

Appendix D

Soil Boring Logs



PROJECT NUMBER NJ022948 SR SI	BORING NUMBER C-1
SHEET 1 OF 1	
SOIL BORING LOG	

PROJECT Stepan Co. and Sears and Adjacent Properties RI	LOCATION Maywood, NJ
ELEVATION 50.1 MSL	DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ
DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID	
WATER LEVELS	START 3/30/92 1000 FINISH 3/30/92 LOGGER L. Vogel

WATER LEVELS				START		END			
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY					SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
				8" - 6" - 8" (N)					
5.0			-	-	0-1' asphalt and trap rock		8110	300 lb hammer-3" splitspoon	
	1						9769		
		S-1	2'	15-10-7-10 (17)	1-2' POORLY GRADED SAND SP, moderate brown, dry, medium sand, angular-subangular quartz, feldspar, opaque, poorly consolidated pieces of sandstone throughout, easily broken, 2-2.8' SILT ML, with trace sand, olive black to light brown, cobble encountered at 2' and 3'	0	10387		
							9625		
	3						15934		
							15552		
		S-2	2'	21-13-12-10 (25)	3-5' POORLY GRADED SAND SP, dark reddish brown, dry, fine-medium sand, subangular, occasional interbedded semiconsolidated sandstone fragments	0	14823		
							8887		
							6480		
							6369		
10.0	5				5-7' SILT WITH SAND ML, dark reddish brown, damp, very fine-fine quartz sand, occasional interbedded semiconsolidated sandstone fragments	0	6323	slight diesel fuel like odor	
		S-3	2'	10-6-5-10 (11)			6594		
							6146		
							6487		
	7				7-8.5' SANDY LEAN CLAY WITH GRAVEL CL, dark reddish brown, saturated, very fine-fine sand, interbedded semiconsolidated sandstone fragments	290	6679	difficult to advance to 9' scraping of augers	
							6350		
		S-4	1.5'	6-5-5-9 (10)			6284	slight odor	
							6721		
	9				9-9.5' Reddish brown, fine-very fine SANDSTONE, weathered, with silty sand matrix	NT	6280 End	140 lb hammer-2" splitspoon	
		S-5	.5'	21-16-16-19 (32)					
	11				11-12.3' Same as 9-9.5'	NT		auger refusal 9' spoon refusal 12.3'	
		S-6	1.2'	33-43-50/4" (93)					
	12.3								
					End of Boring				
								NT: Not Taken	

NT: Not Taken



PROJECT NUMBER

NJ022948.SR.SL

BORING NUMBER

C-2

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 48.8 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Tripod w/ 140 lb hammer, 3" splitspoon

WATER LEVELS

START 4/8/92 1005

FINISH 4/8/92

LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (cpm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
2.0			2'	N/A	0-0.5' SILT ML. dark brown, moist firm, contains roots & vegetation, metal shavings	0	3599 4240	
					0.5-1.75' WELL GRADED SAND WITH SILT and GRAVEL SW-SM, tan-brown, moist, firm, rock pieces		5249 3880	
4.0		S-1	1.5'	27-34-42-42 (76)	1.75-2' SANDSTONE, dark red-brown	0	3862	
					2-2.05' WELL GRADED SAND WITH SILT and GRAVEL SW-SM, brown saturated, firm		4292 End	
					2.05-3' LEAN CLAY CL. black with gray mottling, saturated, stiff, 3-3.5' POORLY GRADED SAND WITH SILT SP-SM, brown-black, saturated, firm, stained	NT		odor in sample
					End of Boring			

NT: Not Taken



PROJECT NUMBER

NJ022948 SR SL

BORING NUMBER

C-3

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 48.5 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 3/31/92 0900

FINISH 3/31/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
2.0		S-1	1.2'	27-9-10-10 (19)	0-1.2' POORLY GRADED SAND with little SILT SP-SM, light brown, damp-wet, fine to medium sand, trace coarse sand, quartz, feldspar, opaques, subangular-subrounded, top 1 inch asphalt	1.6	19481 12286 21000 19157	300 lb hammer-3" splitspoon *QC 21090
		S-2	1.2'	10-14-16-14 (30)	2-2.2' Same as 0-1.2' except no asphalt 2.2-3.2' SILTY SAND SM, trace clay, moderate reddish brown, slightly damp, very fine-fine sand, subrounded-subangular, pieces of sandstone (dark reddish brown) throughout 4-4.3' Same as 2.2-3.2'	1.7	13749 10636 10992 11321	
		S-3	0.3'	15-10-11-21 (21)		NT	11315 End	auger refusal 4'
6.0					End of Boring			
10.0								

NT: Not Taken



PROJECT NUMBER
NJ022948.ST.SL

BORING NUMBER
C-4

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 70.0 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 2/14/92 0930

FINISH 2/14/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (cpm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	1.0		1'		0-1' asphalt and trap rock		8357 9274	300 lb hammer - 3" splitspoon
					1-2' CLAYEY SAND SC, moderate brown, dry, very fine-fine sand	8.0	10363 10085	
	3.0	S-1	1.8'	6-9-22-20 (31)	2-2.8' POORLY GRADED SAND WITH SILT SP-SM, light brown, dry, very fine-fine sand, bottom 0.2' semiconsolidated sand		10218 10056	
					3-5' SILTY SAND SM, light brown, dry, very fine-fine sand, silky, semiconsolidated pieces of sandstone throughout (dark reddish brown)	9.4	10418 11065 11081 10866	
	5.0	S-2	2'	20-22-23-23 (45)	5-7' Same as 3-5' interval	10.0	10927 10972	*QC 10782
12.0	7.0	S-3	2'	17-17-50/4" (67)	7-8.7' Same as 3-5' interval with root in spoon	11.7	12011 12393 12717 13164 13684 13576	5-7' scraping of augers
	9.0	S-4	1.7'	12-13-19-34 (32)	9-9.7' Same as 3-5' interval with layered pieces of semiconsolidated sandstone (dark reddish brown)	12.0	14165 15453	spoon refusal 9.75' auger refusal 10'
		S-5	0.7'	19-50/3"	End of Boring		15002 End	
	11.0							



PROJECT NUMBER

NJ022948.ST.SL

BORING NUMBER

C-5

SHEET : OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 58.9 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 2/12/92 0945

FINISH 2/12/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
2.0		S-1	1.3'	13-16-12-7 (28)	0-1.3' SILTY SAND SM, dark yellowish brown, dry, with large angular cobbles of decomposing brick and concrete, fill material	0	12435 8357 9194 11582	300 lb hammer - 3" spitspoon
		S-2	0.8'	37-50/4"	2-2.8' SILTY SAND SM, dark reddish brown, dry, hard, semiconsolidated pieces of sandstone throughout, bottom of spoon	0	12251 11854 12261 End	spoon tip broke off in hole very tight material *QC 11982 spoon refusal at 2.83' auger refusal at 3.5'
4.0					End of Boring			last gamma reading taken at 2.83'



PROJECT NUMBER
NJ022948.SR.SL

BORING NUMBER
C-8

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stegan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 47.7 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Tripod w/140 lb hammer, 3" splitspoon

WATER LEVELS

START 4/8/92 1127

FINISH 4/8/92 1205

LOGGER S. Scanlon

WATER LEVEL		SAMPLE				STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY	0" - 6" - 6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION				
5.0	2.0	S-1	1.5'	14-16-42-65 (58)	0-0.25' railroad ballast rock 0.25-1.5' POORLY GRADED SAND WITH SILT SP-SM, dark brown, moist, stiff contains rock fragments, (fill)	0	10340 * * *	* Hole collapsed unable to gamma log		
	4.0	S-2	2'	42-79-69-52 (148)	2-4' POORLY GRADED SAND WITH SILT SP-SM, brown, saturated, stiff, contains some tan-yellow mottling	NT	3987 3874 End			
						End of Boring				
10.0										

NT: Not Taken



PROJECT NUMBER

NJ022948.SR.SL

BORING NUMBER

C-7

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 47.8 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 3/31/92 1045

FINISH 3/31/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY	6" - 6" - 6" (N)				
5.0		S-1	.5'	22-13-7-4 (20)	1-2' SILTY SAND SM, reddish-orange, fine-medium sand, dry, subangular-subrounded, quartz, feldspar	0	11534 7360 14775 31112	300 lb hammer-3" splitspoon
	2.0				2-3.7' LEAN CLAY WITH SAND CL, dark gray with light gray mottling, damp-wet, very fine sand, soft roots	2.0	62239 101183 143857 215948	290 cpm rad reading
	4.0	S-2	2'	3-2-1-2 (3)	3.7-4' SILTY SAND SM, black, damp, very fine-fine sand, trace clay, organic matter, roots			
					4-4.5' Same as 3.7-4'	2.7	247236 194181	190 cpm rad reading
		S-3	1.5'	7-7-8-7 (15)	4.5-5' FAT CLAY CH, dark gray, slightly damp, high plasticity		95199	
6.0					5-5.5' MEDIUM GRADED SAND & SILT SW-SP, olive gray, damp, very fine-medium sand, feldspar, quartz, subangular		55484	fining downward sequence
	6.0				6-6.7' SILT WITH SAND ML, grayish orange, dry, very fine-fine sand, hard, dense	2.9	27538 13075	*QC 27599
		S-4	2'	7-19-31-50/6" (50)	6.7-8' POORLY GRADED SAND SP, black, wet-saturated at 8', fine-medium sand, quartz, feldspar, subangular-subrounded		10307 9483	
8.0					8' Predominately SANDSTONE, dark reddish brown, fine-medium grained, hard, weathered		11928	140 lb hammer-2" splitspoon
	8.0				End of Boring		End	
10.0		S-5	0	50/5"				auger refusal 8" spoon refusal 8.5"
	10.0							



PROJECT NUMBER NJ022948.SR.SL	BORING NUMBER C-8
SHEET 1 OF 1	
SOIL BORING LOG	

PROJECT Stedan Co. and Sears and Adjacent Properties RI **LOCATION** Maywood, NJ
ELEVATION 46.4 MSL **DRILLING CONTRACTOR** Environmental Drilling, west Creek, NJ
DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID
WATER LEVELS _____ **START** 3/31/92 1335 **FINISH** 3/31/92 **LOGGER** L. Vogel

WATER LEVEL		DATE		TIME		LOCATION		PROJECT	
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (dpm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY						SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY
				6" - 6" - 6" (N)					
5.0	2.0	S-1	0.5'	7-4-4-10 (8)	0-0.5' POORLY GRADED SAND SP, black, wet, medium-fine sand, trace coarse sand, quartz, feldspar	2.0	88218 92470 97381 142962	300 lb hammer-3" splitspoon	
	4.0	S-2	1'	3-2-3-4 (5)	2-3' LEAN CLAY WITH SAND CL, medium gray, damp, medium-fine sand	1.6	108550 75475 38518 32664		
	6.0	S-3	0	6-8-10-7 (18)	4-6' No recovery	NT	27699 19590 14778 11683		
	8.0	S-4	0.5'	5-17-21-22 (38)	6-6.5' CLAYEY SAND SC, moderate yellowish brown, wet-saturated, medium-fine sand, trace coarse sand, quartz, saturated	3.4	9358 8232 7468 7323	*QC 8051	
	10.0	S-5	1.5'	4-21-24-39 (45)	8-8.7' POORLY GRADED SAND SP, pale red, saturated, quartz, feldspar, subrounded 8.7-9' SILT ML, yellowish brown, dry, pieces of sandstone in bottom of spoon, dark reddish brown, dry	NT	6137 6135 7236 End	140 lb hammer-2" splitspoon	
10.0	10.0				End of Boring			auger refusal 10'	

NT: Not Taken

BORING NUMBER

NJ022948.SR.SL

C-9

SHEET ' OF i

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 47.7 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS _____ START 4/3/92 1100

FINISH 4/3/92

LOGGER L. Vogel

[illegible]

PROJECT NUMBER NJ022948 SP 51	BORING NUMBER C-10	SHEET 1 OF 1
SOIL BORING LOG		

PROJECT Stepan Co. and Sears and Adjacent Properties RI LOCATION Maywood, NJ
ELEVATION 48.4 MSL DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ
DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID
WATER LEVELS _____ START 4/3/92 0910 FINISH 4/3/92 LOGGER L. Vogel

WATER LEVELS		START		FINISH		ELEVATION		
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY					DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
				8" - 6" - 6" (N)				
60		S-1	1.6'	6-3-2-2 (5)	0-0.5' CLAYEY SAND SC, dark yellowish brown, slightly damp, very fine-fine sand (fill material), trace clay, 2" layer of asphalt and trap rock at surface	2.3	128130 74902 156354	300 lb hammer-3" splitspoon 400 cpm rad reading
	2.0				0.5-1.6' SILTY SAND SM, medium dark gray, damp, very fine-medium sand, white mottling throughout	2.4	245936 278620	100 cpm rad reading
		S-2	2'	4-4-7-9 (11)	2-2.9' POORLY GRADED SAND WITH SILT SP-SM, brownish black, slightly damp, fine-medium sand, organic matter, roots and vegetation		291304 212958	
	4.0				2.9-4' POORLY GRADED SAND SP, dark yellowish brown, damp, medium sand, trace coarse sand, feldspar, quartz, subangular		118416 72564	
		S-3	1.5'	5-4-6-7 (10)	4-4.8' POORLY GRADED SAND SP, olive gray wet medium-coarse sand, quartz, feldspar, subangular	2.3	56996 24120	100 cpm rad reading
	6.0				4.8-5' CLAYEY SAND SC, light olive gray, damp, very fine-fine sand	11458		
					5-5.5' SILT ML, dark yellowish orange, damp red sandstone fragments in bottom of spoon	10132		
		S-4	2'	9-12-11-21 (23)	6-6.8' POORLY GRADED SAND WITH SILT SP-SM, moderate yellowish brown, wet, very fine-fine sand, subangular	1.6	9506 8932	auger refusal 8'
	8.0				6.8-7.8' SILT ML, dark yellowish orange, saturated	8902		
					7.8-8' POORLY GRADED SAND SP, dark reddish brown, wet, trace gravel and sandstone	10432 End		
120					End of Boring			

PROJECT NUMBER NJ022948.GF.SL	BORING NUMBER C-II	SHEET 1 OF 1
SOIL BORING LOG		

PROJECT Stepan Co. and Sears and Adjacent Properties RI LOCATION Maywood, NJ
ELEVATION 46.8 MSL DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ
DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID
WATER LEVELS _____ START 2/27/92 1035 FINISH 2/27/92 LOGGER L. Vogel

WATER LEVELS		STATION		DATE		SHEET		
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY					
				6" - 8" - 6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			
5.0	1.0		-		0-1' Concrete		7654 13246	300 lb hammer-3" splitspoon
		S-1	1.3'	4-5-7-4 (12)	1-1.4' WELL GRADED SAND WITH SILT SW-SM, brownish black, dry, very fine-coarse sand, trace clay, occasional cobbles	3.3	16043 13334	
	3.0				1.4-2.3' POORLY GRADED SAND SP, yellowish brown, slightly damp, medium sand, trace coarse sand, subangular, occasional cobbles		12423 11953	
		S-2	1'	3-4-2-3 (6)	3-4' Same as 1.4-2.3'	13.8	16519 23768	
	5.0						26543 21053	
		S-3	1.7'	5-4-10-9 (14)	5-6' SANDY LEAN CLAY CL, medium gray, slightly damp, very fine-fine sand, root matter	5.4	15707 12346	
	7.0				6-6.7' MEDIUM GRADED SAND SW-SP, brownish gray, wet, fine-medium sand, trace silt, trace coarse sand		10545 10734	
		S-4	2.0'	6-6-8-8 (14)	7-7.5' Same as 6-6.7', saturated	4.8	10239 9346	
	9.0				7.5-9' CLAYEY SILT ML, brownish gray, damp		8824 8572	
					9-11' No recovery	NT	8439 7885	
10.0		S-5	0	16-22-15-14 (37)			7227 6660	140 lb hammer-2" splitspoon
	11.0				10-10.5' SILT ML, moderate yellowish brown, wet, trace clay, stiff, occasional cobbles	NT	7212 7256	
		S-6	0.5'	12-12-15-12 (27)			7844 8671	
	13.0				13-13.5' POORLY GRADED SAND SP, reddish brown, wet, fine-medium sand, trace silt, angular-subangular grains, large cobbles jammed in spoon	NT	8439 9378	
	14.0	S-7	0.5'	42-50/3"	End of Boring		9844 End	
								spoon refusal 13.75' auger refusal 14'
								NT: Not Taken



PROJECT NUMBER
NJ022948.SR.SL

BORING NUMBER
C-12

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stegan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 48.1 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 4/2/92 1415

FINISH 4/2/92

LOGGER L. Vogel

WATER LEVELS		START		END					
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (dpm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY	0" - 6" - 6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION	
6.0	0.5				0-0.5' asphalt and trap rock	.7	8621	300 lb hammer-3" splitspoon	
					0.5-0.7' trap rock		8868		
		S-1	1.5'	15-17-26-18 (43)	0.7-2' POORLY GRADED SAND SP, dark reddish brown, dry, fine sand, trace medium sand, trace gravel throughout, trace silt, quartz, feldspar, subrounded		9851		
							9440		
	2.5				2-4' Same as 0.7-2'	1.2	9384	140 lb hammer-2" splitspoon	
							9864		
		S-2	1.5'	13-13-5-5 (18)			9820		
							10023		
	4.5				4.5-6.5' No recovery	NT	10021		auger refusal 9.5'
							9872		
		S-3	0	1-1-1-1 (2)		9761			
						9899			
	6.5				6.5-7' POORLY GRADED SAND SP, dark reddish brown, very fine-fine sand, occasional sandstone fragments, dark reddish brown, friable	NT	9764		
	S-4	0.5'	1-2-4-3 (6)		9880				
8.5									
				8.5-9.5' Same as 0.7-2', saturated	NT	10056			
						9947			
10.0		S-5	1.0'	4-3-5-6 (8)		10385	auger refusal 9.5'		
						10254 End			
	10.5				10.5-11.5' POORLY GRADED SAND WITH CLAY SP-SC, dark reddish brown, very fine-fine sand	NT			
	S-6	1.0'	7-17-29-40 (46)		11.5' Reddish brown, fine-very fine SANDSTONE, weathered, hard				
12.5									
					End of Boring				
								NT: Not Taken	

NT: Not Taken

SOIL BORING LOG

[illegible]



PROJECT NUMBER

NJ022948 SR SI

BORING NUMBER

C-14

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 46.1 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B81 using HSA 6 1/4" ID

WATER LEVELS START 3/31/92 1530 FINISH 3/31/92 LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (cpm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
5.0	2.0	S-1	1'	3-2-3-2 (5)	0-0.7' top 2" asphalt, POORLY GRADED SAND WITH SILT SP-SM, black, damp, trace large gravel, trace clay	1.0	27692	300 lb hammer-3" splitspoon
					0.7-1' CLAYEY SILT ML, medium light gray with pale pink streaks (fill)		39820	
	4.0	S-2	2'	2-2-1-5 (3)	2-3.5' CLAYEY SILT ML, light gray- with white streaks, damp, with patches of wet material (fill)	2.2	109608	230 cpm rad reading
					3.5-4' CLAYEY SAND SC, greenish gray, damp, fine sand with trace very fine sand, yellow mottling throughout (fill)		158850	
					4-5' CLAYEY SAND SC, light olive gray, slightly damp, very fine-medium sand, yellow mottling, trace fine gravel, quartz, subangular (possible fill)	2.0	214944	200 cpm rad reading
10.0	6.0	S-3	2'	5-7-11-14 (18)	5-6' POORLY GRADED SAND WITH SILT SP-SM, moderate yellowish brown, slightly damp, fining to SILT ML, moderate yellowish brown, slightly damp	1.9	192718	
					6-7.5' POORLY GRADED SAND SP, moderate yellowish brown, wet-saturated, fine sand, trace medium sand, subangular quartz, feldspar, thin 1" SILT layer at bottom		135166	
	8.0	S-4	1.5'	11-17-17-16 (34)	8-9.8' POORLY GRADED SAND SP, pale reddish brown, saturated, medium-coarse quartz sand, angular-subangular, trace feldspar, trace opaques		96652	5-6' fining downward sequence
					9.8-10' SANDSTONE, dark reddish brown, dry, very fine-fine sand, quartz		41820	
	10.0	S-5	2'	16-28-36-41 (64)	End of Boring	NT	19896	
							9924	
							7522	
							6064	
							5042	saturated at 7'
							4494	
							5630	140 lb hammer-2" splitspoon
							4481	
							5335	
							7660	
							6402	auger refusal 10'
							End	

NT: Not Taken

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 46.2 MSL

- DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS _____ START 2/26/92 1420

FINISH 2/26/92

LOGGER L. Vogel

[illegible]



PROJECT NUMBER
NJ022948.SR.SL

BORING NUMBER
C-16

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 46.3 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 4/1/92 0920

FINISH 4/1/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	2.0	S-1	2'	2-2-2-3 (4)	0-1.5' POORLY GRADED SAND WITH SILT SP-SM, dusky yellow brown, damp, organic matter throughout, roots, trace clay 1.5-2' LEAN CLAY CL. very light gray, damp, organic matter, trace sand	0	43059 57994 72462 57676	300 lb hammer-3" splitspoon 200 cpm rad reading
	4.0	S-2	2'	2-2-3-2 (5)	2-2.5' LEAN CLAY CL. very light gray, damp, trace sand 2.5-3.7' SILTY SAND SM. black, damp, very fine sand, trace clay, organic matter consisting of branches and roots 3.7-4' LEAN CLAY CL. light olive gray, damp, medium plasticity	0	43977 48835 41228 26957	250 cpm rad reading
	6.0	S-3	2'	5-11-11-8 (22)	4-5.5' Same as 3.7-4' coarsening downward to SILT ML. light olive gray, slightly damp 5.5-6' WELL GRADED SAND SM. pale yellowish brown, fine-coarse sand, trace gravel, subangular quartz, feldspar	0	16863 14450 14335 13964	200 cpm rad reading
	8.0	S-4	2'	6-8-13-13 (21)	6-8' SILT ML. moderate yellowish brown, wet, trace clay, tight, thin layer 0.2' of WELL GRADED SAND SM. pale yellowish brown	0	14162 11730 9685 9016	*QC 14620 200 cpm rad reading
	10.0	S-5	2'	13-16-16-31 (32)	8-9' coarsening from SILT ML (interval 8-9') to SANDY SILT ML to 9-10' POORLY GRADED SAND WITH SILT SP-SM. pale yellowish brown, wet, very fine-fine sand, quartz. POORLY GRADED SAND SP. dark yellowish brown, saturated, very fine-fine sand, subangular quartz	NT	8879 8194 9657 End	140 lb hammer-2" splitspoon
	12.0	S-6	2'	16-23-31-50/4 (54)	10-12' POORLY GRADED SAND WITH SILT SP-SM. yellowish brown, wet, very fine-fine sand, abundant reddish brown, fine-very fine grained sandstone pieces	NT		spoon refusal 11.8'
					End of Boring			

NT: Not Taken



PROJECT NUMBER NJ022948.SR.SL	BORING NUMBER C-17
SHEET 1 OF 1	
SOIL BORING LOG	

PROJECT <u>Stegan Co. and Sears and Adjacent Properties RI</u>	LOCATION <u>Maywood, NJ</u>
ELEVATION <u>44.5 MSL</u>	DRILLING CONTRACTOR <u>Environmental Drilling, West Creek, NJ</u>
DRILLING METHOD AND EQUIPMENT <u>Tripod and 140 lb hammer</u>	
WATER LEVELS	START <u>4/7/92 0750</u> FINISH <u>4/7/92 0930</u> LOGGER <u>S. Scanlon</u>

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
5.0	2.0	S-1	2'	9-7-6-6 (13)	0-1.5' POORLY GRADED SAND WITH SILT SP-SM, dark brown, moist, fill material, contains bricks, wood, roots	0	22040	
					1.5-2' ORGANIC SOIL (clay and silt) OL/OH, dark black, moist, firm, veg.		88939	
	4.0	S-2	2'	6-17-27-36 (44)	2.0-2.85' Same as 1.5-2' interval	0	65198	
					2.85-4' POORLY GRADED SAND WITH SILT SP-SM, tan, moist, dense		39304	
					4.0-4.75' POORLY GRADED SAND WITH CLAY SP-SC, tan, saturated, dense	0	16564	
6.0	6.0	S-3	1.5'	17-24-20-5 (44)	4.75-6' WELL GRADED SAND WITH SILT SW-SM, tan, saturated, firm		10356	
					6-7' ELASTIC SILT MH, tan, saturated, very stiff	0	6235	
	8.0	S-4	1.3'	10-10-13-9 (23)	7-8' POORLY GRADED SAND WITH SILT SP-SM, tan, saturated		4948	
10.0					End of Boring		End	



PROJECT NUMBER

NJ022948.SR.SL

BORING NUMBER

C-18

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 45.1 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Tripod and 140 lb hammer

WATER LEVELS START 4/7/92 1405 FINISH 4/7/92 1453 LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
2.0		S-1	2'	4-4-7-23 (11)	0-1.5' SILT ML, dark brown, moist, stiff, contains debris and vegetation	0	5494 10448 6700	*QC 6512
		S-2	1.25'	44-31-50/3" (81)	1.5-2' SILTY SAND SM, red-brown, moist, stiff, roots & vegetation 2-3.25' POORLY GRADED SAND WITH SILT SP-SM, red-brown, moist, very dense, pieces of rocks, vegetation roots	0	4685 4823 3887 4242 End	Spoon refusal 3.25'
4.0					End of Boring			
6.0								
8.0								
10.0								
12.0								
14.0								
16.0								
18.0								
20.0								
22.0								
24.0								
26.0								
28.0								
30.0								
32.0								
34.0								
36.0								
38.0								
40.0								
42.0								
44.0								
46.0								
48.0								
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72.0								
74.0								
76.0								
78.0								
80.0								
82.0								
84.0								
86.0								
88.0								
90.0								
92.0								
94.0								
96.0								
98.0								
100.0								



PROJECT NUMBER NJ022948.SR.SL	BORING NUMBER C-19	SHEET 1 OF 1
SOIL BORING LOG		

PROJECT Stepan Co. and Sears and Adjacent Properties RI LOCATION Maywood, NJ
 ELEVATION 44.4 MSL DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ
 DRILLING METHOD AND EQUIPMENT Tripod and 140 lb hammer
 WATER LEVELS _____ START 4/8/92 FINISH 4/8/92 LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	2.0	S-1	1.25'	4-4-3-9 (7)	0-0.5' LEAN CLAY CL. dark brown, moist, firm, contains roots and vegetation (fill) 0.5-1.25' POORLY GRADED SAND WITH SILT SP-SM, black, moist, firm, contains some rocks (fill)	0	12213 13721 23387 16819	
	4.0	S-2	2'	12-14-37-32 (51)	2-3.5' POORLY GRADED SAND WITH SILT SP-SM, gray, moist, very dense, contains lenses of red coarser sand that appear to be weathered rock 3.5-3.7' SILT ML, bluish gray, moist, hard 3.7-4' SANDSTONE, red brown, fine-medium grain, weathered	0	10969 9379 9652 9672 End	
	6.0	S-3	2'	25-18-19-43 (37)	4-4.75' POORLY GRADED SAND WITH SILT SP-SM, yellowish brown, moist, dense, contains some rock fragments 4.75-5' POORLY GRADED GRAVEL GP, yellow, rounded	0		
	8.0	S-4	1.25'	47-45-28-46 (73)	5-6' POORLY GRADED SAND WITH SILT SP-SM, reddish brown, moist, dense, contains rock fragments 6-7.25' POORLY GRADED SAND WITH SILT SP-SM, reddish brown, dense, saturated, contains many large rock fragments	NT		
10.0					End of Boring			

NT: Not Taken

[illegible]

NT: Not Taken

WATER LEVELS		DATE		TIME		LOCATION		PROJECT	
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY						
				8" - 8" - 8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY				
5.0	1.0				0-1' asphalt and trap rock	5.6	5058 7008 7830 9327	1545 abandon borehole because fill from tank excavation was encountered 1600 begin at new location 24' west toward Route 17N 300 lb hammer-3" splitspoon	
		S-1	1.7'	9-11-11-10 (22)	1-2' SILTY SAND WITH GRAVEL SM. very fine-fine sand, trace, coarse sand, numerous limestone cobbles (fill) 2-3.7' POORLY GRADED SAND SP. moderate yellowish brown, slightly damp, medium sand, trace coarse sand; sandstone pieces approx. 1" wide, pale yellow, subangular, quartz		2.0		9819 9998
	3.0				Same as 2-3.7' interval with increase of sandstone pieces				11190 11247
		S-2	1'	9-9-11-13 (20)			10648 10069		
	5.0				5-5.3' SANDSTONE, pale yellow, breaks into thin angular pieces 5.3-6' SILT ML. medium gray to reddish gray, dry, slightly plastic	3.0	10184 10147	140 lb hammer-2" splitspoon spoon refusal 8.5'	
		S-3	1.6'	10-11-16-20 (27)	6-6.6' POORLY GRADED SAND WITH SILT SP-SM, reddish brown, damp, very fine-fine sand, trace gravel with interbedded semiconsolidated sandstone that is dark reddish brown, very fine-fine grained, friable		NT		10963 11251
	7.0				7-8.5' SANDSTONE, dark reddish brown, very fine-fine grained, saturated, weathered, laminated, sandstone within SILT matrix				10217 End
		S-4	1.5'	13-16-28-50/4 (44)					
	9.0								
	10.0					End of Boring			spoon refusal 8.75' auger refusal 7'
NT: Not Taken									

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 48.6 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS _____ START 4/2/92 1020 FINISH 4/2/92 LOGGER L. Vogel

START 4/2/92 1020

FINISH 4/2/92

LOGGER L. Vogel

[illegible]



PROJECT NUMBER

NJ022948.SR.SL

BORING NUMBER

C-24

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RILOCATION Maywood, NJELEVATION 45.6 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJDRILLING METHOD AND EQUIPMENT Tripod and 140 lb hammer

WATER LEVELS

START 4/7/92 1040FINISH 4/7/92 1145LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
5.0	2.0	S-1	0.85'	4-6-6-5 (12)	0-0.85' SILT ML, dark brown, dry, stiff, contains rocks, wood and grass (fill)	0	30263 42081 70349 115893	
	4.0	S-2	1.25'	4-4-10-16 (14)	2-2.5' POORLY GRADED SAND WITH SILT SP-SM, reddish brown, dry, loose-medium dense 2.5-3.25' SILT ML, dark black, dry, firm	0	142599 141931 End	
	6.0	S-3	1.5'	25-41-45-25 (86)	4-5.5' SANDY SILT ML, gray-tan, moist, hard, with vegetation/roots	0		
10.0					End of Boring			



PROJECT NUMBER NJ022948.FH.SL	BORING NUMBER C-25
SHEET 1 OF 2	
SOIL BORING LOG	

PROJECT <u>Stegan Co. and Sears and Adjacent Properties RI</u>	LOCATION <u>Maywood, NJ</u>
ELEVATION <u>45.0 MSL</u>	DRILLING CONTRACTOR <u>Environmental Drilling, West Creek, NJ</u>
DRILLING METHOD AND EQUIPMENT <u>Mobile B61 using HSA 6 1/4" ID</u>	
WATER LEVELS	START <u>2/26/82 0830</u> FINISH <u>2/26/92</u> LOGGER <u>L. Vogel</u>

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION	HEADSPACE READING (dpm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
5.0	0.5				0-0.5' asphalt and taprock	600	5620	300 lb hammer-3" splitspoon
							5865	
		S-1	2'	4-4-6-6 (10)	0.5-2.5' SILTY SAND SM, brownish black, slightly damp, sandstone pieces throughout, very fine-fine grained (fill)		5983	strong gasoline odor
							6031	
	2.5				2.5-4' CLAYEY SAND SC, reddish brown, damp, with abundant layers of weathered sandstone, moderate reddish brown very fine-fine angular grains, saturated	1520	6850	
		S-2	1.5'	6-6-7-8 (13)			8942	
							10724	
	4.5				4.5-5.5' POORLY GRADED SAND WITH SILT SP-SM, medium gray, damp, fine-medium sand, subangular, quartz, feldspar, opaques, thin bands of semiconsolidated sandstone, friable	1680	11429	
		S-3	1.5'	14-22-23-12 (45)			13606	slough in top of spoon
					5.5-6.0' SILT ML, with trace clay, moderate yellowish brown, slightly damp	1450	14826	
6.5				6.5-7.2' Same as 5.5-6'	7819			
	S-4	1.6'	8-13-17-15 (30)	7.2-8.1' Same as 4.5-5.5'	7532			
					7178			
10.0	8.5				8.5-9' Same as 4.5-5.5'	3777	8033	
							8334	
		S-5	2'	0-0-13-14 (13)		8131		
					9-10.5' POORLY GRADED SAND SP, moderate reddish brown, saturated fine-medium sand with trace coarse sand; angular sandstone pieces throughout	NT	8001	
	10.5				10.5-12.5' Same as 9-10.5'		7901	
		S-6	2'	9-4-5-4 (9)			8040	
							8387	140 lb hammer-2" splitspoon
						NT	8522	
							8569	
	12.5				12.5-14.5' Same as 9-10.5'		8226	
					8230			
		S-7	2'	3-6-10-23 (16)		8250		
	14.5					8391		
						8621		
						8404		
					NT	8412	NT: Not Taken	



PROJECT NUMBER

NJ022948.FH.SL

BORING NUMBER

C-25

SHEET 2 OF 2

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 45.0 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 2/26/92 0830

FINISH 2/26/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
				6" - 6" - 6" (N)				
		S-8	2'	11-9-8-7 (17)	14.5-16.5' Same as 9-10.5'	NT	8373	spoon refusal at 17.75' auger refusal at 16'
	16.5				16.5-17.5' Same as 9-10.5'		8849	
		S-9	1'	7-11-69/3"			8282 End	
	17.9				End of Boring			
20.0								
25.0								

[illegible]



PROJECT NUMBER

NJ022948.FA.SL

BORING NUMBER

C-28

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 47.1 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS START 2/20/92 1015 FINISH 2/20/92 LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	1.0		N/A		0-1' asphalt and trap rock		9379 12203	300 lb hammer-3" splitspoon
		S-1	2'	13-20-12-12 (32)	1-1.5' CLAYEY SAND SC, grayish brown, dry 1.5-2.5' WELL GRADED SAND WITH SILT SW-SM, moderate yellowish brown, dry, fine-medium sand, brick, cobbles (fill) 2.5-3' SILTY SAND SM, pale yellowish brown, dry, very fine-fine sand	3.1	13303 11313 4994 8950	
	3.0				3-4.7' WELL GRADED SAND WITH SILT to CLAYEY SAND SM-SC, moderate yellowish brown, damp, trace silt	3	8791 8918 9023 9150	*QC 8864
	5.0	S-2	1.7'	8-19-23-29 (42)	5-6' Same as interval 3-4.7'	3.6	9228 9473 9339 9318	
12.0	7.0	S-3	2'	7-14-15-16 (29)	6-7' SILT ML, light brown, slightly damp, trace very fine-fine sand, slightly plastic		8770 8264 End	
		S-4	2'	24-31-16-16 (47)	7-9' SILTY SAND SM, moderate reddish brown, damp, trace clay, occasional semiconsolidated pieces of sandstone	3.4		auger refusal 8'
	9.0				End of Boring			

WATER LEVELS				START		END		
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY					
				0' -6' -8' (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			
5.0	1.0		N/A		0-1' asphalt and trap rock	0	24983 96207	1145 begin drilling 300 lb hammer-3" splitspoon
	3.0	S-1	2'	3-2-3-3 (5)	1-3' POORLY GRADED SAND WITH SILT SP-SM, trace clay and gravel, brownish gray, slightly damp, very fine sand, organic matter, twigs, wood chips (fill)	0	247454 277799 195966 137003	250 cpm rad reading *QC 139046
	5.0	S-2	1.5'	3-3-1-1 (4)	3-4.5' POORLY GRADED SAND SP, trace clay, dark gray, saturated, very fine sand, organic matter, twigs, roots (fill)	0	117092 106179 86161 64001	
	7.0	S-3	1.5'	2-7-13-13 (20)	5-6.5' SANDY SILT ML, greenish gray-pale yellowish brown, slightly damp, very fine sand, some mottling	0	41808 30397 27140 22155	200 cpm rad reading
	9.0	S-4	1.5'	15-22-24-26 (46)	7-8' SANDY SILT ML, pale yellowish brown, slightly damp 8-8.5' WELL GRADED SAND SW, brownish grey, saturated, fine-coarse quartz and feldspar sand, trace fine opaques, angular-subangular grains	0	17973 13958 13898 11047	fuel odor present
	11.0	S-5	1'	19-21-24-30 (45)	9-10' SILTY SAND SM, reddish brown, wet, trace clay and gravel 10' SANDSTONE, reddish brown, very fine-fine grained, weathered	NT	16912 End	140 lb hammer-2" splitspoon auger refusal 9'
					End of Boring			
NT: Not Taken								



PROJECT NUMBER NJ022948.FA.SI	BORING NUMBER C-30	SHEET 1 OF 1
SOIL BORING LOG		

PROJECT	Stepan Co. and Sears and Adjacent Properties RI	LOCATION	Maywood, NJ
ELEVATION	52.7 MSL	DRILLING CONTRACTOR	Environmental Drilling, West Creek, NJ
DRILLING METHOD AND EQUIPMENT	Mobile B61 using HSA 8 1/4" ID		
WATER LEVELS	START 2/21/92 1140	FINISH 2/21/92	LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
				6" -6" -6" (N)				
50	1.0				0-1' asphalt and trap rock	1.4	5186	300 lb hammer-3" splitspoon
							7169	
	1.75	S-1	0.75'	9-35/3"	1-15' SILT ML, trace clay and very fine sand, reddish brown, dry 1.5' SANDSTONE, dark reddish brown, very fine-medium grained, slightly weathered		9217	*QC 8926 very hard drilling
					End of Boring		10792	auger refusal at 2' spoon refusal at 1.75'
							10171 End	

WATER LEVELS		START							
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION	
				6" - 6" - 6" (N)					
5.0	2.0	S-1	1.7'	1-3-3-4 (6)	0-0.5' ORGANIC SOIL OL, brownish black, damp, roots, layer of granular silty sand with clay	3	5546	300 lb hammer-3" splitspoon	
					0.5-1.7' SILTY SAND SM, moderate yellowish brown, damp, very fine-fine sand, loose, trace gravel		6719		
	4.0	S-2	1.8'	1-8-3-6 (11)	2-3' WELL GRADED SAND WITH SILT SW-SM, moderate yellowish brown, damp, very fine-fine sand	1	8109	*QC 8560	
					3-3.8' WELL GRADED SAND WITH CLAY SW-SC, black-moderate yellowish brown, gravel, very fine-coarse sand		8511		
	6.0	S-3	2'	7-7-10-10 (17)	4-5.2' SILTY SAND SM, moderate yellowish brown, damp, very fine-fine sand, trace gravel, slightly consolidated	2	8621		
5.2-6' WELL GRADED SAND WITH CLAY SW-SC, dark reddish brown, wet, very fine-coarse sand, trace gravel						8276			
8.0	S-4	1.7'	9-9-9-9 (18)	6-7.7' CLAYEY SAND SC, moderate reddish brown, wet, very fine-medium sand, trace gravel with semiconsolidated sandstone, dark reddish brown, fine-medium sand, friable	4.4	8427			
						8659			
						9189			
10.0	S-5	1.9'	3-5-67-50/5" (72)	8-9.9' SILTY SAND SM, moderate reddish brown, wet, very fine-fine sand, trace rounded gravel of 1" diameter throughout, and semiconsolidated sandstone, dark reddish brown, very fine-medium grained, angular, friable	1	8983	auger refusal 10' spoon refusal 9.9'		
						8929			
						9405			
							9105		
							9918		
							9464		
							9064		
							9678		
							End		
					End of Boring				

[illegible]



PROJECT NUMBER

NJ022948.SC.SL

BORING NUMBER

C-33

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 46.4 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 2/26/92 1600

FINISH 2/26/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY					DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
5.0	1.0				0-1' asphalt and trap rock		4768 5738	300 lb hammer-3" splitspoon
		S-1	1.8'	12-12-7-7 (19)	1-2' MEDIUM GRADED SAND SW-SP, dark yellowish brown, dry, medium-coarse sand trace gravel, quartz, feldspar, cobbles, angular-subangular	4.3	7615 12073 14456	
	3.0				2-2.8' LEAN CLAY CL, brownish black, damp, cobbles		17826	
		S-2	1.5'	4-4-3-5 (7)	3-4' SILTY SAND SM, medium dark gray, slightly damp, very fine-fine sand	3.6	23615 32232	
	5.0				4-4.5' ELASTIC SILT MH, black, slightly damp, roots		45216 30357	
		S-3	2'	4-4-6-7 (10)	5-7' WELL GRADED SAND WITH CLAY SW-SC, medium gray to brownish gray, damp, very fine-coarse sand	4.2	18509 14688 13446	
	7.0				7-8' ELASTIC SILT MH, brownish gray, damp, very stiff, trace sand	7.9	10162 8068 8705	
		S-4	1.5'	5-9-9-10 (18)	8-8.5' POORLY GRADED SAND SP, brownish gray, saturated, quartz, feldspar, opaques angular-subangular		9495 10395	
10.0	9.0				9-10' CLAYEY SAND SC, moderate reddish brown, wet, very fine-fine sand, semiconsolidated sandstone throughout	3.3	10321 9832 9635	auger refusal at 10' spoon refusal at 10.25'
	10.25	S-5	1'	3-15-50/3"	End of Boring		End	

WATER LEVELS				START		END			
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY	6" -8" -8" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION	
5.0	1.0				0-1' asphalt and trap rock	8	8863 6818	300 lb hammer-3" splitspoon	
	3.0	S-1	2'	3-2-1-2 (3)	1-3' CLAYEY SAND SC. brownish black, damp, very fine-fine sand, brick pieces (fill)		6080 6529 6601 6727		
	5.0	S-2	2'	8-7-7-7 (14)	3-5' WELL GRADED SAND SW. yellowish gray, damp, very fine-coarse sand, angular-subrounded quartz, feldspar. 1" thin gray silt layer at 3.5'	5.6	6630 6343 6180 6452		
	7.0	S-3	1.7'	5-7-3-10 (10)	5-6.2' WELL GRADED SAND SW. moderate brown, damp, very fine-coarse sand, feldspar, quartz, angular-subrounded, fining downward 6.2-6.7' CLAYEY SAND SC. reddish brown, damp, very fine medium sand angular-subrounded, thin 1" layer of WELL GRADED SAND, trace gravel 7-8.2' WELL GRADED SAND SW. reddish brown, saturated, very fine-coarse sand, trace silt, layered sandstone pieces in bottom of spoon, very fine-fine grained, hard	5.3	6897 7093 8427 8969		
	9.0	S-4	1.2'	11-19-11-8 (30)		5.8	8785 8929 9119 9375		
	10.2	S-5	0.5'	5-38-50/2"	9-9.5' SANDSTONE. reddish brown, saturated, friable, thin layers, very fine-fine grained	NT	9399 9718 9647 End		140 lb hammer-2" splitspoon spoon refusal 10'2" auger refusal 10'
					End of Boring				
NT: Not Taken									



PROJECT NUMBER NJ022948.FA.SL	BORING NUMBER C-35
SHEET OF	
SOIL BORING LOG	

PROJECT Stepan Co. and Sears and Adjacent Properties RI	LOCATION Maywood, NJ
ELEVATION 47.5 MSL	DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ
DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID	
WATER LEVELS	START 2/20/92 1200 FINISH 2/20/92 LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N)	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
6.0	1.0				0-1' asphalt and trap rock		9288 9678	300 lb hammer-3" splitspoon
		S-1	1.5'	11-10-6-5 (16)	1-2.5' WELL GRADED SAND WITH SILT SW-SM, pale yellowish brown, damp, trace clay, fine-medium sand with trace coarse sand	4	10292 9064 9570 9260	
	3.0				3-3.2' SILTY SAND SM, pale yellowish brown, damp, very fine-fine sand, trace medium sand	3	8584 9105	
		S-2	2.0'	4-8-13-14 (21)	3.2-4.5' ELASTIC SILT WITH SAND MH, moderate reddish brown, damp, very fine-fine sand, trace coarse sand		9773 9826	
	5.0				5-6.5' Same as 3-3.2'	4	9649 9746 9918 9758	
		S-3	1.5'	5-10-10-9 (20)	7-9' Same as 3-3.2' Becoming coarser grained, wet at 8.8'	1	9626 9706 9419 9309 End	
10.0	7.0							
		S-4	2.0'					
	9.0				9-9.5' SANDSTONE, reddish brown, wet, very fine-fine grained, hard	NT		140 lb hammer-2" splitspoon
		S-5	0.5'	22-29-29-14 (58)				
	11.0							
	11.33	S-6		50/4"	11' No recovery	NT		auger refusal 9' spoon refusal 11.33'
					End of Boring			

NT. Not Taken



PROJECT NUMBER

NJ022948.SR.SL

BORING NUMBER

C-36

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 46.2 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Tripod and 140 lb hammer

WATER LEVELS START 4/7/92 1509

FINISH 4/7/92 1600

LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 8" - 8" - 8" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (gpm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
5.0	2.0	S-1	1.5'	3-4-10-17 (14)	0-0.9' SILT ML, dark brown, moist, stiff, contains vegetation and rock fragments 0.9-1.5' SILTY SAND SM, reddish brown, moist	0	2314 3530 5385 4467	
	4.0	S-2	2'	34-27-25-25 (52)	2-3.75' POORLY GRADED SAND WITH SILT SP-SM, reddish brown, moist, contains sandstone fragments	0	4303 End	
	6.0	S-3	1.75'	48-49-39-22 (88)	3.75-4' POORLY GRADED SAND WITH SILT AND GRAVEL SP-SM, 4-5.75' SILTY SAND SM, red-brown, moist, firm, pieces of red brown sandstone fragments	0		
	8.0	S-4	1.5'	11-17-21-27 (38)	6-7.5' POORLY GRADED SAND WITH SILT AND GRAVEL SP-SM, red-brown, saturated	NT		
10.0					End of Boring			

NT: Not Taken



PROJECT NUMBER

NJ022948.DS.SL

BORING NUMBER

C-37

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 45.9 MSL

DRILLING CONTRACTOR

Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Tripod and 140 lb hammer

WATER LEVELS

START 4/8/92 0840

FINISH 4/8/92 0905

LOGGER S. Scanlon

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	2.0	S-1	2'	5-5-10-18 (10)	0-1.5' SILT ML, dark brown, moist, stiff, contains pieces of red sandstone 1.5-2' WELL GRADED SAND WITH SILT AND GRAVEL SW-SM, tan-brown, moist	.5	24979 36955 37201	*QC 50137
	4.0	S-2	1.5'	7-8-45-50 (53)	2-2.25' WELL GRADED SAND WITH SILT SW-SM, tan, moist, dense 2.25-3.25' SILT ML, black, moist, firm, vegetation and roots 3.25-3.5' ORGANIC SOIL OH, black, with gray mottling, moist, stiff, plastic, some roots and vegetation 4-6' Spoon empty, only a few pieces of red sandstone in tip, spoon contained water	2.2	48943 48346 25267 15216 10933 End	
	6.0	S-3	0	8-22-23-31 (45)	End of Boring	NT		
10.0								

NT: Not Taken

[illegible]



PROJECT NUMBER NJ022948.ST.SL	BORING NUMBER C-39
SHEET 1 OF 1	
SOIL BORING LOG	

PROJECT <u>Stegan Co. and Sears and Adjacent Properties RI</u>	LOCATION <u>Maywood, NJ</u>
ELEVATION <u>62.2 MSL</u>	DRILLING CONTRACTOR <u>Environmental Drilling, West Creek, NJ</u>
DRILLING METHOD AND EQUIPMENT <u>Mobile B61 using HSA 6 1/4" ID</u>	
WATER LEVELS	START <u>2/18/92 0830</u> FINISH <u>2/18/92</u> LOGGER <u>L. Vogel</u>

WATER LEVELS				START		END		LOCATION	
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY	6" - 6" - 6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION	
6.0	2.0	S-1	2.0'	8-14-13-13 (27)	0-0.5' gravel, trap rock 0.5-2' SILT ML, brownish red to moderate brown, dry, trace clay, trace cobbles	3.2	7428 11868 12230 12680	300 lb hammer-3" splitspoon	
	4.0	S-2	0.83'	24-50/4"	2-2.83' SILT ML, moderate brown to brownish red, dry, semiconsolidated	2.1	13415 13235 13434 13696	3' very slow augering *QC 13572	
	6.0	S-3	2.0'	24-28-30-25 (58)	4-6' SILT ML, brownish red to moderate brown, slightly damp, little clay, occasional cobbles of semiconsolidated silt	2.0	13552 End		
	8.0	S-4	2.0'	25-25-16-18 (41)	6-8' Same as interval 4-6'. damp	3.6		auger refusal 5'	
					End of Boring				
10.0									



PROJECT NUMBER

NJ022948.ST.SL

BORING NUMBER

C-40

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 60.4 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS START 2/13/92 1335

FINISH 2/13/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	2.0	S-1	1.8'	2-6-5-8 (11)	0-0.6' asphalt and trap rock 0.6-1.1' SANDY SILT ML, grayish brown, dry, trace clay 1.1-1.8' SANDY SILT ML, dark yellowish orange, dry, trace clay	4.9	9434 11007 10715 10910	300 lb hammer - 3" splitspoon
	4.0	S-2	1.9'	7-9-14-14 (23)	2-3.9' CLAYEY SAND SC, moderate brown, dry, sandstone cobbles, medium-very fine grained	6.8	11563 11661 11386 10620	
	6.0	S-3	2.0'	9-11-12-26 (23)	4-6' SILT ML, dark reddish brown, dry, trace gravel and coarse sand, semiconsolidated silt at 6', friable	10.8	10381 10292 10564 10470	*QC 10583
	8.0	S-4	2.0'	18-18-20-26 (38)	6-8' ELASTIC SILT MH, dark reddish brown, dry, trace gravel and medium sand, some shale fragments	10.1	11473 11030 10120 9918	Hard drilling
	9.25	S-5	1.0'	11-40-50/3" (90)	8-8.5' POORLY GRADED SAND SP, dark reddish brown, dry, medium-fine sand, layered, semiconsolidated	10.8	9853 9555 9539	spoon refusal 9.25' auger refusal 9.5'
10.0					8.5-9' SILTY SAND SM, dark reddish brown, dry, angular, occasional sandstone cobbles End of Boring		9501 End	



PROJECT NUMBER

NJ022948.ST.SL

BORING NUMBER

C-41

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 54.2 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS

START 2/12/92 1320

FINISH 2/12/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
6.0	2.0	S-1	1.5'	2-2-2-1 (4)	0-1' ORGANIC SOIL WITH SAND OL, grayish brown, slightly damp, very fine-fine sand, roots, grass top 6" (fill)	0	15073	300 lb hammer-3" splitspoon
					1-1.5' SANDY ORGANIC SOIL WITH GRAVEL OH, grayish black, slightly damp, very fine-fine sand, roots, mossy material (fill)	0	23066	
	4.0	S-2	1.5'	3-3-7-5 (10)	2-3' POORLY GRADED SAND WITH GRAVEL SP grayish black, slightly damp, organic matter (fill)	0	29701	
					3-3.5' SILT WITH SAND ML, dark yellowish brown, dry, very fine-coarse sand, trace clay, dense	0	32753	
10.0	6.0	S-3	1.0'	2-3-3-8 (6)	4-5' POORLY GRADED SAND WITH CLAY SP-SC, grayish brown, damp, very fine-fine sand, black streaks throughout; large cobbles (fill)	0	27778	*QC 17143
						0	21815	
	8.0	S-4	2.0'	19-20-25-21 (45)	6-6.7' POORLY GRADED SAND SP, with trace gravel, dark gray, angular semiconsolidated shale and green rock chips and trace clay throughout, slightly damp (fill)	0	17046	
					7.7-8' SILT ML, dark reddish brown, dry, trace cobbles	0	11651	
	10.0	S-5	1.5'	7-19-22-28 (41)	8-9' SILTY SAND SM, dark reddish brown, dry, very fine-fine sand, trace cobbles, zone of semiconsolidated material 8-8.5'	0	11050	
					9-9.5' POORLY GRADED SAND SP, dark reddish brown, dry, semiconsolidated, medium grained sand, subrounded	0	10417	
	12.0	S-6	2.0'	4-8-6-15 (14)	10-12' SILTY SAND SM, dark reddish brown, damp-wet, medium grained sand, trace clay, semiconsolidated sandstone fragments throughout	0	10239	
						0	10119	
	12.55	S-7	.33"	50/4"	12-12.33' SILT ML, dark reddish brown, slightly damp, semiconsolidated	0	10257	8' augers scraping *QC 10741
					End of Boring	0	9788	
						0	8565	
						0	8750	
						0	9757	
						0	10855	
						0	12141	
						0	11898	
						0	12157	
						0	12431	
						0	12524	
						0	12958	
						0	13405	
						0	End	spoon refusal 12.33' auger refusal 12.55'



PROJECT NUMBER

NJ022948 ST. ST

BORING NUMBER

C-42

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 56.4 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS START 2/19/92 1430 FINISH 2/19/92 LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY					DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
5.0	2.0	S-1	1.8'	13-19-6-8 (25)	0-1.8' SILTY SAND SM, gray black dry, gravel, bricks, concrete, fibrous material (fill)	111	6059	300 lb hammer-3" splitspoon
							18474	
							39783	
							47483	
5.0	4.0	S-2	1.6'	9-9-4-9 (13)	2-3' Same as interval 0-1.8'	108	38092	
					3-3.6' POORLY GRADED SAND WITH SILT SP-SM, medium dark gray, dry, loose, layers of light and dark gray silt (fill)		24611	
							17617	
							15603	
5.0	6.0	S-3	2.0'	1-1-1-1 (2)	4-4.8' POORLY GRADED SAND WITH SILT SP-SM, abundant asphalt throughout	112	14414	
					4.8-6' LEAN CLAY CL, olive black, damp, very soft (fill)		11963	
							11842	
							10523	
10.0	8.0	S-4	2.0'	2-4-12-13 (16)	6-8' POORLY GRADED SAND SP, moderate yellowish brown to dark yellowish brown, wet, medium-fine sand, trace coarse sand, gravel bricks, asphalt (fill)	100	10007	*QC 10920
							11070	
							11823	
							10631	
10.0	10.0	S-5	2.0'	4-8-8-9 (16)	8-8.75' POORLY GRADED SAND SP, grayish brown, damp, fine-medium sand, trace coarse sand, trace silt	55	8993	
					8.7-10' ELASTIC SILT MH, dark yellowish orange and mottled light gray, slightly damp		8615	
					10-11.7' SILT ML, yellowish orange and light gray mottling, dry, trace sand, slightly plastic		8786	
					11.7-11.9' SILTY SAND SM, dark yellowish brown, damp to wet, fine-medium sand, feldspar, opaques, quartz	8.8	8072	
10.0	12.0	S-6	1.9'	4-6-7-8 (13)			7575	
							7105	
							7068	
							7225	
10.0	14.0	S-7	1.5'	8-8-9-14 (17)	12-13.5' SILTY SAND SM, dark yellowish brown, wet, fine-coarse sand, opaques, feldspar and quartz, lenses of coarse sand	7.0	7320	
							6427	
							6437	
							6229	
5.0	15.33	S-8	1.25'	3-15-50/3"	14-15' WELL GRADED SAND SW, brownish gray, wet, fine-coarse sand of quartz feldspar, opaques, trace feldspar gravel, subangular-subrounded	18.8	6228	auger refusal 15' spoon refusal 15.25
					15-15.25' SANDY SILT ML, dark reddish brown, damp, trace gravel, semiconsolidated		End	
					End of Boring			

WATER LEVELS				START		FINISH		LOGGERS	
DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS	
	INTERVAL	TYPE AND NUMBER	RECOVERY					DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION	
	0" - 0" - 0" (N)								
5.0	1.0	N/A			0-1' asphalt and trap rock	13.8	5682 7885 13606 20067	300 lb hammer-3" splitspoon	
	3.0	S-1	2.0'	3-5-7-9 (12)	1-3' SANDY SILT ML. brownish black, trace clay, bricks, cobbles, semiconsolidated (fill)		19355 20980		
	5.0	S-2	1.7'	6-18-12-11 (30)	3-3.7' Same as interval 1-3' 3.7-4.7' WELL GRADED SAND WITH CLAY SW-SC, moderate brown, dry, very fine to medium sand, cobbles throughout	45	16349 14320 15425		
	7.0	S-3	1.5'	3-10-11-14 (21)	5-5.5' Same as 3.7-4.7' 5.5-6.5' ELASTIC SILT WITH SAND MH, moderate reddish brown, dry, very fine to medium sand, semiconsolidated pieces of silt and sand throughout	3.5	11606 10435 10435		
9.0	S-4	1.8'	16-29-29-21 (58)	7-8.8' Same as 5.5-6.5'	30	9678 10564 10658			
10.0	11.0	S-5	1.5'	3-7-10-7 (17)	9-10.5' Same as 5.5-6.5'. except damp	31.3	10187 10508 10085		
	13.0	S-6	2.0'	3-20-20-8 (40)	11-13' Same as 5.5-6.5' soils becoming more consolidated	111	11429 10949 11473 10861 10699 10292 10753 11015		


PROJECT NUMBER

NJ022948.ST.SL

BORING NUMBER

C-44

SHEET 1 OF 1

SOIL BORING LOG
PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION 54.8 MSL

DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS
START 2/13/92 940

FINISH 2/13/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (cpm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
5.0	2.0	S-1	1.2'	18-24-24-20 (48)	0-1.2' SILTY SAND SM, gravel, bricks, wood chips, concrete, (fill)	21	10468	0940 begin drilling slight odor present
							22292	
							27011	
							27063	
4.0	1.0'	S-2	1.0'	11-8-6-6 (14)	2-3' POORLY GRADED SAND WITH SILT SP-SM, grayish black, dry, very fine-fine sand, angular shale chips, reddish brown (fill)	211	21608	strong odor present *QC 16524 slight shimmer to soil
							16367	
							12201	
							10916	
6.0	1.6'	S-3	1.6'	3-3-5-11 (8)	0-1.6' POORLY GRADED SAND WITH SILT SP-SM, olive gray, wet, very fine-fine sand, trace medium sand, angular shale chips, grayish red	49.9	10430	1
							12717	
							13892	
							13608	
8.0	1.5'	S-4	1.5'	23-29-37-42 (66)	6-7.5' SANDY SILT ML, moderate reddish brown to moderate brown, dry, very fine sand, semiconsolidated, some shale and sandstone fragments	143	11103	Hard drilling sweet odor present
							9886	
							9716	
							9645	
10.0	1.7'	S-5	1.7'	15-21-24-32 (45)	8-9.7' POOLY GRADED SAND WITH SILT SP-SM, medium gray, slightly damp, trace gravel, medium sand, shale pieces throughout moderate brown and brownish gray	190	9538	sweet odor present
							9721	
							10045	
							9637	
12.0	2.0'	S-6	2.0'	13-10-11-21 (22)	10-10.7' WELL GRADED SAND WITH SILT AND GRAVEL SW-SM, light gray, damp 10.7-12' SILTY SAND SM, pale reddish brown, dry, consolidated	264	10360	auger scraping 10' sweet odor present
							10246	
							End	
12.83	0.83'	S-7	0.83'	69-50/4"	12-12.83' POORLY GRADED SAND WITH SILT SP-SM, moderate reddish brown, wet, very fine-fine sand, saturated at 12.5'			scraping augers 12' auger refusal 12' spoon refusal 12.83'
					End of Boring			



PROJECT NUMBER

NJ022948.SR.WI

BORING NUMBER

OBMWI

SHEET 1 OF 1

SOIL BORING LOG

PROJECT Stepan Co. and Sears and Adjacent Properties RI

LOCATION Maywood, NJ

ELEVATION _____ DRILLING CONTRACTOR Environmental Drilling, West Creek, NJ

DRILLING METHOD AND EQUIPMENT Mobile B61 using HSA 6 1/4" ID

WATER LEVELS _____ START 4/1/92 1430

FINISH 4/1/92

LOGGER L. Vogel

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS 6" - 6" - 6" (N)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	HEADSPACE READING (ppm)	GAMMA LOG (cpm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY					
	1.0				0-1' asphalt and trap rock			140 lb hammer-2" splitspoon
	3.0	S-1	1.0'	7-44-25-8 (69)	1-1.3' WELL GRADED SAND WITH SILT SW-SM, dark yellowish brown, slightly damp, very fine to medium sand, trace clay 1.3-1.7' sandstone cobble, dark reddish brown, very fine grained 1.7-2' WELL GRADED SAND WITH CLAY SW-SC, dark yellowish orange, saturated 3-5' WELL GRADED SAND SW, moderate yellowish brown, wet, very fine-coarse sand, quartz, feldspar, subangular at 4.5-4.75' layer of medium-coarse sand and fine gravel			
5.0	5.0	S-2	2.0'	10-10-16-15 (26)	5-5.5' POORLY GRADED SAND SP, moderate yellowish brown medium-coarse sand, saturated, subangular-subrounded, quartz, feldspar, opaques			
	7.0	S-3	1.0'	20-21-17-24 (38)	5.5-6' POORLY GRADED SAND WITH CLAY SW-SC, moderate yellowish brown, saturated fine to very fine sand			
	9.0	S-4	1.0'	13-15-24-30 (39)	7-8' POORLY GRADED SAND WITH SILT SP-SM, trace clay, reddish brown, saturated, very fine to fine sand, sandstone chips dark, reddish brown, very fine to fine grain			
10.0					End of Boring			