sized clasts of same mineralogy cemented with dolomite, silty to clayey and loose to ropey from top of core to bottom	highest reading 605 ppm FID, 77 ppm PID	
45	09:21	38-43	100%	**clayey/silty sand** 0-60" greenish-grey, med to fine sand sized quartz and phosphatic grains, semi-rounded, semi sorted, with silt and minor clay, unconsolidated, somewhat formable and malleable, slightly ropey, moist with strong odor	highest reading 1156 ppm FID, 54 ppm PID	
50	09:59	43-48	100%	**silty/clayey sand** 0-60" brownish green, med to fine sand sized quartz and phosphatic grains, semi-rounded, semi sorted, wet, consolidated, with silt and minor clay, ropey but not stiff, strong odor	highest reading 1000 ppm FID, 67.7 ppm PID	core oxidizes to grey/black after exposure to sun
55	10:39	48-53	100%	**silty/clayey sand** 0-60" brownish green, fine sand sized quartz and phosphatic grains, semi-rounded, semi sorted, wet, consolidated, with silt and minor clay, ropey but not stiff, strong odor	highest reading 58 ppm FID, 0.0 ppm PID	core oxidizes to grey/black after exposure to sun
60	11:17	53-58	100%	**sandy clay** 0-60" brownish green, clay, stiff, with med to fine sand sized quartz and phosphatic grains, semi-rounded, semi sorted, moist, consolidated, strong odor, more sandy at bottom 30" of core	highest reading 2136 ppm FID, 32.9 ppm PID	core oxidizes to grey/black after exposure to sun
65	12:08	58-63	100%	**clayey sand** 0-60" brownish green, fine to very fine sand sized quartz and minor phosphatic grains, semi-rounded, sorted, wet, consolidated, with clay, ropey but not stiff, strong odor, clay increases towards bottom of core and becomes dry	highest reading 143 ppm FID, 20.5 ppm PID	core oxidizes to grey/black after exposure to sun

BOREHOLE LOG

BOREHOLE NUMBER: HG30-D

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 10/4/2011 DATE COMPLETED: 10/4/2011

TOTAL DEPTH: 103 feet
NORTHING: 253010
EASTING: 2659816
SURFACE ELEV.: 179.3 ft
WATER LEVEL: 44.37 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: FID & PID
BOREHOLE DIAMETER: 6.5 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
	12:58	63-68	100%	**clayey sand to sandy clay** 0-60" light greyish with brown mottling, fine sand size quartz and phosphatic grains, clay, semi-sorted, rounded, moist, consolidated, stiff, malleable and ropey, odor brown lenses of clay at top of core alternating clay content and dark grey color at bottom of core	highest reading 1102 ppm FID, 42 ppm PID	
70						
	14:40	68-72	88%	**silty clay** 0-42" grey, clay with minor silt, very stiff, odor	highest reading 40 ppm FID, 0.2 ppm PID	drilling terminated @ 72.5 FT BGS
75						

BOREHOLE LOG

BOREHOLE NUMBER: HG30-D

PAGE NO. 3 OF 3

PROJECT NAME: Hawthorne Group Investigation
W.O.#: 05791.004.006.0003
LOCATION: Cabot Carbon/ Koppers Superfund Site Gainesville, FL
DRILLING COMPANY: Cherokee Environmental/ Environmental Drilling
RIG TYPE: GeoProbe 8140DT
DRILLING METHOD: Rotosonic
SAMPLING METHOD: Continuous logging with 4.5 inch x 5 foot core barrel
LOGGED BY: Heath McGregor WEATHER: Partly cloudy, ~79°F
DATE BEGUN: 10/10/2011 DATE COMPLETED: 10/10/2011

TOTAL DEPTH: 103 feet
NORTHING: 253010
EASTING: 2659816
SURFACE ELEV.: 179.3 ft
WATER LEVEL: 44.37 ft TOC
DRILLING BOND NUMBER: 9719912
AIR MONITORING INSTRUMENT: FID & PID
BOREHOLE DIAMETER: 6.0 inches
P.G. SIGNATURE:

DEPTH FT BLS	SAMPLE TIME	SAMPLING INTERVAL (FT BLS)	RECOVERY	LITHOLOGIC DESCRIPTION	VOLATILE ORGANIC VAPORS (ppm)	COMMENT
	12:16	72-77	60%	**clayey/gravely sand** 0-36" light grey, med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, moist, consolidated with clay, ropey, odor, with gravel sized semi-indurated clasts (same mineralogy) cemented with dolomite	highest reading 110 ppm FID, 0.1 ppm PID	
75	13:17	77-82	60%	**clayey/gravely sand** 0-36" light grey, lenses of med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, moist, consolidated with clay, ropey, strong odor, with layers of gravel sized semi-indurated clasts (same mineralogy) cemented with dolomite, dry towards bottom of core	highest reading 1845 ppm FID, 0.0 ppm PID	
80	14:29	82-87	80%	**gravel to clayey/silty sand** 0-48" light grey, lenses of med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, moist, consolidated with silt and clay, ropey, odor, with layers of gravel sized indurated clasts (same mineralogy) cemented with dolomite, dry at top, moist at bottom	highest reading 140 ppm FID, 0.0 ppm PID	
85	15:17	87-93	67%	**gravel to silty/clayey sand** 0-48" greenish grey, lenses of med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, wet, semi-consolidated with silt and clay, ropey, odor, with layers of indurated clasts (same mineralogy) cemented with dolomite	highest reading 1270 ppm FID, 2.1ppm PID	
90	16:07	93-98	100%	**clayey sand to silty/clayey sand** 0-60" greyish green, med to fine sand size quartz and phosphatic grains, semi-sorted, semi-rounded, moist, semi-consolidated with silt and clay, ropey, odor, with indurated clasts of clay cemented with dolomite near top of core, more silty less consolidated at bottom of core	highest reading 1350 ppm FID, 2.7 ppm PID	
95	16:51	98-103	90%	**clayey/silty sand** 0-54" greyish green, med to fine sand size quartz and minor phosphatic grains, semi-sorted, semi-rounded, moist, unconsolidated with silt and clay, ropey, odor, more silty at bottom of core	highest reading 1597 ppm FID, 0.1 ppm PID	drilling terminated @ 103 FT BLS
100						
105						

SUPPLEMENTAL HAWTHORNE INVESTIGATION

SOIL BORING LOG

Date	Time	Core Interval (ft BGS)	Recovery Ft.	Volatile Oraganic Vapors (ppm)		Yes/No/NA	Ft. BGS	Ft.. BGS	Boring Designation:									HG-31D
				PID	FID	Sand/Gravel Stringers	Stringer Interval	Stained Interval	Lithologic interval	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
03/31/14	1330	5-10	4	49.7	NA	No	NA	None	5-10	0.25	uncon	SM	f/m	moist	qtz	10YR 6/ 3	1	medium to fine sand with silt noticeable odor but no staining observed
03/31/14	1345	10-15	5	363	NA	No	NA	10-12	10-12		uncon	SM	med	wet	qtz	10YR 3/	3	medium to fine sand with silt noticeable odor staining in top 1 ft. of core
						No	NA	none	12-15	4.5	semi-con	SC	f/m	moist	qtz	10YR 7/ 2	1	silt and clay with fine sand very dense no staining observed
03/31/14	1510	15-20	5.5	16.8	NA	NA	NA	None	15-16	4.5	semi-con	SC	f/m	wet	qtz	10YR 7/ 2	1	silt and clay with fine sand very dense no staining observed
						NA	NA	None	16-20	0.25	uncon	SC	f/m	wet	qtz	10YR 7/ 2	1	medium to fine sand with silt odor
03/31/14	1525	20-25	4.5	0.7	NA	NA	NA	None	20-25	0.25	uncon	SM	med	sat	qtz	10YR 6/ 3	1	medium to fine sand with silt odor but no staining
03/31/14	1550	25-30	5	0.03	NA	NA	NA	None	25-28	0.25	uncon	SM	f/m	sat	qtz	10YR 6/ 3	1	medium to fine sand with silt odor but no staining
						NA	NA	None	28-30	2	semi-con	SC	vf/f	sat	qtz	10YR 7/ 3	1	sand with silt and clay no staining some odor
03/31/14	1610	30-33	7.7	1.3	NA	NA	NA	None	30-32	0.5	uncon	SM	f/m	sat	qtz	10YR 6/ 3	1	sand with silt no staining slight odor
					NA	Yes	32-33	None	32-33	3	semi-con	CL	f/m	moist	qtz	5GY 5/ 2	1	blue green clay with sand stringers To of Upper Clay = 32 ft. bls.
04/03/14	0930	33-35	3	1.5	5.8	Yes	33-35	None	33-35	3	semi-con	CL	f/m	moist	qtz	5GY 5/ 2	1	blue green clay with sand stringers bottom of upper clay = 35 ft. bls
04/03/14	0950	35-40	5	15.8	19.2	No	35-40	None	35-37	1	semi-con	SC	f/m/c	moist	qtz	10YR 7/ 3	1	silt and sand with minor clay odor. Slight color change
						No	NA	None	37-40	1	semi-con	SC	f/m/c	moist	qtz	5Y 7/ 2	1	sandy clay with silt and shell fragments. Odor. Some color change
04/03/14	1045	40-45	5	12.8	16.2	no	NA	None	40-45	0.5	uncon	SC	f/m/c	wet	fossil	5Y 7/ 2	1	sand with clay and silt and shell fragments & phosphate grains Odor. Color change
04/03/14	1140	45-50	5	15.6	51.2	no	NA	None	45-50	0.5	uncon	SC	f/m/c	moist	fossil	5Y 7/ 2	1	sand with clay and silt and shell fragments & phosphate grains. Odor. Color Change
04/03/14	1200	50-55	5	88.3	19.6	yes	50-53	None	50-55	0.5	semi-con	SC	f/m/c	moist	phos nod	5Y 7/ 2	1	sand with clay and silt and shell fragments & phosphate grains. Odor. Color Change
04/03/14	1230	55-60	5	9.0	7.5	yes	58-60	None	55-60	0.5	semi-con	SC	f/m/c	moist	fossil	5Y 7/ 1	1	sand with clay and silt and shell fragments & phosphate grains. Odor. Color Change
04/03/14	1300	60-65	5	16.6	12.4	yes	63-64	None	60-64	2	semi-con	SC	f/m	moist	fossil	5Y 7/ 2	1	sand with clay and silt and shell fragments & phosphate grains. Odor. Color Change
						no	NA	none	64-65	3	con	CL		dry		5Y 6/ 1	1	clay stiff brown tan and gray To of Middle Clay = 64 ft. bls. Odor. Color Change

WESTON SOLUTIONS
an employee-owned company

SUPPLEMENTAL HAWTHORNE INVESTIGATION

SOIL BORING LOG

Date	Time	Core Interval (ft BGS)	Recovery Ft.	Volatile Oraganic Vapors (ppm)		Yes/No/NA	Ft. BGS	Ft.. BGS	Boring Designation:									HG-31D
				PID	FID	Sand/Gravel Stringers	Stringer Interval	Stained Interval	Lithologic interval	R value	consolidation	USCS	grain size	moisture	minerals	color	NAPL Extent	comments
04/07/14	11:15	65-70	5	4.6	48.3	no	NA	65.5-66	65-66	3	con	CH	vf/f	moist		5Y 4/ 1	2	clay with odor stained interval at 66. No sand visible. No color change
						No	NA	None	66-68	2.5	con	CH	f/m	moist	phos nod	10YR 4/ 2	1	clay with sand & silt. Odor. No color change
						No	NA	None	68-70	3	con	CH	grav	moist	lithics	5Y 4/ 1	1	clay with odor. No sand visible. No color change
04/07/14	1300	70-73	3	0	0	No	NA	None	70-73	2.5	con	OH	grav	moist	dolo	5Y 4/ 1	1	clay with ccasional gravel. Odor. No color change. Very Hard drilling
04/07/14	1350	75-80	2	0	4.5	no	NA	None	73-75	5	ind	GP	grav	dry	lithics	2.5Y 7/ 1	1	gravel & cobbles with clay. Odor
04/07/14	1445	80-85	4.5	14.3	143	no	NA	None	75-80	1	semi-con	ML	grav	wet	dolo	5Y 7/ 1	1	Silt with clay, sand and gravel. Strong Odor. Some color change from 81-83 ft.
04/07/14	1515	85-90	4.4	6.5	23.4	No	NA	None	85-89	3	con	CH	grav	wet	dolo	5Y 7/ 1	1	Clay with gravel, sand and silt
						No	NA	None	89-90	1	semi-con	SC	f/m/c	wet	qtz	5Y 7/ 1	1	Sand with clay and silt. End of Middle Clay Approx. 89 ft. bls
04/07/14	1545	90-95	4	0	55.3	No	NA	None	90-95	3	con	CH	grav	wet	dolo	5Y 7/ 1	1	Clay with gravel, sand and silt
04/07/14	1615	95-100	5	0	26.3	No	NA	None	95-100	2.5	semi-con	SC	f/m/c	wet	dolo	5Y 6/ 2	1	Sand with clay and silt and gravel. Odor. Color change. Clay is blue green color
04/07/14	1650	100-104	3	0.6	463	No	Na	None	100-104	0.5	uncon	SC	f/m/c	wet	dolo	5GY 6/ 2	1	sand with silt clay and gravel. Slight odor
																		Bottom of Hole 104 ft.

WESTON SOLUTIONS
an employee-owned company

Monitoring Well Construction Diagrams

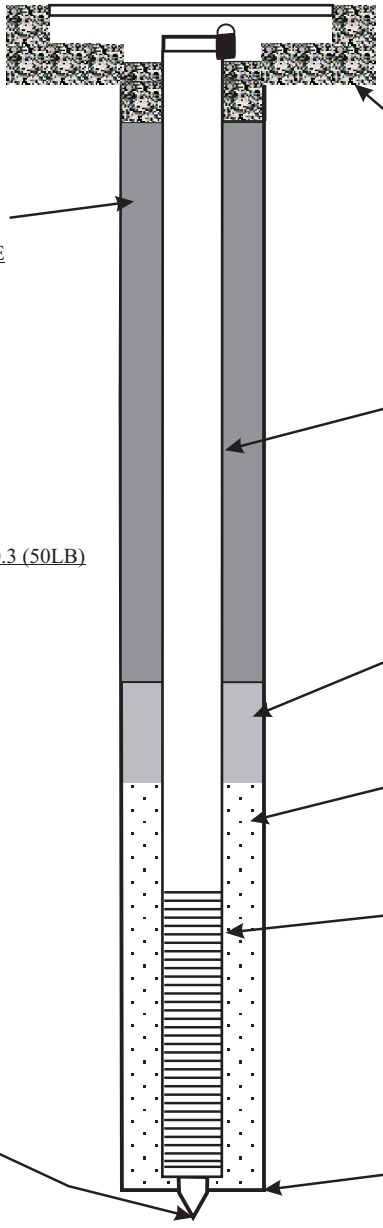
SA-29

DRILLING METHOD: ROTOSONIC
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 9/21/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 179.32 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 253027
EASTING: 2659984

GROUND SURFACE ELEVATION: 179.4 FEET MSL



SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

DEPTH TO TOP OF ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

WELL MATERIALS USED

FEET OF RISER: 26 FT
FEET OF SCREEN: 5 FT
FEET OF SEDIMENT SUMP: 0.8 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): 0.3 (50LB)
BAGS OF CONCRETE (bag size): 3.5 (80 lb)
GALLONS OF NEAT CEMENT : ~15
BAGS OF RIVER PEBBLE: 0
PROTECTIVE CASING: 0.3 FT x 0.3 FT x 5 FT

DEPTH TO TOP OF PLUG: 21 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 1/4 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 23 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 26 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: WIRE WRAPPED STAINLESS STEEL
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 5 FT

TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

BOREHOLE DIAMETER: 6 IN
DEPTH TO BOTTOM OF BOREHOLE AND WELL :31 FT BGS

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2011 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

SA-29

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	09/26/11	05791.004.006.0003	New Well Construction Data

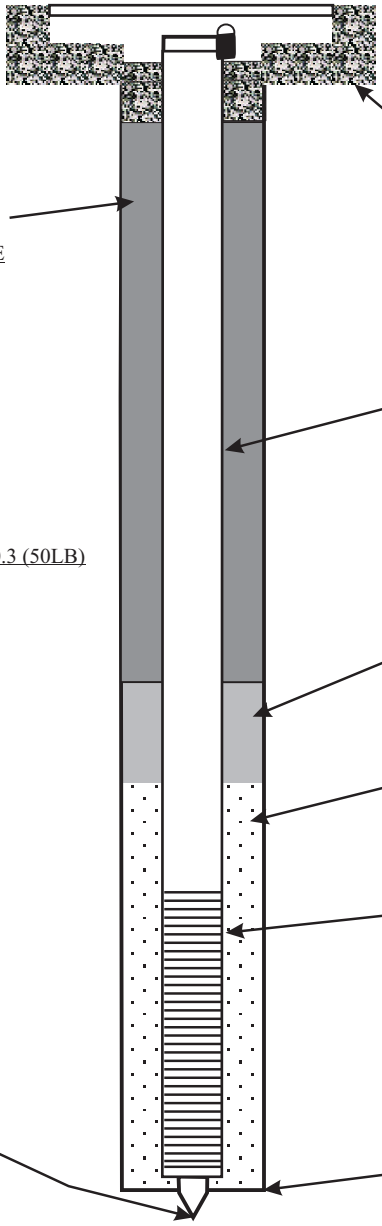
SA-30

DRILLING METHOD: ROTOSONIC
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 9/22/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 179.50 FEET MSL

STATE PLANE COORDINATES:
NORTHING:253009
EASTING:2659837

GROUND SURFACE ELEVATION: 179.6 FEET MSL



SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

DEPTH TO TOP OF ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

WELL MATERIALS USED

FEET OF RISER: 27 FT
FEET OF SCREEN: 5 FT
FEET OF SEDIMENT SUMP: 0.8 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): 0.3 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~14
BAGS OF RIVER PEBBLE: 0
PROTECTIVE CASING: 0.3 FT x 0.3 FT x 5 FT

DEPTH TO TOP OF PLUG: 19 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 1/4 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 22 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 24 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: WIRE WRAPPED STAINLESS STEEL
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 5 FT

TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

BOREHOLE DIAMETER: 6 IN
DEPTH TO BOTTOM OF BOREHOLE AND WELL :29 FT BGS

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2011 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

SA-30

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	09/26/11	05791.004.006.0003	New Well Construction Data

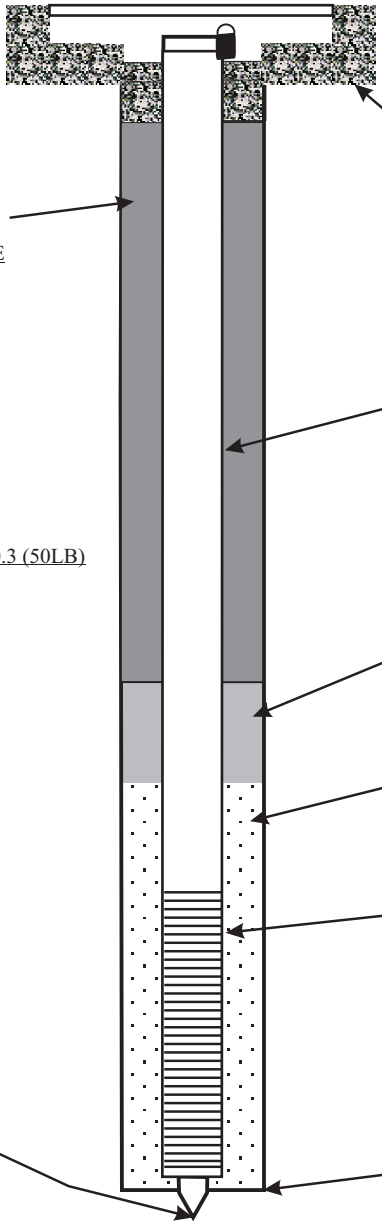
SA-31

DRILLING METHOD: ROTOSONIC
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 9/26/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 184.45 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 252108
EASTING: 2659398

GROUND SURFACE ELEVATION: 184.5 FEET MSL



SURFACE SEAL: 2FT X 2FT CONCRETE PAD
MATERIAL: CONCRETE

DEPTH TO TOP OF ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

WELL MATERIALS USED

FEET OF RISER: 21 FT
FEET OF SCREEN: 5 FT
FEET OF SEDIMENT SUMP: 0.8 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): 0.3 (50LB)
BAGS OF CONCRETE (bag size): 2 (80 lb)
GALLONS OF NEAT CEMENT : ~14
BAGS OF RIVER PEBBLE: 1 (0.5 CU FT)
PROTECTIVE CASING: 0.3 FT x 0.3 FT x 5 FT

DEPTH TO TOP OF PLUG: 16 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 1/4 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 18 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 21 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 5 FT

TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

BOREHOLE DIAMETER: 6 IN
DEPTH TO BOTTOM OF BOREHOLE AND WELL :26 FT BGS

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

SA-31

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	09/26/11	05791.004.006.0003	New Well Construction Data

SA-32

DRILLING METHOD: ROTOSONIC
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 9/20/2011

PROTECTIVE CASING : ALUMINUM 0.3 FT x 0.3 FT x 5 FT

RIVER PEBBLES

WEEP HOLE

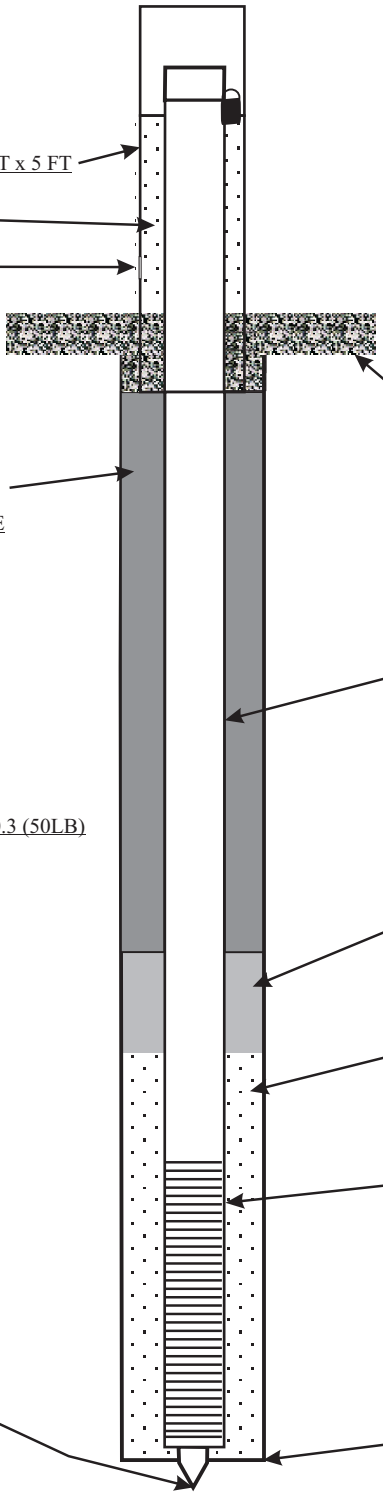
WELL COVER: LOCKING ALUMINUM
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 185.07 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 252598
EASTING: 2659404

GROUND SURFACE ELEVATION: 182.2 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

DEPTH TO TOP OF ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE



RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

WELL MATERIALS USED

FEET OF RISER: 24 FT
FEET OF SCREEN: 5 FT
FEET OF SEDIMENT SUMP: 0.8 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): 0.3 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~11
BAGS OF RIVER PEBBLE: 1 (0.5 CU FT)
PROTECTIVE CASING: 0.3 FT x 0.3 FT x 5 FT

DEPTH TO TOP OF PLUG: 15 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 1/4 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 18 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 20 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 5 FT

TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

BOREHOLE DIAMETER: 6 IN
DEPTH TO BOTTOM OF BOREHOLE AND WELL :26 FT BGS

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

SA-32

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	09/20/11	05791.004.006.0003	New Well Construction Data

SA-33

DRILLING METHOD: ROTOSONIC
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 9/20/2011

PROTECTIVE CASING : ALUMINUM 0.3 FT x 0.3 FT x 5 FT

RIVER PEBBLES

WEEP HOLE

WELL COVER: LOCKING ALUMINUM
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 185.66 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 252880
EASTING: 2659386

GROUND SURFACE ELEVATION: 182.5 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

DEPTH TO TOP OF ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

WELL MATERIALS USED

FEET OF RISER: 23 FT
FEET OF SCREEN: 5 FT
FEET OF SEDIMENT SUMP: 0.8 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): 0.3 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~10
BAGS OF RIVER PEBBLE: 1 (0.5 CU FT)
PROTECTIVE CASING: 0.3 FT x 0.3 FT x 5 FT

DEPTH TO TOP OF PLUG: 15 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 1/4 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 17 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 20 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 5 FT

TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

BOREHOLE DIAMETER: 6 IN
DEPTH TO BOTTOM OF BOREHOLE AND WELL :25 FT BGS

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

SA-33

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	09/20/11	05791.004.006.0003	New Well Construction Data

HG-28S

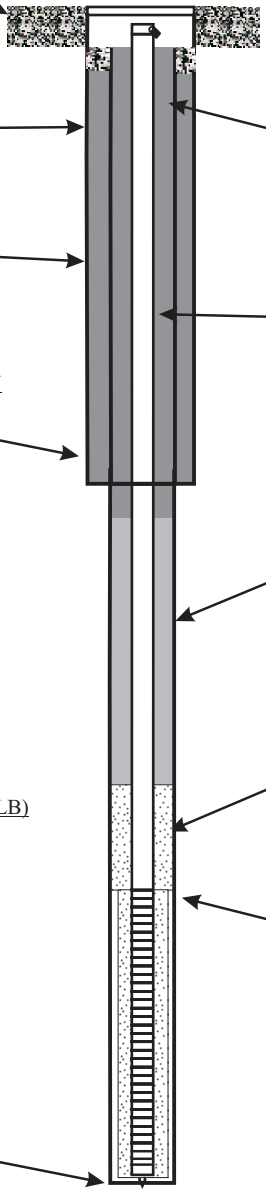
DRILLING METHOD: ROTOSONIC AND MUD ROTARY
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 10/07/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 174.82 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 253260
EASTING:2660272

GROUND SURFACE ELEVATION: 175.3 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE



BOREHOLE DIAMETER: 10 IN
DEPTH OF BOREHOLE: 30 FT BGS

TOP OF 6 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE

TOP OF 10 IN ANNULUS SEAL: 2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

PERMANENT CASING: 6 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 30 FT BGS

DEPTH TO TOP OF PLUG: 32 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

WELL MATERIALS USED

FEET OF RISER: 45 FT
FEET OF SCREEN: 10 FT
FEET OF SEDIMENT SUMP: 0.8 FT
FEET OF 6 IN CASING: 34 FT
BAGS OF SAND (bag size): 2 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): ~2 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~131

DEPTH TO TOP OF FILTER PACK: 42 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 45 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL WITH PRE-PACK FILTER WASHED, 20/30, GRADED QUARTZ SAND
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 10 FT

DEPTH TO BOTTOM OF WELL : 55 FT BGS
TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

HG-28S

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	10/07/11	05791.004.006.0003	New Well Construction Data

HG-28D

DRILLING METHOD: ROTOSONIC AND MUD ROTARY
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 10/11/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 175.29 FEET MSL

STATE PLANE COORDINATES:
NORTHING:253260
EASTING:2660261

GROUND SURFACE ELEVATION: 175.3 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

BOREHOLE DIAMETER: 14 IN
DEPTH OF BOREHOLE: 33 FT BGS

PERMANENT CASING: 10 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 34 FT BGS

TOP OF 14 IN ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

TOP OF 10 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

TOP OF 6 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

DEPTH TO TOP OF PLUG: 32.5 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

PERMANENT CASING: 6 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 68 FT BGS

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

DEPTH TO TOP OF PLUG: 70 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF FILTER PACK: 76 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

WELL MATERIALS USED

FEET OF RISER: 82 FT
FEET OF SCREEN: 10 FT
FEET OF SEDIMENT SUMP: 0.8 FT
FEET OF 6 IN CASING: 68 FT
FEET OF 10 IN CASING: 34 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): ~4 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~395

DEPTH TO TOP OF SCREEN: 82 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL WITH PRE-PACK FILTER WASHED, 20/30, GRADED QUARTZ SAND
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 10 FT

DEPTH TO BOTTOM OF WELL :92 FT BGS
TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

HG-28D

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	10/11/11	05791.004.006.0003	New Well Construction Data

HG-30S

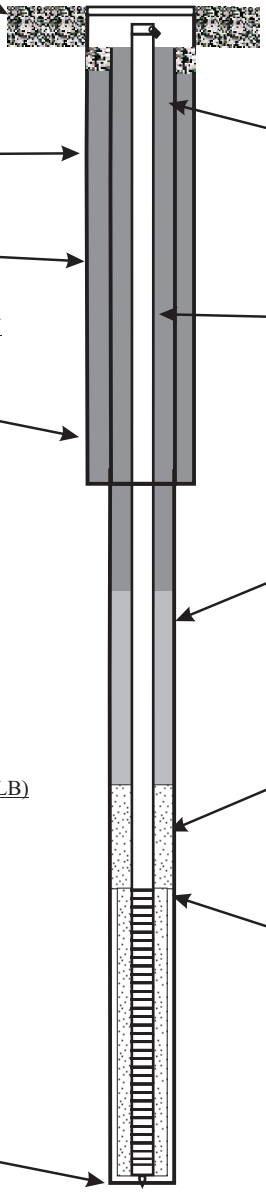
DRILLING METHOD: ROTOSONIC AND MUD ROTARY
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 10/05/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 179.50 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 253007
EASTING:2659830

GROUND SURFACE ELEVATION: 179.5 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE



BOREHOLE DIAMETER: 10 IN
DEPTH OF BOREHOLE: 30 FT BGS

TOP OF 6 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE

TOP OF 10 IN ANNULUS SEAL: 2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

PERMANENT CASING: 6 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 30 FT BGS

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

DEPTH TO TOP OF PLUG: 42 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

WELL MATERIALS USED

FEET OF RISER: 56 FT
FEET OF SCREEN: 10 FT
FEET OF SEDIMENT SUMP: 0.8 FT
FEET OF 6 IN CASING: 30 FT
BAGS OF SAND (bag size): 4 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): ~2 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~131

DEPTH TO TOP OF FILTER PACK: 51 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 56 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL WITH PRE-PACK FILTER WASHED, 20/30, GRADED QUARTZ SAND
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 10 FT

DEPTH TO BOTTOM OF WELL : 66 FT BGS
TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

HG-30S

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	10/05/11	05791.004.006.0003	New Well Construction Data

HG-30D

DRILLING METHOD: ROTOSONIC AND MUD ROTARY
DRILLER: CHEROKEE ENVIRONMENTAL
BOND NUMBER: 9719912
DATE OF CONSTRUCTION: 10/11/2011

WELL COVER: 10 IN DIA STEEL MANHOLE
TYPE OF WELL CAP: 2 IN RUBBER SEAL PLUG
TOP OF CASING ELEVATION: 179.31 FEET MSL

STATE PLANE COORDINATES:
NORTHING: 253010
EASTING:2659816

GROUND SURFACE ELEVATION: 179.3 FEET MSL

SURFACE SEAL: 3FT X 3FT CONCRETE PAD
MATERIAL: CONCRETE

BOREHOLE DIAMETER: 14 IN
DEPTH OF BOREHOLE: 33 FT BGS

PERMANENT CASING: 10 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 29 FT BGS

TOP OF 14 IN ANNULUS SEAL: ~2 FT BGS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: TREMIE PIPE

TOP OF 10 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

TOP OF 6 IN ANNULUS SEAL: GS
MATERIAL: NEAT CEMENT GROUT
SEALANT PLACEMENT METHOD: HALIBURTON

DEPTH TO TOP OF PLUG: ~28 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

PERMANENT CASING: 6 IN I.D. SCHEDULE 40 CARBON STEEL
DEPTH OF CASING: 72 FT BGS

RISER PIPE MATERIAL/SIZE: 2 IN I.D. SCHEDULE 40 STAINLESS STEEL

DEPTH TO TOP OF PLUG: 80 FT BGS
PLUG MATERIAL/SIZE : BENTONITE 3/8 IN TABLETS
PLUG PLACEMENT METHOD: GRAVITY

WELL MATERIALS USED

FEET OF RISER: 82 FT
FEET OF SCREEN: 10 FT
FEET OF SEDIMENT SUMP: 0.8 FT
FEET OF 6 IN CASING: 72 FT
FEET OF 10 IN CASING: 29 FT
BAGS OF SAND (bag size): 3.5 (50LB)
BUCKETS OF BENTONITE PELLETS (bucket size): ~4 (50LB)
BAGS OF CONCRETE (bag size): 4 (80 lb)
GALLONS OF NEAT CEMENT : ~381

DEPTH TO TOP OF FILTER PACK: 90 FT BGS
FILTER PACK MATERIAL/SIZE: WASHED, 20/30, GRADED QUARTZ SAND
FILTER PACK PLACEMENT METHOD: GRAVITY

DEPTH TO TOP OF SCREEN: 93 FT BGS
SCREEN ID: 2 IN
TYPE OF SCREEN: SLOTTED STAINLESS STEEL WITH PRE-PACK FILTER WASHED, 20/30, GRADED QUARTZ SAND
SCREEN SLOT SIZE: 0.010 IN
LENGTH OF SCREEN: 10 FT

DEPTH TO BOTTOM OF WELL : 103 FT BGS
TYPE OF SUMP: POINTED
LENGTH OF SUMP: 0.8 FT

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Date: 2-14-2012 Firm: WESTON SOLUTIONS, INC.

FIGURE IS NOT DRAWN TO SCALE

HAWTHORNE GROUP INVESTIGATION

GAINESVILLE, ALACHUA COUNTY, FLORIDA

HG-30D

WELL DIAGRAM

DRAWN	DATE	WORK ORDER NO.	FILE NAME
HAM	10/10/11	05791.004.006.0003	New Well Construction Data

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-36S**
TOTAL DEPTH: **55 Ft. bgs**
WELL DEPTH: **55 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/11, 5/15, 5/18/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **11:30**

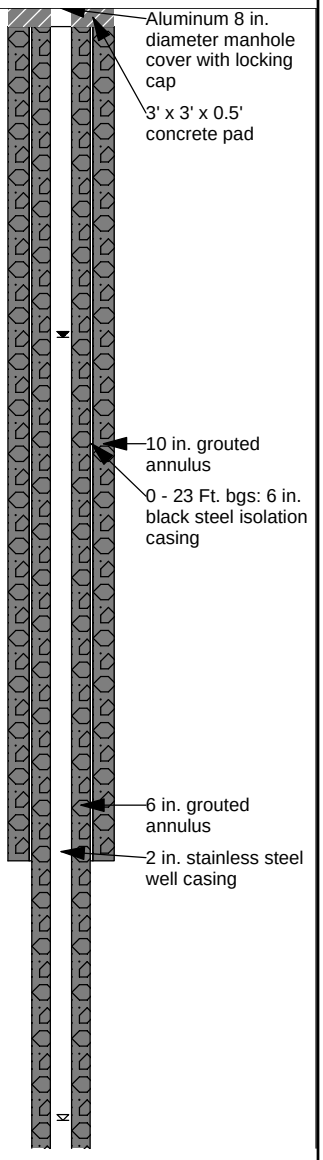
Top of Casing Elev.: **169.35 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs**
Static Water Level: **8.88 Ft. btoc**

Northing: **253886 US Ft.**
Easting: **2660686 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	80	0	7.7	1		SM	5YR	5YR 5/1 Stained gray sand, no clay, slightly cemented last foot, unconsolidated, wet
		0	10.6	-		-	-	No recovery
10	60	4.1	18.2	1		SM	10YR	10 YR 4/1 Stained dark gray sand, slight smokey odor, unconsolidated, moist
				-		-	-	No recovery
15	60	8.1	648	1		SC	10YR	10YR 4/1 Medium to fine sand with silt and clay, smokey odor, semi-consolidated, moist
				-		-	-	No recovery
20	60	0	15.1	1		CL	5GY	5GY 5/1 Greenish gray clay, slight smokey odor, top of upper clay = 23 Ft. bgs
				-		-	-	No recovery
25	80	0	0	1		CL	5GY	5GY 5/1 Greenish-gray clay, stringers at 25 - 27 Ft. bgs, semi-consolidated, saturated, bottom of upper clay = 30 Ft. bgs
				-		-	-	No recovery
30								5GY 5/1 Medium to fine sand with silt,

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-36S**
TOTAL DEPTH: **55 Ft. bgs**
WELL DEPTH: **55 Ft. bgs**

CABOT

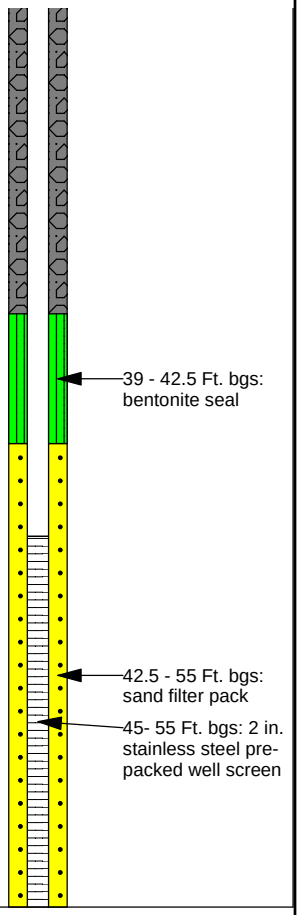
PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**5/11, 5/15, 5/18/15**	BOREHOLE DIA.:	**10 in., 6 in.**
		TIME OF BORING:	**11:30**

Top of Casing Elev.: **169.35 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs**
Static Water Level: **8.88 Ft. btoc**

Northing: **253886 US Ft.**
Easting: **2660686 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
	100	0.7	0	1		ML	2.5YR	unconsolidated, saturated
35	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel
40				1		CL	5GY	5GY 7/1 Light greenish-gray silty clay with phosphate nodules.
	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel.
45	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules
50	100	0	1.1	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with white banding and phosphate nodules
55								



NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-36D**
TOTAL DEPTH: **104 Ft. bgs**
WELL DEPTH: **103 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/11, 5/15, 5/18, 5/20/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **11:30**

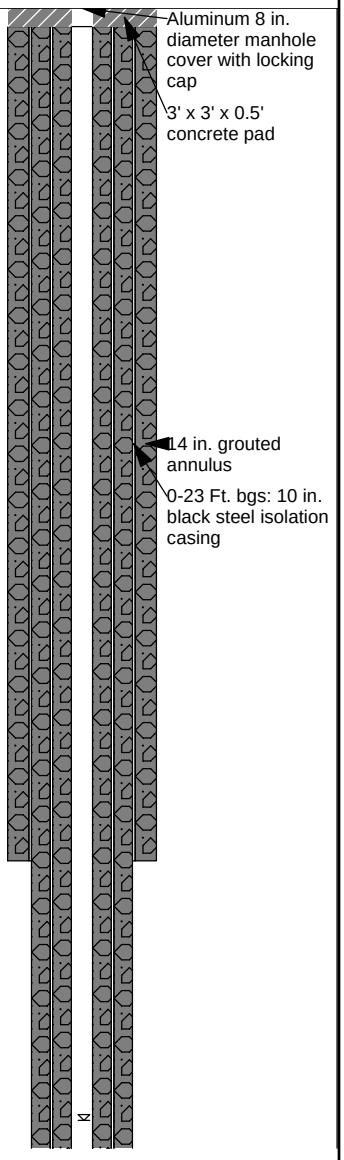
Top of Casing Elev.: **169.14 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs**
Static Water Level: **34.05 Ft. btoc**

Northing **253887 US Ft.** Easting **2660694 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	80	0	7.7	1		SM	5YR	5YR 5/1 Stained gray sand, no clay, slightly cemented last foot, unconsolidated, wet
		0	10.6	-		-	-	No recovery
10	60	4.1	18.2	1		SM	10YR	10 YR 4/1 Stained dark gray sand, slight smokey odor, unconsolidated, moist
				-		-	-	No recovery
15	60	8.1	648	1		SC	10YR	10YR 4/1 Medium to fine sand with silt and clay, smokey odor, semi-consolidated, moist
				-		-	-	No recovery
20	60	0	15.1	1		CL	5GY	5GY 5/1 Greenish gray clay, slight smokey odor, top of upper clay = 23 Ft. bgs
				-		-	-	No recovery
25	80	0	0	1		CL	5GY	5GY 5/1 Greenish-gray clay, stringers at 25 - 27 Ft. bgs, semi-consolidated, saturated, bottom of upper clay = 30 Ft. bgs
				-		-	-	No recovery
30								5GY 5/1 Medium to fine sand with silt,

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-36D**
TOTAL DEPTH: **104 Ft. bgs**
WELL DEPTH: **103 Ft. bgs**

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/11, 5/15, 5/18, 5/20/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **11:30**

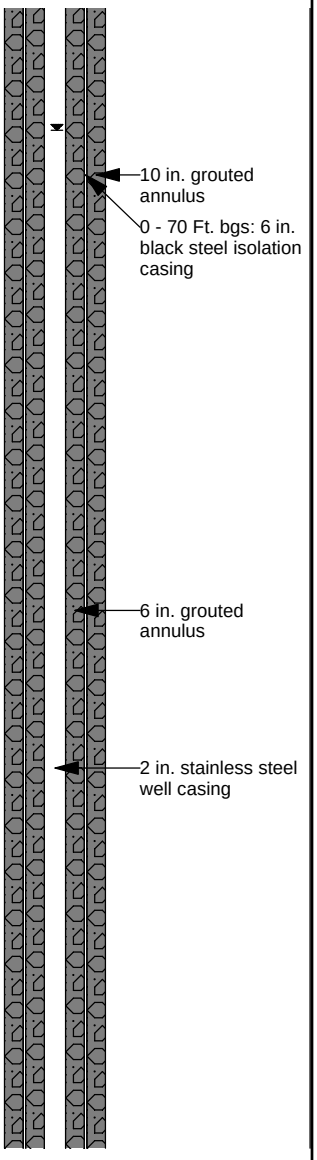
Top of Casing Elev.: **169.14 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs**
Static Water Level: **34.05 Ft. btoc**

Northing: **253887 US Ft.**
Easting: **2660694 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
	100	0.7	0	1		ML	2.5YR	unconsolidated, saturated
35	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel
40				1		CL	5GY	5GY 7/1 Light greenish-gray silty clay with phosphate nodules.
	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel.
45	100	0	0	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with phosphate nodules
50	100	0	1.1	1		SC	5GY	5GY 6/1 Greenish-gray silty, clayey sand with white banding and phosphate nodules
55	100	0	0	1		ML	5GY	5GY 7/1 Light greenish-gray silty clay with phosphate nodules, semi-consolidated, moist
60								5GY 6/1 Light greenish gray sandy, clayey silt, with sand content

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-36D**
TOTAL DEPTH: **104 Ft. bgs**
WELL DEPTH: **103 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**D40 Mud Rotary Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**5/11, 5/15, 5/18, 5/20/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**11:30**

Top of Casing Elev.: **169.14 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs** ▼ Static Water Level: **34.05 Ft. btoc**

Northing **253887 US Ft.** Easting **2660694 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
65	100	0	0	1		SM	5GY	increasing with depth, semi-consolidated, moist
	40	0	0	1		SM	5GY	5GY 6/1 Light greenish gray silty, sandy clay with phosphate nodules, semi-consolidated, moist
				-		-	-	No recovery
70	80	0	1.2	1		CL	5GY	5GY 5/1 Greenish-gray, stiff clay, consolidated, dry, top of middle clay = 70 Ft. bgs
				-		-	-	No recovery
75	60	0.5	0	1		CL	5GY	5GY 5/1 Dark greenish-gray, stiff clay, consolidated, dry
				-		-	-	No recovery
80	100	0	0	1		CL	5GY	5GY 5/1 Dark greenish gray, stiff clay, shell fragments at bottom of sample, consolidated, dry, bottom of middle clay = 85 Ft. bgs
85	100	0	0	1		CL	5GY	5GY 6/1 Clay with limestone gravel, sand and silt, and more compacted at the top, consolidated, moist
90				1		ML	5GY	5GY 6/1 Clay with and and silt, consolidated, moist

WELL CONSTRUCTION:

89 -91.5 Ft. bgs: bentonite seal

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-36D**
TOTAL DEPTH: **104 Ft. bgs**
WELL DEPTH: **103 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/11, 5/15, 5/18, 5/20/15**

DRILLING INFORMATION

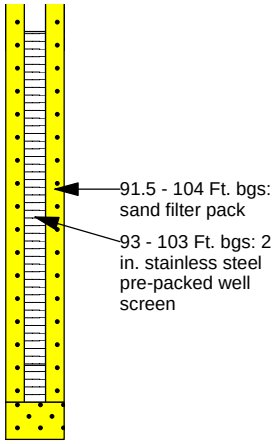
DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **11:30**

Top of Casing Elev.: **169.14 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **30 Ft. bgs**
Static Water Level: **34.05 Ft. btoc**

Northing: **253887 US Ft.**
Easting: **2660694 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
95	100	0	0	1		SC	5GY	5GY 6/1 Silty sand with some clay, consolidated, moist	
	40	0	9	1		SM	5GY	5Y 6/1 Silty sand with clay diminishing with depth, unconsolidated, saturated	
				-		-	-	No recovery	
100	100	0	0	1		SM	5GY	5GY 6/1 Sand with silt, unconsolidated, saturated, should produce water	
				1		CL	5GY	5GY 5/1 Silt grading to clay, much more consolidated than sand above, consolidated, moist	
105									



NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-37S**
TOTAL DEPTH: **60 Ft. bgs**
WELL DEPTH: **58 Ft. bgs**

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/27 - 4/29, 5/05 - 5/06/15**

DRILLING INFORMATION

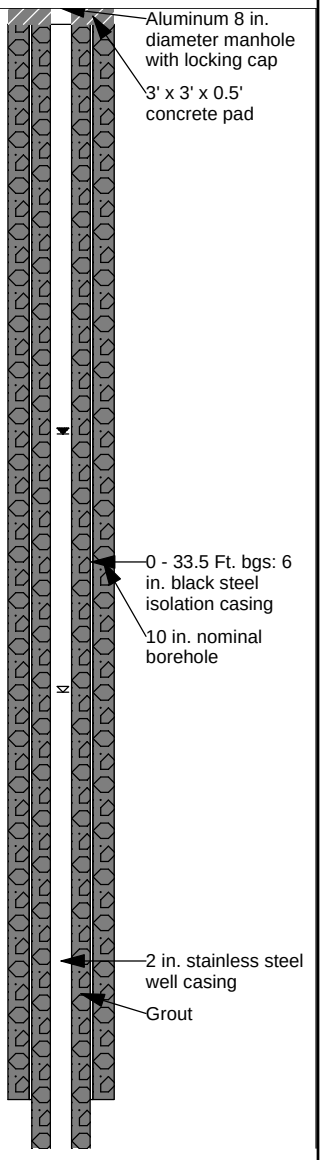
DRILLING CO.: **Environmental Drilling Services, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **17:50**

Top of Casing Elev.: **176.16 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **13.07 Ft. btoc**

Northing: **253461 US Ft.**
Easting: **2660573 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	20			-		-	-	No recovery
10		0	9.1	1		SM	10YR	10YR 2/1 Black fill material with concrete chunks, staining observed, unconsolidated, wet
				-		-	-	
	80	2.1	6.7	1		SM	10YR	No recovery
15				1		GM	5GY	10YR 2/1, Black fill material with concrete chunks, staining observed, unconlidated, wet
	100	0	4.7	1		SC	5GY	5GY 7/1, Medium to fine sand with silt and some clay, noticeable odor, semi-consolidated, moist
20		0	2.1	1		SM	5GY	5GY 7/1 Silt and clay with fine sand, very dense, semi-consolidated, wet
				-		-	-	
	80	2.3	134	1		SM	7.5YR	5GY 7/1, Medium to fine sand with silt, unconsolidated, wet
		1.3	133	1		SM	5GY	No recovery
25				-		-	-	7.5YR 7/1, Medium to fine sand, unconsolidated, saturated
	70	7.7	32.2	1		SM	10YR	5GY 5/1 Medium to fine sand with silt, unconsolidated, saturated
30								No recovery
	100	1.9	208					10 YR 7/3, 10YR 6/3 Medium to fine sand, with smokey odor but no staining
35		1.5	53.5	1		CL	5GY	5GY 7/1 Blue green clay, with sand stringers, semi-consolidated, moist, top of upper clay = 33.5 Ft. bgs,



NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-37S**
TOTAL DEPTH: **60 Ft. bgs**
WELL DEPTH: **58 Ft. bgs**

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/27 - 4/29, 5/05 - 5/06/15**

DRILLING INFORMATION

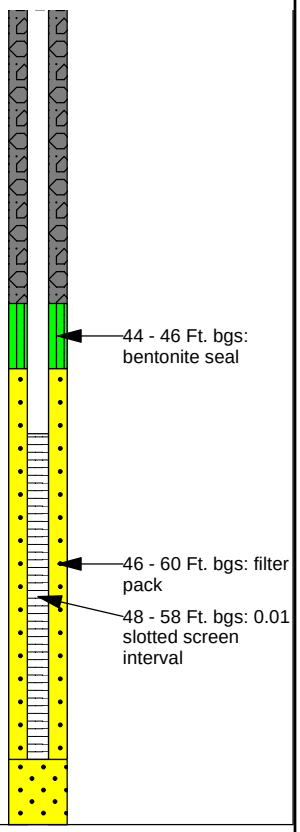
DRILLING CO.: **Environmental Drilling Services, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **17:50**

Top of Casing Elev.: **176.16 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **13.07 Ft. btoc**

Northing **253461 US Ft.** Easting **2660573 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
		0.5	1.7				bottom up upper clay = 36 Ft. bgs
	100	1.6	221	1	SM	2.5YR	2.5YR 6/2 Silty sand, smokey odor, some color change to green, unconsolidated, wet
		1.6	32.9			5GY	5GY 4/1 Silty sandy clay with phosphate nodules, smokey odor, dark greenish gray lightening slightly with depth, white clay bands obeserved, unconsolidated to semi-consolidated, wet to moist
40	100	0	3.7			5GY	
45	100	0	0	1	CL	5Y	
50	100	0	0			5Y	
55	100	0	0	1	SC	5GY	5GY 7/1 Sand with clay and silt, small phosphate grains, faint smokey odor, semi-consolidated, wet
		0	1.2	1	CL	5GY	5GY 7/1 Clay with little sand and more silt, some white banding visible, drier zone than above, semi-consolidated, moist
60							



WELL CONSTRUCTION:

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-37D**
TOTAL DEPTH: **108 Ft. bgs**
WELL DEPTH: **108 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**D-40 Mud Rotary Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**4/27, 4/29, 5/5 - 5/6, 5/13 - 5/14/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**17:50**

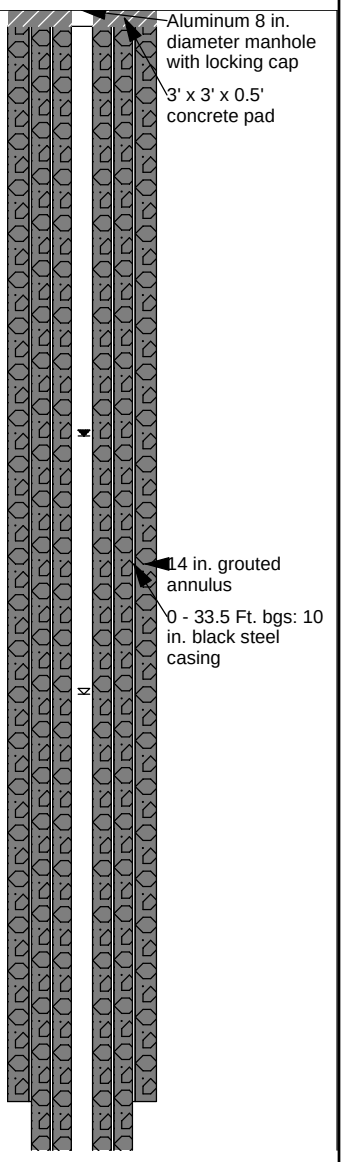
Top of Casing Elev.: **176.43 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs** ▼ Static Water Level: **39.05 Ft. btoc**

Northing **253463 US Ft.** Easting **2660586 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	20			-		-	-	No recovery
10		0	9.1	1		SM	10YR	10YR 2/1 Black fill material with concrete chunks, staining observed, unconsolidated, wet
				-		-	-	
	80	2.1	6.7	1		SM	10YR	No recovery
15		0	27	1		GM	5GY	10YR 2/1 Black fill material with concrete chunks, staining observed, unconlidated, wet
	100	0	4.7	1		SC	5GY	5GY 7/1 Medium to fine sand with silt and some clay, noticeable odor, semi-consolidated, moist
20		0	2.1	1		SM	5GY	5GY 7/1 Silt and clay with fine sand, very dense, semi-consolidated, wet
				-		-	-	
	80	2.3	134	1		SM	7.5YR	5GY 7/1 Medium to fine sand with silt, unconsolidated, wet No recovery
25		1.3	133	1		SM	5GY	7.5YR 7/1 Medium to fine sand, unconsolidated, saturated
				-		-	-	5GY 5/1 Medium to fine sand with silt, unconsolidated, saturated
	70	7.7	32.2	1		SM	10YR	No recovery 10 YR 7/3, 10YR 6/3 Medium to fine sand,with smokey odor but no staining
30		1.9	208				10YR	
	100							
35		1.5	53.5	1		CL	5GY	5GY 7/1 Blue green clay, with sand stringers, semi-consolidated, moist, top of upper clay = 33.5 Ft. bgs,

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-37D**
TOTAL DEPTH: **108 Ft. bgs**
WELL DEPTH: **108 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**D-40 Mud Rotary Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**4/27, 4/29, 5/5 - 5/6, 5/13 - 5/14/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**17:50**

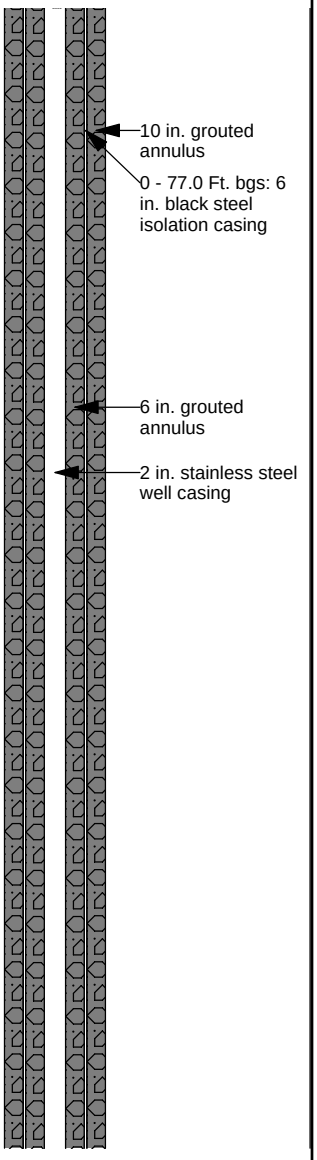
Top of Casing Elev.: **176.43 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs** ▼ Static Water Level: **39.05 Ft. btoc**

Northing **253463 US Ft.** Easting **2660586 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
35		0.5	1.7				5GY	bottom of upper clay = 36 Ft. bgs
	100	1.6	221	1		SM	2.5YR	2.5YR 6/2 Silty sand, smokey odor, some color change to green, unconsolidated, wet
40		1.6	32.9				5GY	5GY 4/1 Silty sandy clay with phosphate nodules, smokey odor, dark greenish gray, lightening slightly with depth, white clay bands obeserved, unconsolidated to semi-consolidated, wet to moist
	100	0	3.7				5GY	
45	100	0	0	1		CL	5Y	
50	100	0	0				5Y	
55	100	0	0	1		SC	5GY	5GY 7/1 Sand with clay and silt, small phosphate grains, faint smokey odor, semi-consolidated, wet
		0	1.2	1		CL	5GY	5GY 7/1 Clay with little sand and more silt, some white banding visible, drier zone than above, semi-consolidated, moist
60	100	0	0.7	1		SC	5Y	5Y 7/1 Sandy clayey silt, with sand content and cementation increasing with depth, no odor, light greenish gray, semi-consolidated, moist
65	100	0	1.2	1		SM	5GY	5GY 7/1 Light greenish gray Sand and silt with some clay, slightly cemented, no odor, semi-consolidated, moist
70								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-37D**
TOTAL DEPTH: **108 Ft. bgs**
WELL DEPTH: **108 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**D-40 Mud Rotary Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**4/27, 4/29, 5/5 - 5/6, 5/13 - 5/14/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**17:50**

Top of Casing Elev.: **176.43 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs** ▼ Static Water Level: **39.05 Ft. btoc**

Northing **253463 US Ft.** Easting **2660586 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
70	100	0	1.2	1		CL	5GY	5GY 6/1, Clay with sand and silt with fine phosphate nodules, similar to above but more clay, consolidated, moist
		0	0	1		CL	5GY	5GY 5/1 Greenish gray Clay, stiff, top of middle clay = 74 Ft. bgs, consolidated, dry
75	60	0	0	1		CL	5GY	5GY 4/1 Dark greenish gray Clay, stiff, consolidated, dry
				-		-	-	No recovery
80	100	0	5.7	1		CL	5GY	5GY 5/1 Dark greenish gray Clay, stiff, consolidated, dry, bottom of middle clay = 85 Ft. bgs
85	100	0	5.5	1		GC	5GY	5GY 7/1 Light greenish gray, gravel, clay, silt, and sand
90	100	0	3.2	1		GC	5Y	5Y 6/1, 5Y 6/2 Greenish gray clay with gravel, consolidated, moist to wet
95	20	0	26.3	-		-	-	No recovery
100	100	0	66.7	1		SC	5GY	5GY 5/1 Greenish gray sand with clay and silt, slight odor, semi-consolidated, saturated
105		0	26.3	1		SW	5GY	5GY 6/1 Greenish gray, well graded and with silt, some phosphates present, semi-consolidated, saturated

WELL CONSTRUCTION:

- 94 - 96 Ft. bgs: bentonite seal
- 96 - 108 Ft. bgs: sand filter pack
- 98 - 108 Ft. bgs: 2 in. stainless steel pre-packed well

NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-37D**
TOTAL DEPTH: **108 Ft. bgs**
WELL DEPTH: **108 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/27, 4/29, 5/5 - 5/6, 5/13 - 5/14/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D-40 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **17:50**

Top of Casing Elev.: **176.43 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **39.05 Ft. btoc**

Northing: **253463 US Ft.**
Easting: **2660586 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
105	100	0	43.5	1		SC	5Y	5Y 6/2 Blue green clay, silt, and gravel, odor present, unconsolidated, wet	screen

NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-38S**
TOTAL DEPTH: **49 Ft. bgs**
WELL DEPTH: **49 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/26, 4/30/15**

DRILLING INFORMATION

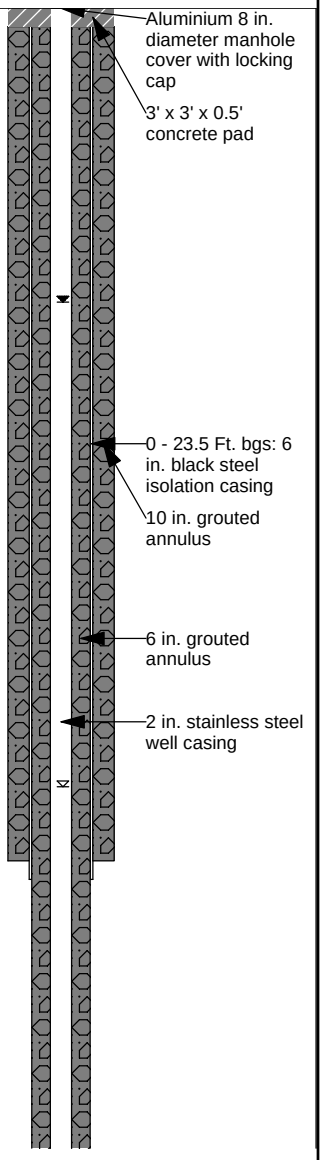
DRILLING CO.: **Environmental Drilling Services, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **13:50**

Top of Casing Elev.: **176.55 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **7.93 Ft. btoc**

Northing: **253375 US Ft.**
Easting: **2659707 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-				No sample collected
5	40	8	146	2		SM	2.5Y	2.5Y 2.5/1 Medium to fine sand with silt, noticeable fuel odor with black staining observed, unconsolidated, moist
		0	56	1		SM	5GY	5GY 6/1, 5YR 5/4 Medium to fine sand with silt, noticeable odor but no staining observed, unconsolidated, moist
		0	19				5YR	
10	100	0	363	2		SM	5GY	5GY 7/1, 10YR 7/2 Medium to fine sand with silt, with noticeable odor and staining between 13 and 14 Ft. bgs., unconsolidated to semi-consolidated, wet to moist
		0	38				10YR	
15	80	0	25.5	1		SC	10YR	10YR 7/2 Silt and clay with fine sand, very dense, no staining, semi-consolidated, wet
		6.7	NA	2		SM	10YR	10YR 5/2 Medium to fine sand with silt, noticeable smoked wood odor with slight staining observed, unconsolidated, wet
20				-		-	-	No recovery
	80	0	1.7	1		SM	5GY	5GY 6/1 Medium to fine sand with silt, noticeable odor but no staining, unconsolidated, saturated
		0	0.9	1		CL	5GY	5GY 5/1 Blue-green clay, top of upper clay = 23 Ft. bgs., set outer casing at 23.5 Ft. bgs., unconsolidated, saturated
25	40	0	0	1		CL	5GY	5GY 7/1 Blue green clay, with sand stringers at 26-27 Ft. bgs., unconsolidated, wet
				-		-	-	No recovery
30								5GY 7/1 Blue green clay, bottom of



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-38S**
TOTAL DEPTH: **49 Ft. bgs**
WELL DEPTH: **49 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/26, 4/30/15**

DRILLING INFORMATION

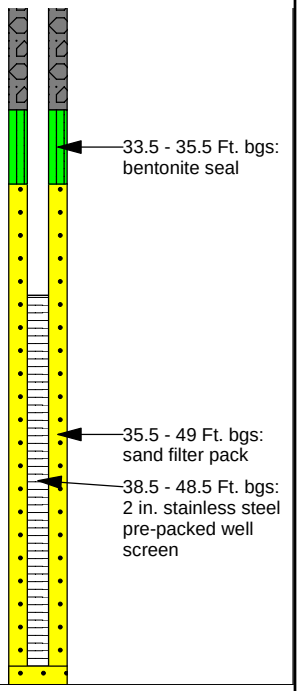
DRILLING CO.: **Environmental Drilling Services, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **13:50**

Top of Casing Elev.: **176.55 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **7.93 Ft. btoc**

Northing: **253375 US Ft.**
Easting: **2659707 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
	40	0	0	1		CL	5GY	upper clay = 32 Ft. bgs., semi-consolidated, wet
				-		-	-	No recovery
35	100	0.1	561	1		CL	5GY	5GY 8/1 Silt with clay, sand, and phosphate grains, grains decreasing with depth, noticeble odor, color change blue-green to gray, semi-consolidated, wet
40	100	0	29.2	1		ML	5GY	5GY 7/1 Silt with clay and sand, salt and pepper specks, noticeable odor of creosote, semi-consolidated, wet
45	100	0	472	1		SC	5GY	5GY 7/1 Silt with clay and sand, noticeable faint odor of creosote, semi-consolidated, wet, well TD is 49 Ft. bgs.



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-38D**
TOTAL DEPTH: **110 Ft. bgs**
WELL DEPTH: **109 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT:	**Hawthorn Grp. Characterization**
PROJECT NO.:	**05791.017.001.0002**
SITE LOCATION:	**Cabot/Koppers Site**
	Gainesville, FL
LOGGED BY:	**Edward Mackey, P.G.**
APPROVED BY:	**Mark Taylor, P.G.**
DATE(S) DRILLED:	**4/26, 4/30, 5/1, 5/4/15**

DRILLING INFORMATION

DRILLING CO.:	**Cherokee/EDS, Inc.**
DRILLER:	**K. Rogers**
RIG TYPE:	**D120 Mud Rotary**
	Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
TIME OF BORING:	**13:50**

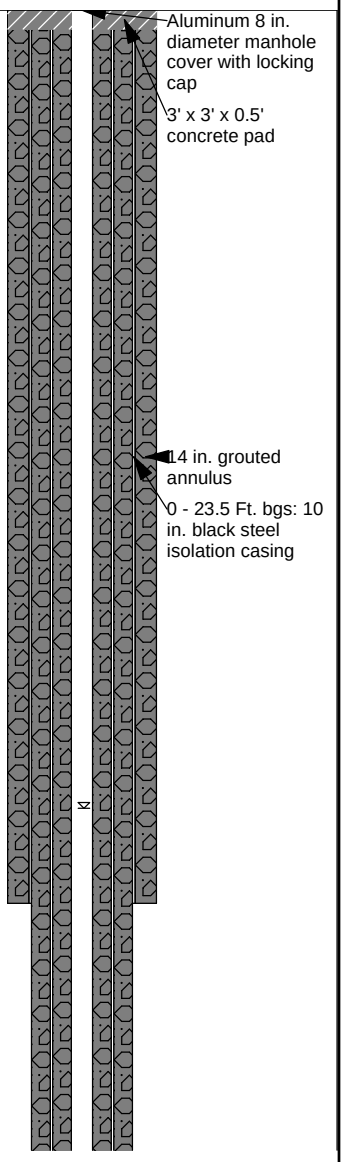
Top of Casing Elev.: **176.67 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **36.60 Ft. btoc**

Northing **253375 US Ft.** Easting **2659696 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	100	8	146	2		SM	2.5Y	2.5Y 2.5/1 Medium to fine sand with silt, noticeable fuel odor with black staining observed, unconsolidated, moist
		0	56	1		SM	5GY	5GY 6/1, 5YR 5/4 Medium to fine sand with silt, noticeable odor but no staining observed, unconsolidated, moist
		0	19				5YR	
10	100	0	363	2		SM	5GY	5GY 7/1, 10YR 7/2 Medium to fine sand with silt, with noticeable odor and staining between 13 and 14 Ft. bgs., unconsolidated to semi-consolidated, wet to moist
		0	38				10 YR	
15				1		SC	10YR	10YR 7/2 Silt and clay with fine sand, very dense, no staining, semi-consolidated, wet
	80	0	25.5	2		SM	10YR	10YR 5/2 Medium to fine sand with silt, noticeable smoked wood odor with slight staining observed, unconsolidated, wet
		6.7	NA					
20				-		-	-	No recovery
		0	1.7	1		SM	5GY	5GY 6/1 Medium to fine sand with silt, noticeable odor but no staining, unconsolidated, saturated
	80	0	0.9	1		CL	5GY	5GY 5/1 Blue-green clay, top of upper clay = 23 Ft. bgs., set outer casing at 23.5 Ft. bgs., unconsolidated, saturated
25				1		CL	5GY	5GY 7/1 Blue green clay, with sand stringers at 26-27 Ft. bgs., unconsolidated, wet
	40	0	0	-		-	-	No recovery
30								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-38D**
TOTAL DEPTH: **110 Ft. bgs**
WELL DEPTH: **109 Ft. bgs**

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **4/26, 4/30, 5/1, 5/4/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **D120 Mud Rotary**
Geoprobe 8140 DT Rotary Sonic
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **13:50**

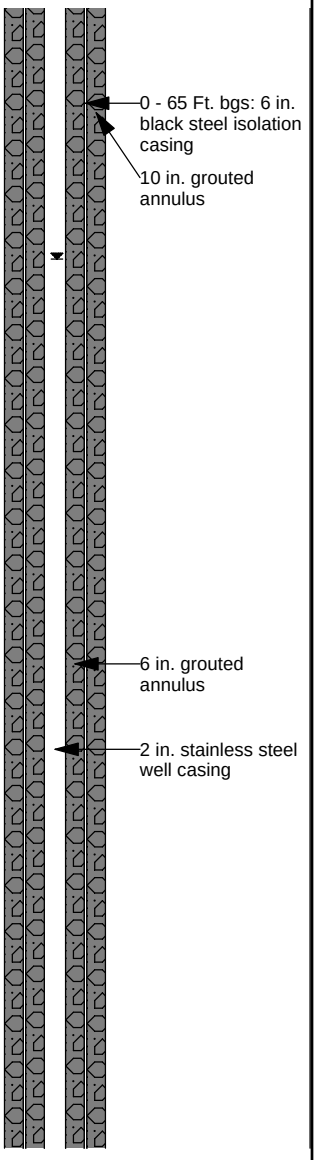
Top of Casing Elev.: **176.67 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **36.60 Ft. btoc**

Northing **253375 US Ft.** Easting **2659696 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
30	100	0	0	1		CL	5GY	5GY 7/1 Blue green clay, bottom of upper clay = 32 Ft. bgs., semi-consolidated, wet
35	100	0.1	561	1		CL	5GY	5GY 8/1 Silt with clay, sand, and phosphate grains, grains decreasing with depth, noticeble odor, color change blue-green to gray, semi-consolidated, wet
40	100	0	29.2	1		ML	5GY	5GY 7/1 Silt with clay and sand, salt and pepper specks, noticeable odor of creosote, semi-consolidated, wet
45	100	0	472	1		SC	5GY	5GY 7/1 Silt with clay and sand, noticeable faint odor of creosote, semi-consolidated, wet,
50	100	0	6.8	1		ML	5GY	5GY 7/1, 2.5Y 7/1, 2.5YR 7/2 Silt with clay and sand, salt and pepper specks, very stiff, semi-consolidated, moist
55	100	0	0				2.5Y	
60								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-38D**
TOTAL DEPTH: **110 Ft. bgs**
WELL DEPTH: **109 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Site**	RIG TYPE:	**D120 Mud Rotary**
	Gainesville, FL		**Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**4/26, 4/30, 5/1, 5/4/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**13:50**

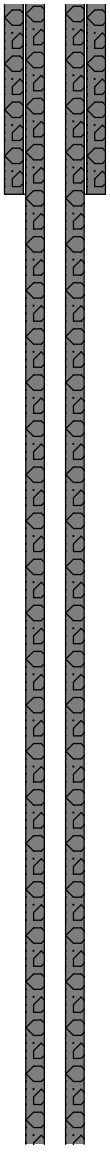
Top of Casing Elev.: **176.67 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **36.60 Ft. btoc**

Northing: **253375 US Ft.**
Easting: **2659696 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
60							2.5YR	
	100	0	0	1		CL	5GY	5GY 6/1 Silt with clay and a little sand, salt and pepper specks, very stiff, semi-consolidated, moist
		0	12.4					
65	100	0	0	1		CH	5GY	5GY 4/1 Greenish clay, stiff, consolidated, moist, top of middle clay = 65 Ft. bgs, bottom of middle clay at 77 Ft. bgs
70	100	0	3.5					
75	100	0	1.5	1		CL	5GY	5GY 4/1 Sandy clay with phosphate nodules, some gravel, semi-consolidated, moist
80	100	0	0	1		CL	5GY	5GY 7/1 Greenish-gray sandy clay with phosphate nodules, some gravel size, very cemented towards the bottom, consolidated, moist
85	100	1.1	NA	1		CL	5GY	5GY 5/1 Clay with gravel, sand, and silt, with zones of varying cementation, consolidated, moist
90								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-38D**
TOTAL DEPTH: **110 Ft. bgs**
WELL DEPTH: **109 Ft. bgs**

CABOT

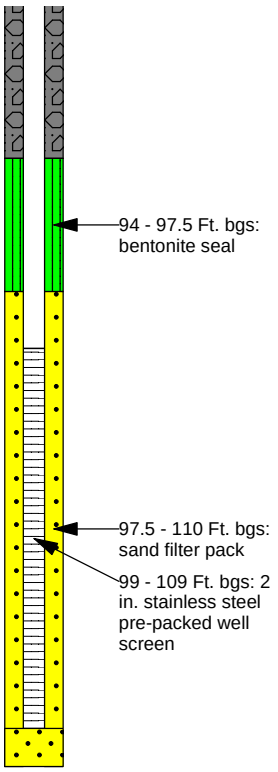
PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Site Gainesville, FL**	RIG TYPE:	**D120 Mud Rotary Geoprobe 8140 DT Rotary Sonic**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**4/26, 4/30, 5/1, 5/4/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**13:50**

Top of Casing Elev.: **176.67 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **21 Ft. bgs**
Static Water Level: **36.60 Ft. btoc**

Northing: **253375 US Ft.**
Easting: **2659696 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
90	80	1.5	NA	1		SM	5GY	5GY 5/1 Sand with silt and minor clay, semi-consolidated, moist
				-		-	-	No recovery
95	100	0	NA	1		SC	5GY	5GY 5/1 Sand with silt and minor clay, cemented, semi-consolidated, saturated
100	100	0.9	NA	1		SC	5GY	5GY 6/1 Sand with slit, clay, and gravel, cementation increases with depth, consolidated to semi-consolidated, moist to saturated
105	80	0	18.4					
				-		-	-	No recovery
110	100	0	54	1		SM	5GY	5GY 5/1 Sand with silt and a little clay, cementation increses with depth, consolidated, dry
		0	11.3	1		CL	5GY	5GY 6/1 Greenish clay, stiff, consolidated, moist, borehole collapsed to 110 Ft. bgs
115								



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-39S**
TOTAL DEPTH: **60 Ft. bgs**
WELL DEPTH: **60 Ft. bgs**

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/08, 5/12, 5/21/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **10:45**

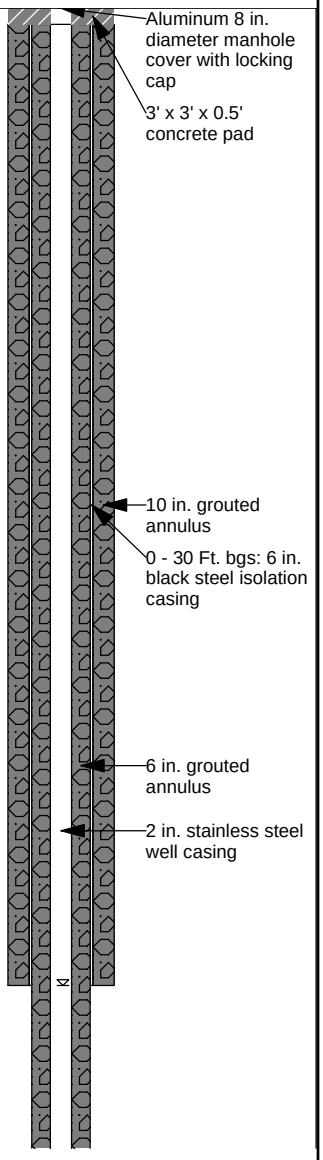
Top of Casing Elev.: **175.34 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs**
Static Water Level: **Not Recorded**

Northing: **252855 US Ft.**
Easting: **2660604 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0		6.1	100	1		SM	2.5YR	2.5YR 2.5/1 Stained black sand with fill material, no clay, unconsolidated, moist
5	80	5.9	446	1		SP	10YR	10YR 2/1 Stained black sand, no clay, unconsolidated, wet
				-		-	-	No recovery
10	70	5.3	126	1		SM	10YR	10 YR 4/1 Stained black sand with smokey odor, unconsolidated, moist
				-		-	-	No recovery
15	80	5.1	241	1		SM	5YR	5YR 5/1 Stained medium to fine sand with silt, smokey odor, less consolidated with depth, semi-consolidated, moist
				-		-	-	No recovery
20	80	10.3	103	1		SM	5YR	5YR 5/1 medium to fine sand with silt, smokey odor, no staining, more consolidated with depth, semi-consolidated, wet
25				-		-	-	No recovery
	60	2.1	32	1		SM	5GY	5GY 6/1 medium to fine sand with smokey odor but no staining, unconsolidated, wet
30		0.4	11.5	1		CL	5GY	5GY 5/1, 5GY 7/1 Greenish to blue-green clay with minor sand stringers, semi-consolidated to consolidated, moist to dry, top of upper clay = 30 Ft. bgs, bottom of upper clay = 36 Ft. bgs
	40	1.5	53.5					
35								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

BOREHOLE NO.: **HG-39S**
TOTAL DEPTH: **60 Ft. bgs**
WELL DEPTH: **60 Ft. bgs**

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/08, 5/12, 5/21/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic**
DRILLING METHOD: **Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **10 in., 6 in.**
TIME OF BORING: **10:45**

Top of Casing Elev.: **175.34 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs**
Static Water Level: **Not Recorded**

Northing: **252855 US Ft.**
Easting: **2660604 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
35		0	0.9						
	100	0	0	1		SM	5GY	5GY 5/1 Silty sand, smokey odor, some color change to green, unconsolidated, saturated	
				1		CL	5GY	5GY 4/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel	
40	100	0	0	1		CL	5GY	5GY 6/1, 5GY 7/1, Dark greenish-gray silty sandy clay with phosphate nodules, smokey odor, with white clay bands and a piece of brown fossilized bone	
45	100	0	6.9						46 - 48 Ft. bgs: bentonite seal
50				1		ML	5GY	5GY 7/1 Light greenish-gray silty, sandy, clay with phosphate nodules, slight odor, semi-consolidated, moist	
	100	0	0	1		SM	5GY	5GY 7/1 Sand with clay and silt, small phosphate grains, semi-consolidated, saturated, faint smokey odor between 52 - 55 Ft. bgs but no odor between 55 - 60 Ft. bgs	48 - 60 Ft. bgs: sand filter pack 50- 60 Ft. bgs: 2 in. stainless steel pre-packed well screen
55									
	100	0	0						
60									

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-39D**
TOTAL DEPTH: **99 Ft. bgs**
WELL DEPTH: **99 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/08, 5/12, 5/21, 5/26 5/27/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic D40 Mud Rotary**
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **10:45**

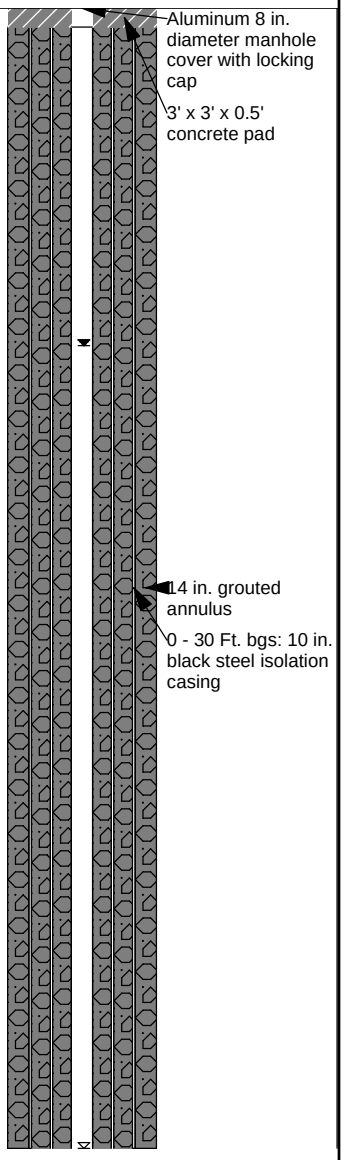
Top of Casing Elev.: **175.50 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs**
Static Water Level: **38.05 Ft. btoc**

Northing **252858 US Ft.** Easting **2660595 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0	0	6.1	100	1		SM	2.5YR	2.5YR 2.5/1 Stained black sand with fill material, no clay, unconsolidated, moist
5	80	5.9	446	1		SP	10YR	10YR 2/1 Stained black sand, no clay, unconsolidated, wet
				-		-	-	No recovery
10	70	5.3	126	1		SM	10YR	10 YR 4/1 Stained black sand with smokey odor, unconsolidated, moist
				-		-	-	No recovery
15	80	5.1	241	1		SM	5YR	5YR 5/1 Stained medium to fine sand with silt, smokey odor, less consolidated with depth, semi-consolidated, moist
				-		-	-	No recovery
20	80	10.3	103	1		SM	5YR	5YR 5/1 medium to fine sand with silt, smokey odor, no staining, more consolidated with depth, semi-consolidated, wet
25				-		-	-	No recovery
	60	2.1	32	1		SM	5GY	5GY 6/1 medium to fine sand with smokey odor but no staining, unconsolidated, wet
30								

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-39D**
TOTAL DEPTH: **99 Ft. bgs**
WELL DEPTH: **99 Ft. bgs**

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/08, 5/12, 5/21, 5/26 5/27/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic D40 Mud Rotary**
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **10:45**

Top of Casing Elev.: **175.50 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs**
Static Water Level: **38.05 Ft. btoc**

Northing **252858 US Ft.** Easting **2660595 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
30		0.4	11.5					
	40			1		CL	5GY	5GY 5/1, 5GY 7/1 Greenish to blue-green clay with minor sand stringers, semi-consolidated to consolidated, moist to dry, top of upper clay = 30 Ft. bgs, bottom of upper clay = 36 Ft. bgs,
		1.5	53.5					
35		0	0.9					
	100	0	0	1		SM	5GY	5GY 5/1 Silty sand, smokey odor, some color change to green, unconsolidated, saturated
				1		CL	5GY	5GY 4/1 Greenish-gray silty, clayey sand with phosphate nodules and some limestone gravel
40								
	100	0	0	1		CL	5GY	5GY 6/1, 5GY 7/1, Dark greenish-gray silty sandy clay with phosphate nodules, smokey odor, with white clay bands and a piece of brown fossilized bone
45								
	100	0	6.9					
50								
	100	0	0	1		ML	5GY	5GY 7/1 Light greenish-gray silty, sandy, clay with phosphate nodules, slight odor, semi-consolidated, moist
55				1		SM	5GY	5GY 7/1 Sand with clay and silt, small phosphate grains, semi-consolidated, saturated, faint smokey odor between 52 - 55 Ft. bgs but no odor between 55 - 60 Ft. bgs
	100	0	0					
60								

WELL CONSTRUCTION:

- 0 - 63.5 Ft. bgs: 6 in. black steel isolation casing
- 10 in. grouted annulus
- 6 in. grouted annulus
- 2 in. stainless steel well casing

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-39D**
TOTAL DEPTH: **99 Ft. bgs**
WELL DEPTH: **99 Ft. bgs**

CABOT

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hawthorn Grp. Characterization**	DRILLING CO.:	**Cherokee/EDS, Inc.**
PROJECT NO.:	**05791.017.001.0002**	DRILLER:	**K. Rogers**
SITE LOCATION:	**Cabot/Koppers Superfund Site Gainesville, FL**	RIG TYPE:	**Geoprobe 8140 DT Rotary Sonic D40 Mud Rotary**
LOGGED BY:	**Edward Mackey, P.G.**	DRILLING METHOD:	**Mud Rotary, Rotary Sonic**
APPROVED BY:	**Mark Taylor, P.G.**	SAMPLING METHOD:	**Continuous 5 Ft. X 4 in. Sampler**
DATE(S) DRILLED:	**5/08, 5/12, 5/21, 5/26 5/27/15**	BOREHOLE DIA.:	**14 in., 10 in., 6 in.**
		TIME OF BORING:	**10:45**

Top of Casing Elev.: **175.50 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs** ▼ Static Water Level: **38.05 Ft. btoc**

Northing **252858 US Ft.** Easting **2660595 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
60								
	100	0	0	1		CL	5GY	5GY 7/1 Clay with little sand and more silt, some white banding visible, drier than the zone above, semi-consolidated, moist
65	100	0	0	1		CL	5GY	5GY 5/1, 5GY 6/1Greenish-gray stiff clay, stringers observed at 63 - 65 Ft. bgs, top of middle = 63 Ft. bgs, bottom of middle clay at 74 Ft. bgs
70	100	0	0					
				1		ML	5GY	5GY 5/1 Clay with sit, sand and limestone gravel, no odor, semi-consolidated, dry
75	100	0	0	1		SC	5GY	5GY 6/1 Sand with clay and silt, very unconsolidated with small phosphate nodules, unconsolidated, saturated
		0.4	92	1		ML	5GY	5GY 5/1 Clay with silt, sand and limestone gravel, no odor, semi-consolidated, moist
80	100	0.3	115	1		ML	5GY	5GY 4/1 Clay with silt, sand and limestone gravel, slight odor, three one inch sand lenses, limestone gravel much smaller at bottom, semi-consolidated, wet
85	20			-		-	-	No recovery
90		0	204	1		SP	5GY	5GY 5/1 Clay with gravel, sand and

WELL CONSTRUCTION:

84 - 86 Ft. bgs: bentonite seal

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **HG-39D**
TOTAL DEPTH: **99 Ft. bgs**
WELL DEPTH: **99 Ft. bgs**

PROJECT INFORMATION

PROJECT: **Hawthorn Grp. Characterization**
PROJECT NO.: **05791.017.001.0002**
SITE LOCATION: **Cabot/Koppers Superfund Site Gainesville, FL**
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **5/08, 5/12, 5/21, 5/26 5/27/15**

DRILLING INFORMATION

DRILLING CO.: **Cherokee/EDS, Inc.**
DRILLER: **K. Rogers**
RIG TYPE: **Geoprobe 8140 DT Rotary Sonic D40 Mud Rotary**
DRILLING METHOD: **Mud Rotary, Rotary Sonic**
SAMPLING METHOD: **Continuous 5 Ft. X 4 in. Sampler**
BOREHOLE DIA.: **14 in., 10 in., 6 in.**
TIME OF BORING: **10:45**

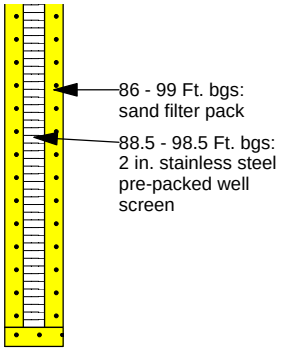
Top of Casing Elev.: **175.50 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **36 Ft. bgs**
Static Water Level: **38.05 Ft. btoc**

Northing: **252858 US Ft.**
Easting: **2660595 US Ft.**

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
90				-		-	-	silt, gravel is very hard, semi-consolidated, wet
	40	0.7	77.1	1		GC	5GY	No recovery 5GY 7/1 Clay with gravel, sand and silt, gravel is very hard, more sand than in the 85 - 90 Ft. zone
95				-		-	-	No recovery
	80	0	0	1		SC	5GY	5GY 6/1 Sand with clay, silt, and some gravel, slight odor, semi-consolidated, saturated
100		0.6	21.1	1		CL	5GY	5GY 6/1 Clay with gravel, sand, and silt, consolidated, moist

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT:	**Upper Floridan Characterization**
PROJECT NO.:	**05791.017.001.0005**
SITE LOCATION:	**Cabot/Koppers Site Gainesville, FL**
LOGGED BY:	**Edward Mackey, P.G.**
APPROVED BY:	**Mark Taylor, P.G.**
DATE(S) DRILLED:	**9/30 - 11/7/2015**

DRILLING INFORMATION

DRILLING CO(s).:	**Cascade, Thompson**
DRILLER(s):	**James Smith, Jerry Thompson**
RIG TYPE(s):	**Rotary Table Drill Rig, 600T Truck-Mounted Sonic Rig**
DRILLING METHOD(s):	**Mud Rotary, Rotary Sonic**
SAMPLING METHOD(s):	**Continuous 10 Ft. X 6 in. Sampler**
BOREHOLE DIA(s).:	**28 in., 21 in., 13.5 in., 8.5 in.**
TIME OF BORING:	**09:00**

Top of Casing Elev.: **179.88 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

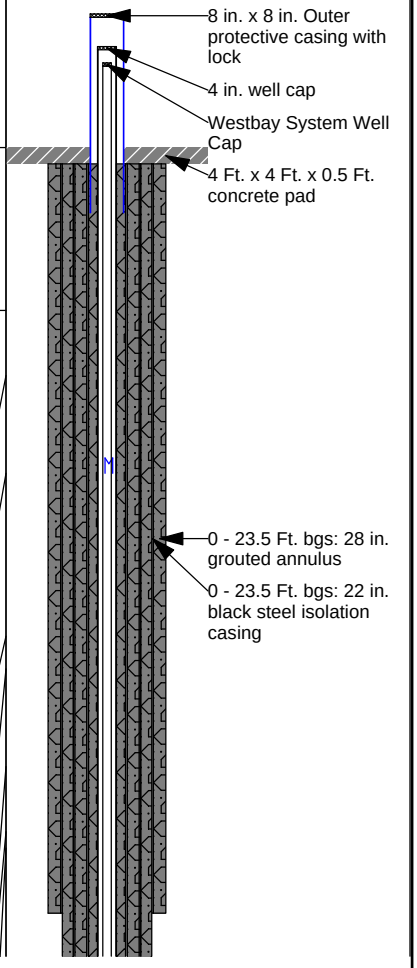
Initial Water Level: **147 Ft. bgs**
Static Water Level: **125.75 Ft. bgs**

Northing	Easting
253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
0				-		-	-	No sample collected
5	100	8	146	2		SM	2.5Y	2.5Y 2.5/1 Medium to fine sand with silt, noticeable fuel odor with black staining observed, unconsolidated, moist
		0	56	1		SM	5GY	5GY 6/1, 5YR 5/4 Medium to fine sand with silt, noticeable odor but no staining observed, unconsolidated, moist
		0	19				5YR	
10	100	0	363	2		SM	5GY	5GY 7/1, 10YR 7/2 Medium to fine sand with silt, with noticeable odor and staining between 13 and 14 Ft. bgs., unconsolidated to semi-consolidated, wet to moist
		0	38				10 YR	
15	80	0	25.5	1		SC	10YR	10YR 7/2 Silt and clay with fine sand, very dense, no staining, semi-consolidated, wet
		6.7	NA	2		SM	10YR	
20	80	0	1.7	-		-	-	10YR 5/2 Medium to fine sand with silt, noticeable smoked wood odor with slight staining observed, unconsolidated, wet
		0	0.9	1		SM	5GY	
25				1		CL	5GY	No recovery

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Upper Floridan Characterization**
PROJECT NO.: **05791.017.001.0005**
SITE LOCATION: **Cabot/Koppers Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **9/30 - 11/7/2015**

DRILLING INFORMATION

DRILLING CO(s).: **Cascade, Thompson**
DRILLER(s): **James Smith**
Jerry Thompson
RIG TYPE(s): **Rotary Table Drill Rig**
600T Truck-Mounted Sonic Rig
DRILLING METHOD(s): **Mud Rotary, Rotary Sonic**
SAMPLING METHOD(s): **Continuous 10 Ft. X 6 in. Sampler**
BOREHOLE DIA(s).: **28 in., 21 in., 13.5 in., 8.5 in.**
TIME OF BORING: **09:00**

Top of Casing Elev.: **179.88 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **147 Ft. bgs**
Static Water Level: **125.75 Ft. bgs**
Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

Northing	Easting
253360	2659702

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
25	40	0	0	1		CL	5GY	5GY 6/1 Medium to fine sand with silt, noticeable odor but no staining, unconsolidated, saturated
				-		-	-	5GY 5/1 Blue-green clay, top of upper clay = 23 Ft. bgs., unconsolidated, saturated. Set casing #1 at 23.5 Ft. bgs.
30	100	0	0	1		CL	5GY	5GY 7/1 Blue green clay, with sand stringers at 26-27 Ft. bgs., unconsolidated, wet
								No recovery
35	100	0.1	561	1		CL	5GY	5GY 7/1 Blue green clay, bottom of upper clay = 32 Ft. bgs., semi-consolidated, wet
40	100	0	29.2	1		ML	5GY	5GY 8/1 Silt with clay, sand, and phosphate grains, grains decreasing with depth, noticeble odor, color change blue-green to gray, semi-consolidated, wet
45	100	0	472	1		SC	5GY	5GY 7/1 Silt with clay and sand, salt and pepper specks, noticeable odor of creosote, semi-consolidated, wet
		0	31					5GY 7/1 Silt with clay and sand, noticeable faint odor of creosote, semi-consolidated, wet,
50	100	0	6.8				5GY	5GY 7/1, 2.5Y 7/1, 2.5YR 7/2 Silt with clay and sand, salt and pepper specks, very stiff, semi-consolidated, moist
55								

WELL CONSTRUCTION:
0 - 65 Ft. bgs: 21 in. grouted annulus
0 - 65 Ft. bgs: 16 in. black steel isolation casing

NOTES:

WELL CONSTRUCTION DIAGRAM

WESTON SOLUTIONS
5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Upper Floridan Characterization**
PROJECT NO.: **05791.017.001.0005**
SITE LOCATION: **Cabot/Koppers Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **9/30 - 11/7/2015**

DRILLING INFORMATION

DRILLING CO(s).: **Cascade, Thompson**
DRILLER(s): **James Smith**
Jerry Thompson
RIG TYPE(s): **Rotary Table Drill Rig**
600T Truck-Mounted Sonic Rig
DRILLING METHOD(s): **Mud Rotary, Rotary Sonic**
SAMPLING METHOD(s): **Continuous 10 Ft. X 6 in. Sampler**
BOREHOLE DIA(s).: **28 in., 21 in., 13.5 in., 8.5 in.**
TIME OF BORING: **09:00**

Top of Casing Elev.: **179.88 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **147 Ft. bgs**
Static Water Level: **125.75 Ft. bgs**

Northing	Easting
253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
60	100	0	0	1		ML	2.5Y	
	100	0	0				2.5YR	
65		0	12.4	1		CL	5GY	5GY 6/1 Silt with clay and a little sand, salt and pepper specks, very stiff, semi-consolidated, moist
70	100	0	0	1		CH	5GY	5GY 4/1 Greenish clay, stiff, consolidated, moist. Top of middle clay = 65 Ft. bgs, bottom of middle clay at 77 Ft. bgs. Set casing #2 at 65 Ft. bgs.
75		0	0					
80	100	0	52	1		CL	5GY	5GY 4/1 Sandy clay with phosphate nodules, some gravel, semi-consolidated, moist
85		0.1	73.2	1		CL	5GY	5GY 7/1 Greenish-gray sandy clay with phosphate nodules, some gravel size, very cemented towards the bottom, consolidated, wet

WELL CONSTRUCTION:

- 0 - 119 Ft. bgs: 13.5 in. grouted annulus
- 0 - 119 Ft. bgs: 9.625 in. black steel isolation casing
- 0 - 142 Ft. bgs: 8.5 in. grouted annulus
- 0 - 155 Ft. bgs: 4 in. stainless steel well casing

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

CABOT

PROJECT INFORMATION

PROJECT: **Upper Floridan Characterization**
PROJECT NO.: **05791.017.001.0005**
SITE LOCATION: **Cabot/Koppers Site**
Gainesville, FL
LOGGED BY: **Edward Mackey, P.G.**
APPROVED BY: **Mark Taylor, P.G.**
DATE(S) DRILLED: **9/30 - 11/7/2015**

DRILLING INFORMATION

DRILLING CO(s).: **Cascade, Thompson**
DRILLER(s): **James Smith**
Jerry Thompson
RIG TYPE(s): **Rotary Table Drill Rig**
600T Truck-Mounted Sonic Rig
DRILLING METHOD(s): **Mud Rotary, Rotary Sonic**
SAMPLING METHOD(s): **Continuous 10 Ft. X 6 in. Sampler**
BOREHOLE DIA(s).: **28 in., 21 in., 13.5 in., 8.5 in.**
TIME OF BORING: **09:00**

Top of Casing Elev.: **179.88 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

Initial Water Level: **147 Ft. bgs**
Static Water Level: **125.75 Ft. bgs**

Northing	Easting
253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
90		1	156	1		CL	5GY	5GY 5/1 Clay with gravel, sand, and silt, with zones of varying cementation, consolidated, moist, smokey odor	
	100			1		SM	5GY	5GY 5/1 Sand with silt and minor clay, very well cemented, semi-consolidated, moist, smokey odor	
95		0	8.5						
100	100	1.2	135	1		SC	5GY	5GY 5/1, Somewhat cemented sand with silt and minor clay, smokey odor, semi-consolidated, saturated	
105									
110	100	0	18.4	1		SC	5GY	5GY 6/1 Sand with silt and little clay, cementation increases with depth, semi-consolidated, saturated	
				1		CL	5GY	5GY 6/1 Clay, stiff, greenish gray, with minor sand stringers, consolidated, moist. Top of lower clay at 110 Ft. bgs. Casing #3 set at 118 Ft. bgs.	
115		0	11.3						

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

PROJECT INFORMATION

PROJECT:	**Upper Floridan Characterization**
PROJECT NO.:	**05791.017.001.0005**
SITE LOCATION:	**Cabot/Koppers Site**
	Gainesville, FL
LOGGED BY:	**Edward Mackey, P.G.**
APPROVED BY:	**Mark Taylor, P.G.**
DATE(S) DRILLED:	**9/30 - 11/7/2015**

DRILLING INFORMATION

DRILLING CO(s).:	**Cascade, Thompson**
DRILLER(s):	**James Smith**
	Jerry Thompson
RIG TYPE(s):	**Rotary Table Drill Rig**
	600T Truck-Mounted Sonic Rig
DRILLING METHOD(s):	**Mud Rotary, Rotary Sonic**
SAMPLING METHOD(s):	**Continuous 10 Ft. X 6 in. Sampler**
BOREHOLE DIA(s).:	**28 in., 21 in., 13.5 in., 8.5 in.**
TIME OF BORING:	**09:00**

Top of Casing Elev.: **179.88 Ft. msl**
Datum: **National Geodetic Vertical Datum 1929**

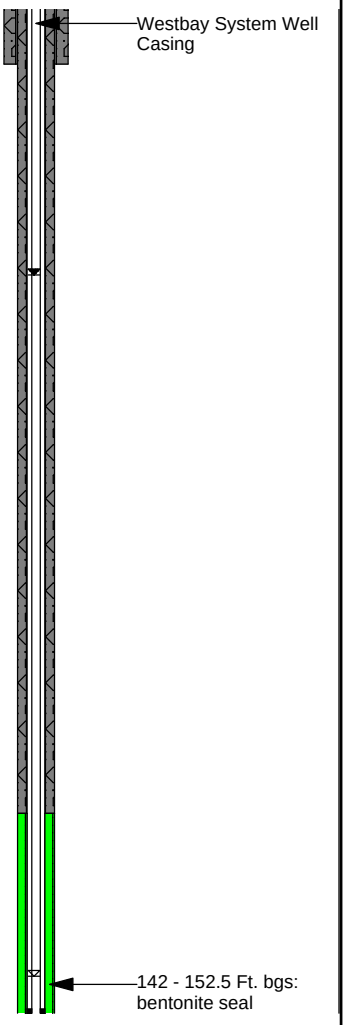
Initial Water Level: **147 Ft. bgs**
Static Water Level: **125.75 Ft. bgs**

Northing	Easting
253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
120	100	0	12.1	1		CL	5GY	5GY 6/1 Clay, stiff, greenish gray, with sand stringers increasing with depth, consolidated, moist
125								
130	100	0.1	4.1	1		CL	5GY	5GY 6/1 Clay, stiff, greenish gray, consolidated, moist
		0	12.1	1		CL	5GY	5GY 7/1 Clay, stiff, greenish gray with sand stringers, dry and crumbly, consolidated, dry, creosote odor
135								
140	100	0	11.1	1		CL	5GY	5GY 7/1 Clay, stiff, greenish gray, consolidated, moist. Bottom of lower clay at 140 Ft. bgs.
				1		NA	2.5Y	2.5Y 7/1 Dolomitic limestone, consolidated, moist. Sulfur odor detected in interval 140 - 240 Ft. bgs.
145		0	0.8					
								2.5Y 7/1 Limestone,

WELL CONSTRUCTION:



NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
Peachtree Corners, GA 30092

BOREHOLE NO.: **CFW-1**
TOTAL DEPTH: **240 Ft. bgs**
WELL DEPTH: **238 Ft. bgs**

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Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
150	100	0.6	428					unconsolidated, saturated. Saturation at 147 Ft. bgs. Initial groundwater at 147 Ft. bgs. Napthalene odor detected in interval 147 - 157 Ft. bgs.	148 Ft. bgs: Westbay Packer
155									
160	100	9	1647						152.5 - 167.5 Ft. bgs: sand filter pack 155 - 165 Ft. bgs: 4 in. stainless steel screen
165									
170	100	9.1	221						168 Ft. bgs: Westbay Packer 167.5 - 173 Ft. bgs: bentonite seal
175									

NOTES:

WELL CONSTRUCTION DIAGRAM

5390 Triangle Parkway, Ste. 150,
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253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION
180								
	100	4.9	469					
185								
190								
	100	2.5	99	1		NA	2.5Y	
195								
200								
	100	0.4	23					
205								
210								

WELL CONSTRUCTION:

- 175 - 185 Ft. bgs: 4 in. stainless steel screen
- 173 - 187.5 Ft. bgs: sand filter pack
- 188 Ft. bgs: Westbay Packer
- 187.5 - 193 Ft. bgs: bentonite seal
- 193 - 207 Ft. bgs: sand filter pack
- 195 - 205 Ft. bgs: 4 in. stainless steel screen
- 208 Ft. bgs: Westbay

NOTES:

WELL CONSTRUCTION DIAGRAM

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Peachtree Corners, GA 30092

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CABOT

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Northing	Easting
253360	**2659702**

Westbay System Measurement Port
Westbay System Pumping Port
Westbay System Magnetic Collar

DEPTH (feet)	% Rec.	PID (ppm)	FID (ppm)	DNAPL Rating	GRAPHIC LOG	USCS CODE	COLOR	LITHOLOGIC DESCRIPTION	WELL CONSTRUCTION:
210	100	3	18						Packer 207 - 212 Ft. bgs: bentonite seal
215									215 - 225 Ft. bgs: 4 in. stainless steel screen
220	100	3	24						
225									212 - 240 Ft. bgs: sand filter pack
230	100	0.9	NA						228 Ft. bgs: Westbay Packer
235									
240	0	NA	NA						

NOTES: