APPENDIX A

Phase II ESA Boring Logs

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-1 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 16' 5" N, 32' 6" E of NW Coliseum Corner
Coliseum UST Area

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.
Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA		
	2				SM	Brown SAND with silt; some silty fines, some coarse to	1.2'+/- 1.8'+/- 2.2'+/- Collected soil Sample B-1 (0.3'-1.2')	
	3				CL	medium sand, little coarse to fine gravel, moist		
	4		4.0		SP	Brown lean CLAY with sand; little medium sand, moist		0
	5					Brown poorly graded SAND; trace silty fines, moist		
	6				CL	Brown stiff sandy lean CLAY; some medium sand,		
	7					trace gravel		
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13							
	14		3.0					0
	15		1.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-2 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 14' 4" N, 6' 6" W of NW Coliseum Corner
Coliseum UST Area

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.
Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA		
	2				SM	Light brown poorly graded silty SAND; little silty	1.0'+/- 1.8'+/- Collected soil	
	3				SM	fines, mostly medium sand, trace gravel	Sample B-2	
	4		4.0			Dark brown poorly graded silty SAND; some silty fines,	(0.5'-2.0')	0
	5					mostly medium sand		
	6				CL	Brown stiff sandy lean CLAY; some medium sand,		
	7					trace gravel		
	8		4.0					0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-3 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 59' W, 25' 5" S of NW Coliseum Corner
Former Fuel Spill

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.
Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	1.0'+/-	
	2				SP	Brown poorly graded SAND with gravel; trace silty fines,	Collected soil	
	3				CL	mostly medium sand, little coarse sand, little gravel	Sample B-3	
	4		2.5			Brown lean CLAY with sand; little medium sand,	(1.0'-2.0')	0
	5					trace gravel, moist, plastic		
	6							
	7					Grades to brown stiff sandy lean CLAY; some medium		
	8		4.0			trace gravel at 1.6'		0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-4 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 62' W, 67' S of NW Coliseum Corner
Former Fuel Spill

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					Silty SAND with gravel; little silty fines, mostly fine to	0.5'+/-	
	2					medium sand, little gravel, fill	1.8'+/- Collected soil	
	3				SP	Poorly graded SAND with gravel; trace fines, mostly	Sample B-4	
	4		4.0			medium sand, little coarse sand, little fine gravel	(0.0'-1.8')	0
	5				CL	Brown stiff sandy lean CLAY; some medium sand,		
	6					trace gravel		
	7							
	8		4.0					0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-5 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 8' N, 4' 4" W of NE fence post
SW Corner across from Solomon Gas Mart

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1				OL	Organic rich topsoil, grey to black	1.2'+/-	
	2				CL	Brown stiff sandy lean CLAY; some medium sand,	Collected soil	
	3					trace gravel	Sample B-5	
	4		4.0				(0.0'-1.2')	0
	5							
	6							
	7							
	8		4.0					0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-6 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 10' E, 10' N of SW fence corner
SW Corner across from Solomon Gas Mart

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA		
	2				SM	Brown silty SAND; some silt, little clay,		
	3					some fine to medium sand	2.5'+/- Collected soil Sample B-6 (0.5'-2.5')	
	4		3.0		CL	Brown stiff sandy lean CLAY; some medium sand,		
	5					trace gravel		0
	6							
	7							
	8		4.0					
	9							0
	10							
	11							
	12		4.0			Grades to grey at 12.0'		
	13							0
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-7 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 25' S, 77' E of fence
Fmr Maintenance Bldg

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 14.0 ft.
Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%
PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA		
	2				GP	Poorly graded GRAVEL with sand; trace silty fines, some medium sand, little coarse sand	1.2'+/-	
	3						2.5'+/- Collected soil Sample B-7 (1.2'-2.0')	
	4		4.0			Black organic rich cinders; some coarse sand, some fine gravel, fill		0
	5							
	6				CL	Brown stiff sandy lean CLAY; some medium sand, trace gravel		
	7							
	8		3.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13							
	14		3.0					0
	15					End of Boring at 14.0'		
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-8 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 109' E, 42' N of fence
Fmr Maintenance Bldg

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 15.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	1.0'+/-	
	2				SP	Silty SAND with gravel; little fines, mostly fine to medium	Collected soil	
	3					sand, little angular gravel	2.7'+/- Sample B-8	
	4		3.8		GP	Poorly graded GRAVEL with sand; mostly angular gravel,	(1.0'-2.7')	
	5				CL	some medium to coarse sand, black stained		0
	6					Blue-grey stiff sandy lean CLAY; some medium sand,		
	7					trace gravel, grades to brown at 4.0'		
	8		4.0					0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15		3.0					0
	16					End of Boring at 15.0'		
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-9 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 11' E, 43' S of SW transformer fence corner
Midway

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 13.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.3'+/-	
	2				CL	Brown stiff sandy lean CLAY; some fine sand,	1.5'+/-	
	3				CL	trace gravel	1.8'+/- Collected soil Sample B-9 (0.0'-1.8')	
	4		3.8			Black stained sandy lean CLAY; some medium sand		0
	5					few angular gravel		
	6				CL	Brown stiff sandy lean CLAY; some medium sand,		
	7					trace gravel		
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13		2.0					0
	14					End of Boring at 13.0'		
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-10 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 53' E, 90' S of SW fence corner Midway

Date Begin: 07/06/09 Date End: 07/06/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 13.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3' HMA, hydrocarbon odor, cohesive	1.2'+/-	
	2				ML	Well graded SILT; grey to brown	Collected soil	
	3				CL	Black to grey stiff sandy lean CLAY; some medium sand,	Sample B-10	
	4		2.5			trace gravel, grades to brown at 2.6'	(0.3'-2.6')	0
	5							
	6							
	7							
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13		2.0					0
	14					End of Boring at 13.0'	Probe refusal	
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-11 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 32' S, 53' W of SW corner light pole
Confirmed UST Release Area

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 16.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA		
	2				SP	Brown poorly graded SAND with gravel; mostly medium	1.2'+/-	
	3					sand, little coarse sand, little fine gravel	Collected soil	
	4		3.6		CL	Dark grey stiff sandy lean CLAY; some medium sand,	Sample B-11	
	5					trace gravel, grades to brown at 3.0'	(0.3'-1.2')	0
	6							
	7							
	8		4.0					0
	9							
	10							
	11							
	12		4.0			Grades to grey at 12.0'		0
	13							
	14							
	15							
	16		4.0					0
	17					End of Boring at 16.0'		
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-12 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 15' S, 22' W of SW corner light post
Confirmed UST Release Area

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 14.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.8'+/-	
	2				SP-SM	Black poorly graded SAND with silt; few fines, mostly	Collected soil	
	3					medium sand, few coarse sand, few fine gravel, moist	Sample B-12	
	4		3.8		CL	Brown stiff gravelly lean CLAY; some fine gravel, grades	4.0'+/- (3.5'-4.5')	0
	5					with less gravel	4.5'+/-	
	6				SP	Grey poorly graded SAND with gravel; mostly medium		
	7					sand, some coarse sand, few fine gravel, moist to wet		
	8		4.0		CL	Brown stiff sandy lean CLAY; some medium sand,		0
	9					trace gravel		
	10							
	11		3.0					
	12					Grades to grey at 12.0'		0
	13							
	14		3.0					
	15					End of Boring at 14.0'	Probe refusal	
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-13 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 28' S, 1.5' W of SW corner light post
Confirmed UST Release Area

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 14.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.7'+/-	
	2				SP	Poorly graded SAND with silt; few silty fines,	1.4'+/-	
	3				SP-SM	mostly medium sand, trace gravel	Collected soil	
	4		3.8			Silty SAND with gravel; some silty fines,	Sample B-13	
	5				CL	mostly medium sand, little gravel	(0.7'-1.4')	0
	6					Brown stiff sandy lean CLAY; some medium sand,		
	7					trace gravel		
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13							
	14		3.0					0
	15					End of Boring at 14.0'	Probe refusal	
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-14 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 53' S, 24' W of SW corner light post
Confirmed UST Release Area

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 14.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.7'+/-	
	2				SP-SM	Poorly graded SAND with silt; few silty fines,	2.0'+/- Collected soil	
	3				SM	mostly medium sand, trace gravel	Sample B-14	
	4		3.8		CL	Silty SAND; little silty fines, mostly fine sand, moist	(0.7'-2.0')	0.7
	5					Brown stiff sandy lean CLAY; some medium sand,		
	6					trace gravel		
	7							
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					Grades to grey at 12.0'		
	13							
	14		3.0					0
	15					End of Boring at 14.0'	Probe refusal	
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-15 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 11' S, 14' W of fence post, 4' W of gas tank
Boring located in stressed vegetation
Gas AST

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 10.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1				OL	Topsoil; black, organic, rich	0.3'+/-	10
	2				CL	Dark grey stiff sandy lean CLAY; mostly medium sand,	1.2'+/- gasoline odor	27
	3				SM	trace gravel		
	4		3.7			Poorly graded SAND with silt; mostly medium sand,	3.0'+/- gasoline odor	33
	5					grades to silt, moist to wet		
	6				CL	Brown stiff sandy lean CLAY; some medium sand,	Collected soil	
	7					trace gravel	Sample B-15	
	8		4.0				(1.0'-3.0')	
	9							0
	10		2.0				PID 72 in hole	
	11					End of Boring at 10.0'	Probe refusal	
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-16 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 14' N of B-15
Diesel AST

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 10.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					Topsoil; black, organic, rich	0.3'+/-	
	2				CL	Dark grey stiff sandy lean CLAY; mostly medium sand,	1.0'+/-	
	3				SM	trace gravel	2.5'+/- Collected soil Sample B-16 (1.0'-2.5')	
	4		3.8			Poorly graded SAND with silt; mostly medium sand,		0
	5					grades to silt, moist to wet		
	6				CL	Brown stiff sandy lean CLAY; some medium sand,		
	7		3.0			trace gravel		
	8							0
	9							
	10		3.0					0
	11					End of Boring at 10.0'	Probe refusal	
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-17 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 116' W, 8' S of SE corner of Dodge Pavillion
Dodge Pavillion UST

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 11.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.6'+/-	
	2					Concrete	1.2'+/-	
	3				SP	Black poorly graded SAND with gravel; trace fines, mostly	Collected soil	
	4		3.8			medium sand, little coarse sand, little fine gravel, moist	Sample B-17	
	5				CL	Black stiff sandy lean CLAY; some medium sand, trace	(0.6'-1.2')	0
	6					gravel, black to grey, grades to brown at 6.0'		
	7							
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					End of Boring at 11.0'	Probe refusal	
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*

MATERIALS TESTING CONSULTANTS, INC.	LOG OF BORING	Project No.: 081563 Boring No.: B-18 Sheet: 1 of 1

Project: Michigan State Fairgrounds
Client: City of Grand Rapids
Location: Grand Rapids, MI
Drill Type: Geoprobe
Crew Chief: RM
Field Eng.: SY/JV
Rev. By: SY
Elevation: ft. +/-
Datum:
Notes: 94' W, 8' S of SE corner Dodge Pavillion
Dodge Pavillion UST

Date Begin: 07/07/09 Date End: 07/07/09

	Type	Dia.	Groundwater, ft.	
Casing	Probe	2"	During	None
Sampler			End	NA
Core			Seepage	
Tube			Date	Depth, ft.

Depth Drilled: 11.0 ft.

Plugging Rcrd: Backfilled with excavated soil cuttings and bentonite.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

PID = Photoionization Detector (ppm)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Penetration (Blows Per 6") ASTM D 1586	*Unified Soil Class.	*DESCRIPTION	REMARKS	PID
	1					3" HMA	0.6'+/-	
	2					Concrete	1.2'+/-	
	3				SP	Black poorly graded SAND with gravel; trace fines, mostly	Collected soil	
	4		3.8			medium sand, little coarse sand, little fine gravel, moist	Sample B-18	
	5				CL	Black stiff sandy lean CLAY; some medium sand, trace	(0.6'-1.2')	0
	6					gravel, black to grey		
	7					Grades to brown at 6.0'		
	8		4.0					0
	9							
	10							
	11		3.0					0
	12					End of Boring at 11.0'	Probe refusal	
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							

** Visual estimate following ASTM D 2488 unless laboratory testing has been performed*