

BORING NO.	<u>AD-1a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>958.5 MSL</u>
Time	<u>1615</u>	Bottom Sample Elevation	<u>955.5 MSL</u>
Sample Method	<u>2' X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny, 80° F</u>	Location	<u>N 466994.163</u>
			<u>E 1342993.927</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes				
0.5	WATER										
1.0											
1.5											
2.0	SILTY CLAY - light grey, high moisture, very soft, silt -15%, clay - 85%, increased density and plasticity with depth	CL	15	1		SS-1a (1645)	0 ppm				
2.5				1							
3.0				1							
3.5				1							
4.0			15	1				0 ppm			
4.5				1							
5.0			Total Depth = 4.5 ft.								
5.5											
6.0											
6.5											
7.0											
7.5											
8.0											
8.5											
9.0											
9.5											
10.0											

BORING NO.	<u>AD-1b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/4/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/4/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>958.5 MSL</u>
Time	<u>0800</u>	Bottom Sample Elevation	<u>950.5 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny, 65° F</u>	Location	<u>N 466933.630</u>
			<u>E 1343064.041</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	
0.5	WATER							
1.0								
1.5								
2.0	CLAYEY SILT - grey, high moisture, very soft, abundant organic material (sticks, leaves) from 2-2.5'	ML	10	0		SS-1b (0830)	0 ppm	
2.5				0				
3.0				0				
3.5				0				
4.0			15	0				0 ppm
4.5				0				
5.0				0				
5.5				0				
6.0	CLAY - greenish grey, high moisture, soft, high plasticity	CH	75	0		0 ppm		
6.5				0				
7.0				0				
7.5			0					
8.0			95	0				0 ppm
8.5				0				
9.0	SILTY SAND - greenish grey, high moisture, loose, poorly graded, silt - 15%, sand - fine grained - 75%	SM	95	1		0 ppm		
9.5				1				
10.0	Total Depth = 9.5 ft.							

BORING NO.

Project
Date Started
Date Completed
Drill Type
Time
Sample Method
Weather

AD-1c
North Park Lake
10/4/02
10/4/02
Hollow Stem Auger
0845
2" X 2' Split Spoon
Sunny 65° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
957 MSL
948 MSL
NOAH
N 467069.991
E 1343551.028

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5	CLAY - greenish grey, high moisture content, very soft, low plasticity	CL	75	0	AD-1c (0900)	SS-1c, PS-1, TS-1 (0930)	0 ppm	%w = 101.5	
4.0				0					
4.5				0					
5.0				0					
5.5			75	0	AD-1c (0910)		0 ppm	%w = 84.9	
6.0				0					
6.5				0					
7.0			75	0	AD-1c (0920)		0 ppm	%w = 53.2	
7.5				0					
8.0				1					
8.5			75		0		AD-1c (0930)	0 ppm, TS-1 VOC sample collected at 10.5'	%w = 23.6; LiquidLimit = 24%; Plastic Limit = 18%; Plasticity Index = 8%; Specific Gravity = 2.66; and Organic Content = 2%
9.0					1				
9.5					0				
10.0					1				
10.5			SILTY SAND - greenish grey, high moisture, very loose, poorly graded, clay - 21%, silt- 34%, sand - fine-med grained - 45%	SM			0	AD-1c (0930)	0 ppm
11.0	1								
11.5	1								
12.0	1								
12.5	Total Depth = 12 ft.								

BORING NO.	<u>AD-1d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>957 MSL</u>
Time	<u>1650</u>	Bottom Sample Elevation	<u>950 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny, 80° F</u>	Location	<u>N 466980.713</u>
			<u>E 1343100.291</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5	WATER						
1.0							
1.5							
2.0							
2.5							
3.0							
3.5	ORGANIC DEBRIS - sticks, leaves	OL		0			
4.0	CLAY - greenish grey, high moisture, very soft, moderate plasticity	CH	10	0		SS-1d (1730)	0 ppm
4.5				0			
5.0				0			
5.5				0			
6.0			10	0			0 ppm
6.5				0			
7.0				0			
7.5				0			
8.0			85	0			0 ppm
8.5				0			
9.0				0			
9.5				0			
10.0			85	0			0 ppm
				0			
10.5	Total Depth = 10 ft.						

BORING NO.

Project
Date Started
Date Completed
Drill Type
Time
Sample Method
Weather

AD-2a
North Park Lake
10/7/02
10/7/02
Hollow Stem Auger
0850
2" X 2' Split Spoon
Cloudy 50° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
957 MSL
947 MSL
NOAH
N 467182.520
E 1343490.424

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results			
0.5	WATER										
1.0											
1.5											
2.0											
2.5											
3.0											
3.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with depth, moderate plasticity at 4.5', 4" clayey sand layer at 9'	CL	10	0	AD-2a (0910)	SS-2a (0950)	0 ppm	%w = 68			
4.0				0							
4.5				0							
5.0				0							
5.5			20	0	AD-2a (0915)		0 ppm	%w = 68.9			
6.0				0							
6.5				0							
7.0				0							
7.5			25	0	AD-2a (0920)		0 ppm	%w = 78.4			
8.0				0							
8.5				0							
9.0				0							
9.5			95	0	AD-2a (0935)		0 ppm	%w = 47.58			
10.0				0							
10.5				0							
11.0				0							
11.5			95	0	AD-2a (0940)		0 ppm	%w = 22.3			
12.0				0							
12.5				0							
13.0				0							
13.5			Total Depth = 13 ft.								

BORING NO.

Project
Date Started
Date Completed
Drill Type
Time
Sample Method
Weather

AD-2b
North Park Lake
10/7/02
10/7/02
Hollow Stem Auger
1010
2" X 2' Split Spoon
Cloudy 50° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
956 MSL
947 MSL
NOAH
N 467269.990
E 1343521.979

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes				
0.5	WATER										
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with depth	CL	10	0		SS-2b (1050)	0 ppm				
5.0				0							
5.5				0							
6.0				0							
6.5			10					0			0 ppm
7.0								0			
7.5								0			
8.0								0			
8.5								0			
9.0			95					0			0 ppm
9.5								0			
10.0								0			
10.5								1			
11.0			95					1			0 ppm
11.5								1			
12.0	3										
12.5	CLAYEY SAND - light brown, high moisture, loose, poorly graded, clay - 25%, sand - fine grained - 75%	SC	95	5			0 ppm				
13.0				5							
13.5	Total Depth = 13 ft.										

BORING NO.	<u>AD-2c</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/7/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/7/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>956 MSL</u>
Time	<u>1112</u>	Bottom Sample Elevation	<u>946 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Cloudy 50° F</u>	Location	<u>N 467309.111</u> <u>E 1343823.506</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with depth	CL	15	0	AD-2c (1120)	SS-2c (1155)	0 ppm	%w = 81.1	
5.0									
5.5									
6.0									
6.5			15	0	AD-2c (1125)			0 ppm	%w = 72.6
7.0									
7.5									
8.0									
8.5			95	0	AD-2c (1135)			0 ppm	%w = 61.9
9.0									
9.5									
10.0									
10.5			95	0	AD-2c (1150)			0 ppm	%w = 46.3
11.0									
11.5									
12.0									
12.5	CLAYEY SAND - light brown, high moisture, loose, poorly graded, clay - 30%, sand - fine grained - 70%	SC	75	0	AD-2c (1120)	0 ppm	%w = 40.8		
13.0									
13.5									
14.0									
14.5	Total Depth = 14 ft.								

BORING NO.

AD-2d

Drilling Firm

Pennsylvania Drilling

Project

North Park Lake

Driller

Bill Minor

Date Started

10/7/02

Inspector

Mark Cruickshank

Date Completed

10/7/02

Surface Elevation

960 MSL

Drill Type

Hollow Stem Auger

Top Sample Elevation

956 MSL

Time

1310

Bottom Sample Elevation

945 MSL

Sample Method

2" X 2' Split Spoon

Datum for Surface El.

NOAH

Weather

Cloudy 50° F

Location

N 467304.246

E 1343937.497

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5	CLAY - greenish grey, high moisture, slight plasticity, increased plasticity, density with depth	CL	25	0	AD-2d (1320)	SS-2d, PS-2, TS-2 (1350)	0 ppm	%w = 82.2
5.0				0				
5.5				0				
6.0				0				
6.5			25	0	AD-2d (1335)		0 ppm	%w = 53.5
7.0				0				
7.5				0				
8.0				0				
8.5			95	0	AD-2d (1340)		0 ppm	%w = 46.5
9.0				0				
9.5				0				
10.0				0				
10.5			95	0	AD-2d (1345)		0 ppm	%w = 52.5
11.0				0				
11.5				0				
12.0				0				
12.5	95	0	AD-2d (1350)	0 ppm, TS-2 VOC sample taken at 13'	%w = 28.1; Liquid Limit = 23%; Plastic Limit = 16%; Plasticity Index = 7%; Specific Gravity = 2.66; and Organic Content = 1.6%			
13.0		0						
13.5		0						
14.0		0						
14.5	Silty SAND - light brown, high moisture, loose, poorly sorted, fines - 39%, sand fine - medium grained - 61%	SM	95	0	AD-2d (1350)	0 ppm		
15.0	CLAY - greenish grey, high moisture, slight plasticity	CL		0				
15.5	Total Depth = 15'							

BORING NO.	<u>AD-3a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/4/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/4/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>1420</u>	Bottom Sample Elevation	<u>945 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 467605.550</u> <u>E 1343994.969</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5	CLAY - greenish grey, high moisture, very soft, low plasticity, slight increased density with depth	CL	25	0	AD-3a (1430)	SS-3a, PS-3, TS-3 (1510)	0 ppm	%w = 79.4
8.0								
8.5								
9.0								
9.5			25	0	AD-3a (1435)		0 ppm	%w = 82.8
10.0								
10.5								
11.0								
11.5			75	0	AD-3a (1445)		0 ppm	%w = 59.1
12.0								
12.5								
13.0								
13.5			60	0	AD-3a (1510)		0 ppm, TS 3 VOC sample collected at 13.5'	%w = 62.2
14.0								
14.5								
15.0								
15.5	Total Depth = 15 ft.							

BORING NO.	<u>AD-3b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/4/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/4/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>1322</u>	Bottom Sample Elevation	<u>943 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 467520.051</u> <u>E 1344232.053</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									
7.0									
7.5	CLAY - greenish grey, high moisture, very soft, low plasticity, slight increased density with depth, trace organic debris, moderate plasticity at 5.5'	CL	25	0	AD-3b (1330)	SS-3b (1405)	0 ppm	%w = 108.	
8.0				0					
8.5				0					
9.0			50		0		AD-3b (1335)	0 ppm	%w = 77.1
9.5					0				
10.0					0				
10.5			75		0		AD-3b (1345)	0 ppm	%w = 60.6
11.0					0				
11.5					0				
12.0			95		0		AD-3b (1350)	0 ppm	%w = 37.7
12.5					0				
13.0					0				
13.5			75		0		AD-3b (1356)	0 ppm	%w = 26.6; Liquid Limit = 38%; Plastic Limit = 22%; Plasticity Index = 16%; Specific Gravity = 2.64 and Organic Content = 2.8%
14.0					0				
14.5					0				
15.0			SILTY SAND - greenish grey, moderate moisture, loose, poorly graded, silt - 25%, sand- fine grained - 75%	SM			0		
15.5	0								
16.0	0								
16.5	Total Depth = 17 ft.								
17.0									
17.5									

BORING NO.

Project
Date Started
Date Completed
Drill Type
Time
Sample Method
Weather

AD-3c
North Park Lake
10/4/02
10/4/02
Hollow Stem Auger
1031
2" X 2' Split Spoon
Sunny 65° F

Drilling Firm
Driller
Inspector
Surface Elevation
Top Sample Elevation
Bottom Sample Elevation
Datum for Surface El.
Location

Pennsylvania Drilling
Bill Minor
Mark Cruickshank
960 MSL
953 MSL
947MSL
NOAH
N 467383.078
E 1344355.594

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes		
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									
7.0									
7.5	CLAY - greenish grey, high moisture, very soft, low plasticity, slight increased density with depth	CL	25	0		SS-3c (1130)	0 ppm		
8.0									
8.5									
9.0									
9.5			25	0				0 ppm	
10.0									
10.5									
11.0									
11.5			75	0					0 ppm
12.0									
12.5									
13.0									
13.5	Total Depth = 13 ft.								

BORING NO.	<u>AD-3d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/4/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/4/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>0955</u>	Bottom Sample Elevation	<u>949 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 65° F</u>	Location	<u>N 467554.320</u>
			<u>E 1344490.890</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5	CLAY - greenish grey, high moisture, very soft, low plasticity, slight increased density from 6' to 7'	CL	25	0		SS-3d (1020)	0 ppm	
8.0								
8.5								
9.0								
9.5			75	0				0 ppm
10.0								
10.5								
11.0								
11.5	Total Depth = 11 ft.							

BORING NO.	<u>AD-4a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/8/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/8/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>1100</u>	Bottom Sample Elevation	<u>941 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 45° F</u>	Location	<u>N 487632.259</u> <u>E 1344347.416</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									
7.0									
7.5	CLAY - greenish grey, high moisture, very soft, increased density with depth. 2" section with medium grained sand at 7'	CL	95	0	AD-4a (1110)	TS-4 (1140) SS-4a, PS-4 (1150)	0 ppm	%w = 82.8	
8.0				0					
8.5				0					
9.0				0					
9.5			75		5		AD-4a (1113)	0 ppm	%w = 55.7
10.0					2				
10.5					2				
11.0			75		1		AD-4a (1120)	0 ppm	%w = 86.8
11.5					2				
12.0					6				
12.5			75		18		AD-4a (1130)	0 ppm	%w = 49.7
13.0					8				
13.5					16				
14.0					13				
14.5					8				
15.0			75		6		AD-4a (1140)	0 ppm, TS-4 VOC sample collected at 16'	%w = 40.8
15.5	18								
16.0	20								
16.5	75		25	AD-4a (1150)	0 ppm	%w = 28.7; Liquid Limit = 30%; Plastic Limit = 17%; Plasticity Index = 13%; Specific Gravity = 2.63; and Organic Content = 2.3%			
17.0			5						
17.5			0						
18.0			0						
18.5	75		0	AD-4a (1150)	0 ppm	%w = 28.7; Liquid Limit = 30%; Plastic Limit = 17%; Plasticity Index = 13%; Specific Gravity = 2.63; and Organic Content = 2.3%			
19.0			0						
19.5	Total Depth = 19 ft.								

BORING NO.	<u>AD-4b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/8/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/8/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>951 MSL</u>
Time	<u>0920</u>	Bottom Sample Elevation	<u>940 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 45° F</u>	Location	<u>N 467899.013</u> <u>E 1344375.021</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0	WATER							
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5				0				
10.0			75	0	AD-4b (0930)		0 ppm	%w = 77.5
10.5				0				
11.0				0				
11.5	CLAY - greenish grey, high moisture, very soft, increased density with depth, trace gravel, sections mottled with black clay	CL		5				
12.0			95	2	AD-4b (0940)		0 ppm	%w = 25.3
12.5				2				
13.0				1				
13.5			95	1				
14.0				2	AD-4b (1005)		0 ppm	%w = 13.8
14.5				6		SS-4b (1035)		
15.0				18				
15.5			95	8				
16.0				16	AD-4b (1020)		0 ppm	%w = 15.8
16.5	Silty CLAY to clayey SILT w/sand and gravel - brown, moderate moisture, medium dense, mottled, cemented, poorly graded, clay - 42%, silt 43%, sand - fine to medium grained - 15% and gravel - 0%. Note: percentages from laboratory test, some gravel size particles were observed.	CL		13				
17.0				8				
17.5			95	6				
18.0				18			0 ppm	%w = 16.0; Liquid Limit = 29%; Plastic Limit = 17%; Plasticity Index = 12%; Specific Gravity = 2.71; and Organic Content = 1.6%
18.5				20	AD-4b (1030)			
19.0				25				
19.5			95	5			0 ppm	
20.0				0				
20.5	Total Depth = 20 ft.							

BORING NO.	<u>AD-4c</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/8/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/8/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>0805</u>	Bottom Sample Elevation	<u>942 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Foggy 40° F</u>	Location	<u>N 467666.137</u> <u>E 1344355.209</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5	CLAY - greenish grey, high moisture, very soft, increased density with depth	CL	25	0	AD-4c (0820)	SS-4c (0850)	0 ppm	%w = 103.5
8.0								
8.5								
9.0								
9.5			25	0	AD-4c (0825)		0 ppm	%w = 55.5
10.0								
10.5								
11.0								
11.5			95	0	AD-4c (0835)		0 ppm	%w = 91.3
12.0								
12.5								
13.0								
13.5			95	0	AD-4c (0840)		0 ppm	%w = 77.4
14.0								
14.5								
15.0								
15.5	CLAY - greenish grey, moderate moisture, soft, high plasticity	CH	95	0	AD-4c (0850)	0 ppm	%w = 26.8	
16.0								
16.5								
17.0			95	0				0 ppm
17.5								
18.0								
18.5	Total Depth = 18 ft.							

BORING NO.	<u>AD-4d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/7/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/7/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>952 MSL</u>
Time	<u>1500</u>	Bottom Sample Elevation	<u>947 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Cloudy 50° F</u>	Location	<u>N 467980.542</u>
			<u>E 1344498.963</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5				0			
9.0			15	0			0 ppm
9.5				0			
10.0				0			
10.5	CLAY - greenish grey, high moisture, low plasticity, increased plasticity, density with depth	CL		0		SS-4d (1600)	0 ppm
11.0			75	0			
11.5				0			
12.0				0			
12.5			95	0			
13.0				0			0 ppm
13.5	Total Depth = 13'						

BORING NO.	<u>AD-5a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>951 MSL</u>
Time	<u>0900</u>	Bottom Sample Elevation	<u>948 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Overcast 65° F</u>	Location	<u>N 468405.179</u> <u>E 1343868.043</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5				0			
10.0			75	0			0 ppm
10.5	CLAY - greenish grey, high moisture, very soft, low plasticity, increased density with depth, increased plasticity	CL		0		SS-5a, SS-10a (dup) (0920)	
11.0				0			
11.5			75	0			
12.0				0			
12.5	Total Depth = 12 ft.						

BORING NO.	<u>AD-5b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>950 MSL</u>
Time	<u>1000</u>	Bottom Sample Elevation	<u>942 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Overcast 65° F</u>	Location	<u>N 468320.040</u> <u>E 1344086.743</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								
10.5	CLAY - greenish grey, high moisture, very soft, low plasticity, increased density and plasticity with depth, decreased moisture with depth	CL	25	0	AD-5b (1015)	SS-5b, SS-10b (dup) (1010)	0 ppm	%w = 151.4
11.0				0				
11.5				0				
12.0				0				
12.5			25	0	AD-5b (1018)		0 ppm	%w = 155.3
13.0				0				
13.5				0				
14.0			95	0	AD-5b (1040)		0 ppm	%w = 122.7
14.5				0				
15.0				0				
15.5				0				
16.0			95	1	AD-5b (1050)		0 ppm	%w = 38
16.5				0				
17.0				0				
17.5				0				
18.0								
18.5	Total Depth = 18 ft.							

BORING NO.	<u>AD-5c</u>	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	<u>950 MSL</u>
Time	<u>1145</u>	<u>940 MSL</u>
Sample Method	<u>2" X 2" Split Spoon</u>	<u>NOAH</u>
Weather	<u>Overcast 70° F</u>	<u>N 468043.342</u>
		<u>E 1344417.377</u>

Depth	Description	USCS	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results		
0.5									
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0	WATER								
5.5									
6.0									
6.5									
7.0									
7.5									
8.0									
8.5									
9.0									
9.5									
10.0									
10.5			0						
11.0			0	AD-5c (1200)		0 ppm	%w = 105.6		
11.5			0						
12.0			0						
12.5			0	AD-5c (1205)		0 ppm	%w = 124.8		
13.0			0						
13.5			0						
14.0			0						
14.5	CLAY - greenish grey, high moisture, very soft, low plasticity increased density and plasticity with depth, decreased moisture with depth, clay - 55%, silt - 35%, sand - 9%, 2" sandy clay section at 17.5'	CL	0	AD-5c (1220)	SS-5c, SS-10c (dup) (1300)	0 ppm	%w = 91		
15.0			0						
15.5			0						
16.0			0						
16.5			1						
17.0			0	AD-5c (1230)				0 ppm	%w = 30.3
17.5			1						
18.0			0						
18.5			5						
19.0			3	AD-5c (1240)				0 ppm	%w = 27.6; Liquid Limit = 46%; Plastic Limit = 25%; Plasticity Index = 21%; Specific Gravity = 2.69; and Organic Content = 3.7%
19.5	1								
20.0									
20.5	Total Depth = 20 ft.								

BORING NO.	<u>AD-5d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/3/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/3/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>952 MSL</u>
Time	<u>1400</u>	Bottom Sample Elevation	<u>944 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 468051.036</u> <u>E 1344497.421</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results		
0.5										
1.0										
1.5										
2.0										
2.5										
3.0										
3.5										
4.0	WATER									
4.5										
5.0										
5.5										
6.0										
6.5										
7.0										
7.5										
8.0										
8.5				0						
9.0			10	0	AD-5d (1410)		0 ppm	%w = 145.1		
9.5				0						
10.0				0						
10.5				0						
11.0			10	0	AD-5d (1415)		0 ppm	%w = 100.9		
11.5	CLAY - greenish grey, high moisture, very soft, low plasticity increased density and plasticity with depth, decreased moisture with depth, 2" sandy clay section at 17.5', cemented sand at 16', poorly graded	CL		0		SS-5d, SS-10d (dup), PS-5, TS-5, PS-10 (dup), TS-10 (dup) (1500)				
12.0				0						
12.5					0					
13.0				95	0		AD-5d (1425)		0 ppm	%w = 91.4
13.5					0					
14.0							0			
14.5				0			0 ppm, TS-5, TS-10 (dup)			
15.0			95	0	AD-5d (1445)		VOC sample collected at 15.5'	%w = 20.9		
15.5				20						
16.0				35						
16.5	Total Depth = 16 ft.									

BORING NO.

Project

Date Started

Date Completed

Drill Type

Time

Sample Method

Weather

AD-6a

North Park Lake

10/2/02

10/2/02

Hollow Stem Auger

1420

2" X 2' Split Spoon

Sunny 80° F

Drilling Firm

Driller

Inspector

Surface Elevation

Top Sample Elevation

Bottom Sample Elevation

Datum for Surface El.

Location

Pennsylvania Drilling

Bill Minor

Mark Cruickshank

960 MSL

953 MSL

949 MSL

NOAH

N 469546.776

E 1342955.350

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0									
5.5									
6.0									
6.5									
7.0									
7.5	SILTY CLAY - olive grey, high moisture, soft, moderate plasticity, clay - 47%, silt 40%, sand 13%.	CL	65	0	AD-6a (1445)	SS-6a (1445)	0 ppm	%w = 59.2; LiquidLimit = 47%; Plastic Limit = 22%; Plasticity Index = 25%; Specific Gravity = 2.70; and Organic Content = 4.7%	
8.0				1					0 ppm
8.5				2					
9.0			65	3			0 ppm		
9.5				2					
10.0				2					
10.5				3					
11.0	3								
11.5	Total Depth = 11 ft.								

BORING NO.

Project

Date Started

Date Completed

Drill Type

Time

Sample Method

Weather

AD-6b

North Park Lake

10/2/02

10/2/02

Hollow Stem Auger

1515

2" X 2' Split Spoon

Sunny 80° F

Drilling Firm

Driller

Inspector

Surface Elevation

Top Sample Elevation

Bottom Sample Elevation

Datum for Surface El.

Location

Pennsylvania Drilling

Bill Minor

Mark Cruickshank

960 MSL

952.75 MSL

947.25 MSL

NOAH

N 469350.595

E 1343022.279

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results	
0.5	WATER								
1.0									
1.5									
2.0									
2.5									
3.0									
3.5									
4.0	CLAYEY SILT - greenish grey, high moisture, very soft, increased silt towards top, 10 % clay, 90% silt	ML	50	1	AD-6b (1530)		0 ppm	%w = 59.2	
8.0				3					
8.5				3					
9.0				4					
9.5		CL	85	3	AD-6b (1545)	SS-6b (1545)	0 ppm	%w = 34.5; LiquidLimit = 42%; Plastic Limit = 23%; Plasticity Index = 19%; Specific Gravity = 2.68; and Organic Content = 4.1%	
10.0				4					
10.5				4					
11.0				4					
11.5				7					
12.0		85	5		0 ppm				
12.5		Total Depth = 12.25 ft.							

BORING NO.	<u>AD-6c</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/2/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/2/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>951 MSL</u>
Time	<u>1605</u>	Bottom Sample Elevation	<u>944 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 469197.804</u> <u>E 1343252.276</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5	WATER							
5.0								
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5				0				
10.0	CLAYEY SILT - greenish grey, high moisture, soft, high plasticity, increased density with depth, upper 1' very soft	CH	75	0	AD-6c (1615)		0 ppm	%w = 74.5
10.5				4				
11.0				1				
11.5	CLAYEY SAND w/gravel - light brown, moderate moisture, loose, moderately graded, clay - 28%, silt - 20%, sand fine to coarse grained - 42%, gravel - 10%	SC	75	0	AD-6c (1645)	SS-6c (1715)	0 ppm	%w = 18.2
12.0				1				
12.5				4				
13.0				6				
13.5	CLAY - green, slightly moist, stiff, refusal with hammer at 4'	CL	10	50/refusal	AD-6c (1710)		0 ppm, collected geotech/chem sample from augers due to refusal of split spoon	%w = 19.5; LiquidLimit = 34%; Plastic Limit = 19%; Plasticity Index = 15%; Specific Gravity = 2.68; and Organic Content = 3.5%
14.0								
14.5								
15.0								
15.5								
16.0								
16.5	Total Depth = 16 ft.							

BORING NO.	<u>AD-6d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/2/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/2/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>952 MSL</u>
Time	<u>1735</u>	Bottom Sample Elevation	<u>948 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 468480.759</u>
			<u>E 1343816.516</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5				0			
9.0			75	0			0 ppm
9.5				0			
10.0	CLAY - greenish grey, high moisture, very soft, low plasticity	CL		0		SS-6d (1745) PS-6, TS-6 (1745)	
10.5				1			
11.0				2			
11.5			80	2			0 ppm, TS-6 VOC sample collected at 11'
12.0	CLAYEY SAND - dark brown, moderate moisture, loose, poorly graded, 5% clay, 95% medium grained sand	SC		1			
12.5	Total Depth = 12 ft.						

BORING NO.	<u>AD-7a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/2/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/2/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>956 MSL</u>
Time	<u>1000</u>	Bottom Sample Elevation	<u>952 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El,	<u>NOAH</u>
Weather	<u>Sunny 65° F</u>	Location	<u>N 469976.384</u>
			<u>E 1342720.690</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5	SILTY CLAY - olive grey, high moisture, very soft, low plasticity, 35% silt, 65 % clay	CL		8	AD-7a (1015)	SS-7a (1015)	0 ppm	%w = 14.8
5.0	Gravelly clayey SAND to sandy clayey GRAVEL - reddish orange, moderate moisture, dense, well graded, gravel - 36%, sand fine to coarse grained - 36%, silt - 15%, clay 13%.	SC - GC	40	12				
5.5				16				
6.0				15				
6.5					75	13	AD-7a (1025)	0 ppm
7.0	11							
7.5	10							
8.0	16							
8.5	Total Depth = 8 ft.							
9.0								
9.5								
10.0								

BORING NO.	<u>AD-7b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/2/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/2/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>955 MSL</u>
Time	<u>0910</u>	Bottom Sample Elevation	<u>952 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 65° F</u>	Location	<u>N 470172.025</u> <u>E 1342791.996</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5	SILT - greenish grey, high moisture, very soft, non plastic	OL	60	1	AD-7b (0925)	SS-7b (MS/MSD) (0925)	0 ppm	%w = 43.2; LiquidLimit = 38%; Plastic Limit = 20%; Plasticity Index = 18%; Specific Gravity = 2.65; and Organic Content = 4.4%
6.0	Silty CLAY to clayey SILT w/sand - greenish grey, high moisture, soft, low plasticity, clay 38%, silt 47%, sand - 14%	CL		2				
6.5			2					
7.0			1					
7.5			2					
8.0	85	1	0 ppm					
8.5	Total Depth = 8 ft.							
9.0								
9.5								
10.0								

BORING NO.

Project AD-7c
Date Started North Park Lake
Date Completed 10/2/02
Drill Type 10/2/02
Time Hollow Stem Auger
Sample Method 0800
Weather 2" X 2' Split Spoon
Sunny 65° F

Drilling Firm

Pennsylvania Drilling
Driller Bill Minor
Inspector Mark Cruickshank
Surface Elevation 960 MSL
Top Sample Elevation 956 MSL
Bottom Sample Elevation 952 MSL
Datum for Surface El. NOAH
Location N 470321.949
E 1342929.874

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0	CLAY - yellowish orange, moderate moisture, soft, high plasticity	CH	85	2	AD-7c (0810)		0 ppm	%w = 22.8
4.5				2				
5.0				3				
5.5	CLAYEY SAND - yellowish orange, high moisture, medium dense, poorly graded, clay - 20%, silt - 29%, sand fine to medium grained - 50%, gravel - 2%.	SC	80	4	AD-7c (0820)	SS-7C (0830)	0 ppm	%w = 20.1; Liquid Limit = 28%; Plastic Limit = 25%; Plasticity Index = 11%; Specific Gravity = 2.68; and Organic Content = 1.4%
6.0				8				
6.5				5				
7.0				4				
7.5				3				
8.0	Total Depth = 8 ft.							
8.5								
9.0								
9.5								
10.0								

BORING NO.	<u>AD-7d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/2/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/2/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>953 MSL</u>
Time	<u>1220</u>	Bottom Sample Elevation	<u>950 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 75° F</u>	Location	<u>N 469577.900</u> <u>E 1343093.388</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0								
5.5								
6.0								
6.5								
7.0								
7.5	SILTY CLAY w/trace sand - olive green, high moisture, very soft, moderate-high plasticity, clay - 62% silt 32% sand - 5%.	CH	25	1	AD-7d (1255)	SS-7d (1255) PS 7, TS-7 (1255)	0 ppm, TS-7 VOC sample collected at 8.5'	%w = 97.5; LiquidLimit = 59%; Plastic Limit = 25%; Plasticity Index = 34%; Specific Gravity = 2.68; and Organic Content =
8.0								
8.5								
9.0								
9.5								
10.0								
10.5	Total Depth = 10 ft.							

BORING NO.	<u>AD-8a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/1/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/1/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>955.75 MSL</u>
Time	<u>1128</u>	Bottom Sample Elevation	<u>953.75 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Partly Cloudy, 75° F</u>	Location	<u>N 470891.366</u>
			<u>E 1342266.549</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5	WATER							
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5	Silty CLAY to clayey SILT w/sand and gravel - olive green, high moisture, very soft, moderate plasticity, clay 35%, silt 40%, sand 18%, gravel 7%.	CL	90	1	AD-8a (1215)	SS-8a (1215)	0 ppm	%w = 38.5; Liquid Limit = 40%; Plastic Limit = 20%; Plasticity Index = 20%; Specific Gravity = 2.87; and Organic Content = 3.0%
5.0				1				
5.5				2				
6.0	CLAYEY SAND - olive grey, high moisture, medium dense, clay -15%, poorly graded fine grained sand - 90%	SC		4				
6.5	Total Depth = 6.25 ft.							
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								

BORING NO.	<u>AD-8b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/1/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/1/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>955.5 MSL</u>
Time	<u>1415</u>	Bottom Sample Elevation	<u>953.5 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Partly Cloudy 80° F</u>	Location	<u>N 470742.319</u> <u>E 1342273.002</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5	WATER						
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5	CLAY - olive grey, high moisture, soft, high plasticity	CH	80	1		SS-8b (1430)	0 ppm
5.0							
5.5							
6.0							
6.5	CLAYEY SAND - olive grey, moderate moisture, loose, poorly graded, clay - 15%, fine grained sand - 85%	SC		1			
7.0	Total Depth = 6.5 ft.						
7.5							
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.

Project AD-8c
Date Started North Park Lake
Date Completed 10/1/02
Drill Type 10/1/02
Time Hollow Stem Auger
Sample Method 1506
Weather 2" X 2' Split Spoon
Partly Cloudy 80° F

Drilling Firm Pennsylvania Drilling
Driller Bill Minor
Inspector Mark Cruickshank
Surface Elevation 960 MSL
Top Sample Elevation 955 MSL
Bottom Sample Elevation 953 MSL
Datum for Surface El. NOAH
Location N 470656.364
E 1342389.990

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5	WATER						
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5	CLAY - olive grey, high moisture, soft, high plasticity, trace sand at lower 2"	CH	75	2		SS-8c (1515)	0 ppm
6.0							
6.5							
7.0							
7.5	Total Depth = 7 ft.						
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	<u>AD-8d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>North Park Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/1/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/1/02</u>	Surface Elevation	<u>960 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>955 MSL</u>
Time	<u>1545</u>	Bottom Sample Elevation	<u>953 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 80° F</u>	Location	<u>N 470523.336</u>
			<u>E 1342544.246</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5	WATER						
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5	CLAY - olive grey, high moisture, soft, high plasticity	CH	75	1		SS-8d (1600) PS-8, TS-8 (1610)	0 ppm, TS-8 VOC sample collected at 6.5'
6.0				1			
6.5	CLAYEY SAND - light brown, high moisture, slightly graded, loose, clay - 25%, fine to medium grained sand - 75%	SC		1			
7.0				2			
7.5	Total Depth = 7 ft.						
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	<u>AD-9a</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>Marshall Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/9/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/9/02</u>	Surface Elevation	<u>989 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>984 MSL</u>
Time	<u>1110</u>	Bottom Sample Elevation	<u>982 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 60° F</u>	Location	<u>N 473975.474</u> <u>E 1338461.827</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5	WATER						
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5	CLAY - grey, high moisture, soft, moderate plasticity, 15% organics in upper 1", 5% gravel to 2"	CL	25	0		SS-9a (MS/MSD) (1145)	0 ppm
6.0							
6.5							
7.0							
7.5	Total Depth = 7 ft.						
8.0							
8.5							
9.0							
9.5							
10.0							

BORING NO.	<u>AD-9b</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>Marshall Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/9/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/9/02</u>	Surface Elevation	<u>989 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>979 MSL</u>
Time	<u>1210</u>	Bottom Sample Elevation	<u>974 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 60° F</u>	Location	<u>N 474023.628</u> <u>E 1338467.749</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes	Lab Results
0.5								
1.0								
1.5								
2.0								
2.5								
3.0								
3.5								
4.0								
4.5								
5.0	WATER							
5.5								
6.0								
6.5								
7.0								
7.5								
8.0								
8.5								
9.0								
9.5								
10.0								
10.5				0				
11.0			25	0	AD-9b (1220)		0 ppm	%w = 50.3
11.5				0				
12.0				0				
12.5	Silty sandy CLAY to clayey sandy SILT - grey, high moisture, very soft, low plasticity, 15% organics in upper 1", clay - 25%, silt - 37%, sand fine to medium - 36%, gravel to 2" - 2%.	CL	95	0	AD-9b (1225)	SS-9b (MS/MSD) (1230)	0 ppm	%w = 34.9; LiquidLimit = 30%; Plastic Limit = 20%; Plasticity Index = 10%; Specific Gravity = 2.72; and Organic Content = 2.3
13.0				0				
13.5				0				
14.0				0				
14.5				0				
15.0	95	0		0 ppm				
15.5	Total Depth = 15 ft.							

BORING NO.	<u>AD-9c</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>Marshall Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/9/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/9/02</u>	Surface Elevation	<u>989 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>979 MSL</u>
Time	<u>1245</u>	Bottom Sample Elevation	<u>975 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 60° F</u>	Location	<u>N 474058.152</u> <u>E 1338484.628</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5	WATER						
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							
10.0							
10.5				0			
11.0	CLAY - grey, high moisture, very soft, low plasticity	CL	25	0		TS-9 (MS/MSD) (1255)	0 ppm
11.5				0			
12.0				0			
12.5	SILTY SAND WITH GRAVEL - dark grey, high moisture, loose, moderately graded, silt - 20%, gravel - 8% (< 2cm), sand - fine to medium grained - 72%	SM	25	0		SS-9c (MS/MSD) (1310)	0 ppm, TS-9 VOC collected at 13.5'
13.0				0			
13.5				0			
14.0				0			
14.5	Total Depth = 14 ft.						

BORING NO.	<u>AD-9d</u>	Drilling Firm	<u>Pennsylvania Drilling</u>
Project	<u>Marshall Lake</u>	Driller	<u>Bill Minor</u>
Date Started	<u>10/9/02</u>	Inspector	<u>Mark Cruickshank</u>
Date Completed	<u>10/9/02</u>	Surface Elevation	<u>989 MSL</u>
Drill Type	<u>Hollow Stem Auger</u>	Top Sample Elevation	<u>979 MSL</u>
Time	<u>1310</u>	Bottom Sample Elevation	<u>976 MSL</u>
Sample Method	<u>2" X 2' Split Spoon</u>	Datum for Surface El.	<u>NOAH</u>
Weather	<u>Sunny 60° F</u>	Location	<u>N 474111.038</u> <u>E 1338387.037</u>

Depth	Description	USCS	% Rec.	Blow Count	Geotech Sample I.D. (time)	Chemical Sample I.D. (time)	P.I.D. Readings, Notes
0.5							
1.0							
1.5							
2.0							
2.5							
3.0							
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5							
10.0							
10.5	SILTY CLAY - grey, high moisture, very soft, low plasticity, silt - 25%, clay - 75%	CL	95	0		SS-9d, PD-9d (1350)	0 ppm
11.0				0			
11.5	SILTY CLAYEY SAND - dark grey, high moisture, loose, poorly sorted, silt - 10%, clay - 15%, sand - fine to medium grained - 75%	SC	0				
12.0			0				
12.5			0				
13.0			0				
13.5	Total Depth = 13 ft.						

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-1C 6.0'-9.0' Lab ID 7
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 23.6

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 24
 Plastic Limit: 16
 Plasticity Index: 8
 Activity Index: 0.57

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	
No. 10	2	100.0
No. 40	0.425	93.9
No. 200	0.075	54.5
	0.02	37.9
	0.005	20.5
	0.002	13.8
estimated	0.001	6.9

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	6.1
Medium Sand	6.1	---
Fine Sand	39.4	39.4
Silt	34.0	40.7
Clay	20.5	13.8

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.66

Classification
 Unified Group Symbol: CL
 Group Name: Sandy lean clay
 AASHTO Classification: A-4 (2)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-1C 6.0'-9.0'

Project Number LV2002121
Lab ID 7

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: N/A
Particle Hardness: N/A

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	
No. 10	100.0

Maximum Particle size: No. 10 Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

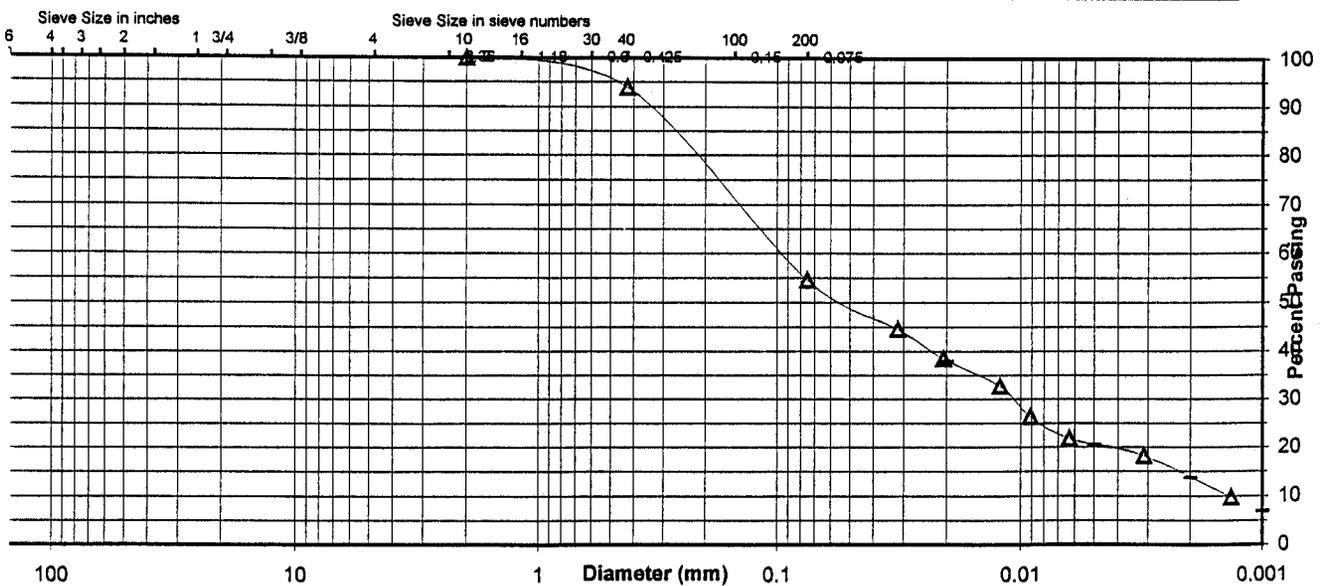
Specific Gravity 2.66

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	93.9
No. 200	54.5
0.02 mm	37.9
0.005 mm	20.5
0.002 mm	13.8
0.001 mm	6.9

Particle Size Distribution

ASTM	Coarse Gravel	Fine Gravel	C. Sand	Medium Sand	Fine Sand	Silt	Clay
	0.0	0.0	0.0	6.1	39.4	34.0	20.5
AASHTO	Gravel		Coarse Sand		Fine Sand	Silt	Clay
	0.0		6.1		39.4	40.7	13.8



Comments

_____ 2 of 30 _____ Reviewed By _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-2D 8.0'-11.0' Lab ID 1
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 28.1

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 23
 Plastic Limit: 16
 Plasticity Index: 7
 Activity Index: 0.78

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	
No. 10	2	100.0
No. 40	0.425	92.6
No. 200	0.075	39.4
	0.02	22.2
	0.005	13.4
	0.002	9.0
estimated	0.001	5.0

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.66

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	7.4
Medium Sand	7.4	—
Fine Sand	53.2	53.2
Silt	26.0	30.4
Clay	13.4	9.0

Classification
 Unified Group Symbol: SC-SM
 Group Name: Silty, clayey sand
 AASHTO Classification: A-4 (0)

Visual Description: _____
 Comments: _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-3B 8.0'-10.0' Lab ID 8
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 26.6

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 38
 Plastic Limit: 22
 Plasticity Index: 16
 Activity Index: 0.62

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	
No. 10	2	100.0
No. 40	0.425	94.2
No. 200	0.075	85.2
		0.02 73.8
		0.005 42.2
		0.002 25.5
estimated	0.001	15.9

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	5.8
Medium Sand	5.8	—
Fine Sand	9.0	9.0
Silt	43.0	59.7
Clay	42.2	25.5

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.64

Classification

Unified Group Symbol: CL
 Group Name: Lean clay
 AASHTO Classification: A-6 (14)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-3B 8.0'-10.0'

Project Number LV2002121
Lab ID 8

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: N/A
Particle Hardness: N/A
Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	
No. 10	100.0

Maximum Particle size: No. 10 Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

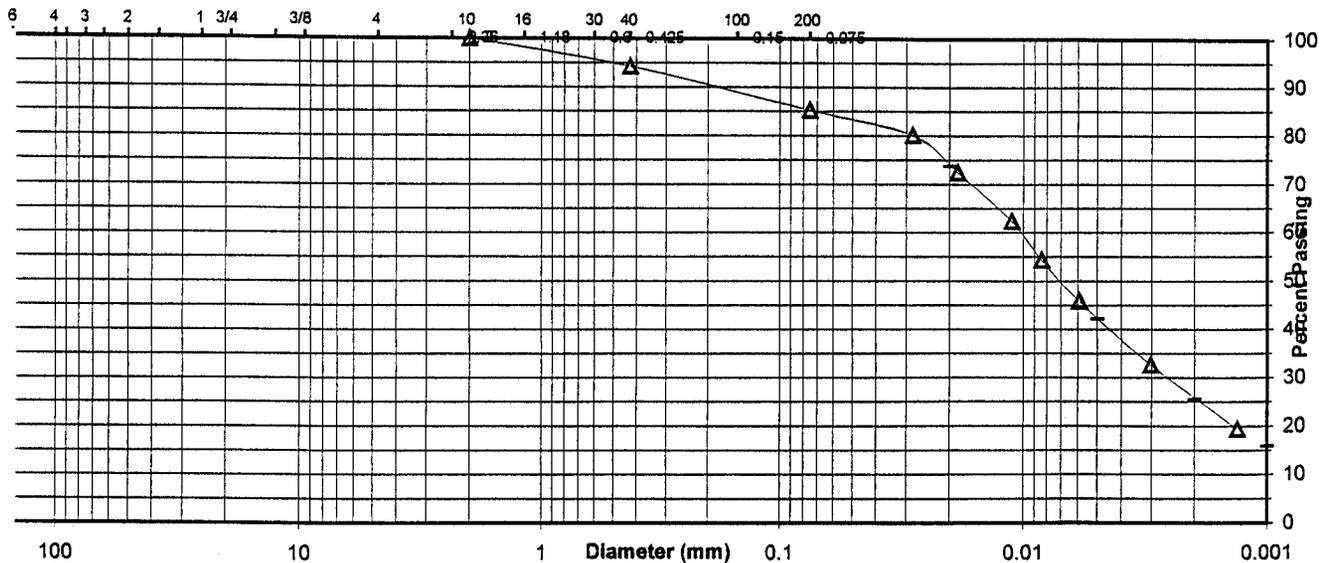
Specific Gravity 2.64

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	94.2
No. 200	85.2
0.02 mm	73.8
0.005 mm	42.2
0.002 mm	25.5
0.001 mm	15.9

Particle Size Distribution

ASTM									
AASHTO									



Comments

6 of 30 Reviewed By _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-4A 10.0'-12.0' Lab ID 5
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 28.7

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 30
 Plastic Limit: 17
 Plasticity Index: 13
 Activity Index: 0.76

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	
No. 10	2	100.0
No. 40	0.425	97.9
No. 200	0.075	76.2
	0.02	57.4
	0.005	28.1
	0.002	16.9
estimated	0.001	9.9

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	2.1
Medium Sand	2.1	—
Fine Sand	21.7	21.7
Silt	48.1	59.3
Clay	28.1	16.9

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.63

Classification

Unified Group Symbol: CL
 Group Name: Lean clay with sand
 AASHTO Classification: A-6 (8)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-4A 10.0'-12.0'

Project Number LV2002121
Lab ID 5

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: N/A
Particle Hardness: N/A

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	
No. 10	100.0

Maximum Particle size: No. 10 Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

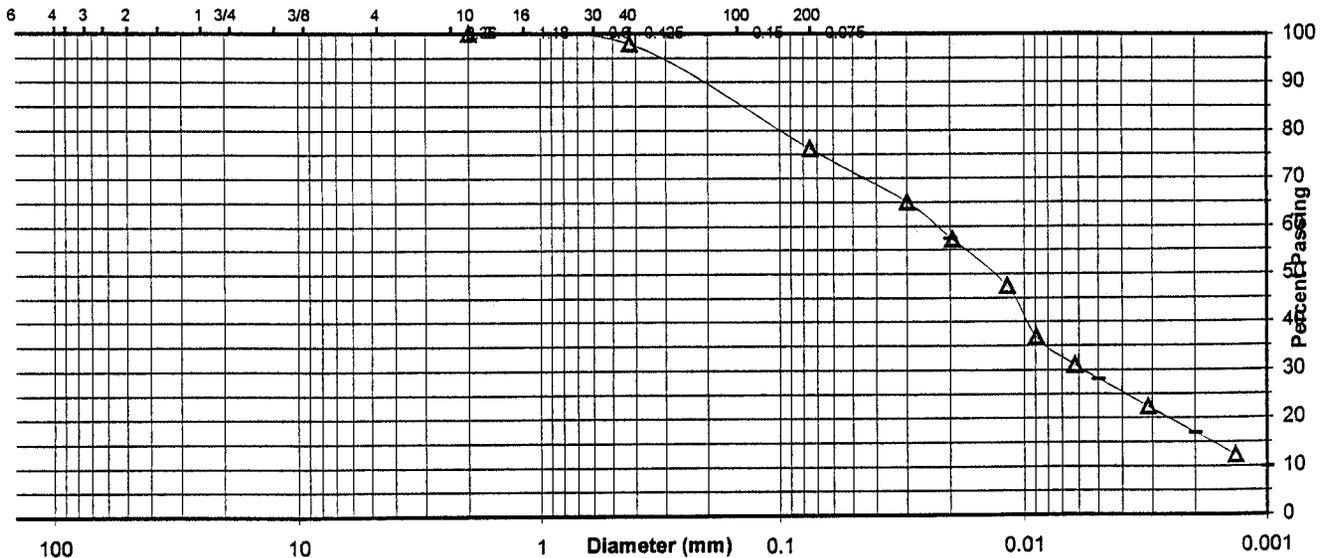
Specific Gravity 2.63

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	97.9
No. 200	76.2
0.02 mm	57.4
0.005 mm	28.1
0.002 mm	16.9
0.001 mm	9.9

Particle Size Distribution

ASTM									
AASHTO									



Comments

8 of 30 Reviewed By _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-4B 8.0'-10.0' Lab ID 4
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 16.6

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 29
 Plastic Limit: 17
 Plasticity Index: 12
 Activity Index: 1.20

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	100.0
3/4"	19	90.3
3/8"	9.5	88.1
No. 4	4.75	84.6
No. 10	2	80.7
No. 40	0.425	71.2
No. 200	0.075	43.4
	0.02	27.9
	0.005	14.0
	0.002	9.7
estimated	0.001	5.8

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	15.4	19.3
Coarse Sand	3.9	9.5
Medium Sand	9.5	—
Fine Sand	27.8	27.8
Silt	29.4	33.7
Clay	14.0	9.7

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.71

Classification
 Unified Group Symbol: SC
 Group Name: Clayey sand with gravel
 AASHTO Classification: A-6 (2)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-4B 8.0'-10.0'

Project Number LV2002121
Lab ID 4

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: Angular
Particle Hardness: Hard and Durable
Tested By: PBE HP
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	100.0
3/4"	90.3
3/8"	88.1
No. 4	84.6
No. 10	80.7

Maximum Particle size: 1" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

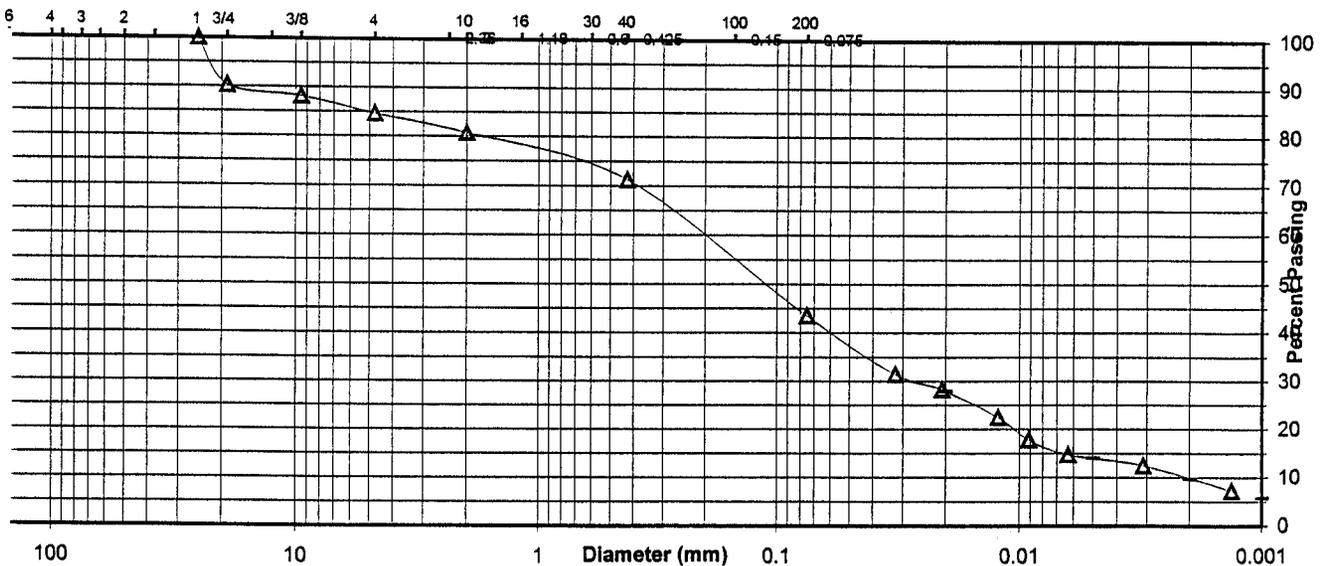
Specific Gravity 2.71

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	71.2
No. 200	43.4
0.02 mm	27.9
0.005 mm	14.0
0.002 mm	9.7
0.001 mm	5.8

Particle Size Distribution

ASTM						
AASHTO						



Comments

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-5C 8.0'-10.0' Lab ID 6
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 27.6

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 46
 Plastic Limit: 25
 Plasticity Index: 21
 Activity Index: 0.62

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	100.0
No. 4	4.75	99.8
No. 10	2	99.8
No. 40	0.425	97.4
No. 200	0.075	89.7
	0.02	81.9
	0.005	54.9
	0.002	33.7
estimated	0.001	20.0

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.2	0.2
Coarse Sand	0.0	2.4
Medium Sand	2.4	—
Fine Sand	7.7	7.7
Silt	34.8	56.0
Clay	54.9	33.7

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.69

Classification

Unified Group Symbol: CL
 Group Name: Lean clay
 AASHTO Classification: A-7-6 (21)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-5C 8.0'-10.0'

Project Number LV2002121
Lab ID 6

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: Angular
Particle Hardness: Weathered and Friable
Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	100.0
No. 4	99.8
No. 10	99.8

Maximum Particle size: 3/8" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

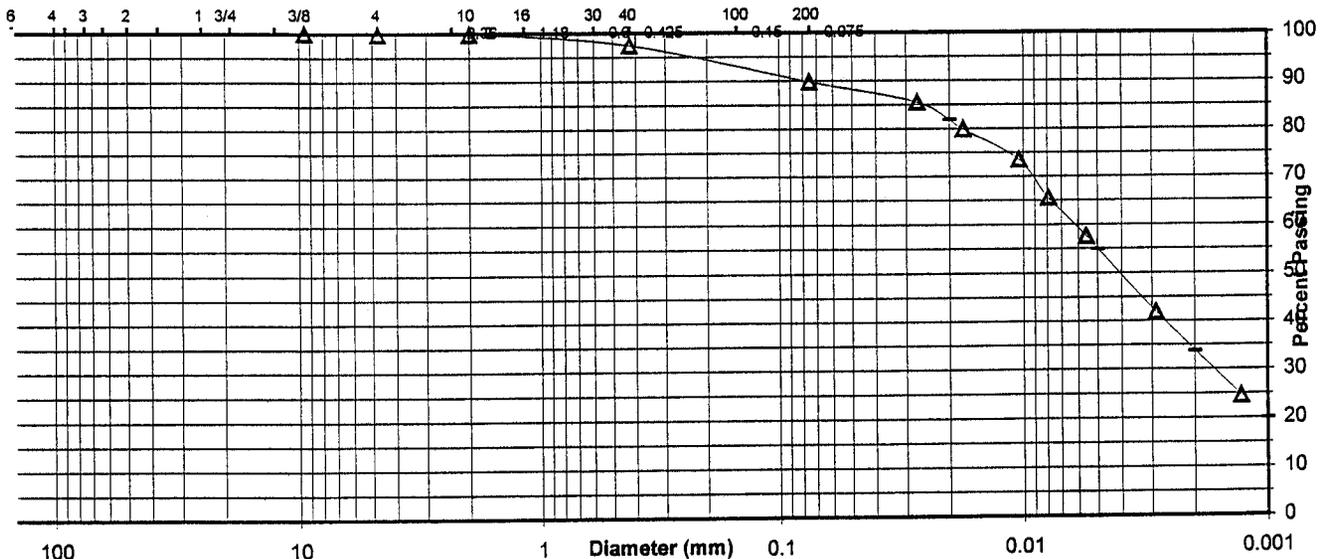
Specific Gravity 2.69

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	97.4
No. 200	89.7
0.02 mm	81.9
0.005 mm	54.9
0.002 mm	33.7
0.001 mm	20.0

Particle Size Distribution

ASTM							
AASHTO							



Comments

12 of 30 Reviewed By _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-6A 0.0'-4.0' Lab ID 11
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 59.2

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 47
 Plastic Limit: 22
 Plasticity Index: 25
 Activity Index: 0.74

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	100.0
No. 10	2	100.0
No. 40	0.425	98.7
No. 200	0.075	86.5
	0.02	73.5
	0.005	46.7
	0.002	34.1
estimated	0.001	25.0

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	1.3
Medium Sand	1.3	—
Fine Sand	12.2	12.2
Silt	39.8	52.4
Clay	46.7	34.1

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.70

Classification
 Unified Group Symbol: CL
 Group Name: Lean clay
 AASHTO Classification: A-7-6 (23)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-6A 0.0'-4.0' Lab ID 11

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
 Prepared using: ASTM D 421-85
 Particle Shape: Angular
 Particle Hardness: Weathered and Friable
 Tested By: PBE
 Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	100.0
No. 10	100.0

Maximum Particle size: No. 4 Seive

Analysis for the portion Finer than the No. 10 Sieve

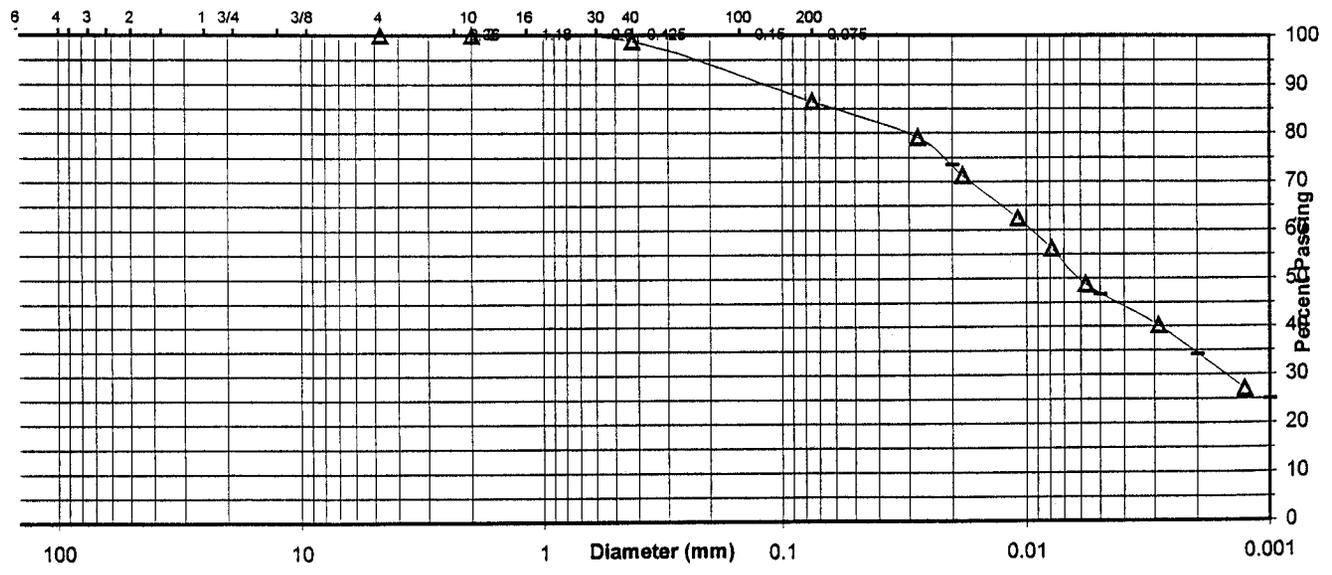
Analysis Based on: Total Sample
 Specific Gravity 2.7

No. 40	98.7
No. 200	86.5
0.02 mm	73.5
0.005 mm	46.7
0.002 mm	34.1
0.001 mm	25.0

Dispersed using: Apparatus A - Mechanical, for 1 minute

Particle Size Distribution

ASTM									
AASHTO									



Comments

14 of 30 Reviewed By _____

Summary of Soil Tests

Project Name	<u>Altech Miscellaneous Lab Testing</u>	Project Number	<u>LV2002121</u>
Source	<u>AD-6B 2.0'-5.0'</u>	Lab ID	<u>13</u>
County	<u>Southfield, MI</u>	Date Received	<u>10-28-02</u>
Sample Type	<u>Grab</u>	Date Reported	<u>11-7-02</u>

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 34.5

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry

Liquid Limit:	<u>42</u>
Plastic Limit:	<u>23</u>
Plasticity Index:	<u>19</u>
Activity Index:	<u>0.58</u>

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	100.0
No. 10	2	100.0
No. 40	0.425	98.7
No. 200	0.075	86.3
	0.02	69.5
	0.005	44.2
	0.002	33.0
estimated	0.001	25.3

Moisture-Density Relationship
 Test Not Performed

Maximum Dry Density (lb/ft ³):	<u>N/A</u>
Maximum Dry Density (kg/m ³):	<u>N/A</u>
Optimum Moisture Content (%):	<u>N/A</u>
Over Size Correction %:	<u>N/A</u>

California Bearing Ratio
 Test Not Performed

Bearing Ratio (%):	<u>N/A</u>
Compacted Dry Density (lb/ft ³):	<u>N/A</u>
Compacted Moisture Content (%):	<u>N/A</u>

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry

Particle Size:	<u>No. 10</u>
Specific Gravity at 20° Celsius:	<u>2.68</u>

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	1.3
Medium Sand	1.3	—
Fine Sand	12.4	12.4
Silt	42.1	53.3
Clay	44.2	33.0

Classification
 Unified Group Symbol: CL
 Group Name: Lean clay

AASHTO Classification: A-7-6 (17)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-6B 2.0'-5.0'

Project Number LV2002121
Lab ID 13

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: Angular
Particle Hardness: Weathered and Friable

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	100.0
No. 10	100.0

Maximum Particle size: No. 4 Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

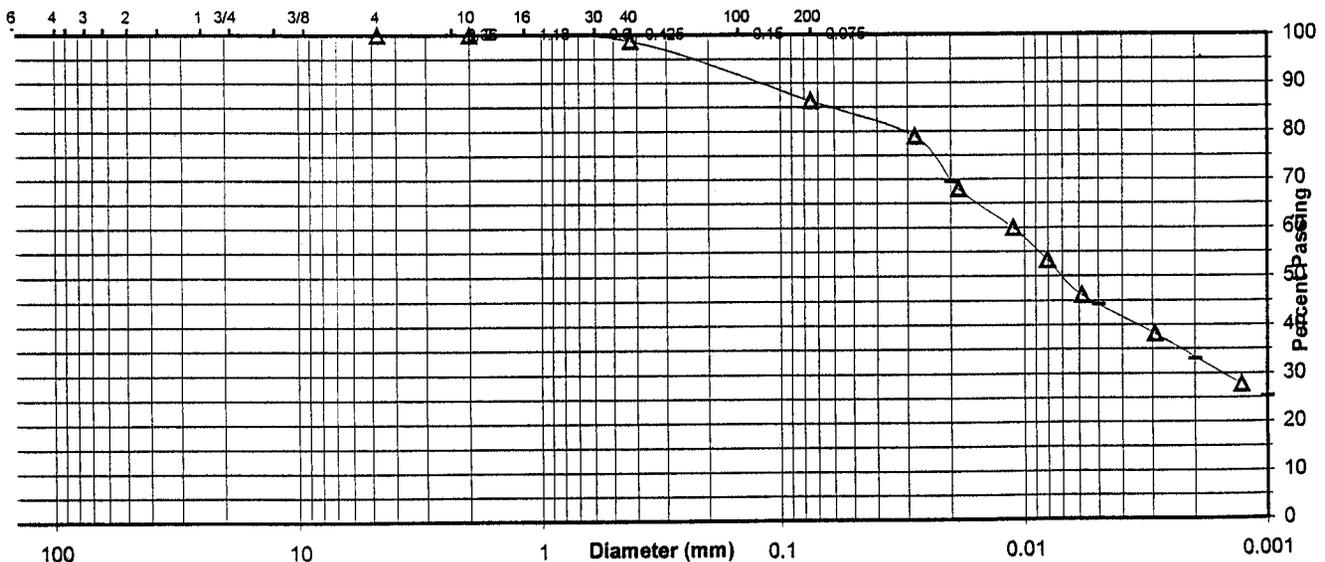
Specific Gravity 2.68

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	98.7
No. 200	86.3
0.02 mm	69.5
0.005 mm	44.2
0.002 mm	33.0
0.001 mm	25.3

Particle Size Distribution

ASTM							
AASHTO							



Comments _____

Reviewed By _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-6C 4.0'-7.0' Lab ID 12
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 19.5

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 34
 Plastic Limit: 19
 Plasticity Index: 15
 Activity Index: 0.79

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	100.0
3/8"	9.5	95.7
No. 4	4.75	89.8
No. 10	2	83.1
No. 40	0.425	69.5
No. 200	0.075	48.2
	0.02	40.6
	0.005	27.8
	0.002	18.9
estimated	0.001	11.9

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

Plus 3 in. material, not included: 0 (%)

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Range	ASTM (%)	AASHTO (%)
Gravel	10.2	16.9
Coarse Sand	6.7	13.6
Medium Sand	13.6	—
Fine Sand	21.3	21.3
Silt	20.4	29.3
Clay	27.8	18.9

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.68

Classification
 Unified Group Symbol: SC
 Group Name: Clayey sand
 AASHTO Classification: A-6 (4)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-6C 4.0'-7.0'

Project Number LV2002121
Lab ID 12

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	100.0
3/8"	95.7
No. 4	89.8
No. 10	83.1

Maximum Particle size: 3/4" Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

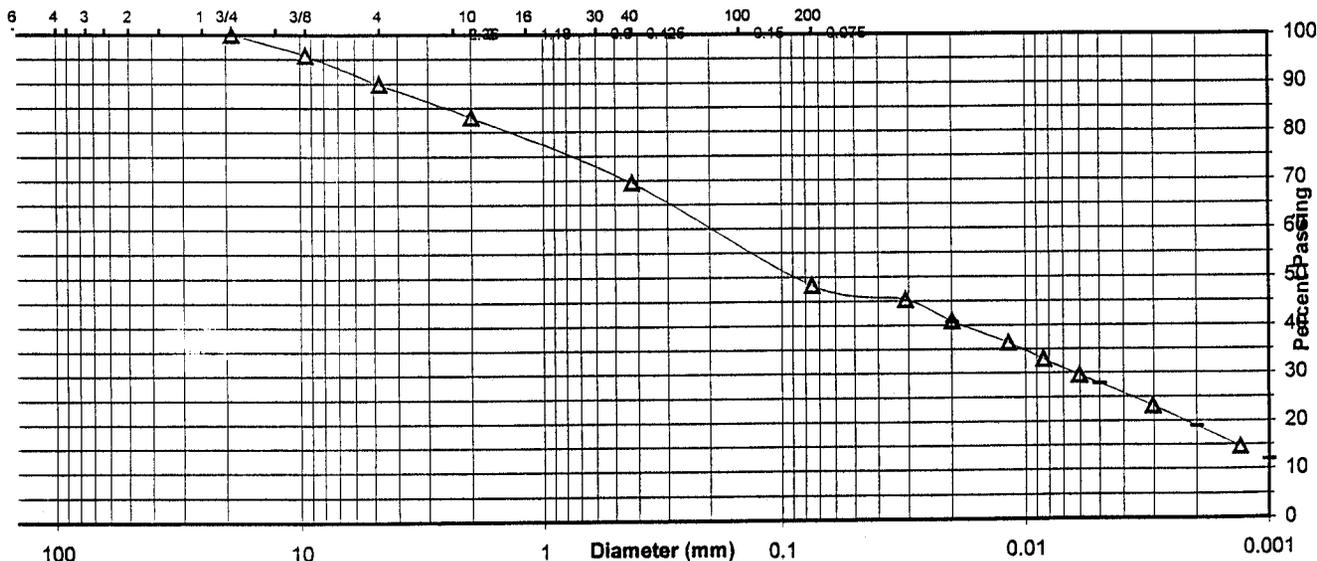
Specific Gravity 2.68

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	69.5
No. 200	48.2
0.02 mm	40.6
0.005 mm	27.8
0.002 mm	18.9
0.001 mm	11.9

Particle Size Distribution

ASTM							
AASHTO							



Comments

18 of 30 Reviewed By _____



ENGINEERS

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-7A 2.0'-4.0' Lab ID 3
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 16.2

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 31
 Plastic Limit: 18
 Plasticity Index: 13
 Activity Index: 1.44

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	100.0
1"	25	91.2
3/4"	19	86.5
3/8"	9.5	74.1
No. 4	4.75	63.7
No. 10	2	55.5
No. 40	0.425	43.8
No. 200	0.075	27.1
	0.02	19.5
	0.005	12.6
	0.002	8.9
estimated	0.001	5.1

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	36.3	44.5
Coarse Sand	8.2	11.7
Medium Sand	11.7	---
Fine Sand	16.7	16.7
Silt	14.5	18.2
Clay	12.6	8.9

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.81

Classification
 Unified Group Symbol: SC
 Group Name: Clayey sand with gravel
 AASHTO Classification: A-2-6 (0)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-7A 2.0'-4.0'

Project Number LV2002121
Lab ID 3

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: Rounded
Particle Hardness: Hard and Durable

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	100.0
1"	91.2
3/4"	86.5
3/8"	74.1
No. 4	63.7
No. 10	55.5

Maximum Particle size: 1 1/2" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

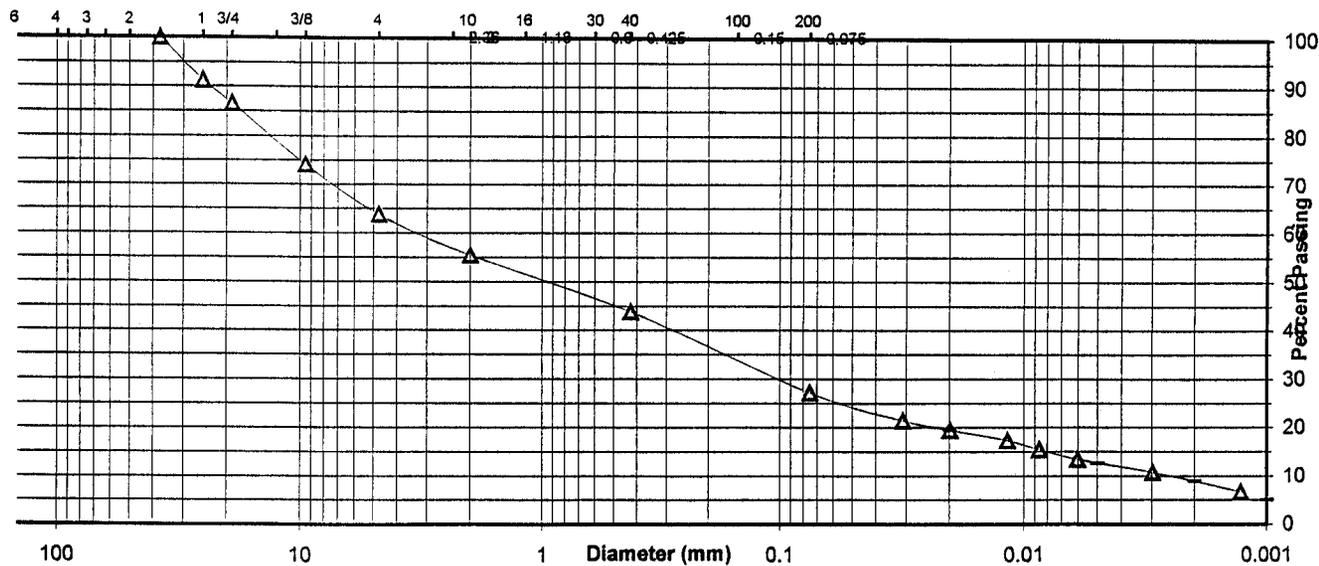
Specific Gravity 2.81

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	43.8
No. 200	27.1
0.02 mm	19.5
0.005 mm	12.6
0.002 mm	8.9
0.001 mm	5.1

Particle Size Distribution

ASTM							
AASHTO							



Comments

20 of 30 Reviewed By _____

Project Name Altech Miscellaneous Lab Testing
Source AD-7B 0.0'-3.0'

Project Number LV2002121
Lab ID 15

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: Angular
Particle Hardness: Weathered and Friable

Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	100.0
No. 4	99.8
No. 10	99.8

Maximum Particle size: 3/8" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

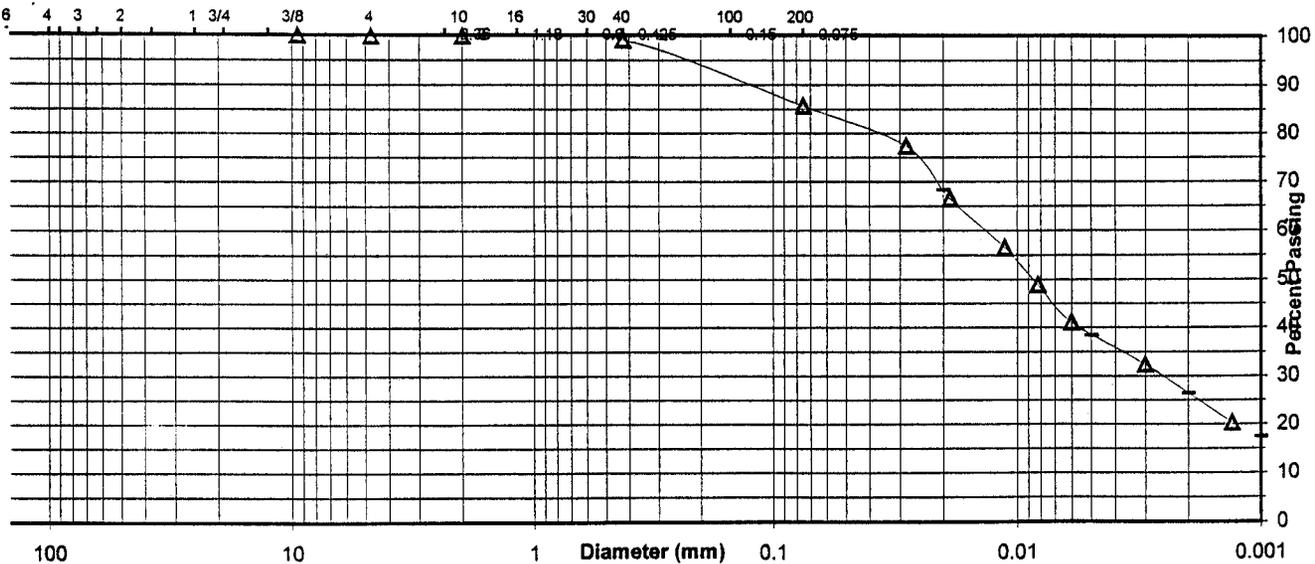
Specific Gravity 2.65

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	99.1
No. 200	85.7
0.02 mm	68.4
0.005 mm	38.4
0.002 mm	26.4
0.001 mm	17.5

Particle Size Distribution

ASTM								
AASHTO								



Comments



ENGINEERS

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-7B 0.0'-3.0' Lab ID 15
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 43.2

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 38
 Plastic Limit: 20
 Plasticity Index: 18
 Activity Index: 0.69

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	100.0
No. 4	4.75	99.8
No. 10	2	99.8
No. 40	0.425	99.1
No. 200	0.075	85.7
	0.02	68.4
	0.005	38.4
	0.002	26.4
estimated	0.001	17.5

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.2	0.2
Coarse Sand	0.0	0.7
Medium Sand	0.7	—
Fine Sand	13.4	13.4
Silt	47.3	59.3
Clay	38.4	26.4

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.65

Classification
 Unified Group Symbol: CL
 Group Name: Lean clay
 AASHTO Classification: A-6 (15)

Visual Description: _____
 Comments: _____

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-7C 2.0'-4.0" Lab ID 10
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 20.1

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 26
 Plastic Limit: 15
 Plasticity Index: 11
 Activity Index: 0.69

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	100.0
3/8"	9.5	98.2
No. 4	4.75	98.2
No. 10	2	98.1
No. 40	0.425	91.7
No. 200	0.075	48.4
	0.02	31.4
	0.005	19.4
	0.002	15.7
estimated	0.001	11.6

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.66

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	1.8	1.9
Coarse Sand	0.1	6.4
Medium Sand	6.4	--
Fine Sand	43.3	43.3
Silt	29.0	32.7
Clay	19.4	15.7

Classification

Unified Group Symbol: SC
 Group Name: Clayey sand
 AASHTO Classification: A-6 (2)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-7C 2.0'-4.0"

Project Number LV2002121
Lab ID 10

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: Angular
Particle Hardness: Hard and Durable
Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	100.0
3/8"	98.2
No. 4	98.2
No. 10	98.1

Maximum Particle size: 3/4" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

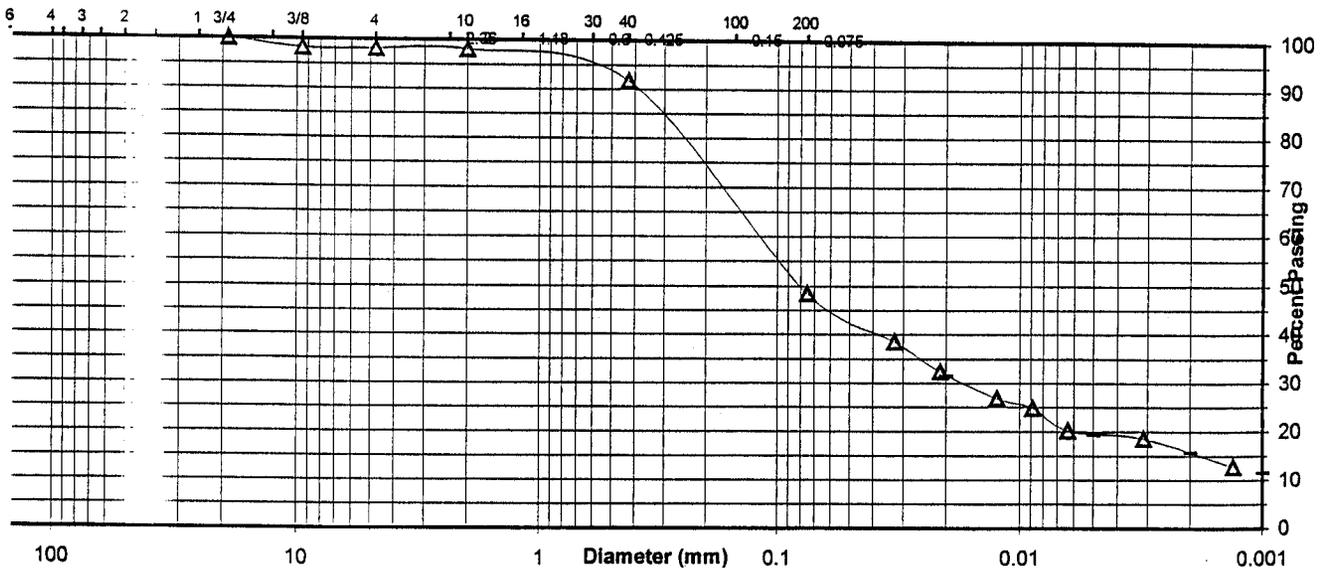
Specific Gravity 2.66

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	91.7
No. 200	48.4
0.02 mm	31.4
0.005 mm	19.4
0.002 mm	15.7
0.001 mm	11.6

Particle Size Distribution

ASTM							
AASHTO							



Comments

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-7D 0.0'-3.0' Lab ID 14
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content
 Test Method: ASTM D 2216-92
 Moisture Content (%): 97.5

Atterberg Limits
 Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 59
 Plastic Limit: 25
 Plasticity Index: 34
 Activity Index: 0.83

Particle Size Analysis
 Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	
1"	25	
3/4"	19	
3/8"	9.5	
No. 4	4.75	
No. 10	2	100.0
No. 40	0.425	98.6
No. 200	0.075	94.5
	0.02	89.3
	0.005	62.2
	0.002	41.0
estimated	0.001	27.2

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	0.0	0.0
Coarse Sand	0.0	1.4
Medium Sand	1.4	---
Fine Sand	4.1	4.1
Silt	32.3	53.5
Clay	62.2	41.0

Moisture-Density Relationship
 Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio
 Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity
 Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.68

Classification
 Unified Group Symbol: CH
 Group Name: Fat clay
 AASHTO Classification: A-7-6 (36)

Visual Description: _____
 Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-7D 0.0'-3.0'

Project Number LV2002121
Lab ID 14

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: N/A
Particle Hardness: N/A
Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	
3/8"	
No. 4	
No. 10	100.0

Maximum Particle size: No. 10 Sieve

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

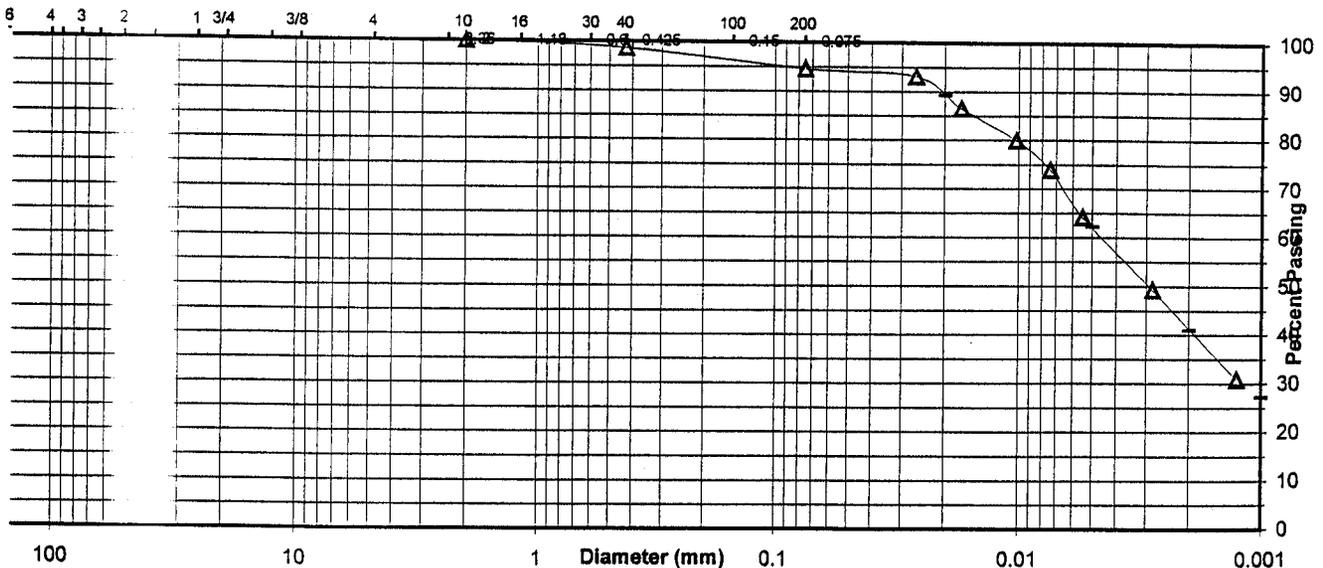
Specific Gravity 2.68

Dispersed using: Apparatus A - Mechanical, for 1 minute

No. 40	98.6
No. 200	94.5
0.02 mm	89.3
0.005 mm	62.2
0.002 mm	41.0
0.001 mm	27.2

Particle Size Distribution

ASTM							
AASHTO							



Comments

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-8A 0.0'-2.0" Lab ID 9
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 36.5

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 40
 Plastic Limit: 20
 Plasticity Index: 20
 Activity Index: 0.87

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Sieve Size	(mm)	
3"	75	
2"	50	
1 1/2"	37.5	100.0
1"	25	95.2
3/4"	19	95.2
3/8"	9.5	93.5
No. 4	4.75	93.2
No. 10	2	92.9
No. 40	0.425	88.5
No. 200	0.075	74.9
	0.02	60.2
	0.005	35.3
	0.002	22.8
estimated	0.001	16.2

Plus 3 in. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	6.8	7.1
Coarse Sand	0.3	4.4
Medium Sand	4.4	---
Fine Sand	13.6	13.6
Silt	39.6	52.1
Clay	35.3	22.8

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.67

Classification

Unified Group Symbol: CL
 Group Name: Lean clay with sand
 AASHTO Classification: A-6 (14)

Visual Description: _____

Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-8A 0.0'-2.0"

Project Number LV2002121
Lab ID 9

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85
Particle Shape: Angular
Particle Hardness: Hard and Durable
Tested By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	100.0
1"	95.2
3/4"	95.2
3/8"	93.5
No. 4	93.2
No. 10	92.9

Maximum Particle size: 1 1/2" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Based on: Total Sample

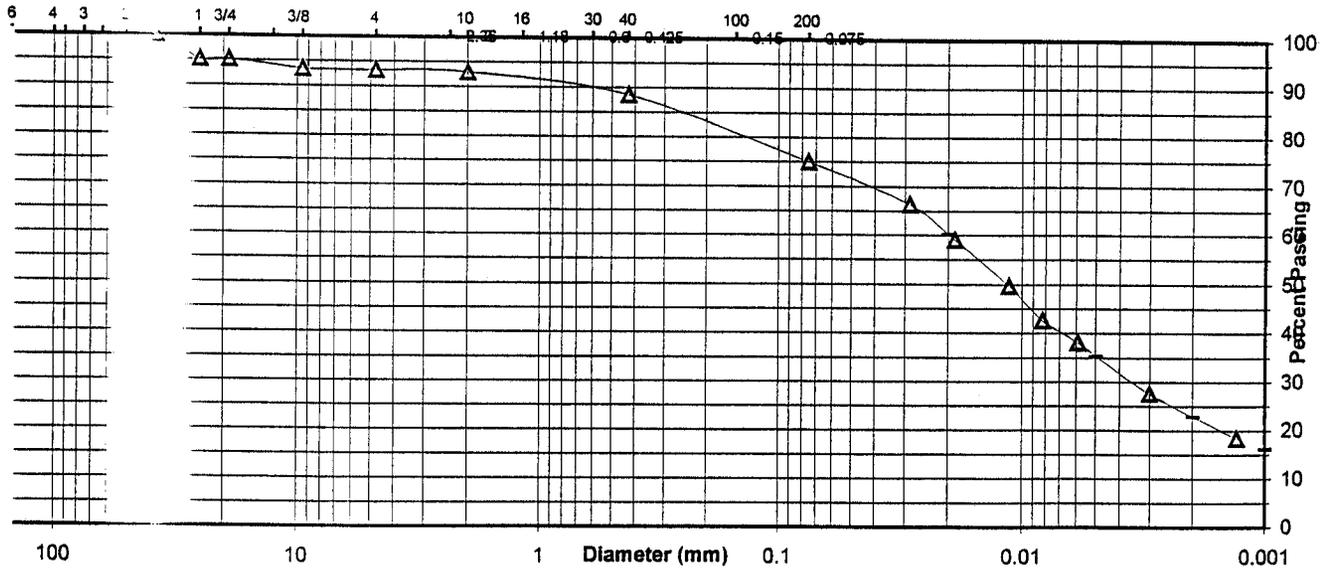
Specific Gravity 2.67

Dispersed Using: Apparatus A - Mechanical, for 1 minute

No. 40	88.5
No. 200	74.9
0.02 mm	60.2
0.005 mm	35.3
0.002 mm	22.8
0.001 mm	16.2

Particle Size Distribution

ASTM							
AASHTO							



Comments

Summary of Soil Tests

Project Name Altech Miscellaneous Lab Testing Project Number LV2002121
 Source AD-9B 2.0'-5.0" Lab ID 2
 County Southfield, MI Date Received 10-28-02
 Sample Type Grab Date Reported 11-7-02

Test Results

Natural Moisture Content

Test Method: ASTM D 2216-92
 Moisture Content (%): 34.9

Atterberg Limits

Test Method: ASTM D 4318-95
 Prepared: Dry
 Liquid Limit: 30
 Plastic Limit: 20
 Plasticity Index: 10
 Activity Index: 0.67

Particle Size Analysis

Preparation Method: ASTM D 421-85
 Gradation Method: ASTM D 422-63
 Hydrometer Method: ASTM D 422-63

Particle Size		% Passing
Screen Size	(mm)	
3"	75	
2"	50	
1/2"	37.5	
1"	25	
3/4"	19	100.0
3/8"	9.5	99.6
No. 4	4.75	98.5
No. 10	2	98.1
No. 40	0.425	89.6
No. 200	0.075	62.1
	0.02	45.9
	0.005	24.8
	0.002	14.9
estimated	0.001	8.1

Plus fin. material, not included: 0 (%)

Range	ASTM (%)	AASHTO (%)
Gravel	1.5	1.9
Coarse Sand	0.4	8.5
Medium Sand	8.5	---
Fine Sand	27.5	27.5
Silt	37.3	47.2
Clay	24.8	14.9

Moisture-Density Relationship

Test Not Performed
 Maximum Dry Density (lb/ft³): N/A
 Maximum Dry Density (kg/m³): N/A
 Optimum Moisture Content (%): N/A
 Over Size Correction %: N/A

California Bearing Ratio

Test Not Performed
 Bearing Ratio (%): N/A
 Compacted Dry Density (lb/ft³): N/A
 Compacted Moisture Content (%): N/A

Specific Gravity

Test Method: ASTM D 854-92
 Prepared: Dry
 Particle Size: No. 10
 Specific Gravity at 20° Celsius: 2.72

Classification

Unified Group Symbol: CL
 Group Name: Sandy lean clay
 AASHTO Classification: A-4 (4)

Visual Description: _____

Comments: _____

Project Name Altech Miscellaneous Lab Testing
Source AD-9B 2.0'-5.0"

Project Number LV2002121
Lab ID 2

Sieve analysis for the Portion Coarser than the No. 10 Sieve

Test Method: ASTM D 421-85
Prepared using: ASTM D 421-85

Particle Shape: Angular
Particle Hardness: Hard and Durable

Tester By: PBE
Test Date: 11-1-02

Sieve Size	% Passing
3"	
2"	
1 1/2"	
1"	
3/4"	100.0
3/8"	99.6
No. 4	98.5
No. 10	98.1

Maximum Particle size: 3/4" Seive

Analysis for the portion Finer than the No. 10 Sieve

Analysis Basis: Total Sample

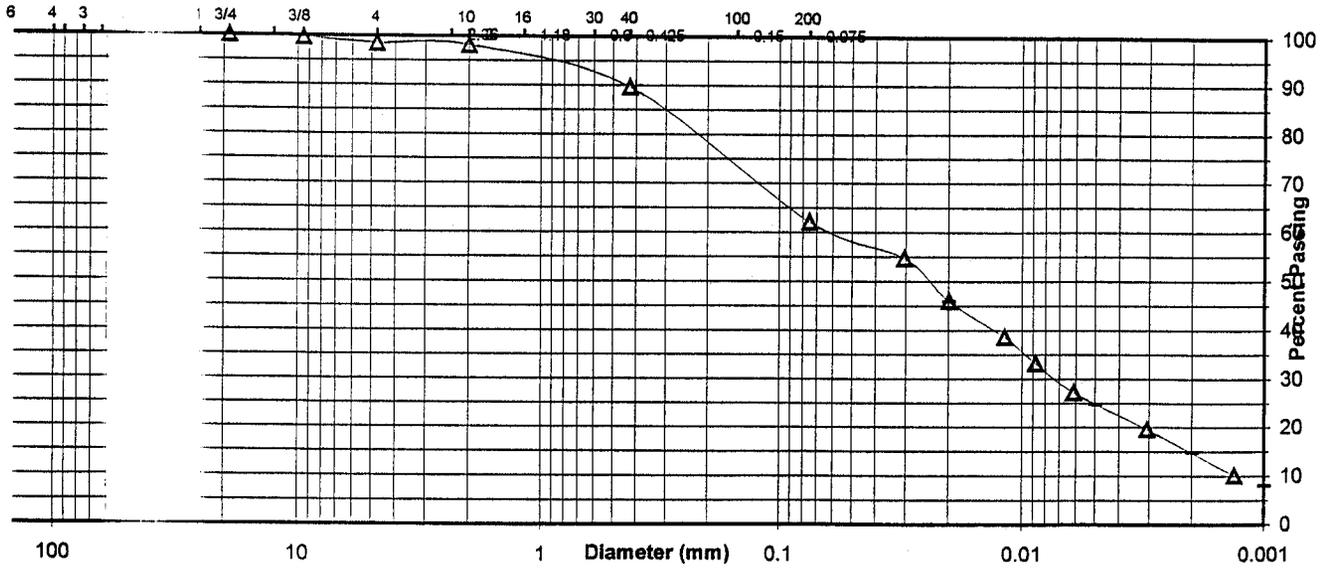
Specific Gravity 2.72

Dispersing: Apparatus A - Mechanical, for 1 minute

No. 40	89.6
No. 200	62.1
0.02 mm	45.9
0.005 mm	24.8
0.002 mm	14.9
0.001 mm	8.1

Particle Size Distribution

ASTM							
AASHTO							



Comments

30 of 30 Reviewed By _____



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
 Source AD-1C (6-9) Lab ID 7
 Prepared by MEN Preparation Date 11-11-2002
 Date Received 11-01-2002

Moisture Content Data

Can ID	<u>P-416</u>	calculated as a percentage of:	Moisture Content (%)
Can Mass	_____ (g)		total mass
Wet Sample plus Can Mass	_____ (g)		oven dried mass
Dry Sample plus Can Mass	_____ (g)		_____

Method C (440° C)	<u>X</u>	Tested By	<u>MEN</u>
Method D (750° C)	_____	Test Date	<u>11-13-2002</u>

Crucible ID	<u>2</u>	Ash Content (%)	
Crucible Mass	<u>33.66</u> (g)	Method C (440° C)	<u>98.0</u>
Oven Dry Sample plus Crucible Mass	<u>70.52</u> (g)	Organic Content (%)	<u>2.0</u>
Ash plus Crucible Mass	<u>69.80</u> (g)		

Comments: _____

Checked By MAG
Reviewed By TK

Fuller
Mossbarger
Scott &
May



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-2D (8-11) Lab ID 1
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID P-400
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 1
Crucible Mass 31.26 (g)
Oven Dry Sample plus Crucible Mass 67.51 (g)
Ash plus Crucible Mass 66.92 (g)

Ash Content (%)
Method C (440° C) 98.4
Organic Content (%) 1.6

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-3B (8-10) Lab ID 8
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

	Moisture Content (%)
Can ID <u>P-418</u>	_____
Can Mass _____ (g)	_____
Wet Sample plus Can Mass _____ (g)	_____
Dry Sample plus Can Mass _____ (g)	_____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 1
Crucible Mass 31.24 (g)
Oven Dry Sample plus Crucible Mass 74.61 (g)
Ash plus Crucible Mass 73.47 (g)

Ash Content (%)
Method C (440° C) 97.4
Organic Content (%) 2.6

Comments: _____

Checked By MAG
Reviewed By TK

Fuller
Mosbacher
Scott &
May



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-4A (10-12) Lab ID 5
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data		Moisture
Can ID	<u>P-407</u>	calculated as a percentage of: Content (%)
Can Mass	<u> </u> (g)	total mass <u> </u>
Wet Sample plus Can Mass	<u> </u> (g)	oven dried mass <u> </u>
Dry Sample plus Can Mass	<u> </u> (g)	

Method C (440° C)	<u>X</u>	Tested By <u>MEN</u>
Method D (750° C)	<u> </u>	Test Date <u>11-13-2002</u>

Crucible ID	<u>2</u>	Ash Content (%)	
Crucible Mass	<u>33.62</u> (g)	Method C (440° C)	<u>97.7</u>
Oven Dry Sample plus Crucible Mass	<u>70.42</u> (g)	Organic Content (%)	<u>2.3</u>
Ash plus Crucible Mass	<u>69.57</u> (g)		

Comments: _____

Checked By MAG
Reviewed By TK



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
 Source AD-4B (8-10) Lab ID 4
 Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

<u>Moisture Content Data</u>			Moisture
Can ID	<u>P-406</u>	calculated as a percentage of:	Content (%)
Can Mass	_____ (g)	total mass	_____
Wet Sample plus Can Mass	_____ (g)	oven dried mass	_____
Dry Sample plus Can Mass	_____ (g)		

Method C (440° C) X Tested By MEN
 Method D (750° C) _____ Test Date 11-13-2002

Crucible ID	<u>1</u>	Ash Content (%)	
Crucible Mass	<u>31.22</u> (g)	Method C (440° C)	<u>98.4</u>
Oven Dry Sample plus Crucible Mass	<u>70.34</u> (g)	Organic Content (%)	<u>1.6</u>
Ash plus Crucible Mass	<u>69.70</u> (g)		

Comments: _____

Checked By MAG
 Reviewed By TK

Fuller
Massbarger
Scott &
May



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-5c (8-10) Lab ID 6
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID P-412
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 1
Crucible Mass 31.24 (g)
Oven Dry Sample plus Crucible Mass 66.46 (g)
Ash plus Crucible Mass 65.17 (g)

Ash Content (%)
Method C (440° C) 96.3
Organic Content (%) 3.7

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-6A (0-4) Lab ID 11
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

	Moisture
Can ID <u>PR-13</u>	calculated as a percentage of: Content (%)
Can Mass _____ (g)	total mass _____
Wet Sample plus Can Mass _____ (g)	oven dried mass _____
Dry Sample plus Can Mass _____ (g)	

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 1
Crucible Mass 31.27 (g)
Oven Dry Sample plus Crucible Mass 69.93 (g)
Ash plus Crucible Mass 68.12 (g)

Ash Content (%)
Method C (440° C) 95.3
Organic Content (%) 4.7

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
 Source AD-6B (2-5) Lab ID 13
 Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID	<u>PR-25</u>	calculated as a percentage of:	Moisture Content (%)
Can Mass	_____ (g)	total mass	_____
Wet Sample plus Can Mass	_____ (g)	oven dried mass	_____
Dry Sample plus Can Mass	_____ (g)		

Method C (440° C) X Tested By MEN
 Method D (750° C) _____ Test Date 11-13-2002

Crucible ID	<u>3</u>	Ash Content (%)	
Crucible Mass	<u>54.75</u> (g)	Method C (440° C)	<u>95.9</u>
Oven Dry Sample plus Crucible Mass	<u>98.49</u> (g)	Organic Content (%)	<u>4.1</u>
Ash plus Crucible Mass	<u>96.71</u> (g)		

Comments: _____

Checked By MAG
 Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-6C (4-7) Lab ID 12
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID PR-21
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 2
Crucible Mass 33.63 (g)
Oven Dry Sample plus Crucible Mass 89.05 (g)
Ash plus Crucible Mass 87.11 (g)

Ash Content (%)
Method C (440° C) 96.5
Organic Content (%) 3.5

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-7A (2-4) Lab ID 3
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID P-404
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 3
Crucible Mass 54.78 (g)
Oven Dry Sample plus Crucible Mass 96.00 (g)
Ash plus Crucible Mass 95.14 (g)

Ash Content (%)
Method C (440° C) 97.9
Organic Content (%) 2.1

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-7B (O-3) Lab ID 15
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID P-409
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 3
Crucible Mass 54.77 (g)
Oven Dry Sample plus Crucible Mass 84.38 (g)
Ash plus Crucible Mass 83.08 (g)

Ash Content (%)
Method C (440° C) 95.6
Organic Content (%) 4.4

Comments: _____

Checked By MAG
Reviewed By TK

Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
 Source AD-7D (0-3) Lab ID 14
 Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID PR-28
 Can Mass _____ (g)
 Wet Sample plus Can Mass _____ (g)
 Dry Sample plus Can Mass _____ (g)

Moisture
 calculated as a percentage of: Content (%)
 total mass _____
 oven dried mass _____

Method C (440° C) X
 Method D (750° C) _____

Tested By MEN
 Test Date 11-13-2002

Crucible ID 1
 Crucible Mass 31.38 (g)
 Oven Dry Sample plus Crucible Mass 65.22 (g)
 Ash plus Crucible Mass 63.81 (g)

Ash Content (%)
 Method C (440° C) 95.8
 Organic Content (%) 4.2

Comments: _____

Checked By MAG
 Reviewed By TK

Fuller
Mossbarger
Scott &
May



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-8A (0-2) Lab ID 9
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID PR-3
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 2
Crucible Mass 33.66 (g)
Oven Dry Sample plus Crucible Mass 79.99 (g)
Ash plus Crucible Mass 78.59 (g)

Ash Content (%)
Method C (440° C) 97.0
Organic Content (%) 3.0

Comments: _____

Checked By MAG
Reviewed By TK

Fuller
Mossbarger
Scott &
May



Moisture, Ash and Organic Content
of Peat and Other Organic Soils
By the Muffle Furnace Method
ASTM D 2974
AASHTO T 267

Project Name Altech Miscellaneous Laboratory Testing Project Number LV2002121
Source AD-9B (2-5) Lab ID 2
Prepared by MEN Preparation Date 11-11-2002 Date Received 11-01-2002

Moisture Content Data

Can ID P-403
Can Mass _____ (g)
Wet Sample plus Can Mass _____ (g)
Dry Sample plus Can Mass _____ (g)

Moisture
calculated as a percentage of: Content (%)
total mass _____
oven dried mass _____

Method C (440° C) X
Method D (750° C) _____

Tested By MEN
Test Date 11-13-2002

Crucible ID 2
Crucible Mass 33.64 (g)
Oven Dry Sample plus Crucible Mass 71.24 (g)
Ash plus Crucible Mass 70.36 (g)

Ash Content (%)
Method C (440° C) 97.7
Organic Content (%) 2.3

Comments: _____

Checked By MAG
Reviewed By TK