Roy F. Weston, Inc.
Suite 500
750 East Bunker Court
Vernon Hills, IL 60061-1450
847-918-4000 • Fax 847-918-4055
www.rfweston.com

file/office copy

9 May 2001

Mr. Keith Watson
Kerr-McGee Chemical, LLC
Kerr-McGee Center
123 Robert S. Kerr Avenue
Oklahoma City, OK 73102

RFW Work Order No. 02687.007.003
KMC Work Order No. 40-50-01-AKW-B

Re: Supplemental GeoProbe® Soil Investigation Report
Moss-American Site, Milwaukee, Wisconsin

Dear Mr. Watson:

Roy F. Weston, Inc. (WESTON®) is pleased to submit this report summarizing the results of the second phase (Phase II) of the GeoProbe investigation recently completed at the Moss-American Site in Milwaukee, Wisconsin. This report updates the GeoProbe Soil Investigation Report (Phase I Report) dated 14 March 2001. A description of the GeoProbe investigation and the results obtained during this investigation are presented in the following sections.

1 GENERAL INFORMATION

The Phase II GeoProbe investigation was performed in accordance with the Soil Management Plan (SMP) for the Moss-American Site in Milwaukee, Wisconsin, dated 9 November 2000. WESTON advanced an additional 97 soil borings during Phase II of the GeoProbe Investigation during February and March 2001. Locations of these borings are indicated in bold on the attached Figure 1.

Included in the number of borings installed during Phase II are seven borings associated with Area T4/5 that were initially scheduled for completion during Phase I (borings 164 and 186 through 191), but were not advanced due to inclement conditions at the site.

In addition to the seven borings in Area T4/5 that were not completed during Phase I of the GeoProbe Investigation, Phase II borings were advanced for three additional purposes: 1) resampling of 13 borings due to high non-detect or otherwise questionable benzene results; 2) re-advancement of 3 borings due to poor sample recovery when installed during Phase I; and 3) advancing 74 "step-out" borings. The step-out borings are adjacent to Phase I borings located along the current limits of excavation identified in the Phase I Report. The following subsections describe the rationale for advancing the Phase II borings.

VERIFICATION OF PREVIOUS BENZENE RESULTS

WESTON resampled in areas previously investigated during Phase I to verify low levels of benzene (generally within twice the cleanup standard of 0.0055 milligrams per kilogram [mg/kg]) and in areas where benzene was not detected, but the detection limit exceeds the cleanup criterion for benzene. Soil units whose only requirement for excavation was due to questionable Phase I benzene results were resampled. If a soil unit with questionable benzene results met any additional excavation criteria (i.e., exceeded a residual contaminant level [RCL] for any polycylcic aromatic hydrocarbon [PAH]), the soil was not resampled. In addition, the boring locations where resampling due to benzene results was proposed primarily consist of locations along the edges of excavation areas that are adjacent to "clean" borings.

If the benzene levels detected in the Phase II samples are below the cleanup standard, excavation of the associated soil is unwarranted. Soil samples collected during Phase II to refine Phase I benzene results were submitted for analysis of benzene only. Since groundwater at the site is relatively shallow for most of the site (approximately 4 feet [ft] below ground surface [bgs]), only one sample was collected from each boring. The following borings were resampled based on questionable Phase I benzene results:

Area T4/5 – Borings 166 and 177
Area T6 – Borings 193, 197, 199, 219, 221, and 228
Area T7 – Borings 51 and 59
Area T10 – Borings 102, 129, and 130

All borings were advanced to 4 ft bgs, except for boring 177, which was advanced to 8 ft bgs to facilitate sample collection from the 4 to 8 ft bgs interval. Boring 214 in Area T6 was initially proposed to be resampled to confirm Phase I benzene levels detected; however, due to high river stage, the area was flooded and inaccessible to the GeoProbe. Consequently, boring 214 was not advanced.

BORING READVANCEMENT DUE TO POOR RECOVERY

In borings 103 and 128, both located within the original boundary drawn for Area T10, poor sample recovery was experienced in the upper 4 ft of material. These borings were initially advanced to 12 ft bgs, and analytical results for the 4 to 12 ft bgs interval for these borings does not indicate that the soil deeper than 4 ft bgs requires excavation; however, adjacent borings do require excavation based on contaminant levels. Since borings 103 and 128 are located within the original limits delineated for Area T10, this soil will require excavation without analytical results indicating that the upper 4 ft of soil associated with these borings is below excavation standards.

WESTON re-advanced these borings to 4 ft bgs and analyzed one sample from each boring for benzene, toluene, ethylbenzene, and total xylenes (BTEX collectively) and PAHs.

Boring 210 in Area T6 had questionable results as to whether free product was present at the 8 to 12 ft bgs interval, as smearing within the GeoProbe liner was experienced. Based on the uncertainty of the lower interval in boring 210, the boring was re-advanced and the 8 to 12 ft bgs interval was sampled for analysis of PAHs.

"STEP-OUT" BORINGS

To further delineate the extent of soil requiring excavation and treatment, WESTON advanced an additional 74 soil borings adjacent to soil borings that were identified to require excavation based on the Phase I results. These borings were advanced to depths ranging from 4 to 16 ft bgs, depending upon the depth of contamination identified in adjacent cells from Phase I results. The following step-out borings were advanced:

Area T4/5 – 300 through 309, and 377
Area T6 – 311
Area T7 – 353 through 362, 364, and 367 through 376
Area T8 – 342 through 352
Area T9 – 313 and 314
Area T10 – 315, 317 through 321, 323 through 333, and 365
Area T11 – 316, 322, and 334 through 341

Boring 310 in Area T6 was initially proposed to further define extent of contamination adjacent to cell 215; however, due to high river stage, the area was flooded and inaccessible to the GeoProbe. Consequently, boring 310 was not advanced.

SAMPLE IDENTIFIERS

Samples collected during Phase II from depth intervals within borings that were previously sampled during Phase I are indicated as the initial boring/sample number followed by an "A." For instance, boring 177 will be resampled from 0 to 4 ft bgs for analysis of benzene during Phase II, and the sample is identified as 177-1A.

Samples from step-out borings use the same identifier approach as implemented for samples collected during Phase I.

2 RESULTS

GENERAL

Analytical results for the samples collected during Phase II of the GeoProbe investigation are summarized in the table included as Attachment A. Laboratory analytical reports are provided as Attachment B. Analytical results for the samples were compared against the excavation standards (as defined in the Phase I Report) to determine if soil associated with a given sample requires excavation. Soil samples were classified as Type I, II, or III based on contaminant levels and the presence/absence of free product. Definitions of Type I, II, and III soil are presented in the Phase I Report.

Extent of contamination associated with each sample was evaluated using the same procedure as used to evaluate the Phase I sample results. In short, the procedure used involved delineating a 25 ft by 25 ft square cell around each boring to represent the area associated with each sample. Sample depth interval and geologic information were used to assess the depth interval that a given sample represents and the total depth of contamination in each cell.

Comprehensive (including both Phase I and II results) plan view maps for Areas T4/5 through T11 are provided as Figures 2 through 7. These figures indicate the cells requiring excavation and the depth that excavation is required in each cell. In addition, Figures 2 through 7 indicate the maximum concentrations of contaminants that exceeded their respective excavation standards within each cell and the depth intervals at which the maximum concentrations occurred.

Boring logs for the borings advanced during Phase II are provided as Attachment C. Comprehensive cross-sectional views of Areas T4/5 through T10 were developed based on sample results and site geology, and are included in Attachment D.

AREA T4/5 PHASE I BORINGS

Based on the analytical results of samples collected during Phase II, four of the seven cells located at Area T4/5 require excavation. Cells 186, 187, 188, and 191 require excavation to 12, 14, 12, and 10 ft bgs, respectively. Contaminant levels in samples collected from borings 164, 189, and 190 did not exceed excavation criteria; therefore, soil associated with these borings does not require excavation.

VERIFICATION OF PREVIOUS BENZENE RESULTS

Based on analytical results of samples collected during Phase II, benzene levels in cells 59 (Area T7), 102 and 129 (Area T10), 166 and 177 (Area T4/5), and 197, 199, and 221 (Area T6) are

below excavation standards and these cells do not require excavation. Benzene levels in cells 51 (Area T7), 130 (Area T10), and 193, 219, and 228 (Area T6) were confirmed to exceed excavation standards and are included within the scope of proposed excavation activities to depth of 4 ft bgs (to the groundwater table). A table summarizing the Phase I and II benzene analytical results for the subject samples, including a determination whether the associated soil is included or eliminated from the scope of excavation activities, is included as Attachment E.

BORING READVANCEMENT DUE TO POOR RECOVERY

Based on the analytical data for Phase II, the upper 4 ft of cell 103 (Area T10) does not require excavation. The lower portion of cell 103 was determined to not require excavation based on Phase I results.

Cell 128 (Area T10) will require excavation to 4 ft bgs since the benzene detection limit far exceeded the excavation standard. The lower portion of cell 128 was determined to meet all excavation standards based on Phase I data.

Cell 210 (Area T6) will require excavation to 12 ft bgs. Free product was not observed in the 8 to 12 ft bgs interval; however naphthalene exceeded the excavation standard in the sample collected from the lower interval.

"STEP-OUT" BORINGS

Based on the analytical results for samples collected during Phase II, contaminant concentrations exceeded excavation criteria in 54 of the 74 step-out borings advanced. Contaminants exceeded excavation criteria in 9 of 11 step-out borings advanced in Area T4/5, 1 of 1 step-out borings advanced in Area T6, 16 of 21 step-out borings advanced in Area T7, 7 of 11 step-out borings advanced in Area T8, 2 of 2 step-out borings advanced in Area T9, 15 of 18 step-out borings advanced in Area T10, and 4 of 10 step-out borings advanced at Area T11.

3 CONCLUSIONS

The cumulative (including both Phase I and II results) total amount of soil requiring excavation is presented in Table 1. Based on information obtained during Phase II, approximately 13,189 CY (in-situ) of additional soil requiring excavation was identified, of which approximately 12,847 CY (in-situ) requires treatment. The cumulative volume of soil that is anticipated to require excavation, including results from both Phase I and II, is approximately 42,523 CY (in-situ), of which approximately 40,509 CY requires treatment. To account for expansion from in-situ to ex-situ quantities, an expansion factor of 15% has been assumed. Using this expansion number, the cumulative total ex-situ quantity of soil requiring excavation and treatment is

approximately 48,901CY and 46,585CY, respectively. Overall, the quantity of soil requiring excavation has increased from the original SMP estimate of 41,076 CY (ex-situ).

These estimates should be viewed as preliminary since we have not determined the limits of excavation in all cases, nor the practical limitations associated with soil excavation. These limitations could cause the quantity of soil to increase because the estimates included in this report assume that the walls of all excavations are vertical. This may not be the case during actual excavation, due to health and safety requirements for sloped excavation walls in certain areas, and because of potential slough during excavation. Based on our previous work at the site; however, we believe that soil types present at the site will facilitate near vertical excavation walls in most areas. Use of the excavator to assist in soil sampling will eliminate the need for workers to enter the excavation in most circumstances, thereby limiting the excavation benching requirements.

If you have any questions or require additional information, please do not hesitate to call me at (847) 918-4142.

Very Truly Yours,

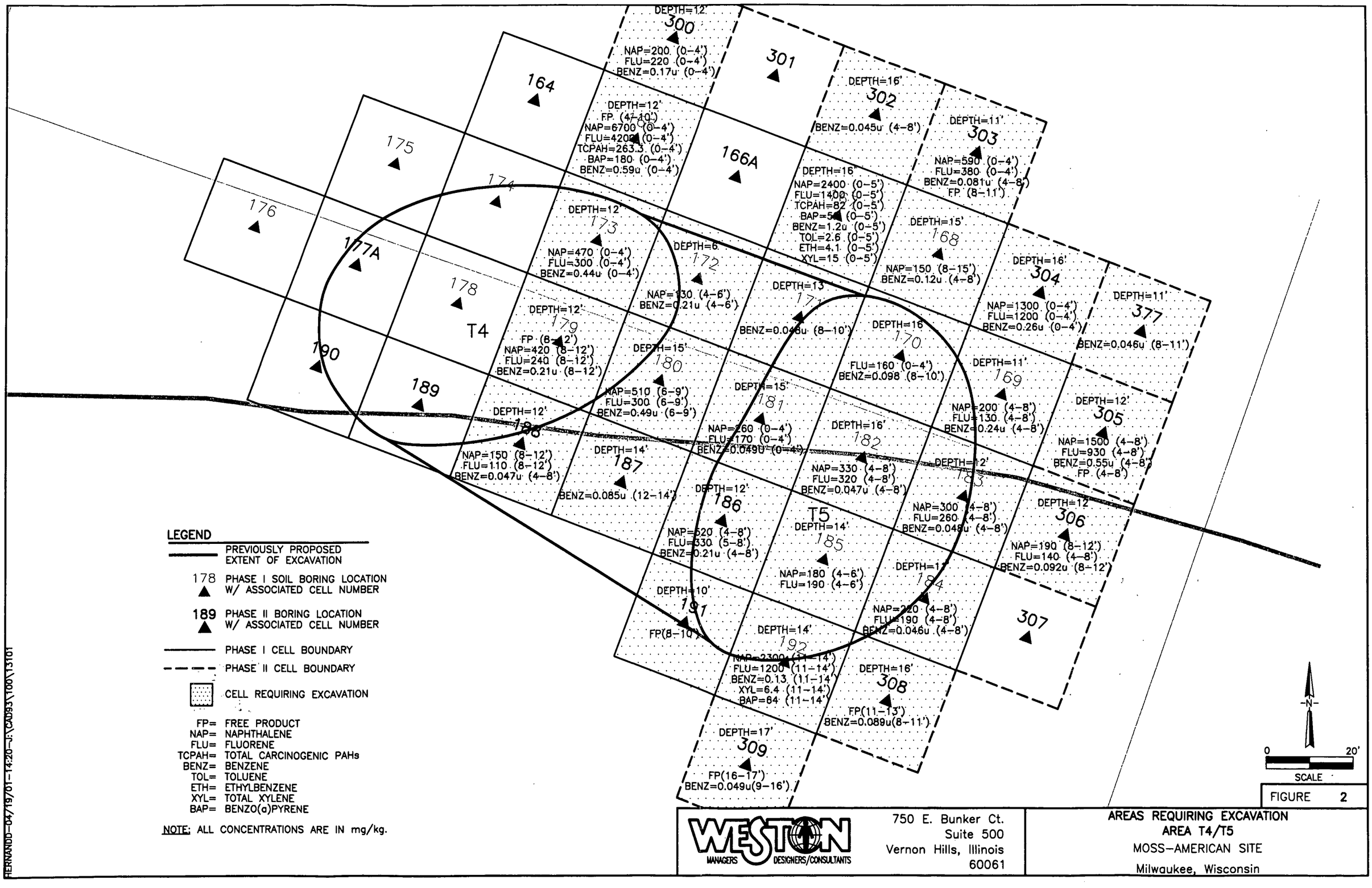
ROY F. WESTON, INC.

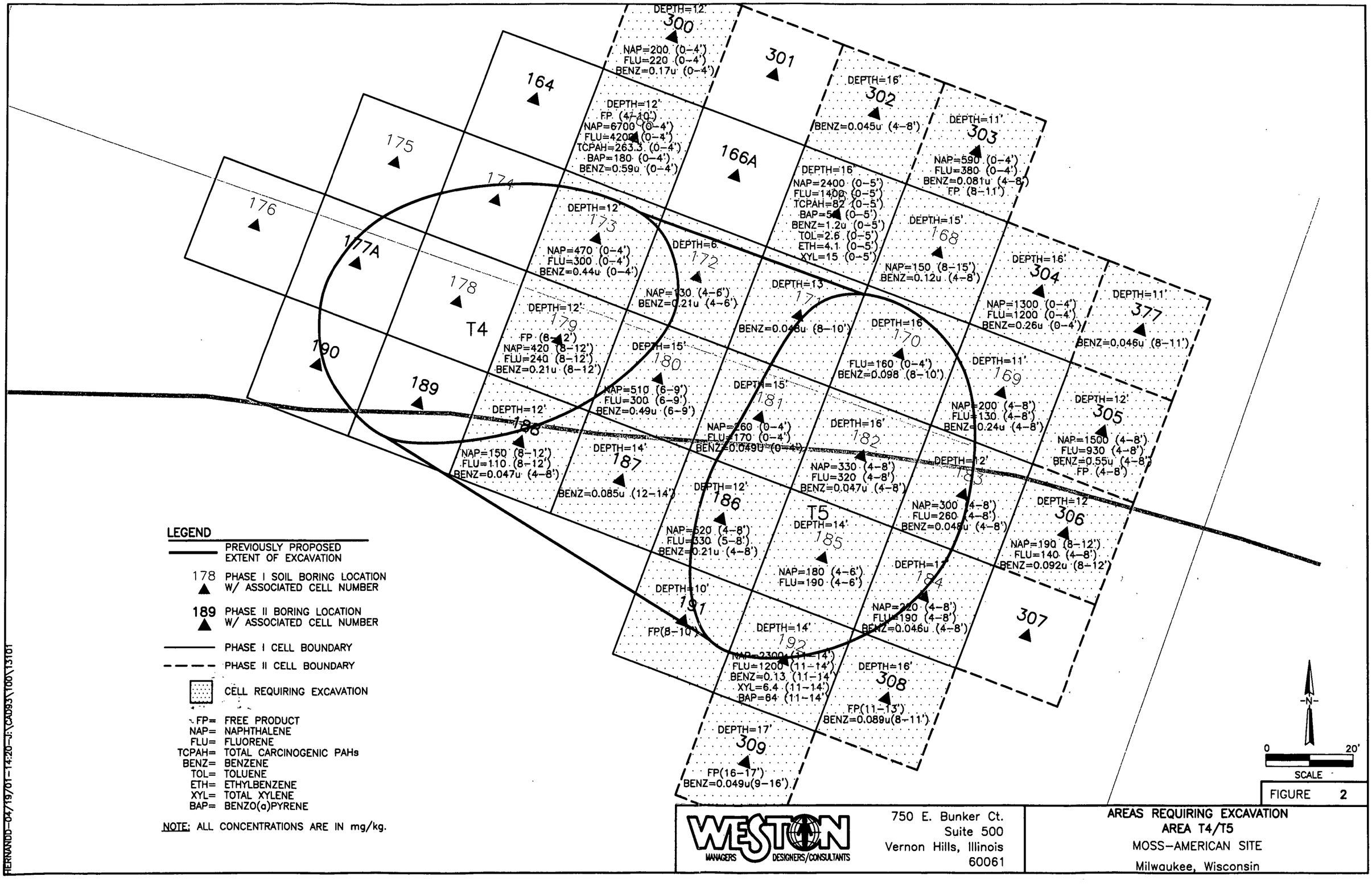
Thomas P. Graan

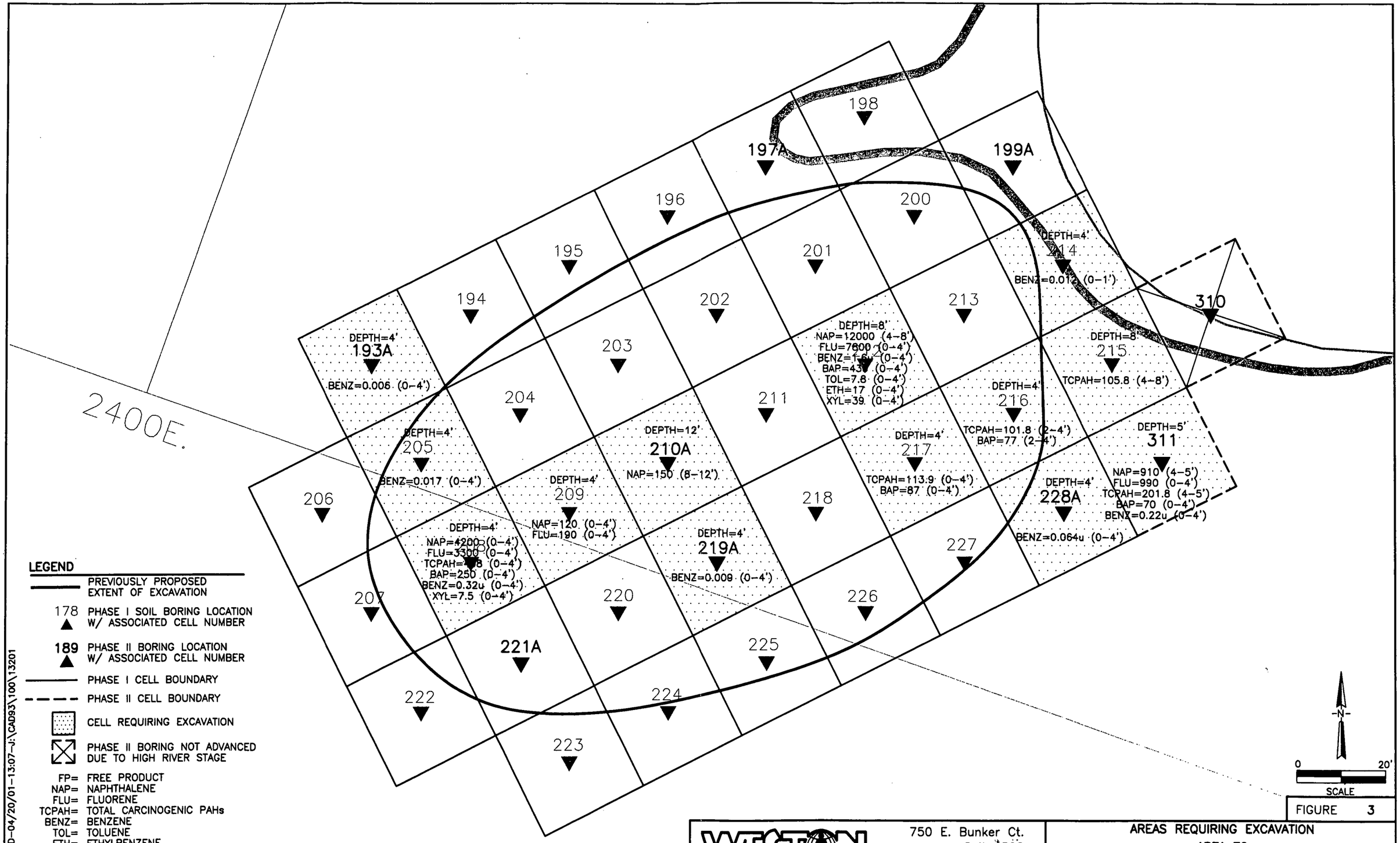
Thomas P. Graan, Ph.D.
Principal Project Manager

TPG/sk(kms)

Attachments


DEPTH=12'
300
NAP=200 (0-4')
FLU=220 (0-4')
BENZ=0.17u (0-4')
301
DEPTH=16'
302
BENZ=0.045u (4-8')
DEPTH=11'
303
NAP=590 (0-4')
FLU=380 (0-4')
BENZ=0.081u (4-8')
FP (8-11')
164
175
176
174
177A
178
T4
190
189
166A
DEPTH=12'
FP (4-10')
NAP=6700 (0-4')
FLU=4200 (0-4')
TCPAH=263.3 (0-4')
BAP=180 (0-4')
BENZ=0.59u (0-4')
DEPTH=16'
NAP=2400 (0-5')
FLU=1400 (0-5')
TCPAH=82 (0-5')
BAP=54 (0-5')
BENZ=1.2u (0-5')
TOL=2.6 (0-5')
ETH=4.1 (0-5')
XYL=15 (0-5')
DEPTH=15'
168
NAP=150 (8-15')
BENZ=0.12u (4-8')
DEPTH=16'
304
NAP=1300 (0-4')
FLU=1200 (0-4')
BENZ=0.26u (0-4')
DEPTH=11'
377
BENZ=0.046u (8-11')
DEPTH=12'
173
NAP=470 (0-4')
FLU=300 (0-4')
BENZ=0.44u (0-4')
DEPTH=6'
172
NAP=130 (4-6')
BENZ=0.21u (4-6')
DEPTH=13'
171
BENZ=0.048u (8-10')
DEPTH=16'
170
FLU=160 (0-4')
BENZ=0.098 (8-10')
DEPTH=11'
169
NAP=200 (4-8')
FLU=130 (4-8')
BENZ=0.24u (4-8')
DEPTH=12'
305
NAP=1500 (4-8')
FLU=930 (4-8')
BENZ=0.55u (4-8')
FP (4-8')
DEPTH=12'
179
FP (8-12')
NAP=420 (8-12')
FLU=240 (8-12')
BENZ=0.21u (8-12')
DEPTH=15'
180
NAP=510 (6-9')
FLU=300 (6-9')
BENZ=0.49u (6-9')
DEPTH=15'
181
NAP=260 (0-4')
FLU=170 (0-4')
BENZ=0.049u (0-4')
DEPTH=16'
182
NAP=330 (4-8')
FLU=320 (4-8')
BENZ=0.047u (4-8')
DEPTH=12'
183
NAP=300 (4-8')
FLU=260 (4-8')
BENZ=0.048u (4-8')
DEPTH=12'
306
NAP=190 (8-12')
FLU=140 (4-8')
BENZ=0.092u (8-12')
DEPTH=12'
186
NAP=520 (4-8')
FLU=330 (5-8')
BENZ=0.21u (4-8')
T5
DEPTH=14'
185
NAP=180 (4-6')
FLU=190 (4-6')
DEPTH=11'
184
NAP=220 (4-8')
FLU=190 (4-8')
BENZ=0.046u (4-8')
307
DEPTH=10'
191
FP(8-10')
DEPTH=14'
192
NAP=2300 (11-14')
FLU=1200 (11-14')
BENZ=0.13 (11-14')
XYL=6.4 (11-14')
BAP=84 (11-14')
DEPTH=16'
308
FP(11-13')
BENZ=0.089u(8-11')
DEPTH=17'
309
FP(16-17')
BENZ=0.049u(9-16')
DEPTH=12'
188
NAP=150 (8-12')
FLU=110 (8-12')
BENZ=0.047u (4-8')
DEPTH=14'
187
BENZ=0.085u (12-14')
LEGEND
PREVIOUSLY PROPOSED EXTENT OF EXCAVATION
178 PHASE I SOIL BORING LOCATION W/ ASSOCIATED CELL NUMBER
189 PHASE II BORING LOCATION W/ ASSOCIATED CELL NUMBER
PHASE I CELL BOUNDARY
PHASE II CELL BOUNDARY
CELL REQUIRING EXCAVATION
FP= FREE PRODUCT
NAP= NAPHTHALENE
FLU= FLUORENE
TCPAH= TOTAL CARCINOGENIC PAHs
BENZ= BENZENE
TOL= TOLUENE
ETH= ETHYLBENZENE
XYL= TOTAL XYLENE
BAP= BENZO(a)PYRENE
NOTE: ALL CONCENTRATIONS ARE IN mg/kg.
-N-
0
20'
SCALE
FIGURE 2
WESTON MANAGERS DESIGNERS/CONSULTANTS
750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061
AREAS REQUIRING EXCAVATION
AREA T4/T5
MOSS-AMERICAN SITE
Milwaukee, Wisconsin
HERNANDD-04/19/01-14:20-J:\CAD93\T00\T3101


DEPTH=12'
300
NAP=200 (0-4')
FLU=220 (0-4')
BENZ=0.17u (0-4')
301
DEPTH=16'
302
BENZ=0.045u (4-8')
DEPTH=11'
303
NAP=590 (0-4')
FLU=380 (0-4')
BENZ=0.081u (4-8')
FP (8-11')
164
175
176
174
177A
178
T4
190
189
166A
DEPTH=12'
FP (4-10')
NAP=6700 (0-4')
FLU=4200 (0-4')
TCPAH=263.3 (0-4')
BAP=180 (0-4')
BENZ=0.59u (0-4')
DEPTH=16'
NAP=2400 (0-5')
FLU=1400 (0-5')
TCPAH=82 (0-5')
BAP=5 (0-5')
BENZ=1.2u (0-5')
TOL=2.6 (0-5')
ETH=4.1 (0-5')
XYL=15 (0-5')
DEPTH=12'
173
NAP=470 (0-4')
FLU=300 (0-4')
BENZ=0.44u (0-4')
DEPTH=6'
172
NAP=130 (4-6')
BENZ=0.21u (4-6')
DEPTH=15'
168
NAP=150 (8-15')
BENZ=0.12u (4-8')
DEPTH=16'
304
NAP=1300 (0-4')
FLU=1200 (0-4')
BENZ=0.26u (0-4')
DEPTH=11'
377
BENZ=0.046u (8-11')
DEPTH=13'
171
BENZ=0.048u (8-10')
DEPTH=16'
170
FLU=160 (0-4')
BENZ=0.098 (8-10')
DEPTH=11'
169
NAP=200 (4-8')
FLU=130 (4-8')
BENZ=0.24u (4-8')
DEPTH=12'
179
FP (8-12')
NAP=420 (8-12')
FLU=240 (8-12')
BENZ=0.21u (8-12')
DEPTH=15'
180
NAP=510 (6-9')
FLU=300 (6-9')
BENZ=0.49u (6-9')
DEPTH=15'
181
NAP=260 (0-4')
FLU=170 (0-4')
BENZ=0.049u (0-4')
DEPTH=16'
182
NAP=330 (4-8')
FLU=320 (4-8')
BENZ=0.047u (4-8')
DEPTH=12'
305
NAP=1500 (4-8')
FLU=930 (4-8')
BENZ=0.55u (4-8')
FP (4-8')
DEPTH=12'
183
NAP=300 (4-8')
FLU=260 (4-8')
BENZ=0.048u (4-8')
DEPTH=12'
306
NAP=190 (8-12')
FLU=140 (4-8')
BENZ=0.092u (8-12')
DEPTH=12'
186
NAP=620 (4-8')
FLU=330 (5-8')
BENZ=0.21u (4-8')
T5
DEPTH=14'
185
NAP=180 (4-6')
FLU=190 (4-6')
DEPTH=12'
184
NAP=220 (4-8')
FLU=190 (4-8')
BENZ=0.046u (4-8')
307
DEPTH=14'
192
NAP=2300 (11-14')
FLU=1200 (11-14')
BENZ=0.13 (11-14')
XYL=6.4 (11-14')
BAP=64 (11-14')
DEPTH=16'
308
FP(11-13')
BENZ=0.089u(8-11')
DEPTH=10'
191
FP(8-10')
DEPTH=12'
188
NAP=150 (8-12')
FLU=110 (8-12')
BENZ=0.047u (4-8')
DEPTH=14'
187
BENZ=0.085u (12-14')
DEPTH=17'
309
FP(16-17')
BENZ=0.049u(9-16')
LEGEND
PREVIOUSLY PROPOSED EXTENT OF EXCAVATION
178 PHASE I SOIL BORING LOCATION W/ ASSOCIATED CELL NUMBER
189 PHASE II BORING LOCATION W/ ASSOCIATED CELL NUMBER
PHASE I CELL BOUNDARY
PHASE II CELL BOUNDARY
CELL REQUIRING EXCAVATION
FP= FREE PRODUCT
NAP= NAPHTHALENE
FLU= FLUORENE
TCPAH= TOTAL CARCINOGENIC PAHs
BENZ= BENZENE
TOL= TOLUENE
ETH= ETHYLBENZENE
XYL= TOTAL XYLENE
BAP= BENZO(a)PYRENE
NOTE: ALL CONCENTRATIONS ARE IN mg/kg.
-N-
0
20'
SCALE
FIGURE 2
WESTON MANAGERS DESIGNERS/CONSULTANTS
750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061
AREAS REQUIRING EXCAVATION
AREA T4/T5
MOSS-AMERICAN SITE
Milwaukee, Wisconsin
HERNANDD-04/19/01-14:20-J:\CAD93\T00\13101



LEGEND

- PREVIOUSLY PROPOSED EXTENT OF EXCAVATION
- 178 ▲ PHASE I SOIL BORING LOCATION W/ ASSOCIATED CELL NUMBER
- 189 ▲ PHASE II BORING LOCATION W/ ASSOCIATED CELL NUMBER
- PHASE I CELL BOUNDARY
- PHASE II CELL BOUNDARY
- CELL REQUIRING EXCAVATION
- PHASE II BORING NOT ADVANCED DUE TO HIGH RIVER STAGE

FP= FREE PRODUCT
NAP= NAPHTHALENE
FLU= FLUORENE
TCPAH= TOTAL CARCINOGENIC PAHs
BENZ= BENZENE
TOL= TOLUENE
ETH= ETHYLBENZENE
XYL= TOTAL XYLENE
BAP= BENZO(a)PYRENE

NOTE: ALL CONCENTRATIONS ARE IN mg/kg.

HERNANDD—04/20/01—13:07—J:\CAD93\100\13201

WESTON MANAGERS DESIGNERS/CONSULTANTS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

FIGURE 3

AREAS REQUIRING EXCAVATION
AREA T6
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

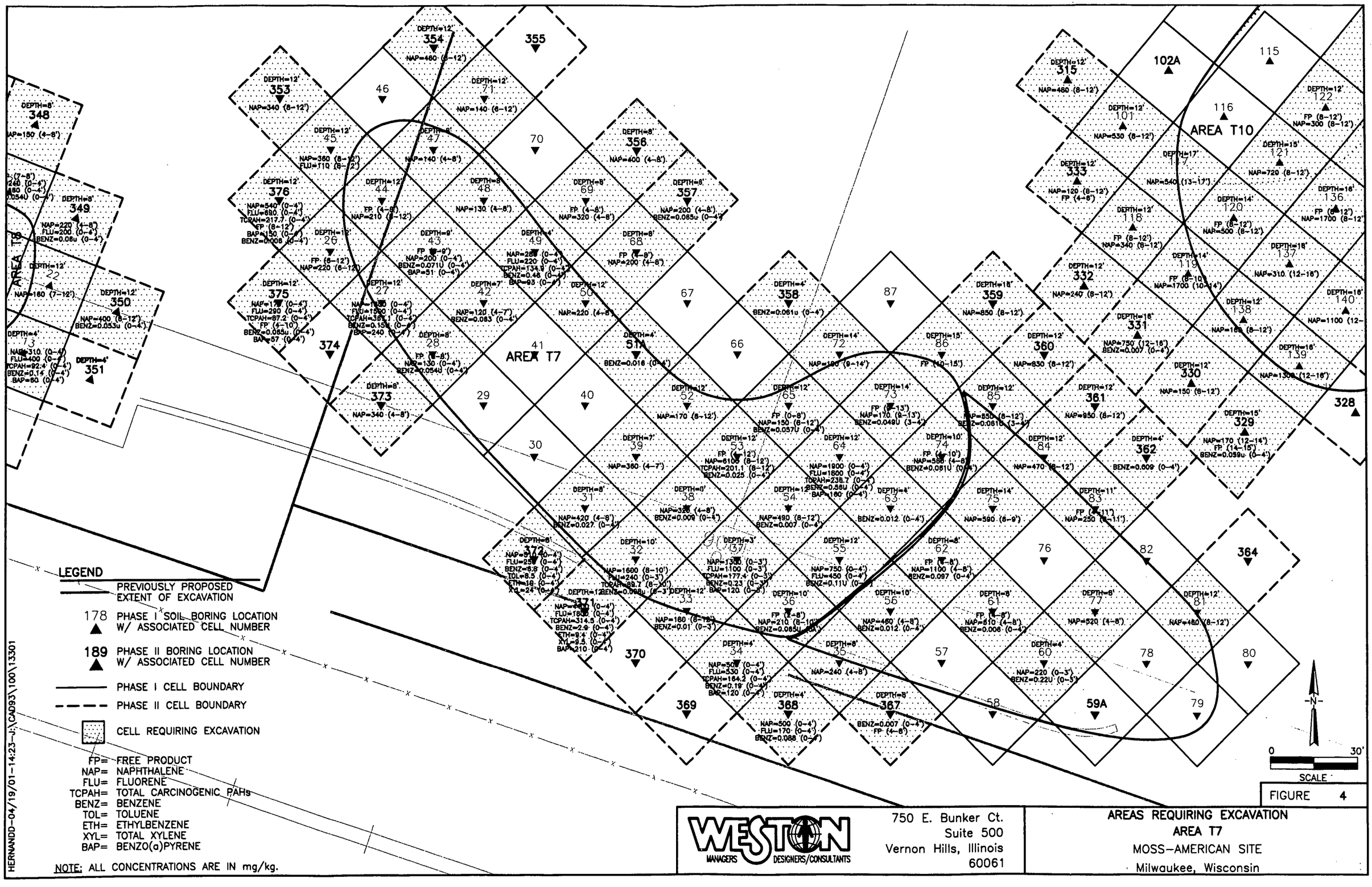
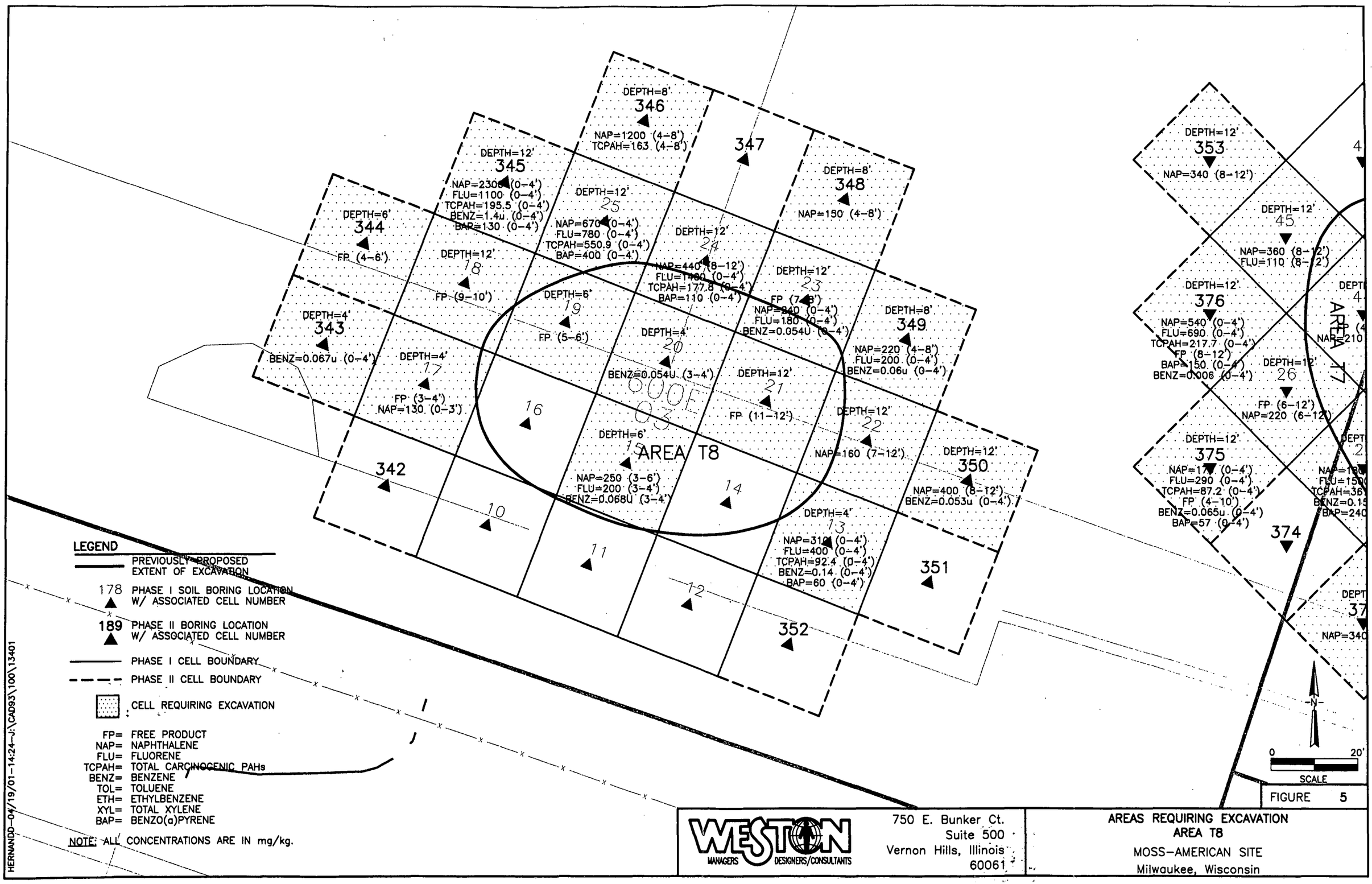


FIGURE 4

WESTON MANAGERS DESIGNERS/CONSULTANTS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

AREAS REQUIRING EXCAVATION
AREA T7
MOSS-AMERICAN SITE
Milwaukee, Wisconsin



LEGEND

- PREVIOUSLY PROPOSED EXTENT OF EXCAVATION
- 178 ▲ PHASE I SOIL BORING LOCATION W/ ASSOCIATED CELL NUMBER
- 189 ▲ PHASE II BORING LOCATION W/ ASSOCIATED CELL NUMBER
- PHASE I CELL BOUNDARY
- PHASE II CELL BOUNDARY
- CELL REQUIRING EXCAVATION

FP= FREE PRODUCT
NAP= NAPHTHALENE
FLU= FLUORENE
TCPAH= TOTAL CARCINOGENIC PAHs
BENZ= BENZENE
TOL= TOLUENE
ETH= ETHYLBENZENE
XYL= TOTAL XYLENE
BAP= BENZO(a)PYRENE

NOTE: ALL CONCENTRATIONS ARE IN mg/kg.

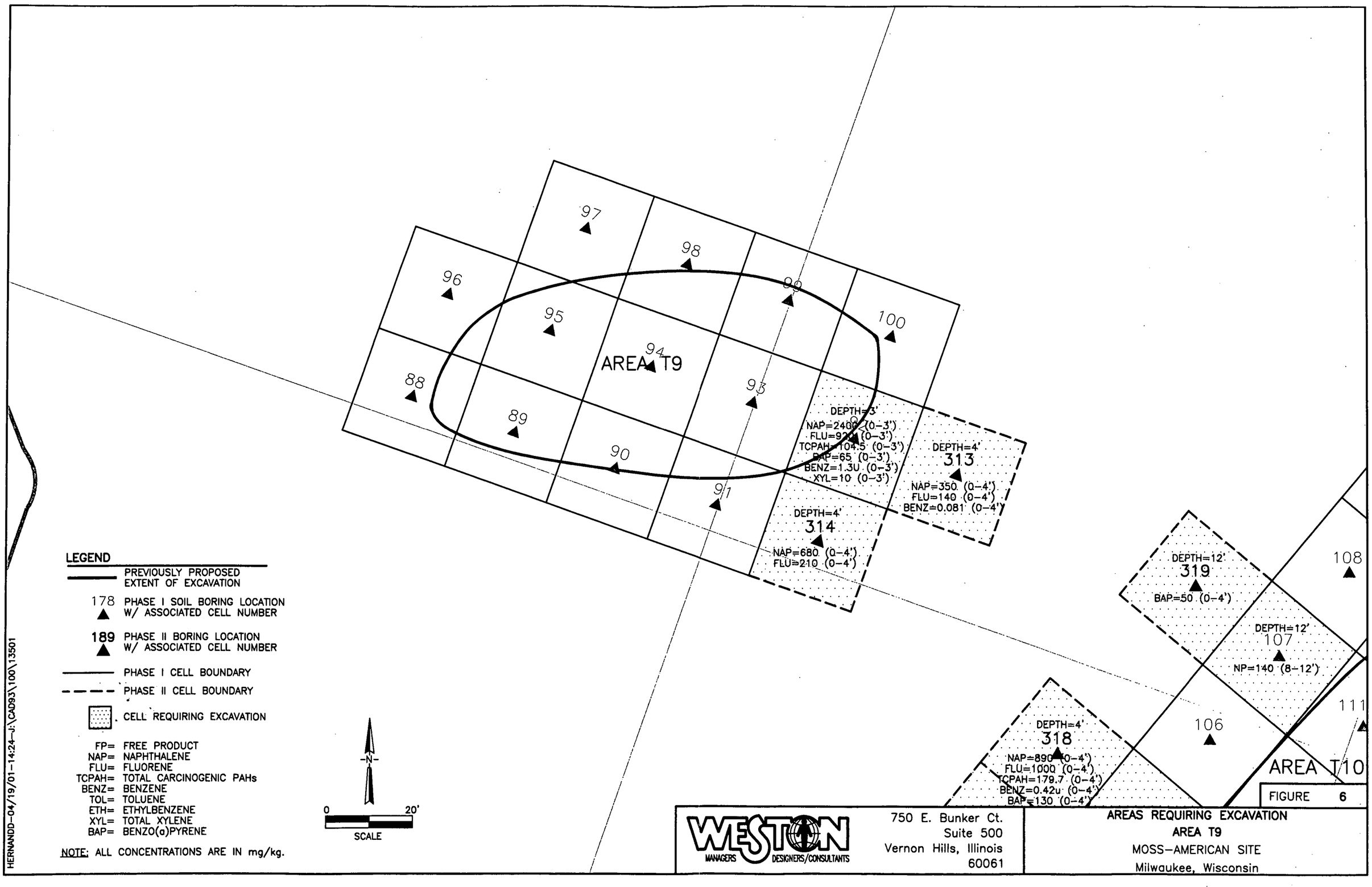
HERNANDD—04/19/01—14:24—J:\CAD93\100\13401

FIGURE 5

WESTON MANAGERS DESIGNERS/CONSULTANTS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

AREAS REQUIRING EXCAVATION
AREA T8
MOSS-AMERICAN SITE
Milwaukee, Wisconsin



WESTON MANAGERS DESIGNERS/CONSULTANTS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

FIGURE 6

AREAS REQUIRING EXCAVATION
AREA T9
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

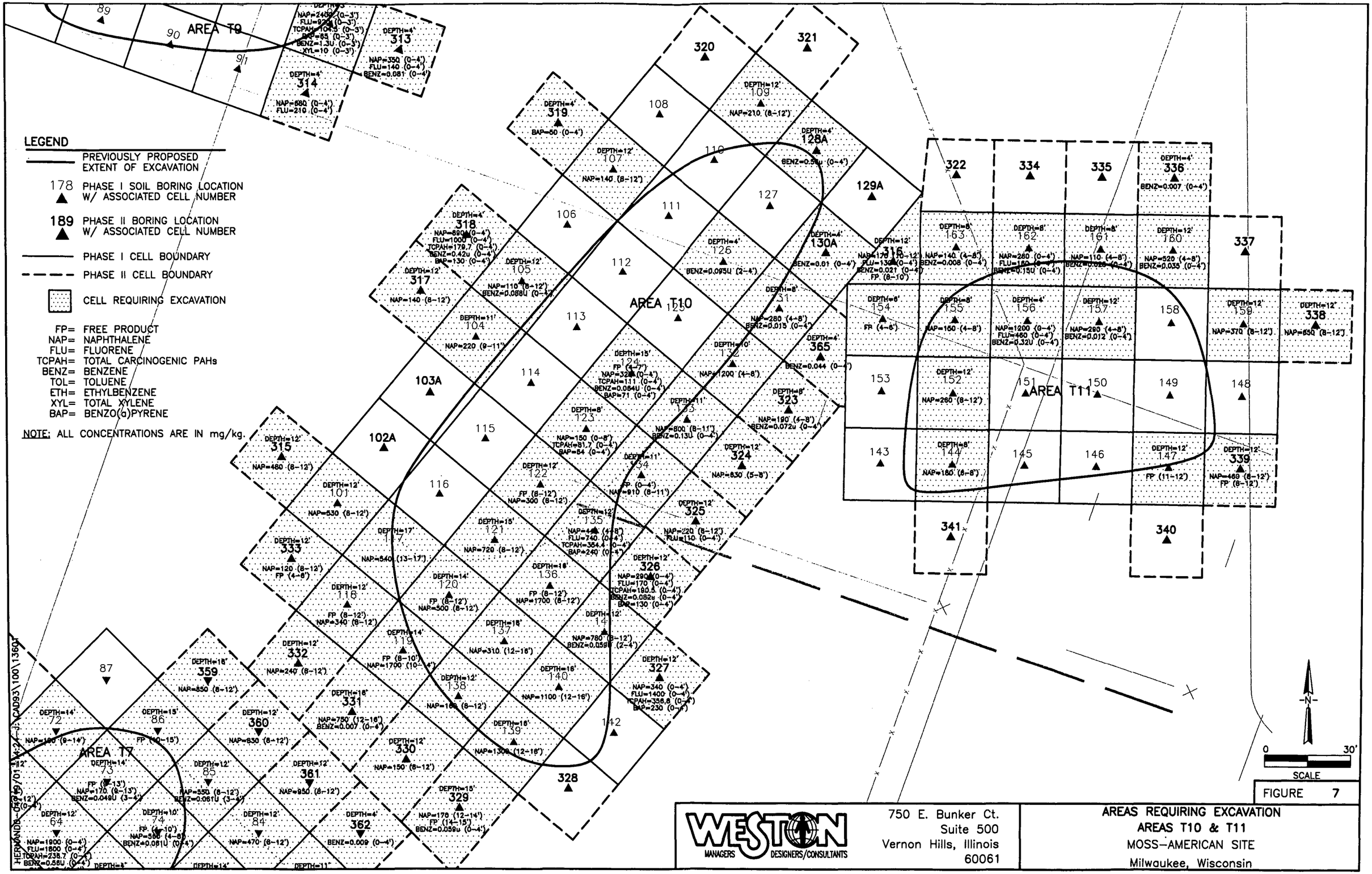


FIGURE 7

WESTON MANAGERS DESIGNERS/CONSULTANTS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

AREAS REQUIRING EXCAVATION
AREAS T10 & T11
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

Excavation Quantities by Area
Moss-American Site
Milwaukee, Wisconsin

	AREA:	*T4/5*	*T6*	*T7*	*T8*	*T9*	*T10*	*T11*	*TOTAL (in-situ)*	*TOTAL (ex-situ)*
Exceeds Excavation Criteria	Type I	4,051	949	8,380	2,106	255	5,787	1,690	23,218	26,700
	Type II	1,065	116	139	0	0	139	185	1,644	1,890
	Type III	1,412	93	1,042	0	0	648	278	3,472	3,993
	Total	6,528	1,157	9,560	2,106	255	6,574	2,153	28,333	32,583
Overburden Material	Type I	208	93	764	394	0	787	93	2,338	2,689
	Type II	394	0	741	347	0	949	162	2,593	2,981
	Type III	787	278	2,199	579	0	2,338	1,064	7,245	8,332
	CLEAN	1,343	0	185	93	0	394	0	2,014	2,316
	Total	2,731	370	3,889	1,412	0	4,468	1,319	14,189	16,318
All Soils	Type I	4,259	1,042	9,144	2,500	255	6,574	1,782	25,556	29,389
	Type II	1,458	116	880	347	0	1,088	347	4,236	4,872
	Type III	2,199	370	3,241	579	0	2,986	1,342	10,717	12,325
	CLEAN	1,343	0	185	93	0	394	0	2,014	2,316
Total Requiring Treatment (in-situ)		7,917	1,528	13,264	3,426	255	10,648	3,472	40,509	
Total Requiring Excavation (in-situ)		9,259	1,528	13,449	3,519	255	11,042	3,472	42,523	
Total Requiring Treatment (ex-situ)		9,104	1,757	15,253	3,940	293	12,245	3,993	46,585	
Total Requiring Excavation (ex-situ)		10,648	1,757	15,466	4,046	293	12,698	3,993	48,901	

NOTE: All values in cubic yards. 15% expansion/overexcavation factor applied to in-situ quantities.

Attachment A

Phase II GeoProbe Sampling Data Summary Table

GeoProbe Sampling Data Summary
Moss-American Site
Milwaukee, Wisconsin

Sample ID / Excavation Standards	Date	Area	Depth Interval	Sample Depth Interval	CPAHs (mg/kg)								Total CPAHs (BAP Eq.)	PAHs (mg/kg)		BTEXs (mg/kg)				Product Free	Soil Type (I, II, or III)
					Benzo(a) pyrene	Dibnezo(a,h) anthracene	Benzo(b) fluoranthene	Benzo(a) anthracene	Indeno(1,2,3-cd) pyrene	Benzo(k) fluoranthen	Chrysene	Benzo(g,h,i) perylene		Naphthalene	Fluorene	Benzene	Toluene	Ethyl benzene	Xylene (Total)		
					48.0	NA	NA	NA	NA	NA	NA	NA	78.0	100.0	100.0	0.0055	1.5	2.9	4.1		
GEO-051-1A	3/9/01	T7	0' - 4'	3' - 3.5'	----	----	----	----	----	----	----	----	----	----	----	0.013	----	----	----		III
GEO-059-1A	3/9/01	T7	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.004 J	----	----	----		III
GEO-102-1A	3/6/01	T10	0' - 4'	2' - 3'	0.1	0.0 J	0.1	0.1	0.1 J	0.0 J	0.2 J	0.1 J	0.114	0.6 U	0.1 J	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-103-1A	3/6/01	T10	0' - 4'	2' - 4'	4.1	0.3 U	5.8	4.9	1.0 J	2.4	5.4 J	3.6 J	5.4	16.0 U	2.0 J	0.002 U	0.0 U	0.0 U	0.0 U		II
GEO-128-1A	3/2/01	T10	0' - 4'	2' - 3'	----	----	----	----	----	----	----	----	----	----	----	0.560 U	----	----	----		III
GEO-128-1AD	3/2/01	T10	0' - 4'	2' - 3'	----	----	----	----	----	----	----	----	----	----	----	0.260 U	----	----	----		III
GEO-129-1A	3/2/01	T10	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.005 J	----	----	----		II
GEO-129-1AD	3/2/01	T10	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.004 J	----	----	----		II
GEO-130-1A	3/2/01	T10	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.067 U	0.1 U	0.1 U	0.1 J		III
GEO-130-1A-MS	3/2/01	T10	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	1.100	1.2	1.2	3.8		III
GEO-130-1A-MSD	3/2/01	T10	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		III
GEO-164-1	2/19/01	T4/5	0' - 4'	2.5' - 3'	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0	0.2 U	0.0 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-164-2	2/19/01	T4/5	4' - 8'	5' - 5.5'	7.9	0.2 U	7.0	18.0	3.2 J	3.6	19.0	2.8 J	10.9	22.0 J	61.0	0.001 U	0.0 U	0.0 U	0.0 U		I
GEO-164-3	2/19/01	T4/5	8' - 12'	9.5' - 10'	0.0 J	0.0 J	0.0 J	0.3 J	0.1 J	0.0 J	0.1 J	0.0 J	0.1	0.3 U	0.1 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-166-2A	2/19/01	T4/5	4' - 8'	7.5' - 8'	----	----	----	----	----	----	----	----	----	----	----	0.001 U	----	----	----		III
GEO-177-1A	2/15/01	T4/5	0' - 4'	0' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.001 U	0.0 U	0.0 U	0.0 U		I
GEO-186-1	2/15/01	T4/5	0' - 4'	0.5' - 1'	0.1	0.0 J	0.0	0.0	0.1 J	0.0 J	0.1 J	0.1 J	0.1	0.3 U	0.1 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-186-2	2/15/01	T4/5	4' - 8'	6' - 6.5'	18.0	0.7 J	16.0	49.0	7.4 J	8.1	44.0	5.9 J	26.0	520.0	330.0	0.210 U	0.2 U	0.4 J	1.2		I
GEO-186-3	2/15/01	T4/5	8' - 12'	9' - 10'	6.0	0.3 J	5.3	16.0	2.6 J	2.7	14.0	2.0 J	8.8	160.0	100.0	0.092 U	0.1 U	0.1 J	0.4 J		I
GEO-186-4	2/15/01	T4/5	12' - 16'	14' - 14.5	0.0 J	0.0 J	0.0 J	0.0	0.0 U	0.0 J	0.1 J	0.0 J	0.0	0.3 U	0.2 J	0.001 J	0.0 U	0.0 J	0.0 J		CLEAN
GEO-186-4-MS	2/15/01	T4/5	12' - 16'	14' - 14.5	0.1	0.1	0.1	0.1	0.3	0.6	0.3	0.5	0.3	8.9	1.1	0.013	0.0	0.0	0.0		III
GEO-186-4-MSD	2/15/01	T4/5	12' - 16'	14' - 14.5	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.5	0.2	8.6	1.0	0.013	0.0	0.0	0.0		III
GEO-187-1	2/15/01	T4/5	0' - 6'	0.5' - 1'	0.0 J	0.0 J	0.0 J	0.0	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.2	0.0 J	0.001 U	0.0 U	0.0 U	0.0 J		CLEAN
GEO-187-2	2/15/01	T4/5	6' - 12'	6.5' - 7'	3.7	0.2 U	3.4	9.1	1.7 J	1.7	8.7	1.4 J	5.2	13.0 J	35.0	0.046 U	0.0 U	0.0 U	0.0 U		II
GEO-187-3	2/15/01	T4/5	12' - 14'	13' - 13.5	0.2	0.0 J	0.2	0.4	0.1 J	0.1	0.4	0.1 J	0.2	4.4	2.6	0.085 U	0.1 J	0.1 J	0.5		III
GEO-187-3D	2/15/01	T4/5	12' - 14'	13' - 13.5	0.1	0.0 U	0.1	0.3	0.0 U	0.0	0.3	0.0 J	0.1	10.0	1.8	0.005	0.0	0.0	0.1		III
GEO-187-4	2/15/01	T4/5	14' - 16'	15' - 15.5	0.1	0.0 J	0.0	0.1	0.0 J	0.0	0.2	0.4 J	0.1	0.9 J	0.7	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-188-1	2/15/01	T4/5	0' - 4'	3.5' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0	0.2 U	0.0 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-188-2	2/15/01	T4/5	4' - 8'	7.5' - 8'	3.0	0.2 J	2.6	7.8	1.2 J	1.4	6.9	1.1 J	4.4	61.0 J	48.0	0.047 U	0.0 U	0.0 U	0.1 J		II
GEO-188-3	2/15/01	T4/5	8' - 12'	8.5' - 9'	6.5	0.2 U	5.9	18.0	2.1 J	3.1	15.0	1.4 J	9.3	150.0	110.0	0.047 U	0.0 J	0.1 J	0.3		I
GEO-189-1	2/15/01	T4/5	0' - 4'	0' - 1.5'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0	0.0	0.0	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-189-2	2/15/01	T4/5	4' - 8'	4.5' - 5'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0 U	0.0	0.2 U	0.0 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-189-3	2/15/01	T4/5	8' - 12'	8.5' - 9'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0	0.2 U	0.0 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-190-1	2/15/01	T4/5	0' - 4'	1' - 1.5'	0.0 U	0.0 U	0.0 J	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-190-2	2/15/01	T4/5	4' - 8'	4.5' - 5'	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-190-3	2/15/01	T4/5	8' - 12'	8.5' - 9'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 U	0.0 J	0.0 U	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-191-1	2/15/01	T4/5	0' - 4'	0.5' - 1'	0.0 J	0.0 J	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-191-2	2/15/01	T4/5	4' - 8'	4.5' - 5'	0.0 U	0.0 U	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-191-2a	2/15/01	T4/5	8' - 10'	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	Y	I
GEO-191-3	2/15/01	T4/5	10' - 16'	13' - 14'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.4 J	0.2 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-193-1A	3/1/01	T6	0' - 4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.006 J	----	----	----		III
GEO-197-1A	3/9/01	T6	0' - 4'	0' - 1'	3.1	0.4	2.6	1.9	2.4	1.1	2.0	2.0	4.2	2.1 J	0.4 J	0.005 J	----	----	----		II
GEO-199-1A	3/9/01	T6	0' - 4'	1' - 2'	----	----	----	----	----	----	----	----	----	----	----	0.005 J	----	----	----		III
GEO-210-3A	3/1/01	T6	8' - 12'	8' - 10'	5.0	0.5 J	4.8	15.0	2.0 J	2.4	14.0	0.7 U	7.7	150.0	63.0	----	----	----	----		I
GEO-219-1A	3/1/01	T6	0' -4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.006 J	----	----	----		II
GEO-221-1A	3/1/01	T6	0' -4'	2' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.003 J	----	----	----		III
GEO-228-1A	3/1/01	T6	0' -4'	3' - 4'	----	----	----	----	----	----	----	----	----	----	----	0.064 U	----	----	----		I
GEO-300-1	2/19/01	T4/5	0' - 4'	3.5' - 4'	13.0	0.9 U	11.0	33.0	4.0 J	5.7	31.0	3.1 J	18.3	200.0 J	220.0	0.170 U	0.2 U	0.4 J	1.0		I
GEO-300-2	2/19/01	T4/5	4' - 8'	6' - 6.5'	1.1	0.1 U	1.0	2.9	0.5 J	0.5	3.2	0.4 J	1.6	28.0 J	17.0	0.051 U	0.1 U	0.1	0.1 J		III
GEO-300-3	2/19/01	T4/5	8' - 12'	8.5' - 9'	2.7	0.2 J	2.6	7.6	0.4 J	1.3	7.3	0.8 J	3.9	46.0 J	44.0	0.054 U	0.1 U	0.1 U	0.1 J		II
GEO-301-1	2/19/01	T4/5	0' - 4'	1' - 1.5'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 U	0.0 U	0.0	0.0	0.2 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-301-2	2/19/01	T4/5	4' - 8'	4.5' - 5'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.2 U	0.0 J	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN
GEO-301-3	2/19/01	T4/5	8' - 12'	8.5' - 9'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 U	0.0 J	0.0 U	0.0	0.3 U	0.0 U	0.001 U	0.0 U	0.0 U	0.0 U		CLEAN

GeoProbe Sampling Data Summary
Moss-American Site
Milwaukee, Wisconsin

Sample ID / Excavation Standards	Date	Area	Depth Interval	Sample Depth Interval	CPAHs (mg/kg)								Total CPAHs (BAP Eq.)	PAHs (mg/kg)		BTEXs (mg/kg)				Free Product	Soil Type (I, II, or III)
					Benzo(a) pyrene	Dibnezo(a,h) anthracene	Benzo(b) fluoranthene	Benzo(a) anthracene	Indeno(1,2,3-cd) pyrene	Benzo(k) fluoranthen	Chrysene	Benzo(g,h,i) perylene		Naphthalene	Fluorene	Benzene	Toluene	Ethyl benzene	Xylene (Total)		
					48.0	NA	NA	NA	NA	NA	NA	NA	78.0	100.0	100.0	0.0055	1.5	2.9	4.1		
GEO-317-1	3/6/01	T10	0' - 4'	2' - 4'	41.0	5.4 J	54.0	89.0	22.0	26.0	93.0	15.0 J	63.3	110.0 J	71.0	0.002 J	0.0 J	0.0 J	0.0		I
GEO-317-2	3/6/01	T10	4' - 8'	7' - 8'	1.5	0.1 U	1.4	4.0	0.6 J	0.7	3.7	0.3 J	2.1	3.7 J	8.9	---	---	---	---		III
GEO-317-3	3/6/01	T10	8' - 12'	9' - 10'	6.2	0.6 U	5.7	17.0	2.1 J	3.2	14.0	1.8 U	9.0	140.0 J	57.0	---	---	---	---		I
GEO-318-1	3/6/01	T10	0' - 3.5'	2' - 3.5'	110.0	6.5 U	100.0	300.0	47.0 J	58.0	270.0	30.0 J	158.8	720.0 J	1000.0	0.400 U	0.6 J	0.7 J	3.1		I
GEO-318-1D	3/6/01	T10	0' - 3.5'	2' - 3.5'	130.0	6.5 U	130.0	310.0	14.0 J	69.0	310.0	19.0 U	179.7	890.0 J	1000.0	0.420 U	0.4 J	0.7 J	3.3		I
GEO-318-2	3/6/01	T10	3.5' - 8'	7' - 8'	1.9	0.2 J	1.7	5.1	0.3 J	0.9	4.5	0.3 J	2.9	19.0 J	14.0	---	---	---	---		III
GEO-318-3	3/6/01	T10	8' - 12'	10' - 11'	0.0 J	0.0 J	0.0 J	0.1 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.7 U	0.1 U	---	---	---	---		III
GEO-319-1	3/6/01	T10	0' - 4'	3' - 4'	50.0	4.0 J	56.0	77.0	26.0	26.0	70.0	15.0 J	70.2	62.0 J	16.0 J	0.002 U	0.0 U	0.0 U	0.0 U		I
GEO-319-2	3/6/01	T10	4' - 8'	6' - 7'	0.0 U	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.7 U	0.1 U	---	---	---	---		III
GEO-319-3	3/6/01	T10	8' - 12'	9' - 10'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 U	0.0 U	0.0 U	0.0	0.7 U	0.1 U	---	---	---	---		III
GEO-320-1	3/6/01	T10	0' - 4'	2' - 3'	1.6	0.2 J	1.7	3.4	0.6 J	0.9	2.7	0.4 J	2.4	15.0 J	4.4	0.001 U	0.0 J	0.0 J	0.0		III
GEO-320-2	3/6/01	T10	4' - 8'	5' - 7'	0.0 U	0.0 U	0.0 J	0.1 J	0.0 U	0.0 J	0.1 J	0.0 U	0.0	0.6 U	0.1 J	---	---	---	---		III
GEO-320-2D	3/6/01	T10	4' - 8'	5' - 7'	0.0 J	0.0 U	0.0 J	0.1	0.0 U	0.0 J	0.1 J	0.0 U	0.1	0.7 U	0.1 J	---	---	---	---		III
GEO-320-3	3/6/01	T10	8' - 12'	10' - 11'	2.4	0.0 U	2.2	5.5	0.0 U	1.2	4.7	0.6	3.2	33.0	22.0	---	---	---	---		II
GEO-321-1	3/6/01	T10	0' - 4'	2' - 4'	0.3	0.1 J	0.4	0.4	0.1 U	0.2	0.5 J	0.3 J	0.5	1.9 U	0.4 J	0.002 J	0.0 J	0.0 U	0.0 J		III
GEO-321-2	3/6/01	T10	4' - 8'	6' - 7'	0.0 J	0.0 U	0.0 U	0.0 J	0.0 U	0.0 U	0.0 J	0.0 U	0.0	0.7 U	0.5 J	---	---	---	---		III
GEO-321-3	3/6/01	T10	8' - 12'	10' - 11'	4.4	0.1 U	4.2	12.0	0.1 U	2.3	9.5	1.3 J	6.1	3.1 U	29.0	---	---	---	---		III
GEO-322-1	3/1/01	T11	0' - 4'	2' - 4'	0.0 J	0.0 U	0.0	0.0 J	0.1 J	0.0 J	0.1 J	0.1 J	0.0	0.4 U	0.0 U	0.001 J	0.0 J	0.0 U	0.0 J		CLEAN
GEO-322-2	3/1/01	T11	4' - 8.5'	4' - 5'	0.2	0.0 J	0.2	0.2	0.1 J	0.1	0.2	0.1 J	0.2	16.0	1.7	---	---	---	---		III
GEO-322-3	3/1/01	T11	8.5 - 11'	9' - 10'	1.6	0.2 J	1.5	3.8	0.8 J	0.8	3.2	0.6 J	2.4	41.0	19.0	---	---	---	---		III
GEO-322-4	3/1/01	T11	11' - 16'	13' - 14'	0.1	0.0 U	0.0	0.1	0.0 U	0.0	0.1 J	0.0 J	0.1	1.3 J	0.6	---	---	---	---		III
GEO-323-1	3/2/01	T10	0' - 4'	2' - 4'	0.1	0.0 U	0.2	0.2	0.1 J	0.1	0.3 J	0.2 J	0.2	1.0 J	0.1 J	0.072 U	0.1 J	0.1 J	0.2 J		III
GEO-323-2	3/2/01	T10	4' - 8'	4' - 5'	4.7	0.1 U	4.1	12.0	1.8	2.2	14.0	1.4 J	6.6	110.0	65.0	---	---	---	---		I
GEO-323-2D	3/2/01	T10	4' - 8'	4' - 5'	7.8	0.7 J	6.8	21.0	3.1	3.7	18.0	2.5 J	11.6	190.0	120.0	---	---	---	---		I
GEO-323-3	3/2/01	T10	8' - 12'	9' - 11'	2.7	0.2 J	2.4	7.0	1.0	1.3	5.8	0.7 J	4.0	73.0	38.0	---	---	---	---		II
GEO-324-1	3/2/01	T10	0' - 5'	3' - 4'	0.2	0.0 J	0.3	0.2	0.3 J	0.1	0.2 J	0.3 J	0.3	1.6 U	0.1 U	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-324-1-MS	3/2/01	T10	0' - 5'	3' - 4'	0.3	0.1 J	0.3	0.2	0.4 J	0.1	0.3 J	0.6 J	0.5	8.1 J	0.8 J	0.017	0.0	0.0	0.0		III
GEO-324-1-MSD	3/2/01	T10	0' - 5'	3' - 4'	0.3	0.1 J	0.3	0.2	0.4 J	0.2	0.4 J	0.7 J	0.5	8.8 J	0.8 J	0.020	0.0	0.0	0.1		III
GEO-324-2	3/2/01	T10	5' - 8'	6.5' - 7.5'	40.0	2.3 J	36.0	100.0	15.0	19.0	92.0	13.0	57.7	630.0	560.0	---	---	---	---		I
GEO-324-3	3/2/01	T10	8' - 12'	10' - 11'	8.0	0.8	6.9	19.0	2.9	3.9	14.0	1.7 J	11.8	220.0	81.0	---	---	---	---		I
GEO-324-3D	3/2/01	T10	8' - 12'	10' - 11'	40.0	4.0	35.0	99.0	14.0	20.0	66.0	8.2	59.1	1200.0	400.0	---	---	---	---		I
GEO-325-1	3/2/01	T10	0' - 4'	2' - 4'	20.0	1.8 J	19.0	49.0	6.2	9.8	44.0	4.5 J	29.4	30.0 J	110.0	0.004 J	0.0 J	0.0 J	0.0		I
GEO-325-2	3/2/01	T10	4' - 6'	4' - 5'	11.0	1.3 J	11.0	22.0	9.8	5.0	21.0	8.3 J	16.7	46.0 J	41.0	---	---	---	---		I
GEO-325-3	3/2/01	T10	6' - 12'	8' - 10'	8.6	0.9	7.4	22.0	3.0	4.3	24.0	1.8 J	12.8	220.0	88.0	---	---	---	---		I
GEO-326-1	3/2/01	T10	0' - 4'	3' - 4'	130.0	15.0	110.0	280.0	56.0	62.0	310.0	32.0 J	190.5	130.0 J	170.0	0.082 U	0.1 J	0.1 J	0.3 J		I
GEO-326-2	3/2/01	T10	4' - 8'	6' - 8'	7.3	0.8	6.4	19.0	2.8	3.7	14.0	1.7 J	11.0	91.0	72.0	---	---	---	---		I
GEO-326-2D	3/2/01	T10	4' - 8'	6' - 8'	7.3	0.6 U	6.5	20.0	2.2 J	3.8	15.0	1.9 U	10.5	98.0 J	77.0	---	---	---	---		I
GEO-326-3	3/2/01	T10	8' - 12'	10' - 11'	7.6	0.9 J	6.9	21.0	0.6 U	3.8	17.0	2.0 J	11.4	290.0	75.0	---	---	---	---		I
GEO-327-1	3/5/01	T10	0' - 4'	3' - 4'	230.0	31.0	190.0	650.0	100.0	110.0	660.0	54.0	356.8	340.0 J	1400.0	0.002 U	0.0 J	0.0	0.0		I
GEO-327-2	3/5/01	T10	4' - 8'	6' - 8'	39.0	5.8	31.0	120.0	16.0	18.0	120.0	7.8 J	61.8	39.0 J	460.0	---	---	---	---		I
GEO-327-3	3/5/01	T10	8' - 12'	9' - 10'	6.8	0.8	5.9	18.0	2.6	3.4	13.0	1.6 J	10.3	170.0	68.0	---	---	---	---		I
GEO-328-1	3/5/01	T10	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 J	0.0 U	0.0 U	0.0	0.7 U	0.7 U	0.004 J	0.0	0.0 J	0.0 J		III
GEO-328-2	3/5/01	T10	4' - 8'	6' - 8'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 J	0.0 U	0.0 U	0.0	0.7 U	0.1 U	---	---	---	---		III
GEO-328-3	3/5/01	T10	8' - 12'	8' - 10'	2.2	0.3 J	1.9	5.6	1.1 J	1.1	4.4	0.6 J	3.4	3.2 U	2.2 J	---	---	---	---		II
GEO-328-4	3/5/01	T10	12' - 14'	12' - 13.5	1.4	0.2 J	1.2	3.7	0.6 J	0.7	3.3	0.3 J	2.1	13.0 J	14.0	---	---	---	---		III
GEO-329-1	3/5/01	T7/10	0' - 4'	3' - 4'	3.3	0.2 J	3.0	3.7	3.6	1.1	2.8	3.6	4.6	46.0	4.7	0.004 J	0.0	0.0 J	0.0		II
GEO-329-1D	3/5/01	T7/10	0' - 4'	3' - 4'	3.0	0.2 J	2.7	3.6	3.3	1.0	2.7	2.8	4.1	40.0	4.8	0.059 U	0.1 U	0.1 U	0.2 J		II
GEO-329-2	3/5/01	T7/10	4' - 8'	4.5' - 6'	0.0 J	0.0 U	0.0 J	0.1 J	0.1 J	0.0 J	0.0 U	0.0 J	0.0	0.7 U	0.1 U	---	---	---	---		III
GEO-329-3	3/5/01	T7/10	8' - 12'	10' - 11'	13.0	1.8 J	12.0	35.0	6.1 J	6.4	29.0	3.0 J	20.2	240.0 J	120.0	---	---	---	---		I
GEO-329-4	3/5/01	T7/10	12' - 14'	13' - 15'	14.0 J	2.8 U	14.0	41.0	8.5 J	7.6 J	25.0 J	8.3 U	21.9	710.0 J	160.0	---	---	---	---		I
GEO-329-4a	3/5/01	T7/10	14' - 15'	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Y	I
GEO-330-1	3/5/01	T7/10	0' - 4'	3' - 4'	5.2	0.7	5.4	9.2	2.9	2.8	9.3	1.9 J	7.7	4.6 J	7.5	0.002 J	0.0	0.0 J	0.0		I

GeoProbe Sampling Data Summary
Moss-American Site
Milwaukee, Wisconsin

Sample ID / Excavation Standards	Date	Area	Depth Interval	Sample Depth Interval	CPAHs (mg/kg)								Total CPAHs (BAP Eq.)	PAHs (mg/kg)		BTEXs (mg/kg)				Free Product	Soil Type (I, II, or III)
					Benzo(a) pyrene	Dibnezo(a,h) anthracene	Benzo(b) fluoranthene	Benzo(a) anthracene	Indeno(1,2,3-cd) pyrene	Benzo(k) fluoranthen	Chrysene	Benzo(g,h,i) perylene		Naphthalene	Fluorene	Benzene	Toluene	Ethyl benzene	Xylene (Total)		
					48.0	NA	NA	NA	NA	NA	NA	NA	78.0	100.0	100.0	0.0055	1.5	2.9	4.1		
GEO-330-2	3/5/01	T7/10	4' - 8'	5' - 8'	9.4	0.9 J	8.9	28.0	1.4 J	4.9	19.0	2.0 J	**14.2**	**53.0 J**	110.0	---	---	---	---		I
GEO-330-2D	3/5/01	T7/10	4' - 8'	5' - 8'	15.0	2.1 J	14.0	43.0	4.8 J	8.2	28.0	3.4 J	**23.4**	**42.0 J**	150.0	---	---	---	---		I
GEO-330-3	3/5/01	T7/10	8' - 12'	9' - 11'	8.9	0.8	8.1	27.0	2.7	4.6	18.0	2.1	**13.5**	**150.0**	110.0	---	---	---	---		I
GEO-330-3-MS	3/5/01	T7/10	8' - 12'	9' - 11'	6.5	0.7	5.8	19.0	2.3	3.3	14.0	1.9 J	**10.0**	120.0	80.0	---	---	---	---		I
GEO-330-3-MSD	3/5/01	T7/10	8' - 12'	9' - 11'	7.0	0.7	6.5	22.0	2.1	3.6	17.0	1.9 J	**10.8**	150.0	92.0	---	---	---	---		I
GEO-331-1	3/5/01	T7/10	0' - 4'	2' - 3'	1.1	0.0 U	1.7	1.1	1.0 J	0.4	1.3	0.8 J	1.5	**5.0 J**	1.1 J	0.007	0.0	0.0 J	0.0		III
GEO-331-2	3/5/01	T7/10	4' - 8'	5' - 6'	0.1 J	0.0 U	0.0 J	0.1	0.1 J	0.0 J	0.2 J	0.0 J	0.1	**23.0**	0.8	---	---	---	---		III
GEO-331-3	3/5/01	T7/10	8' - 12'	9' - 10'	13.0	1.6 J	12.0	37.0	4.5 J	6.5	30.0	3.1 J	**20.0**	**160.0 J**	140.0	---	---	---	---		I
GEO-331-4	3/5/01	T7/10	12' - 16'	14' - 16'	15.0	1.9 J	14.0	44.0	6.6 J	7.6	28.0	3.6 J	**23.5**	**750.0**	190.0	---	---	---	---		I
GEO-331-4D	3/5/01	T7/10	12' - 16'	14' - 16'	14.0	1.7 J	13.0	40.0	5.8 J	7.0	23.0	3.7 J	**21.7**	**680.0**	170.0	---	---	---	---		I
GEO-332-1	3/5/01	T7/10	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 J	0.0 U	0.1 J	0.0	**0.7 U**	0.1 U	0.001 U	0.0 J	0.0 U	0.0 U		III
GEO-332-1D	3/5/01	T7/10	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 U	0.0 U	0.0 J	0.0 U	0.0	**0.7 U**	0.1 U	0.004 J	0.0	0.0 J	0.0		III
GEO-332-2	3/5/01	T7/10	4' - 8'	6' - 7'	3.7	0.4 J	3.4	11.0	1.4	1.9	11.0	0.9 J	5.7	**140.0**	48.0	---	---	---	---		I
GEO-332-3	3/5/01	T7/10	8' - 12'	10' - 11'	5.2	0.6 J	4.6	14.0	2.0	2.6	10.0	1.2 J	**7.9**	**240.0**	66.0	---	---	---	---		I
GEO-333-1	3/6/01	T10	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0 U	0.0	**0.7 U**	0.1 U	0.004 J	0.0	0.0 J	0.0		III
GEO-333-1a	3/6/01	T10	4' - 6'	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Y	I
GEO-333-2	3/6/01	T10	6' - 8'	7' - 8'	2.3	0.1 U	2.1	6.1	0.1 U	1.1	4.7	0.5 J	3.2	**34.0**	20.0	---	---	---	---		II
GEO-333-3	3/6/01	T10	8' - 12'	9' - 10'	3.2	0.4 J	2.9	9.0	1.3 J	1.6	8.0	0.8 J	4.9	**120.0**	32.0	---	---	---	---		I
GEO-334-1	3/1/01	T11	0' - 4'	1' - 2'	0.1	0.0 J	0.2	0.1	0.1	0.1	0.1	0.1 J	0.2	**0.8 J**	0.1 J	0.005 J	0.0 J	0.0 J	0.0 J		III
GEO-334-2	3/1/01	T11	4' - 8'	4' - 5'	0.0 J	0.0 J	0.0	0.0 J	0.0 J	0.0 J	0.1 J	0.0 J	0.1	**8.6**	0.5	---	---	---	---		III
GEO-335-1	3/1/01	T11	0' - 4'	2' - 4'	0.9	0.1	0.9	1.7	0.5	0.5	2.0	0.4	1.3	**7.1**	5.0	0.003 J	0.0 J	0.0 J	0.0 J		III
GEO-335-2	3/1/01	T11	4' - 8'	5' - 6'	1.3	0.1 J	1.3	3.8	0.6 J	0.7	3.2	0.4 J	2.0	**77.0**	29.0	---	---	---	---		III
GEO-336-1	3/1/01	T11	0' - 4'	3' - 4'	2.9	0.2 J	2.9	7.8	1.1 J	1.5	6.6	0.9 J	4.3	**5.1 J**	13.0	0.007 J	0.0	0.0	0.1		II
GEO-336-2	3/1/01	T11	4' - 8'	5' - 6'	4.7	0.3 J	4.5	13.0	0.1 U	2.5	12.0	1.3 J	**6.8**	**49.0**	39.0	---	---	---	---		I
GEO-336-3	3/1/01	T11	8' - 12'	8' - 9'	0.5	0.0 U	0.5	1.5	0.3 J	0.3	1.3	0.2 J	0.8	**17.0 J**	9.0	---	---	---	---		III
GEO-337-1	3/2/01	T11	0' - 6'	1' - 2'	0.1	0.0 U	0.1	0.0 J	0.0 J	0.0 J	0.1 J	0.1 J	0.1	**0.8 U**	0.1 J	0.002 U	0.0 U	0.0 U	0.0 U		III
GEO-337-2	3/2/01	T11	6' - 8.5'	6' - 8'	7.0	0.6 U	6.0	17.0	1.3 U	3.4	14.0	1.9 U	**9.7**	**34.0 U**	62.0	---	---	---	---		I
GEO-337-3	3/2/01	T11	8.5' - 12'	10' - 12'	0.2	0.0 U	0.2	0.5	0.1 J	0.1	0.5	0.1 J	0.3	**1.8 J**	2.2	---	---	---	---		III
GEO-338-1	3/2/01	T11	0' - 4'	2' - 3'	0.9	0.2 J	1.3	0.9	1.0 J	0.5	1.1 J	1.1 J	1.4	**4.8 J**	0.7 J	0.003 J	0.0 J	0.0 U	0.0 J		III
GEO-338-2	3/2/01	T11	4' - 8'	4' - 6'	0.2	0.0 J	0.1	0.5	0.1 J	0.1	0.4	0.0 U	0.2	**0.7 U**	2.2	---	---	---	---		III
GEO-338-3	3/2/01	T11	8' - 12'	10' - 12'	34.0	4.6 J	30.0	91.0	13.0 J	17.0	75.0	6.3 J	**52.2**	**650.0**	300.0	---	---	---	---		I
GEO-339-1	3/2/01	T11	0' - 4'	2' - 3'	1.0	0.1 J	1.1	0.7	1.5 J	0.5	1.5 J	1.5 J	1.4	**4.8 J**	0.4 U	0.002 J	0.0 U	0.0 U	0.0 U		III
GEO-339-2	3/2/01	T11	4' - 8'	4' - 6'	1.1	0.2	1.0	2.5	0.4	0.6	2.7	0.2 J	1.6	**1.0 J**	2.8	---	---	---	---		III
GEO-339-3	3/2/01	T11	8' - 12'	11' - 12'	16.0	1.1 U	15.0	44.0	7.5 J	8.4	32.0	4.3 J	**23.3**	**460.0 J**	160.0	---	---	---	---	Y	I
GEO-339-4	3/2/01	T11	12' - 16'	12' - 13'	1.7	0.1 U	1.4	4.2	0.7 J	0.8	4.0	0.4 J	2.4	**30.0 J**	14.0	---	---	---	---		III
GEO-340-1	3/2/01	T11	0' - 4'	1' - 3'	0.8	0.2 J	1.0	0.8	0.8 J	0.4	0.8 J	0.9 J	1.2	**3.5 U**	0.6 J	0.002 U	0.0 J	0.0 U	0.0 U		III
GEO-340-1D	3/2/01	T11	0' - 4'	1' - 3'	0.7	0.1 J	0.8	0.6	0.8 J	0.3	0.9 J	1.0 J	1.0	**3.6 U**	0.4 J	0.002 J	0.0 J	0.0 U	0.0 U		III
GEO-340-2	3/2/01	T11	4' - 8'	4' - 6'	4.3	0.5 J	3.7	10.0	1.8	2.1	9.3	1.0 J	**6.4**	**3.7 J**	25.0	---	---	---	---		I
GEO-340-3	3/2/01	T11	8' - 12'	8' - 10'	0.0	0.0 J	0.0	0.1	0.0 J	0.0	0.1	0.0 J	0.0	0.3	0.2	---	---	---	---		CLEAN
GEO-340-3-MS	3/2/01	T11	8' - 12'	8' - 10'	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.5	0.2	**8.4**	1.0	---	---	---	---		III
GEO-340-3-MSD	3/2/01	T11	8' - 12'	8' - 10'	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.5	0.2	**7.7**	1.0	---	---	---	---		III
GEO-341-1	3/1/01	T11	0' - 4'	2' - 3'	1.3	0.3 J	2.1	1.2	1.8	0.8	1.5	2.3	2.1	**6.6 J**	0.9 J	0.002 J	0.0 J	0.0 U	0.0 J		III
GEO-341-2	3/1/01	T11	4' - 8'	6' - 8'	1.0	0.2 J	1.0	2.9	0.5 J	0.5	3.0	0.3 J	1.6	**9.6 J**	11.0	---	---	---	---		III
GEO-342-1	3/8/01	T8	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.1 J	0.0 J	0.0 U	0.1 J	0.1	**0.7 U**	0.1 U	0.001 U	0.0 J	0.0 U	0.0 U		III
GEO-343-1	3/8/01	T8	0' - 4'	3' - 4'	11.0	1.4 J	12.0	8.9	7.9	4.9	13.0	6.1 J	**15.3**	**18.0 J**	6.8 J	0.002 J	0.0 J	0.0 J	0.0		I
GEO-343-1D	3/8/01	T8	0' - 4'	3' - 4'	15.0	1.5 U	15.0	9.8	9.2	5.7	17.0	6.7	**19.2**	**20.0 J**	8.1	0.067 U	0.1 U	0.1 J	0.3 J		I
GEO-344-1	3/8/01	T8	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.1 J	0.1 J	0.0 J	0.1 J	0.1 J	0.1	**9.9**	1.7	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-344-1a	3/8/01	T8	4' - 6'	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	Y	I
GEO-344-2	3/8/01	T8	6' - 8'	7' - 8'	5.6	0.6	5.1	14.0	2.2	2.9	12.0	1.4 J	**8.4**	**7.8 J**	41.0	---	---	---	---		I
GEO-344-3	3/8/01	T8	8' - 12'	11' - 12'	5.3	0.7 J	5.1	15.0	2.3 J	2.8	12.0	1.5 J	**8.3**	**14.0 U**	47.0	---	---	---	---		I
GEO-344-4	3/8/01	T8	12' - 16'	13' - 14'	0.0 J	0.0 J	0.0 J	0.1	0.0 J	0.0 J	0.1 J	0.0 U	0.1	**0.6 U**	0.1 J	---	---	---	---		III
GEO-345-1	3/8/01	T8	0' - 4'	2.5' - 3.5'	130.0	13.0 J	120.0	340.0	53.0 J	69.0	530.0	31.0 J	195.5	2300.0	1100.0	1400 U	1.4 U	1.4 U	1.4 U		I

GeoProbe Sampling Data Summary
Moss-American Site
Milwaukee, Wisconsin

Sample ID / Excavation Standards	Date	Area	Depth Interval	Sample Depth Interval	CPAHs (mg/kg)								Total CPAHs (BAP Eq.)	PAHs (mg/kg)		BTEXs (mg/kg)				Free Product	Soil Type (I, II, or III)
					Benzo(a) pyrene	Dibnezo(a,h) anthracene	Benzo(b) fluoranthene	Benzo(a) anthracene	Indeno(1,2,3-cd) pyrene	Benzo(k) fluoranthen	Chrysene	Benzo(g,h,i) perylene		Naphthalene	Fluorene	Benzene	Toluene	Ethyl benzene	Xylene (Total)		
					48.0	NA	NA	NA	NA	NA	NA	NA	78.0	100.0	100.0	0.0055	1.5	2.9	4.1		
GEO-345-2	3/8/01	T8	4' - 8'	6' - 7'	5.0	0.6	4.5	12.0	2.3	2.5	14.0	1.3 J	7.5	82.0	39.0	----	----	----	----		I
GEO-345-3	3/8/01	T8	8' - 12'	10' - 11'	8.8	1.3 J	7.8	21.0	1.6 J	4.3	20.0	2.1	13.2	150.0	66.0	----	----	----	----		I
GEO-346-1	3/8/01	T8	0' - 4'	3' - 4'	3.5	0.2 U	5.8	4.4	4.2 J	2.5	6.7	4.3 J	5.1	13.0 U	4.3 J	0.004 J	0.0	0.0	0.0		II
GEO-346-1-MS	3/8/01	T8	0' - 4'	3' - 4'	4.4	0.2 U	7.1	5.3	5.3 J	3.1	8.7	5.0 J	6.3	17.0 J	6.1 J	0.029	0.0	0.0	0.1		I
GEO-346-1-MSD	3/8/01	T8	0' - 4'	3' - 4'	3.7	0.8 J	5.7	4.6	4.5 J	2.6	6.3	4.2 J	6.0	17.0 J	5.3 J	----	----	----	----		II
GEO-346-2	3/8/01	T8	4' - 8'	5' - 6'	120.0	3.2 U	110.0	240.0	56.0 J	56.0	260.0	36.0 J	163.0	1200.0 J	550.0	----	----	----	----		I
GEO-346-3	3/8/01	T8	8' - 12'	10' - 12'	0.1 J	0.0 U	0.0 J	0.1	0.0 J	0.0 J	0.1 J	0.1 J	0.1	0.6 U	0.2 J	----	----	----	----		III
GEO-347-1	3/8/01	T8	0' - 4'	3' - 4'	0.0 U	0.0 U	0.0 U	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0	0.6 U	0.1 U	0.002 J	0.0 J	0.0 J	0.0 J		III
GEO-347-2	3/8/01	T8	4' - 8'	6.5' - 7.5'	7.5	0.5 U	6.6	17.0	1.5 J	3.7	18.0	2.6 J	10.3	48.0 J	44.0	----	----	----	----		I
GEO-347-3	3/8/01	T8	8' - 12'	8.5' - 9.5'	1.5	0.2	1.3	3.3	0.7	0.7	3.2	0.4	2.2	20.0	9.6	----	----	----	----		III
GEO-348-1	3/7/01	T8	0' - 4'	3' - 4'	5.7	0.6 J	4.6	1.8	4.3	1.4	2.8	3.2	7.3	8.4 J	1.2 J	0.001 U	0.0 J	0.0 J	0.0 J		I
GEO-348-2	3/7/01	T8	4' - 8'	6' - 7'	6.2	0.8 J	5.8	16.0	3.2 J	3.1	17.0	1.7 J	9.6	150.0 J	47.0	----	----	----	----		I
GEO-348-3	3/7/01	T8	8' - 12'	0.5' - 11.5	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.1 J	0.0 U	0.0	0.6 U	0.1 U	----	----	----	----		III
GEO-349-1	3/7/01	T8	0' - 4'	2' - 3'	22.0	3.0 J	21.0	61.0	11.0 J	12.0	75.0	5.2 J	34.5	180.0 J	200.0	0.060 U	0.1 U	0.1 J	0.3		I
GEO-349-2	3/7/01	T8	4' - 8'	5' - 6'	19.0	2.3 J	18.0	46.0	10.0 J	9.5	48.0	5.4 J	28.8	220.0 J	120.0	----	----	----	----		I
GEO-349-3	3/7/01	T8	8' - 12'	9' - 10'	0.4	0.1 J	0.4	0.9	0.2 J	0.2	1.0	0.1 J	0.6	11.0	2.6	----	----	----	----		III
GEO-350-1	3/7/01	T8	0' - 4'	2' - 3'	28.0	2.0 J	28.0	64.0	14.0 J	15.0	74.0	8.4 J	40.8	74.0 J	67.0	0.051 U	0.1 U	0.1 U	0.1 U		I
GEO-350-1D	3/7/01	T8	0' - 4'	2' - 3'	39.0	3.3 J	39.0	81.0	20.0	21.0	88.0	12.0	56.6	80.0 J	61.0	0.053 U	0.1 U	0.1 U	0.1 U		I
GEO-350-2	3/7/01	T8	4' - 8'	6' - 7'	25.0	2.6 J	23.0	60.0	11.0	13.0	67.0	7.9 J	37.2	320.0	160.0	----	----	----	----		I
GEO-350-3	3/7/01	T8	8' - 12'	10' - 11'	23.0	2.5 J	21.0	55.0	10.0	12.0	52.0	6.9 J	34.3	400.0	150.0	----	----	----	----		I
GEO-351-1	3/8/01	T8	0' - 4'	2' - 3'	0.4	0.0 J	0.3	0.8	0.2 J	0.2	0.9	0.1 J	0.5	0.7 U	0.5 J	0.002 J	0.0 J	0.0 J	0.0 J		III
GEO-352-1	3/8/01	T8	0' - 4'	2' - 3'	0.2	0.1 J	0.3	0.2	0.3	0.1	0.3	0.5	0.4	1.4 J	0.1 J	0.001 U	0.0 J	0.0 U	0.0 U		III
GEO-353-1	3/7/01	T7	0' - 4'	2' - 3'	0.1 J	0.0 J	0.1	0.1 J	0.1 J	0.0 J	0.1 J	0.1 J	0.1	4.8 J	0.1 U	0.001 J	0.0 J	0.0 J	0.0		III
GEO-353-2	3/7/01	T7	4' - 8'	7' - 8'	15.0	2.0 J	13.0	37.0	3.0 J	7.0	34.0	4.8 J	22.4	330.0 J	97.0	----	----	----	----		I
GEO-353-3	3/7/01	T7	8' - 12'	9.5' - 10.5	13.0	1.8 J	12.0	33.0	6.3	6.5	34.0	3.7 J	20.0	340.0	89.0	----	----	----	----		I
GEO-353-3-MS	3/7/01	T7	8' - 12'	9.5' - 10.5	5.6	0.9 J	5.3	15.0	2.6 J	2.8	16.0	1.7 J	8.9	150.0 J	41.0	----	----	----	----		I
GEO-353-3-MSD	3/7/01	T7	8' - 12'	9.5' - 10.5	6.0	1.0 J	5.4	15.0	3.0 J	2.9	15.0	2.1 J	9.4	160.0	41.0	----	----	----	----		I
GEO-354-1	3/7/01	T7	0' - 4'	3' - 4'	1.5	0.2	1.3	2.3	0.5	0.7	3.3	0.4	2.1	0.6 U	0.1 J	0.003 J	0.0	0.0 J	0.0 J		III
GEO-354-2	3/7/01	T7	4' - 8'	5.5' - 6.5'	2.6	0.2 J	2.3	6.5	1.1	1.2	6.8	0.8 J	3.8	24.0	18.0	----	----	----	----		II
GEO-354-3	3/7/01	T7	8' - 12'	9' - 10'	21.0	3.1 J	19.0	55.0	2.9 J	10.0	66.0	5.5 J	32.0	460.0 J	130.0	----	----	----	----		I
GEO-355-1	3/7/01	T7	0' - 4'	3' - 4'	0.0 J	0.0 J	0.0 J	0.0 J	0.1 J	0.0 U	0.0 J	0.1 J	0.0	0.6 U	0.1 U	0.002 J	0.0 J	0.0 J	0.0 J		III
GEO-355-2	3/7/01	T7	4' - 8'	4' - 8'	0.5	0.0 J	0.5	1.3	0.3	0.2	1.4	0.3 J	0.7	3.2 J	3.4	----	----	----	----		III
GEO-355-3	3/7/01	T7	8' - 12'	10' - 11'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.1 J	0.0 J	0.0	0.7 U	0.1 J	----	----	----	----		III
GEO-356-1	3/7/01	T7	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.1 J	0.0 J	0.1 J	0.1 J	0.0	0.7 U	0.1 U	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-356-2	3/7/01	T7	4' - 8'	5.5' - 6.5'	6.1	0.9 J	5.3	16.0	2.6 J	2.8	22.0	1.7 J	9.5	90.0 J	44.0	----	----	----	----		I
GEO-356-2D	3/7/01	T7	4' - 8'	5.5' - 6.5'	28.0	2.9 J	25.0	77.0	12.0 J	13.0	93.0	8.1 J	42.5	400.0	200.0	----	----	----	----		I
GEO-357-1	3/7/01	T7	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0 J	0.0	32.0	3.0	0.065 U	0.1 U	0.1 U	0.1 U		III
GEO-357-2	3/7/01	T7	4' - 8'	6.5' - 7.5'	11.0	1.5 J	9.4	25.0	5.1 J	5.1	26.0	3.2 J	16.5	200.0	67.0	----	----	----	----		I
GEO-358-1	3/7/01	T7	0' - 4'	3' - 4'	0.0 U	0.0 U	0.0 J	0.0 U	0.0 U	0.0 U	0.0 U	0.0 U	0.0	2.2 J	0.2 J	0.061 U	0.1 U	0.1 J	0.1 U		III
GEO-358-2	3/7/01	T7	4' - 8'	6' - 8'	1.0	0.1	0.9	2.5	0.5	0.5	2.7	0.3 J	1.5	4.3 J	6.0	----	----	----	----		III
GEO-358-2D	3/7/01	T7	4' - 8'	6' - 8'	0.2	0.0 J	0.2	0.6	0.0 U	0.1	0.6	0.1 J	0.3	2.3 J	2.5	----	----	----	----		III
GEO-358-3	3/7/01	T7	8' - 12'	9' - 10'	11.0	1.5 J	11.0	29.0	4.9 J	5.7	32.0	2.7 J	17.1	61.0 J	59.0	----	----	----	----		I
GEO-358-4	3/7/01	T7	12' - 16'	14' - 15'	2.1	0.3 J	1.8	5.2	1.0 J	1.0	5.3	0.7 J	3.2	36.0	15.0	----	----	----	----		II
GEO-359-1	3/6/01	T7/10	0' - 4'	1' - 2'	0.9	0.1 J	1.0	0.7	1.2	0.5	1.0	1.4	1.3	6.0 J	0.4 J	0.003 J	0.0	0.0 J	0.0		III
GEO-359-2	3/6/01	T7/10	4' - 8'	7' - 8'	4.2 J	1.6 J	3.3 J	11.0	2.8 J	2.1 J	7.1 J	3.7 U	7.5	130.0 J	48.0 J	----	----	----	----		I
GEO-359-2-MSD	3/6/01	T7/10	4' - 8'	7' - 8'	4.9 J	1.2 U	4.1 J	13.0	3.8 J	2.4 J	18.0 J	3.7 U	7.6	170.0 J	56.0 J	----	----	----	----		I
GEO-359-2-MSD	3/6/01	T7/10	4' - 8'	7' - 8'	2.9 J	1.2 U	2.8 J	8.2	4.0 J	1.5 J	9.4 J	3.7 U	5.0	110.0 J	37.0 J	----	----	----	----		I
GEO-359-3	3/6/01	T7/10	8' - 12'	10' - 12'	18.0	2.4 J	16.0	52.0	8.0 J	9.3	34.0	5.3	28.1	850.0	240.0	----	----	----	----		I
GEO-359-4	3/6/01	T7/10	12' - 16'	13' - 14'	8.3	1.5 J	7.7	22.0	2.2 U	4.2 J	18.0 J	3.3 U	12.9	300.0 J	81.0	----	----	----	----		I
GEO-360-1	3/6/01	T7/10	0' - 4'	3' - 4'	0.0 J	0.0 U	0.0 J	0.1	0.1 J	0.0 J	0.1 J	0.1 J	0.1	0.8 J	0.3 J	0.003 J	0.0 J	0.0 J	0.0 J		III
GEO-360-2	3/6/01	T7/10	4' - 8'	7' - 8'	0.9 J	0.3 U	0.9 J	2.7	0.9 J	0.5 J	2.2 J	0.9 J	1.5	40.0 J	15.0 J	----	----	----	----		III
GEO-360-3	3/6/01	T7/10	8' - 12'	9' - 11'	16.0	1.2 U	15.0	48.0	7.3 J	8.5	37.0	5.6 J	23.8	830.0	230.0	----	----	----	----		I

GeoProbe Sampling Data Summary
Moss-American Site
Milwaukee, Wisconsin

Sample ID / Excavation Standards	Date	Area	Depth Interval	Sample Depth Interval	CPAHs (mg/kg)								Total CPAHs (BAP Eq.)	PAHs (mg/kg)		BTEXs (mg/kg)				Free Product	Soil Type (I, II, or III)
					Benzo(a) pyrene	Dibnezo(a,h) anthracene	Benzo(b) fluoranthene	Benzo(a) anthracene	Indeno(1,2,3-cd) pyrene	Benzo(k) fluoranthen	Chrysene	Benzo(g,h,i) perylene		Naphthalene	Fluorene	Benzene	Toluene	Ethyl benzene	Xylene (Total)		
					48.0	NA	NA	NA	NA	NA	NA	NA	78.0	100.0	100.0	0.0055	1.5	2.9	4.1		
GEO-361-1	3/6/01	T7/10	0' - 4'	2' - 3'	0.2	0.0 J	0.2	0.2	0.1 J	0.1	0.2 J	0.1 J	0.3	1.0 J	0.3 J	0.004 J	0.0	0.0 J	0.0		III
GEO-361-2	3/6/01	T7/10	4' - 8'	6' - 7'	0.9	0.1 J	0.9	2.5	0.4	0.5	2.1	0.2 J	1.4	6.5	7.7	----	----	----	----		III
GEO-361-3	3/6/01	T7/10	8' - 12'	10' - 12'	17.0	0.6 U	17.0	53.0	1.1 U	9.4	37.0	3.6 J	24.5	950.0	230.0	----	----	----	----		I
GEO-362-1	3/6/01	T7/10	0' - 4'	2' - 3'	0.6	0.1 U	0.9	0.9	0.5 J	0.3	0.9 J	0.5 J	0.9	3.3 U	2.4 J	0.009	0.0 J	0.0 J	0.0		III
GEO-362-2	3/6/01	T7/10	4' - 8'	6' - 7'	0.4	0.0 U	0.4	1.3	0.2 J	0.2	1.3	0.1 J	0.6	8.6	22.0	----	----	----	----		III
GEO-362-3	3/6/01	T7/10	8' - 12'	10' - 11'	2.5	0.3 J	2.4	7.6	1.0	1.3	8.9	0.7 J	3.9	82.0	36.0	----	----	----	----		II
GEO-362-3-MS	3/6/01	T7/10	8' - 12'	10' - 11'	2.2	0.3	2.1	6.7	1.1	1.2	7.9	1.0	3.5	78.0	32.0	----	----	----	----		II
GEO-362-3-MSD	3/6/01	T7/10	8' - 12'	10' - 11'	2.2	0.3	2.1	6.5	1.1	1.2	7.8	0.9 J	3.5	75.0	31.0	----	----	----	----		II
GEO-364-1	3/6/01	T7	0' - 4'	3' - 4'	1.6	0.1	1.4	1.6	0.1 U	0.6	2.0	0.7 J	2.0	3.2 J	1.1 J	0.001 U	0.0 J	0.0 J	0.0 J		III
GEO-364-2	3/6/01	T7	4' - 8'	6' - 7'	0.8	0.1 J	0.9	0.8	0.1 U	0.3	0.9 J	0.2 U	1.1	4.7 J	0.3 U	----	----	----	----		III
GEO-364-3	3/6/01	T7	8' - 12'	11' - 12'	4.9	0.1 U	4.3	13.0	0.1 U	2.4	11.0	1.3 J	6.7	14.0 J	43.0	----	----	----	----		I
GEO-365-1	3/2/01	T10/11	0' - 4'	2' - 4'	0.2	0.1 J	0.4	0.2 J	0.3 J	0.1	0.3 J	0.3 J	0.4	1.7 U	0.2 U	0.044	0.0	0.0	0.0		III
GEO-365-1-MS	3/2/01	T10/11	0' - 4'	2' - 4'	0.4	0.2 J	0.8	0.5	0.7	0.4	0.6 J	0.8 J	0.8	8.7 J	0.8 J	0.023	0.0	0.0	0.1		III
GEO-365-1-MSD	3/2/01	T10/11	0' - 4'	2' - 4'	0.3	0.1 J	0.5	0.3	0.4 J	0.2	0.5 J	0.6	0.6	9.1 J	0.8 J	0.021	0.0	0.0	0.1		III
GEO-365-2	3/2/01	T10/11	4' - 8'	5' - 7'	0.7	0.0 J	0.7	2.2	0.3 J	0.4	2.1	0.2 J	1.1	27.0	18.0	----	----	----	----		III
GEO-367-1	3/9/01	T7	0' - 4'	2' - 3'	16.0	1.1 J	17.0	17.0	10.0	7.8	18.0	8.1	21.6	25.0 J	5.6 J	0.007 J	0.0	0.0 J	0.0		I
GEO-367-2	3/9/01	T7	4' - 8'	4' - 8'	10.0	0.4 J	9.8	23.0	0.6 U	5.2	21.0	4.0 J	13.8	75.0 J	50.0	----	----	----	----	Y	I
GEO-367-2D	3/9/01	T7	4' - 8'	4' - 8'	17.0	1.0 J	17.0	41.0	0.6 U	8.9	38.0	5.3 J	24.0	100.0 J	93.0	----	----	----	----		I
GEO-367-3	3/9/01	T7	8' - 12'	8.5' - 9.5'	0.2	0.0 U	0.2	0.3	0.0 J	0.1	0.2 J	0.1 J	0.2	20.0	0.4 J	----	----	----	----		III
GEO-368-1	3/9/01	T7	0' - 4'	3' - 4'	20.0	2.3 J	20.0	53.0	13.0 J	11.0	49.0	7.3 J	31.1	500.0	170.0	0.088	0.0	0.3	0.4		I
GEO-368-2	3/9/01	T7	4' - 8'	5.5' - 6.5'	1.9	0.3 J	1.6	4.8	0.8 J	0.9	3.2	0.5 J	2.9	3.2 U	16.0	----	----	----	----		III
GEO-369-1	3/9/01	T7	0' - 4'	2' - 3'	5.7	0.9 J	5.1	1.7	3.6	2.2	2.0 J	2.6 J	7.7	6.9 U	0.6 U	0.001 U	0.0 U	0.0 U	0.0 U		I
GEO-369-1-MS	3/9/01	T7	0' - 4'	2' - 3'	5.0	0.8 J	4.5	1.6	3.2	1.9	1.7 J	2.4 J	6.8	8.9 J	0.9 J	0.026	0.0	0.0	0.1		I
GEO-369-1-MSD	3/9/01	T7	0' - 4'	2' - 3'	4.9	0.8 J	4.4	1.6	3.4	1.9	1.7 J	2.4 J	6.7	11.0 J	1.0 J	0.022	0.0	0.0	0.1		I
GEO-370-1	3/8/01	T7	0' - 4'	3' - 4'	27.0	4.3 J	21.0	28.0	17.0	12.0	26.0	13.0 J	38.0	28.0 U	17.0 J	0.004 J	0.0	0.0	0.0		I
GEO-370-2	3/8/01	T7	4' - 8'	7' - 8'	4.5	0.5 J	4.2	14.0	1.6 J	2.4	10.0	1.0 J	7.0	21.0 J	67.0	----	----	----	----		I
GEO-370-3	3/8/01	T7	8' - 12'	10' - 11'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 U	0.0 U	0.0 U	0.0	0.6 U	0.1 U	----	----	----	----		III
GEO-371-1	3/8/01	T7	0' - 4'	3' - 4'	210.0	21.0 J	200.0	530.0	89.0	110.0	500.0	51.0 J	314.5	4400.0	1800.0	2.900 J	0.9 J	9.4	9.5		I
GEO-371-2	3/8/01	T7	4' - 8'	5' - 6'	4.6	0.4 J	4.5	14.0	1.8 J	2.5	11.0	1.2 J	7.0	140.0	79.0	----	----	----	----		I
GEO-371-3	3/8/01	T7	8' - 12'	9' - 10'	20.0	1.8 J	19.0	49.0	7.3	10.0	50.0	4.9 J	29.5	440.0	210.0	----	----	----	----		I
GEO-372-1	3/8/01	T7	0' - 4'	2' - 3'	16.0	0.9 J	16.0	46.0	6.8 J	8.4	39.0	4.3 J	23.9	510.0	250.0	6.800	6.5	19.0	24.0		I
GEO-372-2	3/8/01	T7	4' - 8'	7' - 8'	7.1	0.5 J	6.6	20.0	3.1 J	3.6	16.0	2.0 J	10.7	120.0 J	99.0	----	----	----	----		I
GEO-372-2D	3/8/01	T7	4' - 8'	7' - 8'	11.0	0.5 J	10.0	31.0	4.6 J	5.7	24.0	3.1 J	16.1	150.0 J	160.0	----	----	----	----		I
GEO-372-3	3/8/01	T7	8' - 12'	9' - 10'	0.0 J	0.0 U	0.0 J	0.0 J	0.0 J	0.0 J	0.0 J	0.0 U	0.0	0.6 U	0.1 J	----	----	----	----		III
GEO-373-1	3/7/01	T7	0' - 4'	2' - 3'	2.0	0.4 J	4.5	0.9	2.6	1.5	1.9	2.1	3.2	9.7 J	0.4 J	0.002 J	0.0 J	0.0 J	0.0 J		II
GEO-373-2	3/7/01	T7	4' - 8'	6.5' - 7.5'	17.0	0.6 J	16.0	46.0	7.2 J	8.9	33.0	4.4 J	24.6	340.0	180.0	----	----	----	----		I
GEO-374-1	3/7/01	T7	0' - 4'	2' - 3'	0.1 J	0.0 U	0.1 J	0.1 J	0.1 J	0.0 J	0.2 J	0.1 U	0.2	2.8 J	0.2 J	0.002 J	0.0 J	0.0 J	0.0 J		III
GEO-374-2	3/7/01	T7	4' - 8'	7' - 8'	3.6	0.4 J	3.2	9.2	1.5	1.7	9.9	1.0 J	5.4	3.1 J	17.0	----	----	----	----		II
GEO-374-3	3/7/01	T7	8' - 12'	9' - 10'	8.0	1.0 J	7.5	20.0	4.1	3.9	23.0	2.6 J	12.2	9.8 U	22.0	----	----	----	----		I
GEO-375-1	3/7/01	T7	0' - 4'	2' - 3'	57.0	7.2 J	55.0	140.0	30.0 J	32.0	210.0	19.0 J	87.2	170.0 U	290.0	0.065 U	0.1 U	0.1 U	0.1 J		I
GEO-375-2	3/7/01	T7	4' - 10'	7' - 8'	14.0	1.3 J	12.0	34.0	7.2 J	6.9	35.0	4.5 J	20.7	140.0 J	93.0	----	----	----	----	Y	I
GEO-375-3	3/7/01	T7	10' - 12'	10' - 11'	8.2	0.7 J	7.4	20.0	3.4	4.0	20.0	2.3 J	12.0	140.0	53.0	----	----	----	----		I
GEO-376-1	3/7/01	T7	0' - 4'	3' - 4'	150.0	10.0 U	130.0	410.0	75.0 J	72.0	500.0	61.0 J	217.7	540.0 U	690.0	0.006 J	0.0	0.1	0.2		I
GEO-376-2	3/7/01	T7	4' - 8'	6' - 7'	9.3	0.9 J	8.5	23.0	4.1	4.6	24.0	2.5 J	13.8	200.0	64.0	----	----	----	----		I
GEO-376-3	3/7/01	T7	8' - 12'	8.5' - 9.5'	17.0	2.7 J	16.0	42.0	9.0 J	8.7	42.0	5.4 J	26.5	310.0 J	110.0	----	----	----	----	Y	I
GEO-377-1	2/19/01	T4/5	0' - 4'	0.5' - 1'	1.3	0.1 J	0.7	0.3	1.5	0.2	0.6	1.8	1.6	0.6 U	0.1 J	0.001 U	0.0 U	0.0 U	0.0 U		III
GEO-377-2	2/19/01	T4/5	4' - 8'	4.5' - 5'	2.4	0.1 J	2.2	6.4	0.2 U	1.1	6.7	2.3 J	3.4	49.0 J	40.0	0.044 U	0.0 U	0.1 J	0.2		II
GEO-377-3	2/19/01	T4/5	8' - 11'	9' - 9.5'	0.6	0.0 U	0.5	1.5	0.3 J	0.3	1.4	0.2 J	0.8	8.7 J	8.4	0.046 U	0.0 U	0.0 U	0.0 U		III

---- = Not Analyzed for the Parameter

Attachment B

Phase II Laboratory Analytical Data Reports

(AVAILABLE UPON REQUEST)

Attachment C

Phase II Boring Logs

LOG OF BORING GEO-051

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/08/00	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - brown gravel, (4")			
1				CLAY - black to brown, little medium to fine gravel, some sand, slight odor, stained			
2			3		1	4.2	GEO-051-1 0.0 to 4.0 ft bgs BTEX & PAHs (see note below)
3							
4				As above			
5		CL					
6			4	CLAY - brown, some sand, mottled with black stains	2	17.3	GEO-051-2 4.0 to 8.0 ft bgs BTEX & PAHs
7							
8				CLAY - gray, some sand, no staining			
9			4				
10				SILT - gray	3	28.3	GEO-051-3 8.0 to 12.0 ft bgs BTEX & PAHs
11		ML					
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-051-1A was collected on 3/09/01, from 3.0 to 3.5 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-051.BOR

LOG OF BORING GEO-059

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/18/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 5.5 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				Auger used to penetrate frost layer			
1		FL	2.5	FILL - dark brown clay, some sand	1	ND	GEO-059-1 1.5 to 2.5 ft bgs BTEX & PAHs (see note below)
2							
3				FILL - brown to black sand and slag			
4		CL	1.5	CLAY - brown, mottled As above, some fine sand, wet at 5.5 ft bgs (gravel seam)	2	ND	GEO-059-2 4.5 to 5.0 ft bgs BTEX & PAHs
5							
6							
7							
8		ML		SILT - brown, little pebbles	3	ND	GEO-059-3 8.0 to 8.5 ft bgs BTEX & PAHs
9							
10		SP	4	SAND - some gravel, some clay, saturated below 10.5 ft bgs			
11					4	ND	GEO-059-4 11.0 to 11.5 ft bgs BTEX & PAHs
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.
No staining, no odors noted in this soil boring.

Sample GEO-059-1A was collected on 3/9/01, from 3.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-059.BOR

LOG OF BORING GEO-102

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/20/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 9 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				Frost auger used to about 1.5 ft bgs			
1				FILL - tan sand and gravel			
2		FL	1	Black to brown slag	1	2.7	GEO-102-1 2.0 to 3.0 ft bgs BTEX & PAHs (see note below)
3							
4				CLAY - brown, soft, mottled, some silt, trace gravel, odor, stained throughout			
5							
6			3		2	2.5	GEO-102-2 6.0 to 6.5 ft bgs BTEX & PAHs
7		CL					
8				As above			
9				SILT - brown, trace clay, no odor, no staining			
10		ML	3		3	5.5	GEO-102-3 10.0 to 10.5 ft bgs BTEX & PAHs
11				grading to a very fine SAND			
12		SW					
13				End of boring: 12 ft bgs			
14							

Soil boring was advanced in 4 foot increments, unless otherwise noted. First attempt at 4 to 8 ft bgs sample came up with zero recovery - moved 2 ft to try a second tiime.

Sample GEO-102-1A was collected on 3/6/01, from 2.0 to 3.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-102.BOR

LOG OF BORING GEO-103

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/20/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 9 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				Frost auger used to about 1.5 ft bgs			
1		FL		FILL - black and brown clay, stained black slag			
2			2				GEO-103-1A 3.5 to 4.0 ft bgs BTEX & PAHs (see note below)
3							
4		CL		CLAY - black to olive green CLAY, stained, odor As above, brown, some silt mottled, trace pebbles, no staining, very slight odor	1	2.7	GEO-103-1 3.5 to 4.0 ft bgs BTEX & PAHs
5							
6			3		2	2.5	GEO-103-2 5.5 to 6.0 ft bgs BTEX & PAHs
7		ML		grading to a SILT, some clay at about 7 ft bgs			
8				SAND and GRAVEL (6") seam, saturated, stained black, sheen present			
9		CL		CLAY - brown, some silt, trace pebbles	3	5.5	GEO-103-3 9.0 to 9.5 ft bgs BTEX & PAHs
10			3.5				
11		ML		grading to a brown SILT			
12		SW		grading to a very fine SAND at 11.5 ft bgs			
13				End of boring: 12 ft bgs			
14							

Soil boring was advanced in 4 foot increments, unless otherwise noted. Staining noted in wet zone from 8 to 8.5 ft bgs and to about 8.7 ft bgs. Sample 3 is from below staining.

Sample GEO-103-1A was collected on 3/6/01, from 2.0 to 4.0 ft bgs and analyzed for BTEX and PAHs.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-103.BOR

LOG OF BORING GEO-128

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/29/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 5 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 14 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - black clay and possibly tan sand and gravel - very poor recovery			
1							
2			.1				GEO-128-1A 2.0 to 3.0 ft bgs BTEX & PAHs (see note below)
3							
4				CLAY - olive green, mottled, some silt			
5				saturated gravelly zone, odor			
6			3.5	CLAY - gray, trace to little pebbles, trace gravel, high plasticity	1	2.5	GEO-128-1 6.0 to 6.5 ft bgs BTEX & PAHs
7							
8				As above, heavily stained surrounding gravel from 9 to 10 ft bgs			
9		CL			2	39.4	GEO-128-2 9.0 to 9.5 ft bgs BTEX & PAHs
10			4				
11				grading to brown and less plastic at 10.5 ft bgs, slight odor			
12				As above, no odor below 13 ft bgs			
13			2		3	1.0	GEO-128-3 12.5 to 13.0 ft bgs BTEX & PAHs
14				End of boring: 14 ft bgs			
15							
16							
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-128-1A was collected on 3/2/01, from 2.0 to 3.0 ft bgs and analyzed for BTEX and PAHs.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-128.BOR

LOG OF BORING GEO-129

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 01/02/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 8 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–2		FL	2	FILL - tan sand and gravel black clay and slag	1	1.7	GEO-129-1 1.0 to 2.0 ft bgs BTEX & PAHs (see note below)
4–8		CL	3	CLAY - gray, mottled grading to brown, mottled, some silt, trace pebbles and gravel, stained slightly along fractures/partings	2	32.7	GEO-129-2 6.0 to 6.5 ft bgs BTEX & PAHs
8–14		ML	4 4	SILT - brown, mottled, trace to little fine sand, little to some clay, no staining As above, staining at 14.5 ft bgs, just above clay	3	7.2	GEO-129-3 9.0 to 9.5 ft bgs BTEX & PAHs
14–16		CL		CLAY - gray, some silt, litttle pebbles, moist,no staining, no odor	4	1.1	GEO-129-4 14.5 to 15.0 ft bgs BTEX & PAHs
16				End of boring: 16 ft bgs			
17–20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-129-1A was collected on 3/2/01, from 3.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-129.BOR

LOG OF BORING GEO-130

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 01/02/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - dark brown clay	1	2.7	GEO-130-1 0.0 to 0.8 ft bgs BTEX & PAHs (see note below)
1				low recovery			
2			.8				
3							
4		CL		CLAY - gray, mottled			
5				grading to brown, some silt, tract to little gravel and pebbles, stained along fractures/partings, and surrounding gravel, odor	2	51.8	GEO-130-2 & GEO-130-2D 5.0 to 6.0 ft bgs BTEX & PAHs
6			2.5	grading to SAND - brown, some silt, stained			
7		SP					
8				grading to a SILT - brown, mottled			
9		ML		stained to 10 ft bgs			
10			3		3	5.5	GEO-130-3 9.5 to 10.0 ft bgs BTEX & PAHs
11				grading to a CLAY - gray, stiff, dry, trace pebbles, trace gravel, no staining, no odor			
12				As above, staining noted surrounding gravel at 13.5 ft bgs			
13		CL					
14			4		4	32.5	GEO-130-4 13.5 to 14.0 ft bgs BTEX & PAHs
15							
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-130-1A was collected on 03/02/01, from 3.0 to 4.0 ft bgs and analyzed for BTEX only.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-130.BOR

LOG OF BORING GEO-164

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, little to some coarse grained sand, some silt, more oxidized from 2 to 3 ft bgs			
1							
2			3				
3				trace LIMESTONE gravel at bottom of spoon, slight odor, slight stain	1	---	GEO-164-1 2.5 to 3.0 ft bgs BTEX & PAHs
4				Brown clay as above, slight staining along fractures/partings			
5					2	---	GEO-164-2 5.0 to 5.5 ft bgs BTEX & PAHs
6		CL	3				
7							
8				As above, very moist, no odor, no staining			
9				grading to gray, highly plastic			
10			2.5		3	---	GEO-164-3 9.5 to 10.0 ft bgs BTEX & PAHs
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-164.BOR

LOG OF BORING GEO-186

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		CL		CLAY - brown, some silt, trace LIMESTONE gravel, trace pebbles, no odor, no staining	1	---	GEO-186-1 0.5 to 1.0 ft bgs BTEX & PAHs
1							
2			2.5				
3							
4				As above, wet zone above 4 ft bgs with sheen evident, stained throughout along partings			
5							
6			3.5	sand seam at 6 ft bgs, stained	2	---	GEO-186-2 6.0 to 6.5 ft bgs BTEX & PAHs
7							
8				Brown clay as above, high plasticity, slightly to moderately stained throughout, occasional LIMESTONE gravel, odor			
9					3	---	GEO-186-3 9.0 to 10.0 ft bgs BTEX & PAHs
10			4				
11							
12				sample smeared from above saturated/stained zones to 13 ft bgs			
13				Brown clay as above, trace to little gravel and sand, no apparent staining, no odor			
14			3		4		GEO-186-4 14.0 to 14.5 ft bgs BTEX & PAHs
15				End of boring: 15 ft bgs			
16							
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-186.BOR

LOG OF BORING GEO-187

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace LIMESTONE gravel			
1					1	---	GEO-187-1 0.5 to 1.0 ft bgs BTEX & PAHs
2			4				
3							
4				As above, dry (tough drilling)			
5							
6			3.5				
7				slightly stained from 6.5 to 7.5 ft bgs	2	---	GEO-187-2 6.5 to 7.0 ft bgs BTEX & PAHs
8		CL		very low recovery (pushed a rock) - As above, smeared from above staining			
9							
10			.1				
11							
12				CLAY - gray, slightly stained			
13			2		3	---	GEO-187-3 & GEO-187-3D 13.0 to 13.5 ft bgs BTEX & PAHs
14				As above, high plasticity, no odor, no stain			
15			2		4		GEO-187-4 15.0 to 15.5 ft bgs BTEX & PAHs
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, except for the 12 to 14, and 14 to 16 ft bgs depth, where the boring was advance 2 ft at a time.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-187.BOR

LOG OF BORING GEO-188

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				TOPSOIL - dark brown, silty, little fine grained sand			
1							
2		CL	4	CLAY - brown, trace gravel, trace to little sand			
3							
3.5		SP		SAND - brown, some clay, odor	1	---	GEO-188-1 3.5 to 4.0 ft bgs BTEX & PAHs
4		CL		CLAY - brown, slightly moist, trace gravel, some silt			
5							
6			4				
7				staining along fractures/partings from 7 to 8 ft bgs			
7.5					2	---	GEO-188-2 7.5 to 8.0 ft bgs BTEX & PAHs
8				As above, heavily stained along fractures/partings to 9.5 ft bgs			
8.5					3	---	GEO-188-3 8.5 to 9.0 ft bgs BTEX & PAHs
9							
10			4	grading to gray, highly plastic below 10 ft bgs - no odor, no staining below 10 ft bgs			
11							
12							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-188.BOR

LOG OF BORING GEO-189

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some siilt, trace pebbles and gravel, no no odor, no stain	1	—	GEO-189-1 0.0 to 1.5 ft bgs BTEX & PAHs
1							
2			1.5				
3							
4				As above, some sand, mottled, trace gravel			
5				increasing gravel with depth to 7 ft bgs, becoming stiffer	2	—	GEO-189-2 4.5 to 5.0 ft bgs BTEX & PAHs
6		CL	4				
7				[wet zone encountered at about 8 ft bgs, based on smearing in the 8 to 12 ft bgs sleeve]			
8				CLAY - brown, highly plastic, some silt, trace pebbles, slightly mottled	3	—	GEO-189-3 8.5 to 9.0 ft bgs BTEX & PAHs
9							
10			4				
11				grading to dark gray at 11 ft bgs, highly plastic, some silt, trace pebbles			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

No odor, no staining encountered in this boring.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-189.BOR

LOG OF BORING GEO-190

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 8 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				TOPSOIL			
1				CLAY - brown, some silty, little fine grained sand, trace gravel	1	---	GEO-190-1 1.0 to 1.5 ft bgs BTEX & PAHs
2			4				
3							
4		CL		As above, trace LIMESTONE gravel, no odor, no staining	2	---	GEO-190-2 4.5 to 5.0 ft bgs BTEX & PAHs
5							
6			4	highly plastic, grading to gray			
7							
8				SAND - medium to coarse grained, saturated			
9		SW			3	---	GEO-190-3 8.5 to 9.0 ft bgs BTEX & PAHs
10				CLAY - gray, highly plastic			
11		CL	4				
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

No odor, no staining encountered in this boring.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-190.BOR

04-19-2001

LOG OF BORING GEO-191

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 8 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, mottled, little to some silt, trace gravel, no odor, no staining	1	—	GEO-191-1 0.5 to 1.0 ft bgs BTEX & PAHs
1							
2			4				
3							
4				As above, wet zone at 4.5 ft bgs (possible sand seam), more plastic, not mottled, no odor, no staining	2	—	GEO-191-2 4.5 to 5.0 ft bgs BTEX & PAHs
5							
6			4				
7				The 8 to 12 ft bgs sample showed saturated conditions at 8 ft bgs, with free product. Most likely a sand/gravel seam			
8		CL					
9				CLAY - gray, highly plastic, does not appear to be staining (however the sample is smeared from above free product - no sample collected from 8 to 12 ft bgs.)			
10			2				
11							
12				As above, some silt, smeared from above, no staining noted from 12 to 16 ft bgs			
13					3	—	GEO-191-3 13.0 to 14.0 ft bgs BTEX & PAHs
14			3.5				
15							
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-191.BOR

LOG OF BORING GEO-193

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/04/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–4		FL	2.5	FILL - brown and gray clay, trace gravel Wood fragments, no odor	1	6.0	GEO-193-1 0.5 to 1.5 ft bgs BTEX & PAHs (see note below)
4–8		CL	3	CLAY - brown, some silt, occasional fine to coarse sand seams	2	0.6	GEO-193-2 4.5 to 5.5 ft bgs BTEX & PAHs
8				End of boring: 8 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-193-1A was collected on 3/1/01, from 3.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-193.BOR

LOG OF BORING GEO-197A

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/09/01	WESTON Geologist	: J. Klemp
Driller	: WESTON	Depth to Water	: Not Encountered
Drilling Method	: Hand Auger	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 2 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		CL	1.0	SILTY CLAY - dark brown organic, trace coarse to fine sand	1	ND	GEO-199-1 0.0 to 1.0 ft bgs BENZENE
2			1.0				
				End of boring: 2 ft bgs			
3							
4							
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-197.BOR

LOG OF BORING GEO-199

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 01/16/01	WESTON Geologist	: A. Slesers
Driller	: WESTON	Depth to Water	: Near surface
Drilling Method	: Hand Auger	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 3 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0			0.7	Dark brown clay, saturated	1	ND	GEO-199-1 0.5 to 1.0 ft bgs BTEX & PAHs (see note below)
1		CL	0.7	Dark brown to black silty clay			
2			0.7	CLAY - brown, mottled, some silt, little to some sand	2	ND	GEO-199-2 2.0 to 2.5 ft bgs BTEX & PAHs
3				Refusal at about 3 ft bgs End of boring: 3 ft bgs			
4							
5							
6							

Soil boring was advanced in 1 foot increments.

Sample GEO-199-1A was collected on 3/9/01, from 1.0 to 2.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-199.BOR

LOG OF BORING GEO-210

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/05/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 7 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes (sheen)
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - brown clay, some silt, some gravel			
1				FILL - brown to black sand and gravel, no odors	1	0.9	GEO-210-1 0.5 to 2.0 ft bgs BTEX & PAHs
2		FL	2			9.0	GEO-210-2 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				CLAY - brown to gray, some silt, some fine sand, stained, strong odor			
5				saturated at about 7 ft bgs	2		
6			3				
7							
8		CL		Six inches of wet clayey material (slough from above Geoprobe sleeve), with heavy sheen CLAY - brown, some fine sand			(see note below)
9				Sample not collected from 8-12 ft interval, because of cross contamination potential from 4-8 ft interval			
10			1				
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-210-3A was collected on 03/01/01, from 8.0 to 10.0 ft bgs and analyzed for PAHs only.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-210.BOR

04-19-2001

LOG OF BORING GEO-219

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 01/09/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace gravel	1	ND	GEO-219-1 0.0 to 0.5 ft bgs BTEX & PAHs (see note below)
1							
2			.5				
3							
4		CL		As above, black to brown, trace sand	2	ND	GEO-219-2 4.0 to 4.5 ft bgs BTEX & PAHs
5							
6			2				
7							
8				End of boring: 8 ft bgs			
9							
10							
11							
12							
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-219-1A was collected on 3/1/01, from 3.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-219.BOR

LOG OF BORING GEO-221

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/05/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - brown clay (2"), then tan sand and gravel to 1 ft bgs			
1				FILL - black slag to 2.5 ft bgs	1	3.7	GEO-221-1 1.0 to 2.0 ft bgs BTEX & PAHs (see note below)
2			2.5				
3							
4		FL		FILL - black clay, soft, moist			
5				Not enough recovery for a sample (see note below)			
6			.7				
7							
8				Gray clay, moist with brown mottles in tip of probe - natural formation			
				End of boring: 8 ft bgs			
9							
10							
11							
12							
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted. First attempt at the 4-8 ft bgs sample failed, due to refusal at 4 ft bgs. The rig was moved 1 ft to obtain the sample - this resulted in a very low recovery.

Sample GEO-221-1A was collected on 3/1/01, from 2.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-221.BOR

LOG OF BORING GEO-228

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 12/04/00	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 8.5 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL	3	FILL - brown clay, some silt, little gravel	1	ND	GEO-228-1 0.5 to 1.5 ft bgs BTEX & PAHs (see note below)
1							
2				FILL - black gravel and wood fragments	2	1.1	GEO-228-2 1.5 to 3.0 ft bgs BTEX & PAHs
3				FILL - grayish green clay			
4				FILL - tan, soft clay, saturated with creosote, strong odor	3	0.6	GEO-228-3 4.0 to 5.0 ft bgs BTEX & PAHs
5		PT	1	Black Peat			
6							
7							
8							
9		SC	1.5	SAND - fine, grayish green, some clay, some silt, no odors			
10							
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Sample GEO-228-1A was collected on 3/1/01, from 3.0 to 4.0 ft bgs and analyzed for BENZENE ONLY.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-228.BOR

LOG OF BORING GEO-300

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: About 8 ft to a sand seam
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, dry, trace pebbles, discolored or stained throughout, odor increasing with depth			
1							
2			4				
3							
					1	---	GEO-300-1 3.5 to 4.0 ft bgs BTEX & PAHs
4				As above, slight staining throughout along fractures/partings			
5							
6		CL	4		2	---	GEO-300-2 6.0 to 6.5 ft bgs BTEX & PAHs
7							
				Based on 8 to 12 ft bgs sample: a saturated zone exists above 8 ft bgs			
8				Brown clay as above, hard, free product found sporadically along fractures and partings			
					3	---	GEO-300-3 8.5 to 9.0 ft bgs BTEX & PAHs
9							
10			4				
11				Black stained sand seam at 11 ft bgs no odor, no staining below sand seam			
12							
				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-300.BOR

LOG OF BORING GEO-301

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace pebbles, trace gravel, no no odor, no staining			
1					1	---	GEO-301-1 1.0 to 1.5 ft bgs BTEX & PAHs
2			4				
3							
4				As above, occasional pebbles and gravel, occasional sand seams near 7 ft bgs, no odor, no staining			
5					2	---	GEO-301-2 4.5 to 5.0 ft bgs BTEX & PAHs
6		CL	4				
7							
8				As above, moist, high plasticity, no odor, no staining			
9					3	---	GEO-301-3 8.5 to 9.0 ft bgs BTEX & PAHs
10			4				
11				grading to gray at 11 ft bgs, no odor, no staining			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-301.BOR

LOG OF BORING GEO-302

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, trace silt, trace pebbles, stained below 2 ft bgs, odor			
1							
2			3.5				
3					1	---	GEO-302-1 3.0 to 3.5 ft bgs BTEX & PAHs
4				As above, occasional gravel, no staining, slight odor			
5							
6		CL	3		2	---	GEO-302-2 6.0 to 6.5 ft bgs BTEX & PAHs
7							
8				As above, high plasticity, trace to little silt, no staining, no odor			
9					3	---	GEO-302-3 & GEO-302-3D 9.0 to 10.0 ft bgs BTEX & PAHs
10			4				
11				grading to gray at 10.5 ft bgs			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Tough drilling beneath 4 ft bgs - due to tight clays and gravel/cobbles.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-302.BOR

LOG OF BORING GEO-303

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace pebbles, stained from 0.5 to 3.0 ft bgs			
1							
2			4		1	---	GEO-303-1 & GEO-303-1D 2.0 to 2.5 ft bgs BTEX & PAHs
3				becoming denser, no staining, occasional LIMESTONE gravel			
4				As above, slightly stained			
5				very moist zone - little to some fine brown sand, heavily stained	2	---	GEO-303-2 5.0 to 5.5 ft bgs BTEX & PAHs
6		CL	4				
7				CLAY - stiff, trace pebbles, some silt, dry, occasional staining along fractures/partings			
8				As above, free product present to a depth of 11 ft bgs			
9							
10			3				
11				grading to gray below 11 ft bgs		---	GEO-303-3 11.5 to 12.0 ft bgs BTEX & PAHs
12				No staining below 11.5 ft bgs	3		
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-303.BOR

LOG OF BORING GEO-304

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace gravel, heavily stained below 1.5 ft bgs			
1							
2			3.5				
3					1	---	GEO-304-1 3.0 to 3.5 ft bgs BTEX & PAHs
4				As above, stained throughout with heavy staining from 4.0 to 4.2 ft bgs. Slight to moderate staining below 4.2 ft bgs			
5							
6			4		2	---	GEO-304-2 6.0 to 6.5 ft bgs BTEX & PAHs
7		CL					
8				As above, stained throughout - stained only slightly at bottom along fractures/partings			
9							
10			4		3	---	GEO-304-3 9.5 to 10.0 ft bgs BTEX & PAHs
11							
12				As above, hard, stained to a depth of 14 ft bgs			
13					4	---	GEO-304-4 13.0 to 13.5 ft bgs BTEX & PAHs
14			3	becoming darker, and harder below 14 ft bgs. No staining below 14 ft bgs.			
15				Refusal encountered at 15 ft bgs End of boring: 15 ft bgs			
16							
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-304.BOR

LOG OF BORING GEO-305

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace gravel, stained from 3 to 4 ft bgs			
1							
2			4				
3							
4					1	---	GEO-305-1 3.5 to 4.0 ft bgs BTEX & PAHs
				As above, stained			
5					2	---	GEO-305-2 4.5 to 5.0 ft bgs BTEX & PAHs
6		CL	3	free product evident from 6 to 9 ft bgs			
7							
8							
9				As above, hard brown clay, little silt, trace pebbles, slight staining			
10			3		3	---	GEO-305-3 10.0 to 10.5 ft bgs BTEX & PAHs
				No staining below 10.5 ft bgs			
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-305.BOR

LOG OF BORING GEO-306

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 10 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, trace roots, some silt, trace gravel, trace pebbles, no odor, no staining			
1					1	---	GEO-306-1 0.5 to 1.0 ft bgs BTEX & PAHs
2			2				
3							
4				As above, stained throughout, odor, increased silt content, dry			
5		CL					
6			4				
7					2	---	GEO-306-2 7.0 to 7.5 ft bgs BTEX & PAHs
8				As above, stained			
9			2		3	---	GEO-306-3 9.0 to 10.0 ft bgs BTEX & PAHs
10				Refusal on gravel/cobble (LIMESTONE) layer			
				End of boring: 10 ft bgs			
11							
12							
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

Refusal was encountered at 9 ft bgs on gravel/cobble - hole was redrilled 3 ft north and refusal was encountered at 10 ft bgs.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-306.BOR

LOG OF BORING GEO-307

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace gravel, no odor, no staining	1	---	GEO-307-1 0.5 to 1.0 ft bgs BTEX & PAHs
1							
2			4				
3							
4				As above, no odor, no staining			
5					2	---	GEO-307-2 5.0 to 5.5 ft bgs BTEX & PAHs
6			4				
7							
8		CL		As above, no odor, no staining			
9				becoming darker with depth	3	---	GEO-307-3 8.5 to 9.0 ft bgs BTEX & PAHs
10			3				
11							
12				CLAY - gray, trace silt, moist, high plasticity, no odor, no staining	4	---	GEO-307-4 12.5 to 13.0 ft bgs BTEX & PAHs
13							
14			4				
15							
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-307.BOR

LOG OF BORING GEO-308

(Page 1 of 1)

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 20 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace pebbles, occasional gravel, trace fine grained sand, no odor, no staining	1	---	GEO-308-1 0.5 to 1.5 ft bgs BTEX & PAHs
2			4				
4				As above, no odor, no staining	2	---	GEO-308-2 4.5 to 5.0 ft bgs BTEX & PAHs
6			4	occasional sand seams (<1")			
8				As above, slightly stained at 8 ft bgs, with increasing staining with depth			
9		CL					
10			4		3	---	GEO-308-3 10.5 to 11.0 ft bgs BTEX & PAHs
12				As above, heavily stained throughout, free product along fractures/partings			
13					4	---	GEO-308-4 13.0 to 13.5 ft bgs BTEX & PAHs
14			4				
16				As above, stained throughout, free product along fractures/partings			
17				free product at base of brown clay			
18			4	CLAY - gray, very moist, grading to a very silty, sandy clay, no staining			
19		CL			5	---	GEO-308-5 19.5 to 20.0 ft bgs BTEX & PAHs
20							
21				End of boring: 20 ft bgs			
22							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-308.BOR

LOG OF BORING GEO-309

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/15/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 18 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				TOPSOIL			
1				CLAY - brown, some silty, trace gravel, little fine grained sand, slightly moist, no odor, no staining	1	---	GEO-309-1 & GEO-309-1D 0.5 to 1.5 ft bgs BTEX & PAHs
2			4				
3							
4				As above			
5					2	---	GEO-309-2 4.5 to 5.0 ft bgs BTEX & PAHs
6			4				
7							
8		CL		As above to 9 ft bgs			
9				Sand seam, then brown clay as above - stained thoughout to 12 ft bgs	3	---	GEO-309-3 9.0 to 9.5 ft bgs BTEX & PAHs
10			3				
11							
12				As above, free product along fractures/partings			
13			3				
14				wet zone at 14 ft bgs			
15				As above to 16 ft bgs			
16		GP	3	SAND & GRAVEL seam with free product			
17		CL		CLAY - gray, no staining noted	4	---	GEO-309-4 17.5 to 18.0 ft bgs BTEX & PAHs
18				End of boring: 18 ft bgs			
19							
20							

Soil boring was advanced in 4 foot increments, except for the 12 to 15, and 15 to 18 ft bgs intervals.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-309.BOR

04-19-2001

LOG OF BORING GEO-311

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		CL		SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel			
1		ML		SILT			
2		CL	3	SILTY CLAY - black, little coarse to fine sand, little medium to fine gravel	1	3.7	GEO-311-1 3.0 to 4.0 ft bgs BTEX & PAHs
3							
4		GP		GRAVEL - black	2	1.4	GEO-311-2 4.0 to 5.0 ft bgs PAHs
		PT		PEAT - light odors, dry			
5							
6			1.3	No Recovery			
7							
8				End of boring: 8 ft bgs			
9							

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-311.BOR

LOG OF BORING GEO-313

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1				FILL - brown silty clay, trace coarse to fine sand, trace medium to fine gravel, dry, no odor, hard			
2		FL	4				
3				FILL - black sandy clay, little coarse to fine sand, burnt material noted, dry, slight petroleum odor	1	2.3	GEO-313-1 2.0 to 4.0 ft bgs BTEX & PAHs
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-313.BOR

LOG OF BORING GEO-314

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - brown sandy clay, little medium to fine gravel			
1							
2		FL	4	FILL - black sandy clay, with charcoal noted, dry, burnt odor	1	6.8	GEO-314-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4		CL		SILTY CLAY - brown			
5				End of boring: 2 ft bgs			
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-314.BOR

LOG OF BORING GEO-315

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - black silty clay, trace coarse to fine sand, trace medium to fine gravel, dry, no odor			
1		CL	4	SILTY CLAY - brown, trace coarse to fine sand, dry, no odor, hard	1	1.7	GEO-315-1 1.0 to 2.0 ft bgs BTEX & PAHs
2							
3							
4				SILTY CLAY -gray, trace of sand, trace of medium to fine gravel			
5		SC		SAND - dark gray, moist, no odor	2	1.4	GEO-315-2 5.0 to 6.0 ft bgs PAHs
6		CL	4	SILTY CLAY - gray, trace of coarse to fine sand, trace of medium to fine gravel			
7							
8							
9				As Above, creosote mottling from 9.0 to 10.0 ft bgs	3	27.1	GEO-315-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		ML		SANDY SILT - brown			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-315.BOR

LOG OF BORING GEO-316

(Page 1 of 1)

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		CL		SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel			
2			3.1				
3		GP		SAND and GRAVEL - brown		8.1	GEO-316-1 3.0 to 4.0 ft bgs BTEX & PAHs
4		ML		SILT - dark gray, trace sand, slight creosote odor, light sheen	1		
5		GP		SAND and GRAVEL - brown	2	32.1	GEO-316-2 4.0 to 5.0 ft bgs PAHs
6		CL	3.1	SILTY CLAY - brown to gray, trace coarse to fine sand			
7		SC		~~SAND - 2" lense~~			
8		CL		SILTY CLAY - gray NOTE: Free Product noted on sample sleeve			
9							
10			1.1	SILTY CLAY - gray, trace coarse to fine sand, creosote odor			
11					3	43.3	GEO-316-3 10.0 to 12.0 ft bgs PAHs
12		GP		SAND and GRAVEL - gray lense			
13		CL		SILTY CLAY - gray, trace coarse to fine sand	4	56.9	GEO-316-4 12.0 to 14.0 ft bgs PAHs
14			3				
15				Refusal at 15.0 ft bgs			
				End of boring: 15 ft bgs			
16							
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-316.BOR

LOG OF BORING GEO-317

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - gray gravel, some brown clay			
1							
2		FL	3.1	SAND - black, contains charcoal, dry, burnt odor	1	4.4	GEO-317-1 2.0 to 4.0 ft bgs BTEX & PAHs
3							
4				SILTY CLAY - brown, trace of coarse to fine sand, dry, no odor			
5							
6			4				
7		CL			2	3.2	GEO-317-2 7.0 to 8.0 ft bgs PAHs
8				NOTE: creosote nodules at 7.5 to 8.0 ft bgs SILTY CLAY - brown to gray, trace coarse to fine sand, moist, no odor, creosote mottled, trace medium to fine gravel			
9					3	32.8	GEO-317-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		ML		SANDY SILT - brown, moist, no odor			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-317.BOR

LOG OF BORING GEO-318

(Page 1 of 1)

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–1		FL		FILL - brown silty clay, little coarse to fine sand, some medium to fine gravel, dry, no odor			
2–3		SC	4	SILTY SAND - black with charcoal, grading into black silty clay, dry, slight creosote odor	1	7.6	GEO-318-1 2.0 to 3.5 ft bgs BTEX & PAHs
4–6		CL	4	SILTY CLAY - brown, little coarse to fine sand, trace medium to fine gravel, dry, no odor			
7–8				NOTE: light creosote nodules of 1mm noted at 7.0 to 7.5 ft bgs	2	8.2	GEO-318-2 7.0 to 8.0 ft bgs PAHs
8–11		ML	4	SANDY SILT - brown, moist, no odor	3	ND	GEO-318-3 10.0 to 11.0 ft bgs PAHs
12		SC		SAND - brown, wet, no odor			
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-318.BOR

LOG OF BORING GEO-319

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - brown silty clay, little coarse to fine sand, some medium to fine gravel			
1							
2			4				
3				SILTY CLAY - black to dark brown, trace coarse to fine sand, dry, no odor	1	2.3	GEO-319-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel			
5							
6		CL	4		2	ND	GEO-319-2 6.0 to 7.0 ft bgs PAHs
7							
8							
9					3	ND	GEO-319-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		ML		SILT - brown			
12		CL		SILTY CLAY - brown			
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-319.BOR

LOG OF BORING GEO-320

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - gray gravel, wet			
2			4	SILTY CLAY - dark brown, trace coarse to fine sand, dry, no odor	1	1.1	GEO-320-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SANDY CLAY - brown, some medium to fine gravel, moist, no odor			
5		CL					
6			4	SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel, moist, no odor	2	ND	GEO-320-2 5.0 to 7.0 ft bgs PAHs
7							
8				SILTY SAND - brown			
9							
10		SM	4				
11				NOTE: creosote nodule noted at 10.5 ft bgs	3	16.0	GEO-320-3 10.0 to 11.0 ft bgs PAHs
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-320.BOR

LOG OF BORING GEO-321

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–4		FL	4	FILL - 3" organic material, roots noted over gray gravel FILL - 6" of black sand and charcoal over black clay, dry, slight burnt odor	1	ND	GEO-321-1 2.0 to 4.0 ft bgs BTEX & PAHs
4–5		GP		GRAVEL - gray, wet, no odor			
5–12		CL	4 4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel SANDY CLAY - brown, little coarse to fine gravel, light creosote mottling noted, wet, no odor	2 3	ND 5.2	GEO-321-2 6.0 to 7.0 ft bgs PAHs GEO-321-3 10.0 to 11.0 ft bgs PAHs
12–13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-321.BOR

LOG OF BORING GEO-322

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: 4.4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				Grass roots and organic matter			
1		GP		GRAVEL - Gray			
2			4				
3		PT		PEAT - black, no odor	1	ND	GEO-322-1 2.0 to 4.0 ft bgs BTEX & PAHs
4							
5		GP		SAND and GRAVEL - brown	2		
6		CL	4	SILTY CLAY - gray, trace coarse to fine sand, no odor, dry SANDY CLAY - lens		ND	GEO-322-2 4.0 to 5.0 ft bgs PAHs
7				CLAY - brown, no odor, moist			
8							
9		GP		SAND and GRAVEL - brown, light creosote odor	3		
10		CL	4	SANDY CLAY - brown			
11						ND	GEO-322-3 9.0 to 10.0 ft bgs PAHs
12							
13					4	ND	GEO-322-4 13.0 to 14.0 ft bgs PAHs
14			4	SILTY CLAY - brown to gray, trace coarse to fine sand, trace medium to fine gravel			
15							
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-322.BOR

LOG OF BORING GEO-323

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 3 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–3		FL	2.5	FILL- brown silty clay, dry, no odor FILL- gray gravel	1	57.2	GEO-323-1 2.0 to 4.0 ft bgs BTEX & PAHs
3–4		GP		SILTY SAND and GRAVEL - dark gray to black, slag noted SAND and GRAVEL - brown	2	21.1	GEO-323-2 4.0 to 5.0 ft bgs PAHs
4–8		CL	3.5	SANDY CLAY - brown, no odor			
8–12		ML	4	SILT - brown, no odor, light sheen	3	18.2	GEO-323-3 9.0 to 11.0 ft bgs PAHs
12–13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-323.BOR

LOG OF BORING GEO-324

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–5		CL	4	SILTY CLAY - brown	1	ND	GEO-324-1 3.0 to 4.0 ft bgs BTEX & PAHs
5–6		SL	4	SILT - brown			
6–7		GP	4	SANDY GRAVEL - dark gray, oil noted, wet, slight odor	2	17.3	GEO-324-2 6.5 to 7.5 ft bgs PAHs
7–8		SL	4	SILT - brown			
8–12		CL	4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel As Above, creosote mottling noted from 11 to 12 ft bgs, no creosote noted below 12 ft bgs	3	25.3	GEO-324-3 10.0 to 11.0 ft bgs PAHs
12–13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-324.BOR

LOG OF BORING GEO-325

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - silty clay, brown, trace coarse to fine sand, trace medium to fine gravel			
2			4				
3		SC		SAND - black with slag material	1	8.2	GEO-325-1 2.0 to 4.0 ft bgs BTEX & PAHs
4					2	15.5	GEO-325-2 4.0 to 5.0 ft bgs PAHs
5				SAND - black coarse grained, wet, slight creosote odor			
6			4				
7							
8		CL		SILTY CLAY - brown, trace coarse to fine sand, creosote mottling	3	53.0	GEO-325-3 8.0 to 10.0 ft bgs PAHs
9							
10			4				
11		ML		SILT - brown, no odor, no mottling			
12		CL		CLAY - brown with a trace of silt, no odor, no mottling			
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-325.BOR

LOG OF BORING GEO-326

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1				FILL - brown SILTY CLAY, trace coarse to fine sand, trace medium to fine gravel			
2		FL	3.3				
3				SAND - black with coal	1	ND	GEO-326-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5		CL	4	CLAY - dark brown to brown, trace coarse to fine sand, trace medium to fine gravel, creosote mottling noted	2	16.4	GEO-326-2 6.0 to 8.0 ft bgs PAHs
6							
7							
8		GC		CLAYEY GRAVEL - brown			
9		CL		SILTY CLAY - brown, trace coarse to fine sand			
10		ML	4	SILT - brown	3	25.3	GEO-326-3 10.0 to 11.0 ft bgs PAHs
11		CL		SILTY CLAY - brown, oily streaks noted			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-326.BOR

LOG OF BORING GEO-327

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1							
2		FL	3	FILL - silty clay, brown, little coarse to fine sand, little medium to fine gravel			
3				SAND - black charred, charcoal present, creosote odor, moist	1	ND	GEO-327-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SANDY CLAY - black stained, some medium to fine gravel			
5							
6		CL	4				
7					2	10.2	GEO-327-2 6.0 to 8.0 ft bgs PAHs
8				SAND - brown fine grained			
9		SC			3	29.3	GEO-327-3 9.0 to 10.0 ft bgs PAHs
10			4	CLAY - brown, light creosote mottling at 9.5 to 10.5 ft bgs			
11		CL					
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-327.BOR

LOG OF BORING GEO-328

(Page 1 of 1)

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 13.5 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		GP		GRAVEL - brown with some clay			
1				FILL - brown silty clay, some coarse to fine sand, some medium to fine gravel			
2			3	SILTY CLAY - brown, little coarse to fine sand, trace medium to fine gravel			
3					1	5.1	GEO-328-1 3.0 to 4.0 ft bgs BTEX & PAHs
4		CL		SANDY CLAY - dark brown			
5							
6			4		2	1.1	GEO-328-2 6.0 to 8.0 ft bgs PAHs
7							
8		SC		SAND - gray lense			
		GP		SAND AND GRAVEL - brown	3	0.8	GEO-328-3 8.0 to 10.0 ft bgs PAHs
9		SC		SAND - brown			
10			4	SILTY CLAY - brown, trace coarse to fine sand			
11		CL					
12				SAND - brown	4	1.7	GEO-328-4 12.0 to 13.5 ft bgs PAHs
13		SC		Refusal at 13.5 ft bgs			
14			1.5	End of boring: 13.5 ft bgs			
15							
16							
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-328.BOR

LOG OF BORING GEO-329

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–1		GP		FILL - gray sand and gravel, some clay, dry, no odor			
2		FL	4	FILL - charcoal seam			
2–3		CL		SILTY CLAY - brown, dry, no odor	1	ND	GEO-329-1 3.0 to 4.0 ft bgs BTEX & PAHs
4–5		CL		SILTY CLAY - dark brown to black, very black from 4.5 to 5.0 ft bgs	2	ND	GEO-329-2 4.5 to 6.0 ft bgs PAHs
6–8		CL	4				
8		ML		SILT - brown, black mottling throughout silt from 8.0 to 11.0 ft bgs			
9–10		ML	4		3	6.9	GEO-329-3 10.0 to 11.0 ft bgs PAHs
11		SC		SAND - brown, wet			
11–12		CL		SILTY CLAY - brown, moist			
12–13		SC		SAND - brown, wet, no odor			
13–14		SC	4		4	33.6	GEO-329-4 13.0 to 15.0 ft bgs PAHs
14–15		CL		SILTY CLAY - brown, trace coarse to fine sand, moist, no odor NOTE: 1cm product and sand seam at 14.5 ft bgs			
16				End of boring: 16 ft bgs			
17–20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-329.BOR

04-19-2001

LOG OF BORING GEO-330

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 3.6 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - gravel with brown clay matrix			
1							
2		FL	3.5				
3				SILTY CLAY - brown to dark brown, little coarse to fine sand	1	3.2	GEO-330-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SANDY CLAY - brown, creosote mottling throughout interval sampled			
5				NOTE: Refusal at 6.0 ft bgs. Moved over 2.0 ft to complete boring.	2		
6			4				
7						7.5	GEO-330-2 5.0 to 8.0 ft bgs PAHs
8		CL		As Above			
9					3		
10			4			32.1	GEO-330-3 9.0 to 11.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-330.BOR

LOG OF BORING GEO-331

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–1		GP	4	GRAVEL - gray			
2		FL		FILL - charcoal and sand, dry, no odor	1	2.6	GEO-331-1 2.0 to 3.0 ft bgs BTEX & PAHs
3–4		CL		SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel			
5				As Above, black from 5.0 to 6.0 ft bgs	2	13.8	GEO-331-2 5.0 to 6.0 ft bgs PAHs
6–7			4				
8–9				SILTY CLAY - brown to gray, some medium to fine gravel, creosote mottling noted	3	6.6	GEO-331-3 9.0 to 10.0 ft bgs PAHs
10		ML	4	SANDY SILT - brown, moist, no odor			
11		CL		SILTY CLAY - brown, little coarse to fine sand			
12				As Above			
13		SC		SAND - brown, wet, no odor, light oil sheen			
14		CL	4	SILTY CLAY - brown, trace coarse to fine sand, some medium to fine gravel, creosote mottling from 14.0 to 16.0 ft bgs	4	46.2	GEO-331-4 14.0 to 16.0 ft bgs PAHs
16				End of boring: 16 ft bgs			
17–20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-331.BOR

LOG OF BORING GEO-332

(Page 1 of 1)

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/05/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - gray gravel			
2			4	SILTY CLAY - brown, little coarse to fine sand, some medium to fine gravel			
3				SANDY CLAY - black, dry, no odor	1	9.6	GEO-332-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - gray to brown, trace coarse to fine sand, little medium to fine gravel, creosote mottling around gravels, moist, slight creosote odor			
5							
6		CL	4		2	44.1	GEO-332-2 6.0 to 7.0 ft bgs PAHs
7							
8				SILTY CLAY - brown, little coarse to fine sand, some medium to fine gravel, creosote mottling noted			
9							
10		ML	4	SANDY SILT - brown, light creosote mottling	3	42.5	GEO-332-3 10.0 to 11.0 ft bgs PAHs
11		CL		SILTY CLAY - brown, trace coarse to fine sand, some medium to fine gravel, light creosote mottling			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-332.BOR

LOG OF BORING GEO-333

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - brown silty clay, little coarse to fine sand, trace medium to fine gravel, dry, no odor			
1							
2		FL	4				
3				FILL - black sandy clay, burnt material noted	1	ND	GEO-333-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown to gray, little coarse to fine sand, some medium to fine gravel, moist, slight petroleum odor			
5							
6			4				
7		CL		NOTE: oil and sheen noted at 7.0 to 8.0 ft bgs	2	19.0	GEO-333-2 7.0 to 8.0 ft bgs PAHs
8							
9				As Above, creosote mottling, wet, odor	3	77.3	GEO-333-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		ML		SANDY SILT - brown			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-333.BOR

04-19-2001

LOG OF BORING GEO-334

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		OL		ORGANIC - roots and organic material, trace gravel, no odor			
1					1	ND	GEO-334-1 1.0 to 2.0 ft bgs BTEX & PAHs
2			1	No Recovery			
3							
4		GP		SAND and GRAVEL	2	ND	GEO-334-2 4.0 to 5.0 ft bgs PAHs
				SILTY CLAY - brown to gray, trace coarse to fine sand, with 2" sand and gravel layer			
5				As Above			
6		CL	4	As Above			
7				As Above			
8							
9				End of boring: 8 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-334.BOR

LOG OF BORING GEO-335

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		OL		ORGANIC - organic material, roots and weeds noted			
1							
2		CL	3.1	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel	1	8.7	GEO-335-1 2.0 to 4.0 ft bgs BTEX & PAHs
3							
4							
5		SC		SAND and GRAVEL - gray, light oil sheening, pocket of creosote at 6.0 ft bgs.	2	31.9	GEO-335-2 5.0 to 6.0 ft bgs PAHs
6			4				
7		CL		SANDY CLAY - brown			
8				End of boring: 8 ft bgs			
9							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-335.BOR

LOG OF BORING GEO-336

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: 4.4'
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		SC		SANDY CLAY - brown			
1		GP		SAND and GRAVEL - brown		ND	GEO-336-1 3.0 to 4.0 ft bgs BTEX & PAHs
2		CL	4	SILTY CLAY - dark gray, light oil sheen			
3					1		
4		ML		SILT - lense			
		GP		SAND and GRAVEL - lens			
5		CL		SILTY CLAY - gray, light oil sheen	2		
6			4			34.3	GEO-336-2 5.0 to 6.0 ft bgs PAHs
7				SILTY CLAY - gray, light oil sheen			
8					3	22.5	GEO-336-3 8.0 to 9.0 ft bgs PAHs
9				SILTY CLAY - gray, light oil sheen, black mottling			
10		GP	4	SANDY GRAVEL - brown			
11		SC		CLAYEY SAND - brown			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-336.BOR

LOG OF BORING GEO-337

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–2		CL	4	SILTY CLAY - brown, with top 2" of roots and organic material	1	ND	GEO-337-1 1.0 to 2.0 ft bgs BTEX & PAHs
2–3		FL		CLAY - dark brown to black FILL - grass and burnt debris			
3–6		CL	4	SILTY CLAY - brown to gray clay, trace of coarse to fine sand, trace medium to fine gravel			
6–8		GP		SAND and GRAVEL - gray, oil sheen noted, light creosote nodules, wet	2	16.4	GEO-337-2 6.0 to 8.0 ft bgs PAHs
8–10		SC		CLAYEY SAND - brown, wet, no odor			
10–12		CL	4	CLAY - gray, trace coarse to fine sand, trace medium to fine gravel	3	10.9	GEO-337-3 10.0 to 12.0 ft bgs PAHs
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-337.BOR

LOG OF BORING GEO-338

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - gray gravel, CA-6			
1							
2			3.3	SILTY CLAY - dark brown, trace coarse to fine sand	1	ND	GEO-338-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4					2	8.2	GEO-338-2 4.0 to 6.0 ft bgs PAHs
5							
6		CL	4	SILTY CLAY - gray to brown, trace coarse to fine sand, trace medium to fine gravel, creosote nodules mottling in bottom of core interval			
7							
8							
9				SILTY CLAY - brown			
10			4				
11				SILTY CLAY - brown, creosote nodule mottling in core interval	3	12.3	GEO-338-3 10.0 to 12.0 ft bgs PAHs
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-338.BOR

LOG OF BORING GEO-339

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - brown silty clay with 3' of organic material - weeds and roots			
1		CL					
2			4	FILL - black charred wood and sand with gravel	1	ND	GEO-339-1 2.0 to 3.0 ft bgs BTEX & PAHs
3		FL		SILTY CLAY - dark brown, trace coarse to fine sand			
4		CL		CLAYEY SAND - brown			
5		SC			2	ND	GEO-339-2 4.0 to 6.0 ft bgs PAHs
6			4	SILTY CLAY - brown, light creosote mottling			
7							
8				SANDY CLAY - brown			
9		CL					
10			4				
11					3	54.8	GEO-339-3 11.0 to 12.0 ft bgs PAHs
12		SC		SAND - black, with 1" free product			
		GP		CLAYEY SAND and GRAVEL - brown	4	45.2	GEO-339-4 12.0 to 13.0 ft bgs PAHs
13				SILT - brown, moist, no odor			
14			4				
15		ML					
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-339.BOR

LOG OF BORING GEO-340

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1							
2			3.3	SILTY CLAY - dark brown, fill, trace coarse to fine sand, some medium to fine gravel	1	ND	GEO-340-1 1.0 to 3.0 ft bgs BTEX & PAHs
3							
4							
5				SILTY CLAY - brown, trace coarse to fine sand, some creosote nodules around gravel grains, trace medium to fine gravel	2		
6		CL	4			12.0	GEO-340-2 4.0 to 6.0 ft bgs PAHs
7							
8				SILTY CLAY - brown, trace coarse to fine sand, some creosote nodules around gravel grains, trace medium to fine grave	3	2.8	GEO-340-3 8.0 to 10.0 ft bgs PAHs
9							
10			4				
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-340.BOR

LOG OF BORING GEO-341

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/01/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		CL		SANDY CLAY - black, with grass on top			
1							
		SC		SAND - black			
2		CL	3.3	SANDY CLAY - black	1	ND	GEO-341-1 2.0 to 3.0 ft bgs BTEX & PAHs
3				SILTY CLAY - brown, trace coarse to fine sand, dry, no odor			
4		ML	4	SILT-trace - CLAY - brown	2	ND	GEO-341-2 6.0 to 8.0 ft bgs PAHs
5							
6							
7							
8				End of boring: 8 ft bgs			
9							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-341.BOR

04-19-2001

LOG OF BORING GEO-342

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - 6" bituminous concrete over 1.5 ft crushed stone			
2		CL	2.1	SILTY CLAY - dark brown, trace coarse to fine sand	1	ND	GEO-342-1 3.0 to 4.0 ft bgs BTEX & PAHs
3							
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-342.BOR

LOG OF BORING GEO-343

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - 6" bituminous concrete over 1.5 ft crushed stone			
2			2.3	SILTY CLAY - dark brown, trace coarse to fine sand			
3		CL		SAND AND CLAY - black with charcoal, wet, burnt odor	1	ND	GEO-343-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-343.BOR

LOG OF BORING GEO-344

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2	SILTY CLAY - black to brown, no odor			
3					1	0.9	GEO-344-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, light creosote mottling			
5							
6			4				
7					2	5.4	GEO-344-2 7.0 to 8.0 ft bgs PAHs
8				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, dry, no mottling			
9		CL		NOTE: inside of sleeve heavily coated with creosote			
10			4				
11				CLAY - gray, trace medium to fine gravel, wet, soft, creosote odor	3	4.4	GEO-344-3 11.0 to 12.0 ft bgs PAHs
12				SILTY CLAY - gray, trace coarse to fine sand, wet, no odor			
13					4	3.2	GEO-344-4 13.0 to 14.0 ft bgs PAHs
14			4				
15							
16				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-344.BOR

LOG OF BORING GEO-345

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2.1				
3		SC		CLAYEY SAND - black, moist, light creosote odor	1	14.5	GEO-345-1 2.5 to 3.5 ft bgs BTEX & PAHs
4				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, creosote mottling noted (light)			
5							
6			4		2	24.6	GEO-345-2 6.0 to 7.0 ft bgs PAHs
7		CL					
8				As Above - more mottling from 9.0 to 11.0 ft bgs			
9							
10			4		3	35.4	GEO-345-3 10.0 to 11.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-345.BOR

LOG OF BORING GEO-346

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2.3	SILTY CLAY - brown to black, dry, light petroleum odor			
3		CL			1	35.0	GEO-346-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				CLAYEY GRAVEL - black, moist, strong creosote odor			
5		GC			2	30.4	GEO-346-2 5.0 to 6.0 ft bgs PAHs
6			4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, slight creosote mottling			
7							
8				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, no odor			
9		CL					
10			4				
11					3	3.0	GEO-346-3 10.0 to 12.0 ft bgs PAHs
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-346.BOR

LOG OF BORING GEO-347

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2.1	SILTY CLAY - brown, trace coarse to fine sand, ttrace medium to fine gravel, dry, no odor			
3					1	ND	GEO-347-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5							
6			4	As Above - light creosote mottling			
7		CL			2	9.3	GEO-347-2 6.5 to 7.5 ft bgs PAHs
8				SILTY CLAY - gray to brown, trace coarse to fine sand, creosote mottling noted from 9.0 to 9.5 ft bgs, wet, no odor			
9					3	10.3	GEO-347-3 8.5 to 9.5 ft bgs PAHs
10			4				
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-347.BOR

LOG OF BORING GEO-348

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			4	SILTY CLAY - black to dark brown, little coarse to fine sand, trace medium to fine gravel, moist, no odor			
3					1	1.1	GEO-348-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown to gray, little coarse to fine sand, trace medium to fine gravel, moist, light creosote odor, creosote mottling noted			
5							
6			4		2	77.5	GEO-348-2 6.0 to 7.0 ft bgs PAHs
7		CL					
8				As Above, no creosote mottling			
9							
10			4				
11					3	ND	GEO-348-3 10.5 to 11.5 ft bgs PAHs
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-348.BOR

LOG OF BORING GEO-349

(Page 1 of 1)

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2.3	SILTY CLAY - black to brown, trace coarse to fine sand, trace medium to fine gravel, moist, slight petroleum odor	1	4.1	GEO-349-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SILTY CLAY - brown to gray, little coarse to fine sand, trace medium to fine gravel, moist, creosote mottling present			
5					2	40.7	GEO-349-2 5.0 to 6.0 ft bgs PAHs
6			4				
7		CL					
8				As Above, no creosote mottling			
9					3	19.9	GEO-349-3 9.0 to 10.0 ft bgs PAHs
10			4				
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-349.BOR

04-19-2001

LOG OF BORING GEO-350

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			4	SANDY CLAY - black to brown, little medium to fine gravel, charcoal and sand layer of 3" at 2.0 ft bgs, moist, no odor	1	2.0	GEO-350-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, light creosote odor, creosote mottling noted			
5							
6			4		2	29.8	GEO-350-2 6.0 to 7.0 ft bgs PAHs
7		CL					
8				SANDY CLAY - gray, trace coarse to fine gravel, moist, light creosote odor, creosoted mottling to 11.0 ft bgs			
9							
10			4		3	46.4	GEO-350-3 10.0 to 11.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-350.BOR

LOG OF BORING GEO-351

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - 6" bituminous concrete over 1.5 ft crushed stone			
1							
2		CL	2.5	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel	1	5.1	GEO-351-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-351.BOR

LOG OF BORING GEO-352

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - 6" bituminous concrete over 1.5 ft crushed stone			
2		CL	2.5	SILTY CLAY -dark brown to brown, trace coarse to fine sand, dry, no odor	1	4.8	GEO-352-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-352.BOR

LOG OF BORING GEO-353

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			4	SILTY CLAY - black to brown,little coarse to fine sand, little medium to fine gravel, dry, no odor	1	0.5	GEO-353-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SILTY CLAY - brown to gray, trace coarse to fine sand, trace medium to fine gravel, dry, slight creosote odor, creosote mottling noted			
5							
6			4				
7		CL			2	50.7	GEO-353-2 7.0 to 8.0 ft bgs PAHs
8							
9							
10			4	Creosote mottling from 9.0 to 9.5 ft bgs Clean from 10.5 to 12.0 ft bgs	3	40.3	GEO-353-3 9.5 to 10.5 ft bgs PAHs
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-353.BOR

LOG OF BORING GEO-354

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			4	SILTY CLAY - black to gray, trace coarse to fine sand, trace medium to fine gravel, dry, no odor			
3					1	ND	GEO-354-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5				As Above - creosote mottling from 5.5 to 7.0 ft bgs			
6		CL	4		2	24.4	GEO-354-2 5.5 to 6.5 ft bgs PAHs
7							
8							
9				Creosote mottling from 9.0 to 10.0 ft bgs	3	63.6	GEO-354-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		SC		SILTY SAND - gray, wet, no odor			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-354.BOR

LOG OF BORING GEO-355

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2.5	SILTY CLAY - brown, little coarse to fine sand, trace medium to fine gravel, dry, no odor			
3					1	ND	GEO-355-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5		CL					
6			0.9		2	ND	GEO-355-2 4.0 to 8.0 ft bgs PAHs
7							
8				SILTY CLAY - gray, trace coarse to fine sand, trace medium to fine gravel, dry, no odor			
9				SILTY CLAY - gray, wet, no odor			
10		SC	4		3	ND	GEO-355-3 10.0 to 11.0 ft bgs PAHs
11							
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-355.BOR

LOG OF BORING GEO-356

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–2		FL	2.3	FILL - gray gravel and crushed stone			
2–3		CL		SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel, dry, no odor	1	ND	GEO-356-1 3.0 to 4.0 ft bgs BTEX & PAHs
3–6		CL	3.3	SILTY CLAY - brown, some coarse to fine sand, some medium to fine gravel, wet, strong petroleum odor	2	38.5	GEO-356-2 5.5 to 6.5 ft bgs PAHs
6–7		CL		SILTY CLAY - gray, trace coarse to fine sand, trace medium to fine gravel, dry, dense			
7–8		SM		SILTY SAND - gray, moist, no odor, dense			
8				End of boring: 8 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-356.BOR

LOG OF BORING GEO-357

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 7.5 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - gray gravel and crushed stone			
2			4	FILL - Wood			
3				SILTY CLAY - dark brown, little coarse to fine sand, trace medium to fine gravel, dry, no odor, hard	1	19.2	GEO-357-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5		CL					
6			4	SILTY CLAY - brown silty, little coarse to fine sand, trace medium to fine gravel, dry slight creosote mottling, no odor			
7					2	44.0	GEO-357-2 6.5 to 7.5 ft bgs PAHs
8		SM		SILTY SAND - gray, wet, no odor			
9				End of boring: 8 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-357.BOR

LOG OF BORING GEO-358

(Page 1 of 1)

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - gray gravel, curushed stone			
1				FILL - brown silty clay, little coarse to fine sand, some medium to fine gravel, black stained from 3.0 to 4.0 ft bgs			
2		FL	4				
3					1	3.5	GEO-358-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				As above, not stained, light creosote mottling around gravel grains at 6.0 to 7.0 ft bgs, slight petroleum odor, moist			
5							
6			4				
7					2	20.5	GEO-358-2 6.0 to 8.0 ft bgs PAHs
8				As above, less gravel, mottling with creosote increases, strong creosote odor			
9		CL			3	45.6	GEO-358-3 9.0 to 10.0 ft bgs PAHs
10			4				
11							
12							
13				As above, some gravel, no creosote mottling, creosote odor, wet			
14			4		4	42.8	GEO-358-4 14.0 to 15.0 ft bgs PAHs
15		SC		Sand - dense, gray, light petroleum odor, no staining, odor decreases with depth to none, wet			
16		ML		SILT - gray, wet, no odor			
				End of boring: 16 ft bgs			
17							
18							
19							
20							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-358.BOR

LOG OF BORING GEO-359

(Page 1 of 1)

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 12.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 16 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–4		CL	4	SANDY CLAY - brown, little coarse to fine gravel, dry, no odor	1	ND	GEO-359-1 1.0 to 2.0 ft bgs BTEX & PAHs
4–8		CL	4	SILTY CLAY - brown to gray, trace coarse to fine sand, trace medium to fine gravel, moist, slight creosote odor, creosote mottling around gravel	2	ND	GEO-359-2 7.0 to 8.0 ft bgs PAHs
8–10		CL		As Above, more gravel			
10–12		CL	4		3	ND	GEO-359-3 10.0 to 12.0 ft bgs PAHs
12–13		GP		SAND and GRAVEL - brown, wet, oil sheen, slight creosote odor			
13–16		CL	4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, dry, creosote mottling noted	4	ND	GEO-359-4 13.0 to 14.0 ft bgs PAHs
16–20				End of boring: 16 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-359.BOR

LOG OF BORING GEO-360

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				GRAVEL - gray			
1				FILL - brown silty clay, trace coarse to fine sand, trace medium to fine gravel			
2		FL	4				
3					1	16.0	GEO-360-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown to gray, trace coarse to fine sand, trace medium to fine gravel, moist, creosote mottling to 12 ft bgs			
5							
6			4				
7					2	27.4	GEO-360-2 7.0 to 8.0 ft bgs PAHs
8		CL					
9							
10			4		3	99.2	GEO-360-3 9.0 to 11.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-360.BOR

LOG OF BORING GEO-361

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - silty clay, brown to black, some gravel			
1							
2		FL	4		1	ND	GEO-361-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SANDY CLAY - black to dark brown, moist, slight creosote odor, creosote nodules present			
5							
6			4		2	13.9	GEO-361-2 6.0 to 7.0 ft bgs PAHs
7							
8		CL		SANDY CLAY - brown, little coarse to fine gravel, moist, creosote odor, oil sheen, creosote mottling			
9							
10			4		3	89.2	GEO-361-3 10.0 to 12.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-361.BOR

LOG OF BORING GEO-362

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		GP		GRAVEL - gray			
1				SILTY CLAY - black, little coarse to fine sand			
2			4		1	4.4	GEO-362-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4				SILTY CLAY - black to dark brown, trace coarse to fine sand, trace medium to fine gravel			
5							
6		CL	4		2	5.3	GEO-362-2 6.0 to 7.0 ft bgs PAHs
7							
8				NOTE: Creosote mottling at 7.5 to 8.0 ft bgs			
9				SILTY CLAY - gray, trace coarse to fine sand, trace medium to fine gravel, moist, heavy creosote mottling, creosote odor			
10			4		3	62.1	GEO-362-3 10.0 to 11.0 ft bgs PAHs
11							
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-362.BOR

LOG OF BORING GEO-364

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/06/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 3.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - gray gravel			
1		FL					
2			4				
3		GC		CLAYEY GRAVEL - brown, wet, no odor	1	ND	GEO-364-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SANDY CLAY - black, moist, light petroleum odor			
5				NOTE: Moved 2.0 ft over and resampled 4.0 ft to 8.0 ft bgs because of no initial recovery			
6			4		2	ND	GEO-364-2 6.0 to 7.0 ft bgs PAHs
7							
8		CL		SILTY CLAY - black to dark brown, trace coarse to fine sand, moist, light creosote odor, creosote mottling noted			
9							
10			4				
11					3	25.9	GEO-364-3 11.0 to 12.0 ft bgs PAHs
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-364.BOR

LOG OF BORING GEO-365

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/02/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 2 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		CL		FILL - brown SANDY CLAY			
2			3.1				
		GP		SAND and GRAVEL - brown, slag material noted, no odor, wet	1	6.8	GEO-335-1 2.0 to 4.0 ft bgs BTEX & PAHs
3							
4		CL		SILTY CLAY - dark brown, no odor, moist SILTY CLAY - brown, no odor, wet			
5		SC		SAND - brown fine-grained, wet, oil sheen in interval, slight petroleum odor	2	20.2	GEO-335-2 5.0 to 7.0 ft bgs PAHs
6			4				
7		CL		SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, no odor			
8				End of boring: 8 ft bgs			
9							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-365.BOR

LOG OF BORING GEO-367

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/09/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–8		FL	1.2	FILL - gravel, crushed stone over clayey gravel	1	ND	GEO-367-1 2.0 to 3.0 ft bgs BTEX & PAHs
4–8		FL	0.9	FILL - gravel and brick material, wet, creosote noted	2	12.6	GEO-367-2 4.0 to 8.0 ft bgs PAHs
8–12		CL	3.4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, no odor	3	2.1	GEO-367-3 8.5 to 9.5 ft bgs PAHs
12				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-367.BOR

LOG OF BORING GEO-368

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/09/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6 inches of bituminous concrete over crushed stone			
1							
2		FL	4	SILTY CLAY - brown to dark brown, little medium to fine gravel, moist, light petroleum odor			
3					1	30.9	GEO-368-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SAND and GRAVEL - black, trace clay, moist to wet, oil sheen noted from 3.5 to 4.0 ft bgs (brick at bottom of core)			
5							
6		CL	4	SILTY CLAY - brown, little coarse to fine sand, trace medium to fine gravel, wet, no odor, light creosote nodules noted (0.05% of soil in core interval)	2	6.9	GEO-368-2 5.5 to 6.5 ft bgs PAHs
7							
8				End of boring: 8 ft bgs			
9							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-368.BOR

LOG OF BORING GEO-369

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/09/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 4 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - 6" bituminous concrete over 1.5 ft crushed stone			
1		CL	4	SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel, moist, no odor	1	ND	GEO-369-1 2.0 to 3.0 ft bgs BTEX & PAHs
2							
3							
4				End of boring: 2 ft bgs			
5							
6							

Soil boring was advanced in 1 foot increments.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-369.BOR

LOG OF BORING GEO-370

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - 6" bituminous concrete over crushed stone			
1							
2		CL	4	SILTY CLAY - dark brown, some coarse to fine sand, some medium to fine gravel, charred material noted, dry, no odor			
3					1	ND	GEO-370-1 3.0 to 4.0 ft bgs BTEX & PAHs
4				SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine greavel, wet , creosote mottling around gravel grains noted			
5							
6			4				
7					2	5.4	GEO-370-2 7.0 to 8.0 ft bgs PAHs
8							
9		ML		SILT - brown, trace clay, little medium to fine gravel, moist, no odor			
10			4		3	3.2	GEO-370-3 10.0 to 11.0 ft bgs PAHs
11							
12		SM		SILTY SAND - gray			
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-370.BOR

LOG OF BORING GEO-371

(Page 1 of 1)

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0–2		FL	4	FILL - 6" bituminous concrete over sand and gravel, some clay, dry, no odor			
2–4		GP		SAND and GRAVEL - black, wet, strong creosote odor and staining	1	53.9	GEO-371-1 3.0 to 4.0 ft bgs BTEX & PAHs
4–6		CL	4	SILTY CLAY - brown, little coarse to fine sand, little medium to fine gravel, moist, light creosote mottling around grains	2	72.5	GEO-371-2 5.0 to 6.0 ft bgs PAHs
6–8							
8–9		GC		CLAYEY GRAVEL - black, wet, strong creosote odor	3	48.6	GEO-371-3 9.0 to 10.0 ft bgs PAHs
9–12		ML	4	SILTY SAND - brown, wet, no odor			
12–13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-371.BOR

04-19-2001

LOG OF BORING GEO-372

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 2.5 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - gray gravel, crushed stone			
1				SILTY CLAY - brown to dark brown, trace coarse to fine sand, moist, no odor			
2			4		1	55.2	GEO-372-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4		CL		SILTY CLAY - brown, trace coarse to fine sand, wet, slight creosote odor, creosote mottling noted			
5							
6			4				
7					2	57.6	GEO-372-2 7.0 to 8.0 ft bgs PAHs
8				SILTY SAND - black, wet, creosote stained SILTY SAND - brown, wet, no odor			
9					3	ND	GEO-372-3 9.0 to 10.0 ft bgs PAHs
10		ML	3				
11				SILTY SAND - gray, wet, no odor Refusal at 11.0 ft bgs			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-372.BOR

LOG OF BORING GEO-373

WESTON® MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: No
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 8 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0		FL		FILL - gray gravel and crushed stone			
1							
2			4	SILTY CLAY - black to dark brown, little coarse to fine sand, trace medium to fine gravel, black sand and charcoal from 1.5 to 2.5 ft bgs	1	ND	GEO-373-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4		CL		SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist			
5							
6			4	SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, slight creosote mottling			
7					2	66.4	GEO-373-2 6.5 to 7.5 ft bgs PAHs
8		ML		SANDY SILT - gray, no odor			
				End of boring: 8 ft bgs			
9							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE-1\PHASEI-2\PHASEI-1\GEO-373.BOR

LOG OF BORING GEO-374

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 8.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2	SILTY CLAY - dark brown to black, little coarse to fine sand, trace medium to fine gravel, black sand and charcoal from 1.5 to 2.0 ft bgs	1	ND	GEO-374-1 2.0 to 3.0 ft bgs BTEX & PAHs
3				SILTY CLAY - brown, little coarse to fine sand, some medium to fine gravel, moist, no odor, creosote mottling around gravel grains			
4							
5							
6		CL	4				
7					2	14.2	GEO-374-2 7.0 to 8.0 ft bgs PAHs
8				SILTY CLAY - brown, some medium to fine gravel, wet, light creosote odor, creosote mottling			
9					3	13.6	GEO-374-3 9.0 to 10.0 ft bgs PAHs
10			4				
11		ML		SANDY SILT - brown, wet, no odor			
12				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-374.BOR

LOG OF BORING GEO-375

WESTON MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/07/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				FILL - 6" bituminous concrete over crushed stone			
1		FL					
2			2	SILTY CLAY - dark brown, little coarse to fine sand, little medium to fine gravel, dry, no odor	1	1.1	GEO-375-1 2.0 to 3.0 ft bgs BTEX & PAHs
3							
4		CL		SILTY CLAY - brown, trace coarse to fine sand, trace medium to fine gravel, moist, creosote odor, creosote mottling present			
5							
6			4				
7					2	39.4	GEO-375-2 7.0 to 8.0 ft bgs PAHs
8		SC		CLAYEY SAND - brown, with free product present in water			
9							
10			4				
10		CL		SILTY CLAY - gray, light creosote mottling	3	40.7	GEO-375-3 10.0 to 11.0 ft bgs PAHs
11		ML		SANDY SILT - gray, wet, no odor			
12							
13				End of boring: 12 ft bgs			

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-375.BOR

LOG OF BORING GEO-376

(Page 1 of 1)

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 03/08/01	WESTON Geologist	: J. Klemp
Driller	: Terra Trace	Depth to Water	: About 4.0 ft bgs
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: Yes
Total Depth	: 12 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0							
1		FL		FILL - 6" bituminous concrete over crushed stone			
2			2.1	SILTY CLAY - brown to black, little coarse to fine sand, little medium to fine gravel, dry, no odor			
3					1	ND	GEO-376-1 3.0 to 4.0 ft bgs BTEX & PAHs
4							
5		CL					
6			4		2	29.8	GEO-376-2 6.0 to 7.0 ft bgs PAHs
7							
8				CLAYEY GRAVEL - brown, wet, free product noted			
9		GP			3	28.3	GEO-376-3 8.5 to 9.5 ft bgs PAHs
10		CL	4	SILTY CLAY - brown to gray, little coarse to fine sand, trace medium to fine gravel, wet, creosote mottling noted			
11		SM		SILTY SAND - gray, wet, no odor			
12							
				End of boring: 12 ft bgs			
13							

Soil boring was advanced in 4 foot increments, unless otherwise noted.

04-19-2001 K:\MOSSAM-2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-376.BOR

LOG OF BORING GEO-377

MANAGERS DESIGNERS/CONSULTANTS

Kerr McGee
Moss American Site
Milwaukee, Wisconsin

Boring Date	: 02/19/01	WESTON Geologist	: A. Slesers
Driller	: Terra Trace	Depth to Water	: Not Encountered
Drilling Method	: Geoprobe	Odors (Y/N)	: Yes
Borehole Diameter	: 2"	Free Product (Y/N)	: No
Total Depth	: 11 ft bgs		

Depth in feet	GRAPHIC	USCS	Recovery (ft per 4 ft sleeve)	DESCRIPTION	Samples	PID (ppm)	Laboratory Samples (Depth and Analyses)
0				CLAY - brown, some silt, trace pebbles, trace gravel, no odor, no staining	1	---	GEO-377-1 0.5 to 1.0 ft bgs BTEX & PAHs
1							
2			3.5				
3							
4				As above, stained throughout along fractures/partings and surrounding gravel	2	---	GEO-377-2 4.5 to 5.0 ft bgs BTEX & PAHs
5		CL					
6			4	becoming denser below 6 ft bgs			
7							
8				As above, staining as above, grading to a gray, dense clay.			
9					3	---	GEO-377-3 9.0 to 9.5 ft bgs BTEX & PAHs
10			3	No staining, no odor below 10 ft bgs			
11							
12				Refusal at 11 ft bgs End of boring: 11 ft bgs			
13							

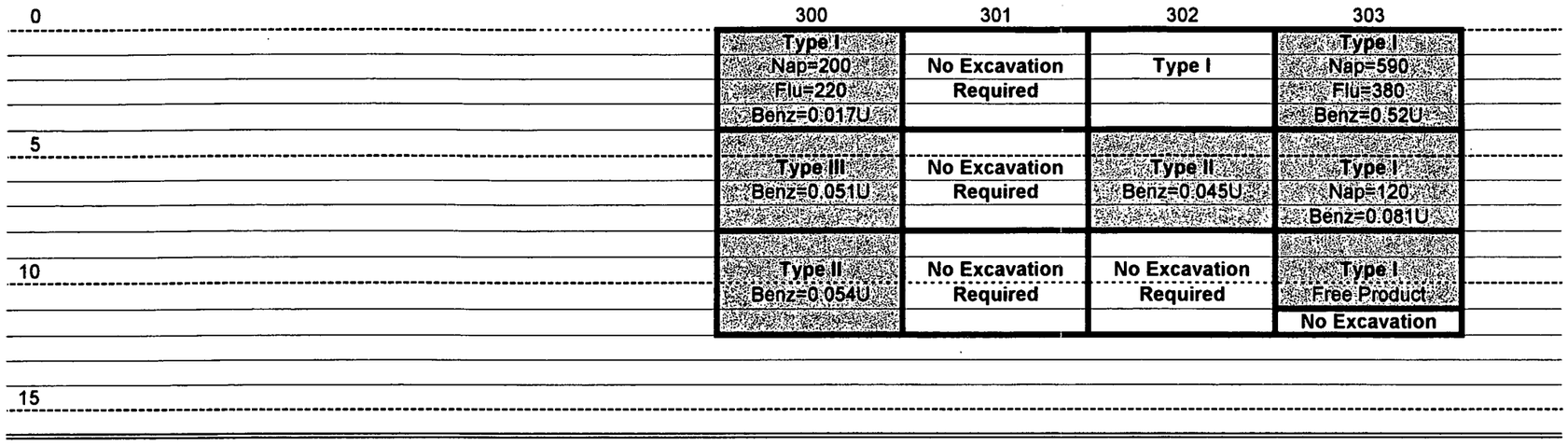
Soil boring was advanced in 4 foot increments, with the exception of the 8 to 11 ft bgs interval.

04-19-2001 K:\MOSSAM~2\SOILRE~1\PHASEI~2\PHASEI~1\GEO-377.BOR

Attachment D

Area Cross-sections

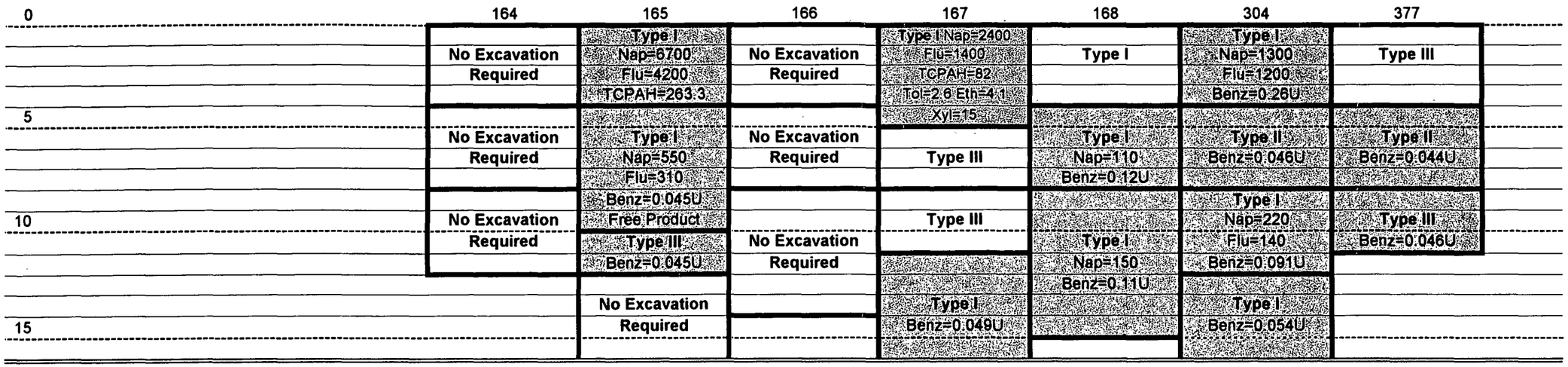
Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

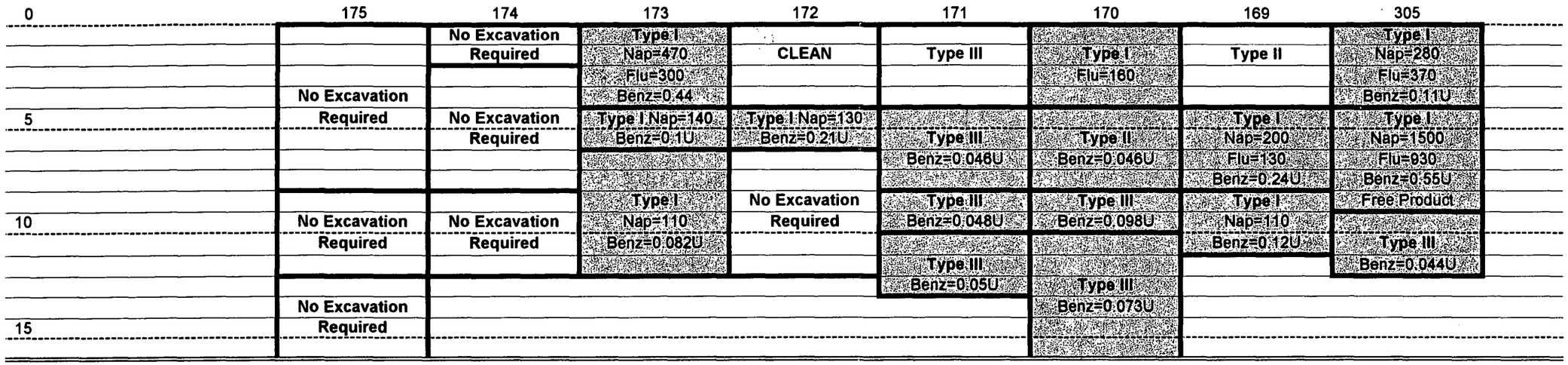
Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

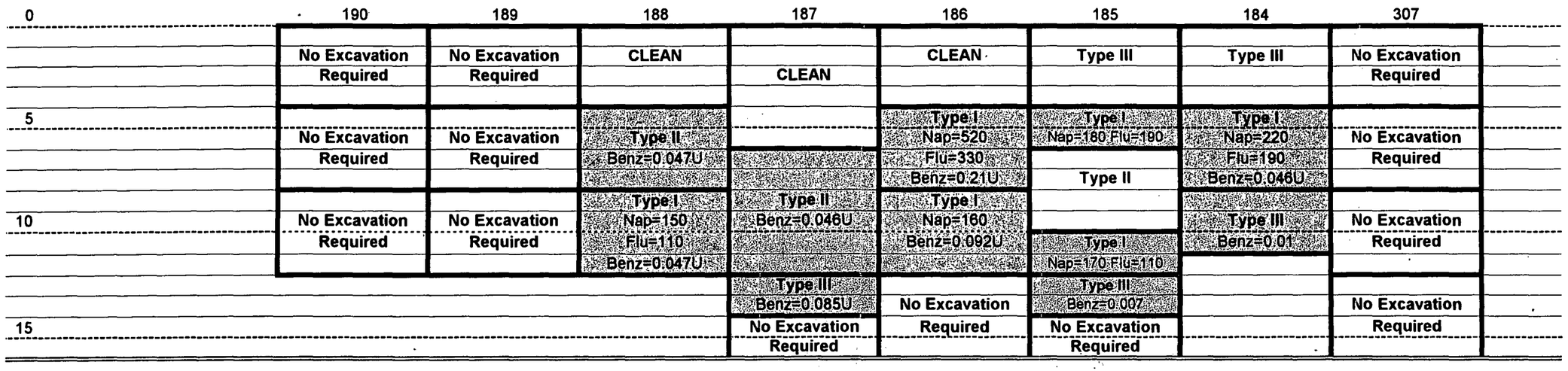
0	176	177	178	179	180	181	182	183	306
	No Excavation Required	No Excavation Required	No Excavation Required	CLEAN	Type II	Type I Nap=260 Flu=170 Benz=0.049U	Type III	Type III	CLEAN
5	No Excavation Required	No Excavation Required	No Excavation Required	CLEAN	Type I Nap=190 Flu=120 Type I Nap=510 Flu=300	Type I Nap=210 Flu=130 Benz=0.042	Type I Nap=330 Flu=320	Type I Nap=300 Flu=260 Benz=0.048	Type I Flu=140 Benz=0.009
10	No Excavation Required			Type I Nap=420 Flu=240 Benz=0.21U Free Product	Benz=0.49U Type III Benz=0.05U	Type II Benz=0.042U	Type I Nap=230 Flu=150	Type I Nap=130	Type I Nap=190 Flu=130 Benz=0.092U
15				No Excavation Required	Type I Nap=130	Type III Benz=0.048	Type I Nap=290 Flu=190		

20

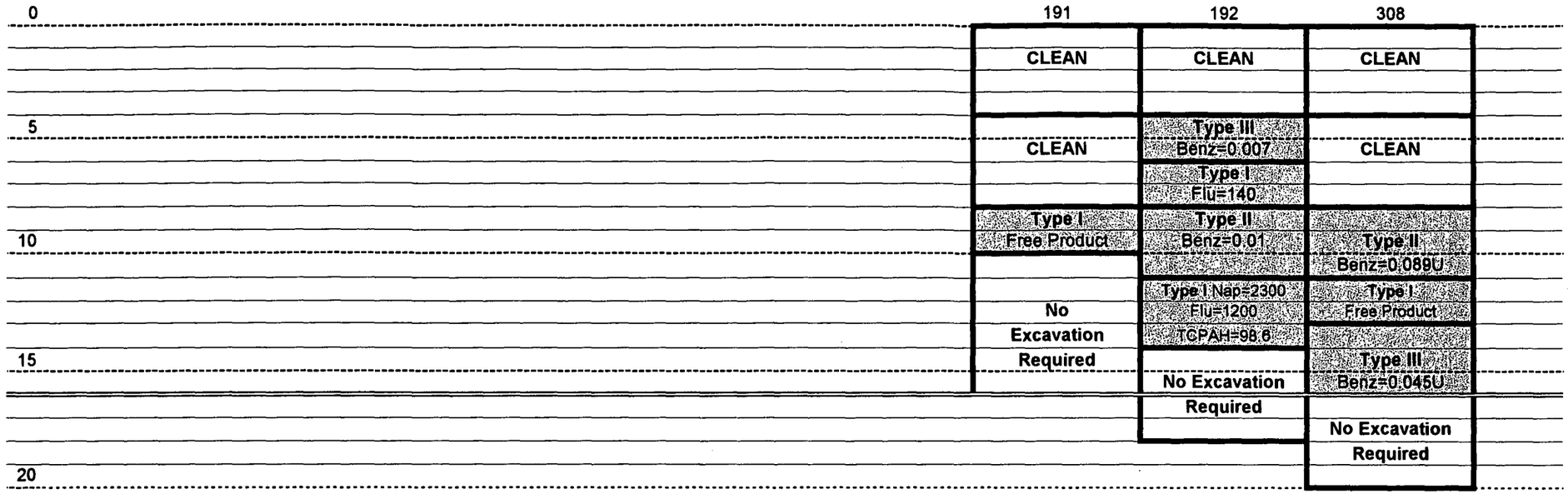
= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



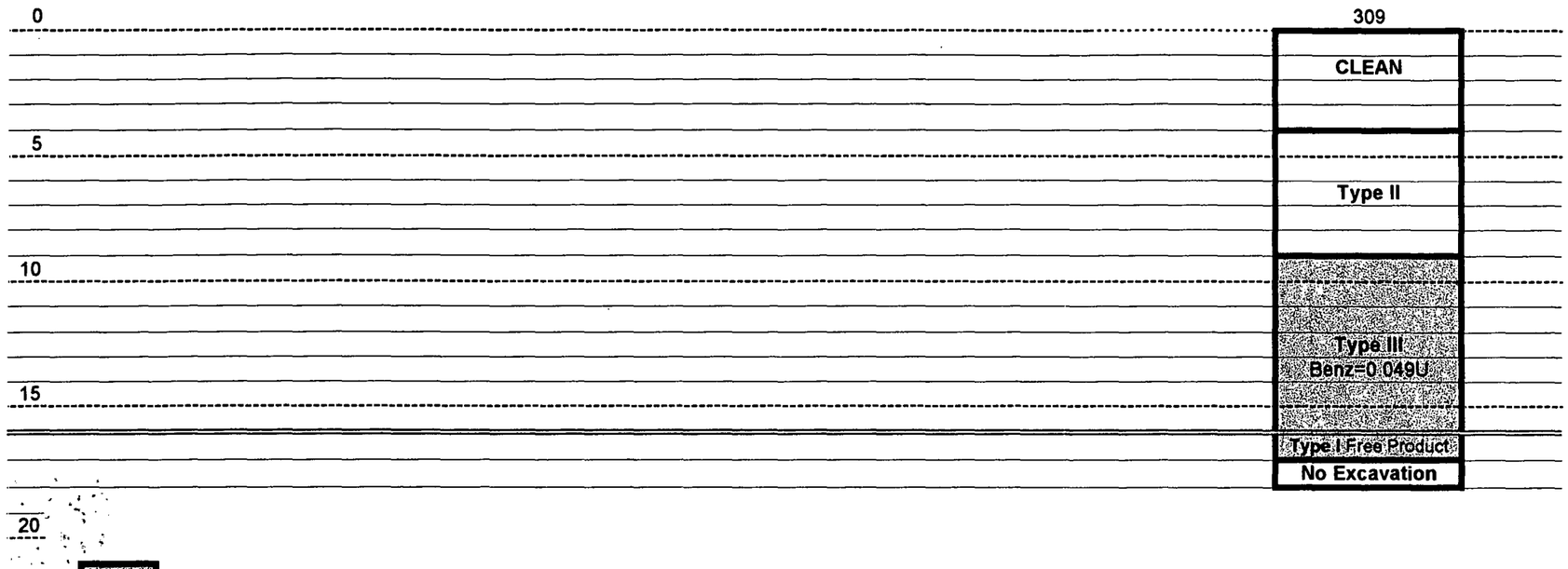
Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

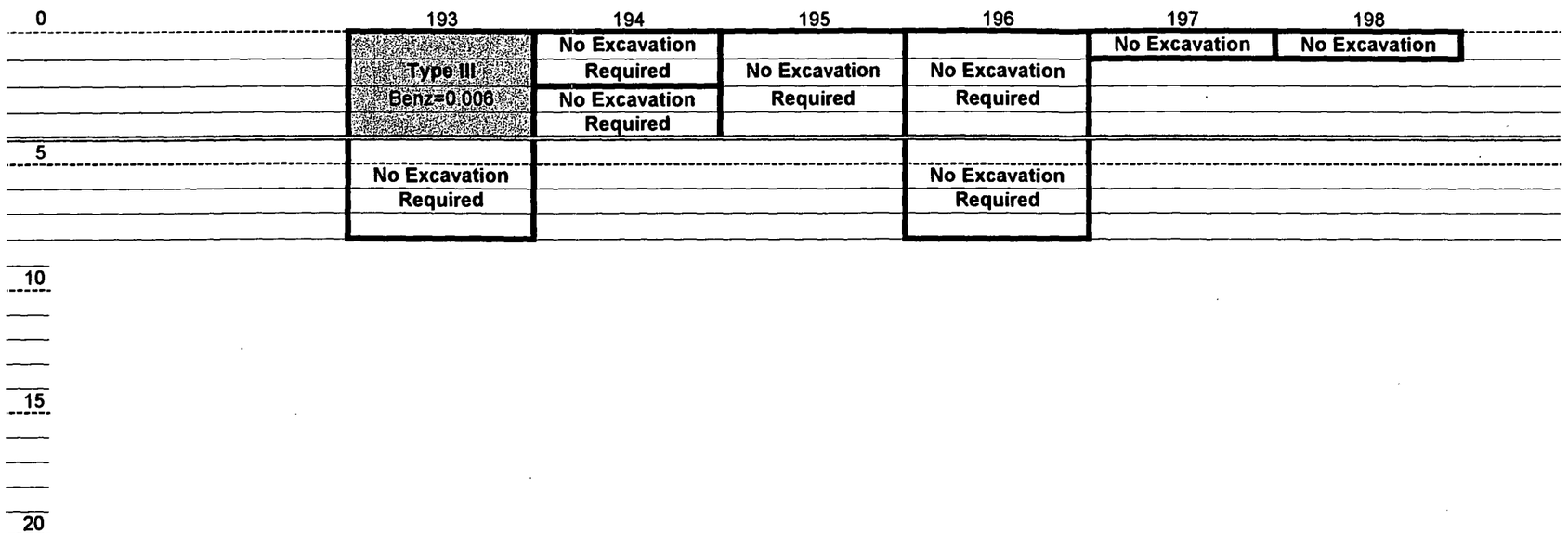
Area T4/5 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

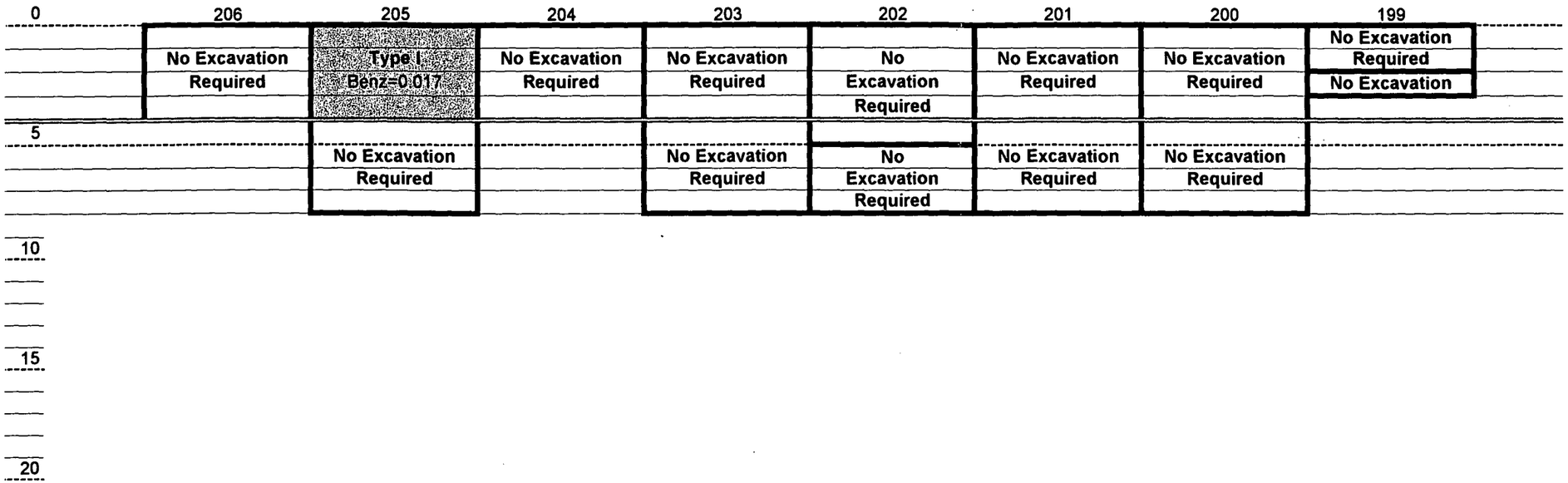
Area T6 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

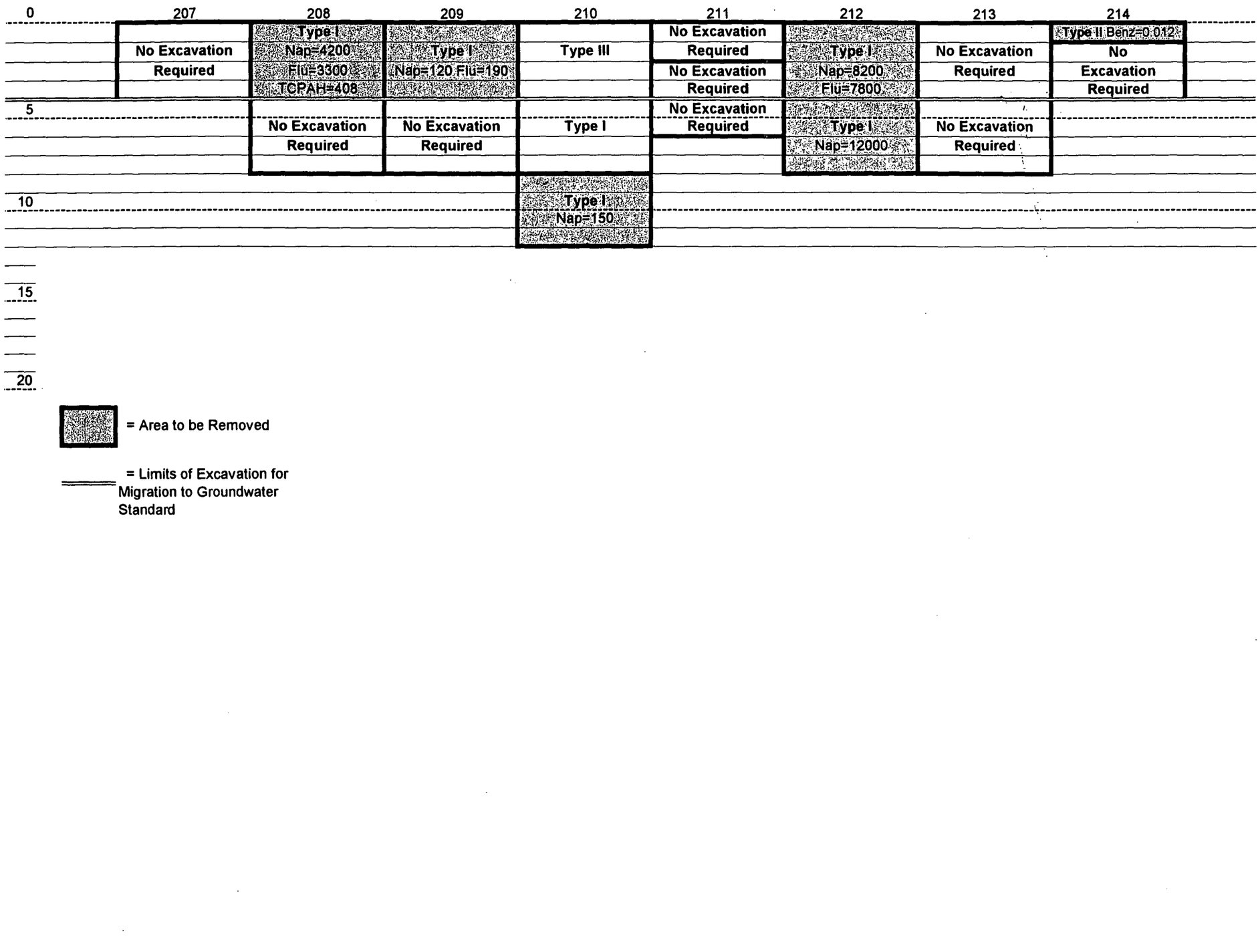
Area T6 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

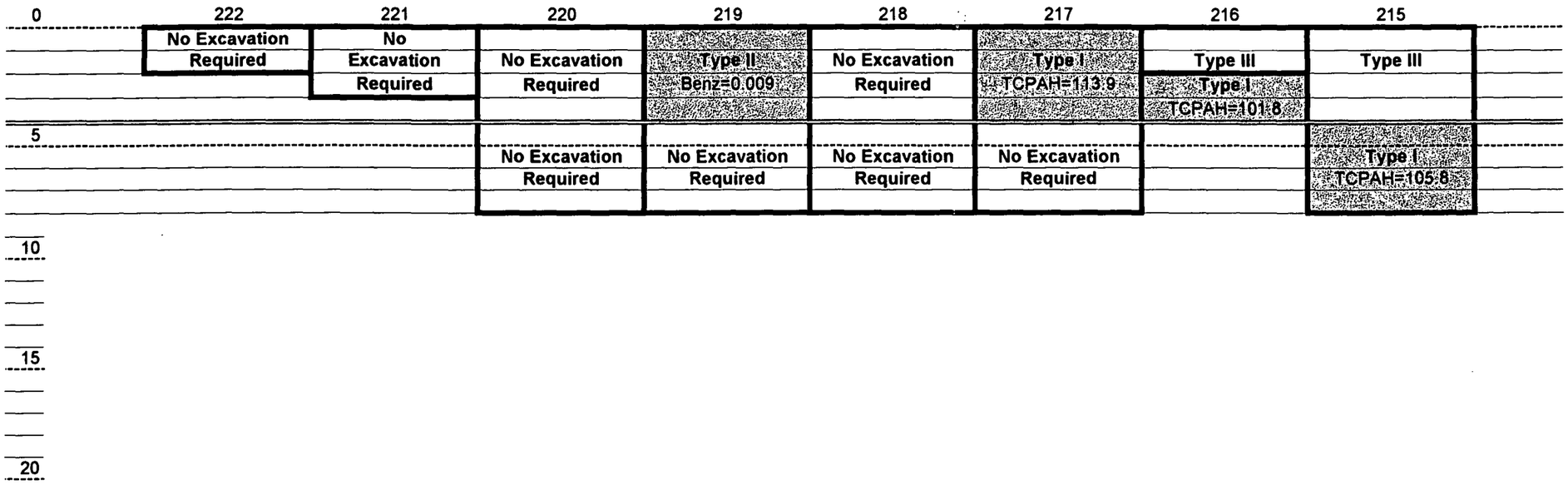
Area T6 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

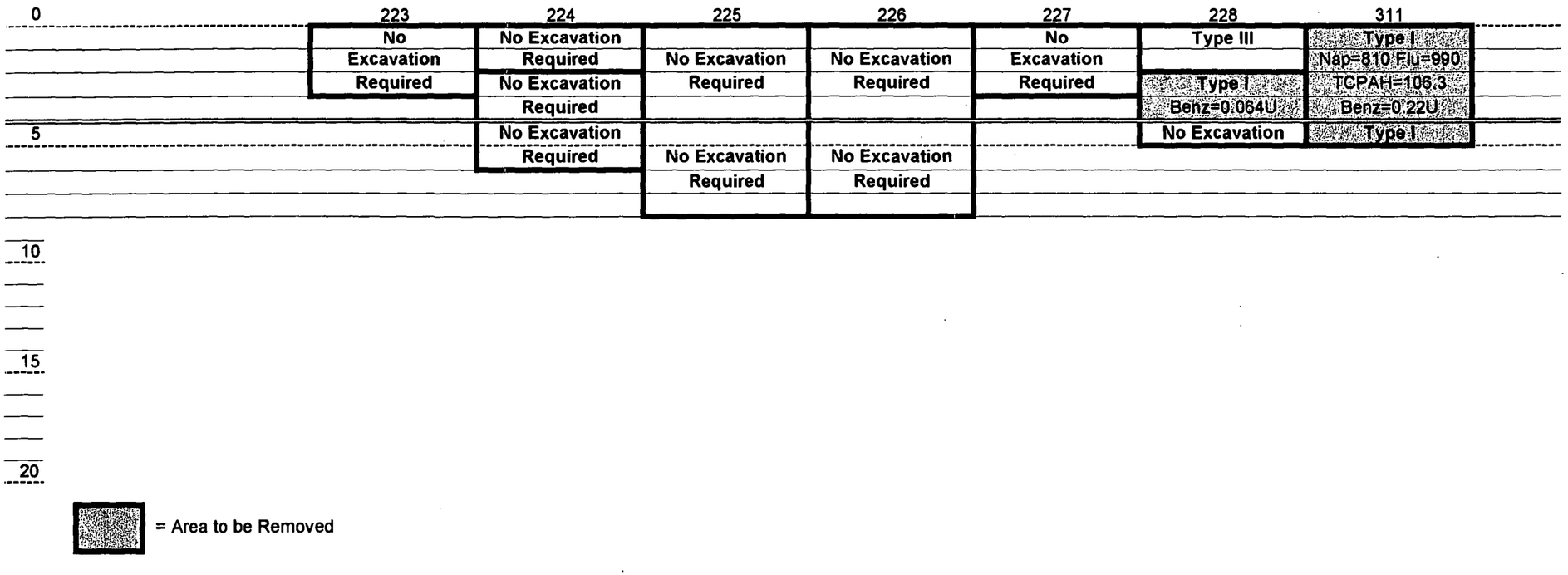
Area T6 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

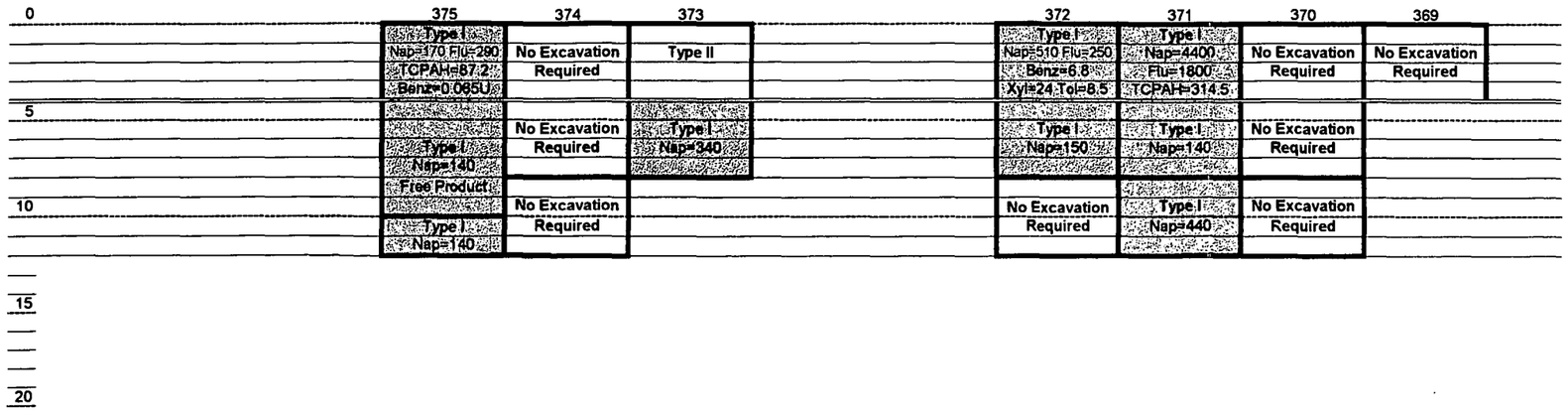
Area T6 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

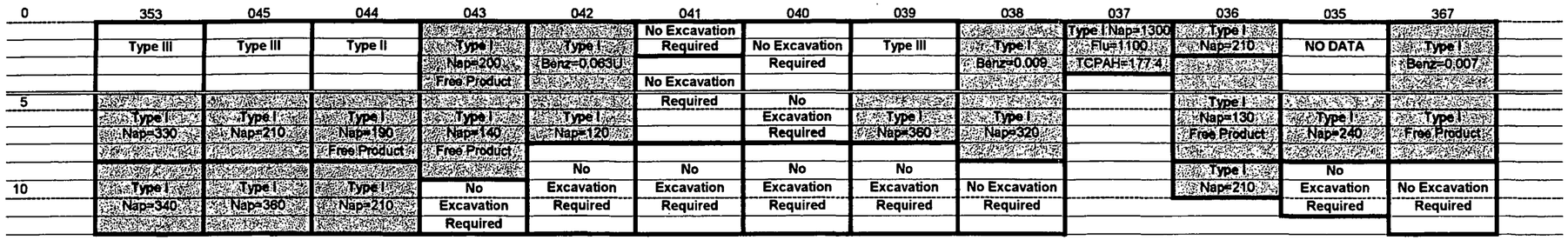
Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

	376	026	027	028	029	030	031	032	033	034	368
0	Type I Nap=540 Flu=690 TCPAH=217.1	Type I	Type I Nap=1800 Flu=1500 TCPAH=387.1	Type I Nap=130 Free Product	No Excavation Required	No Excavation Required	Type III Benz=0.027	Type I Nap=380 Flu=240	Type III Benz=0.01	Type I Nap=500 Flu=530 TCPAH=164.2	Type I Nap=500 Flu=170 Benz=0.088
5	Type I Nap=200	Type I Nap=110	Type I Nap=270	Type I Free Product	No Excavation Required	No Excavation Required	Type I Nap=420	Type II Benz=0.18	Type III Benz=0.076	No Excavation Required	No Excavation Required
10	Type I Nap=310 Free Product	Type I Nap=220 Free Product	Type I Nap=230	No Excavation Required	No Excavation Required	No Excavation Required	No Excavation Required	Type I Nap=1600 Type III	Type I Nap=180	No Excavation Required	
15											
20											

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

0	046	047	048	049	050	051	052	053	054	055	056	057	058
	No Excavation Required	Type III	Type I	Type I Nap=260 Flu=220 TCPAH=134.8	Type I	Type III Benz=0.016	Type I	Type I Benz=0.025	Type III Benz=0.007	Type I Nap=750 Flu=450	Type II Benz=0.012	No Excavation Required	No Excavation Required
5	No Excavation Required	Type I Nap=140	Type I Nap=130	No Excavation Required	Type I Nap=220	No Excavation Required	Type III	Type I Nap=1200 TCPAH=80.4 Free Product	Type I Nap=270	Type I Nap=620 Type I	Type I Nap=420	No Excavation Required	No Excavation Required
10	No Excavation Required	No Excavation Required	No Excavation Required	No Excavation Required	Type I Nap=140	No Excavation Required	Type I Nap=170	Type I Nap=6100 TCPAH=201.1 Free Product	Type I Nap=490	Type I Nap=310	No Excavation Required	No Excavation Required	

15

20

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

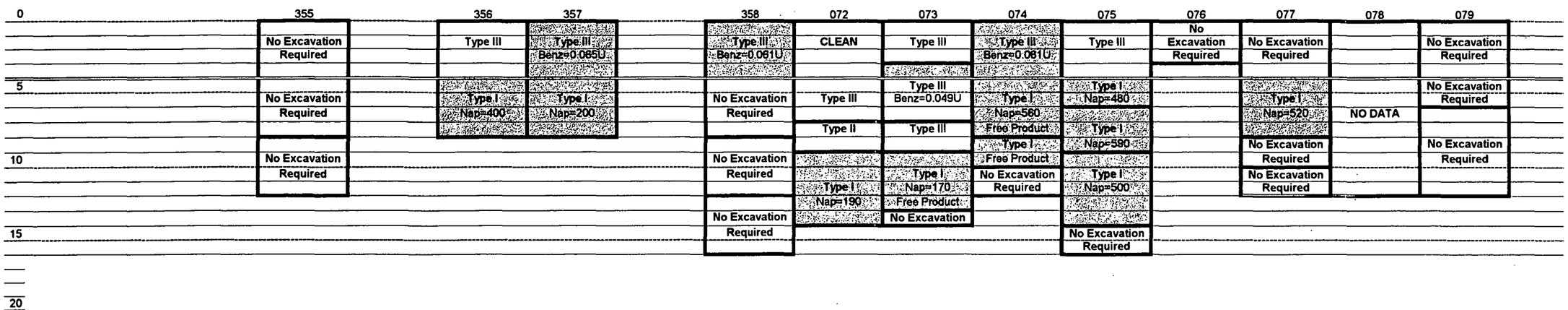
Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

0	354	071	070	069	068	067	066	065	064	063	062	061	060	059
	Type III	Type III	No Excavation Required	Type III	Type III	No Excavation Required	No Excavation Required	Type I Nap=140 Free Product	Type I Nap=1900 Flu=1600	Type III Benz=0.012	Type III Benz=0.097	Type III Nap=0.006	Type I Nap=220 Benz=0.22U Type I	No Excavation Required
5	Type II	Type I	No Excavation Required	Type I Nap=320 Free Product	Type I Nap=200 Free Product	No Excavation Required	No Excavation Required	Type I Nap=110 Free Product	Type I Nap=490		Type I Nap=1100 Free Product	Type I Nap=610 Free Product	Benz=0.051U Tol=7.3 No Excavation	No Excavation Required
10	Type I Nap=460	Type I Nap=140	No Excavation Required	No Excavation Required	No Excavation Required	No Excavation Required	No Excavation Required	Type I Nap=150	Type I Nap=880		No Excavation Required	No Excavation Required	No Excavation Required	No Excavation Required
15														
20														

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

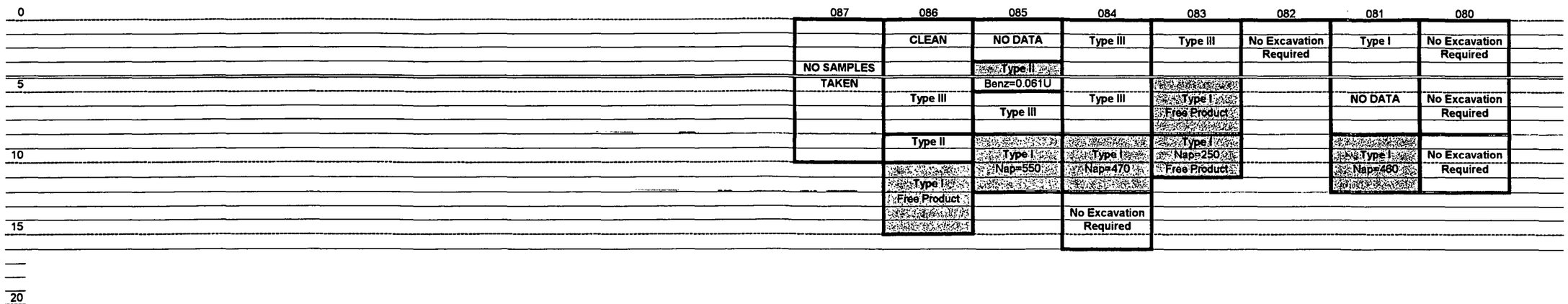
Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

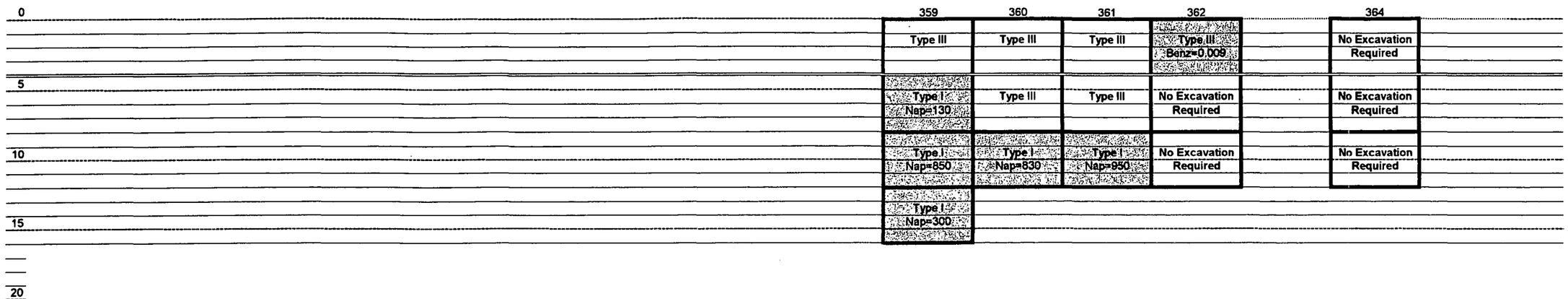
Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



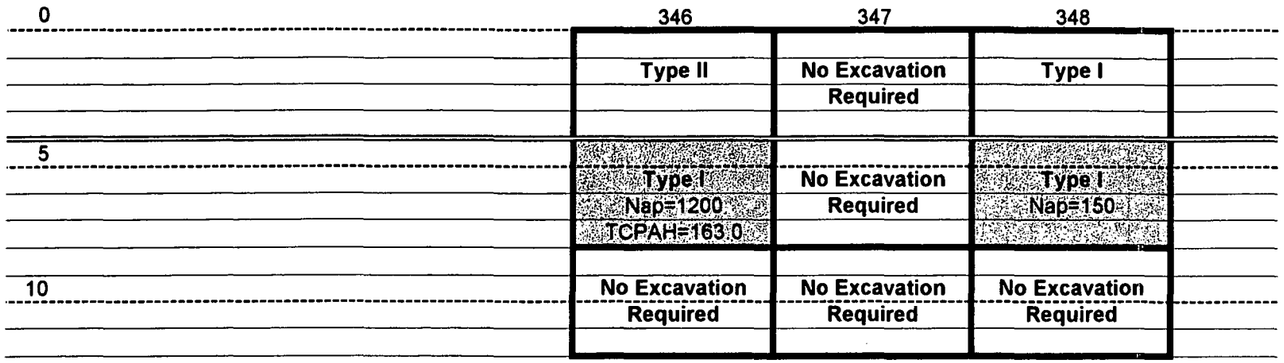
= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T7 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



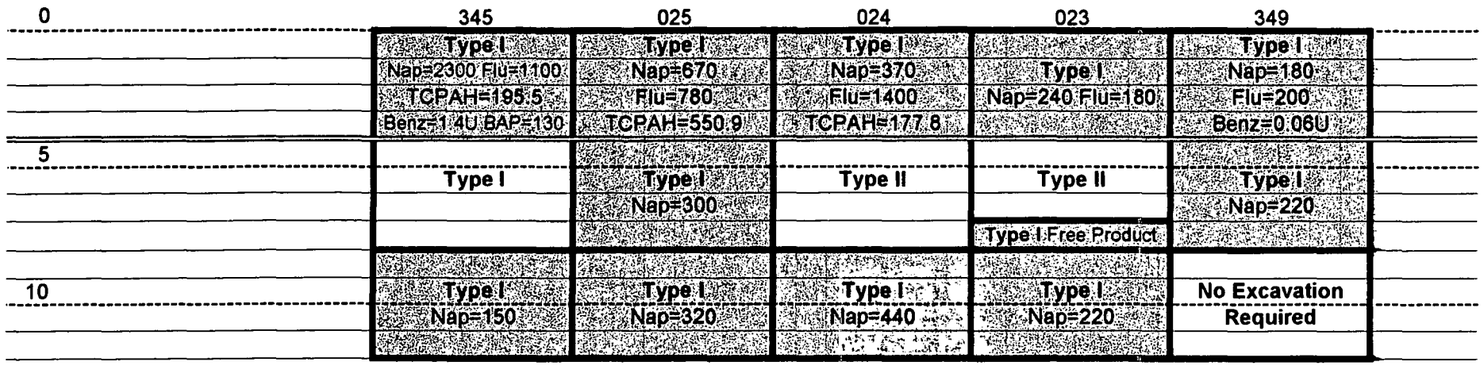
Area T8 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



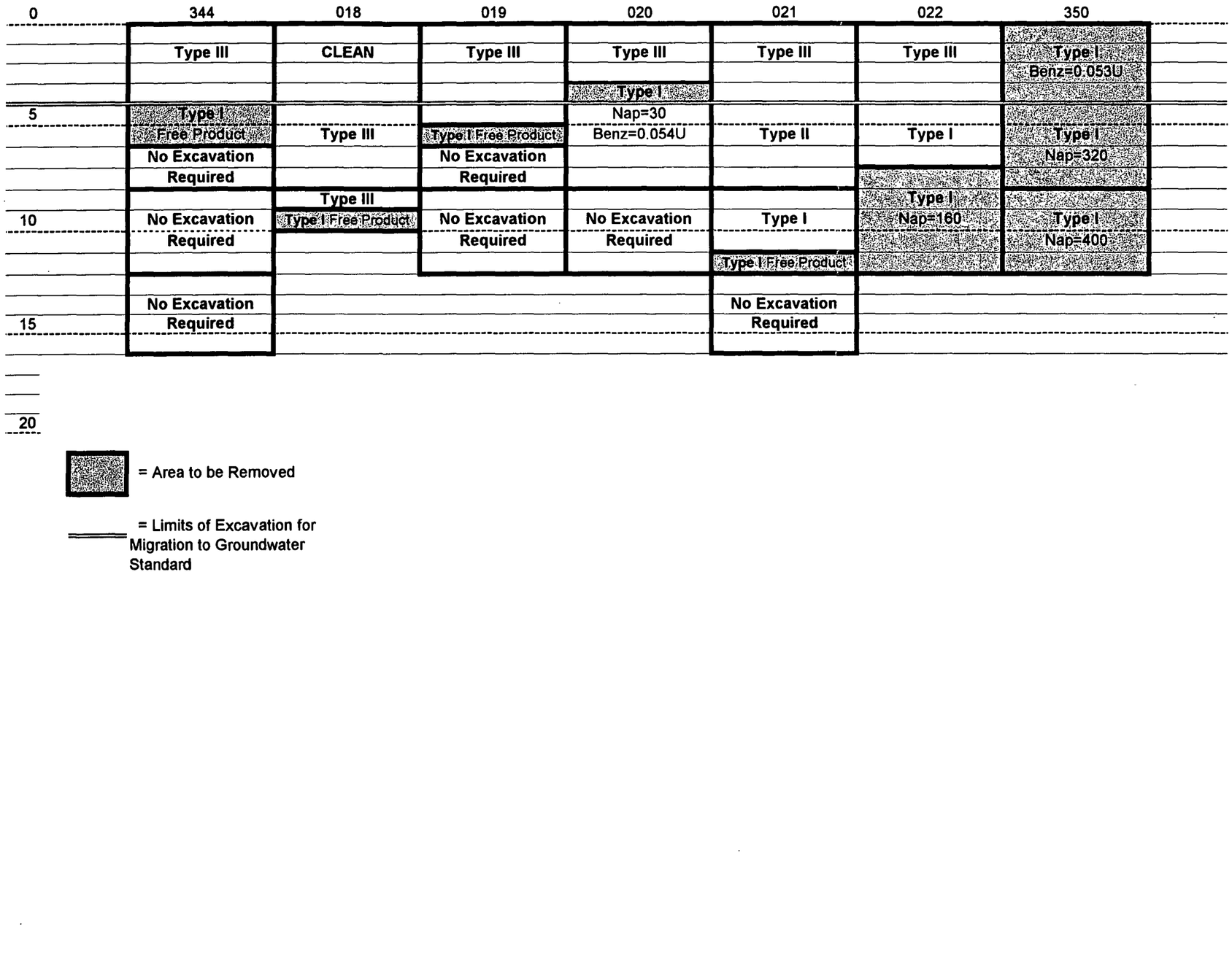
= Area to be Removed

=Limits of Excavation for Migration to Groundwater Standard

Area T8 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



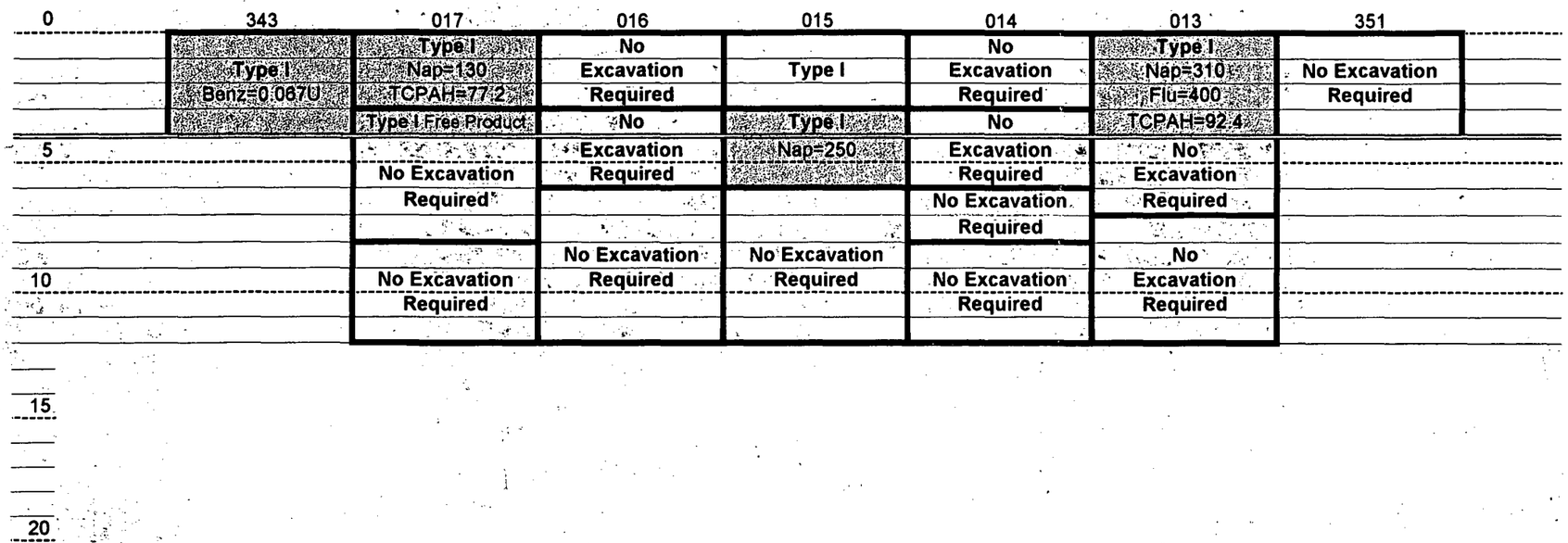
Area T8 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

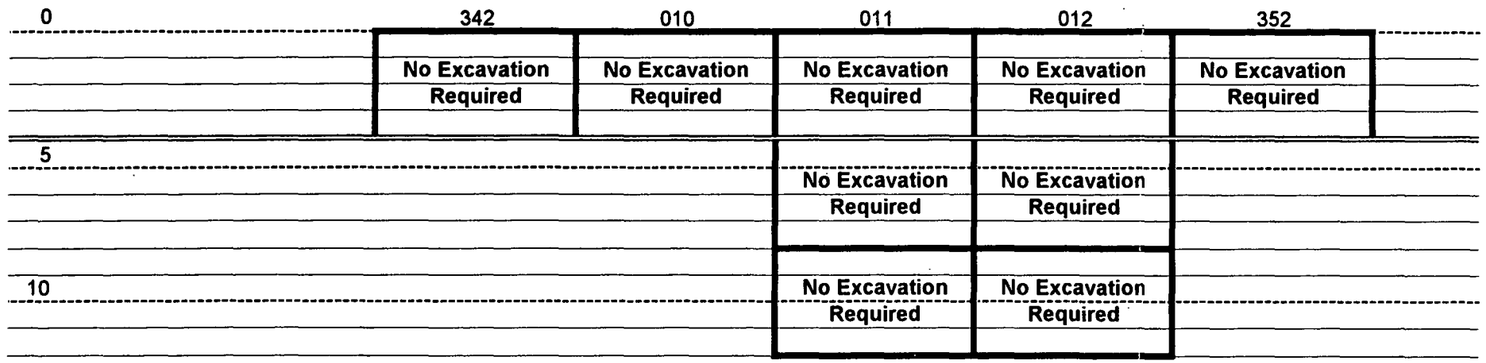
Area T8 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



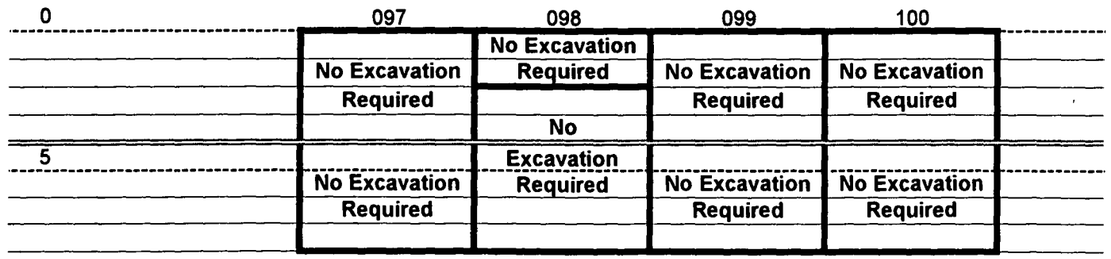
= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T8 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



Area T9 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T9 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

0	096	095	094	093	092	313
	No Excavation Required No	No Excavation Required	No Excavation Required No Excavation Required	No Excavation Required No	Type I Nap=2400 Flu=920 TCPAH=104.5 No	Type I Nap=350 Flu=140 Benz=0.081
5	Excavation Required	No Excavation Required		Excavation Required	Excavation Required	

10

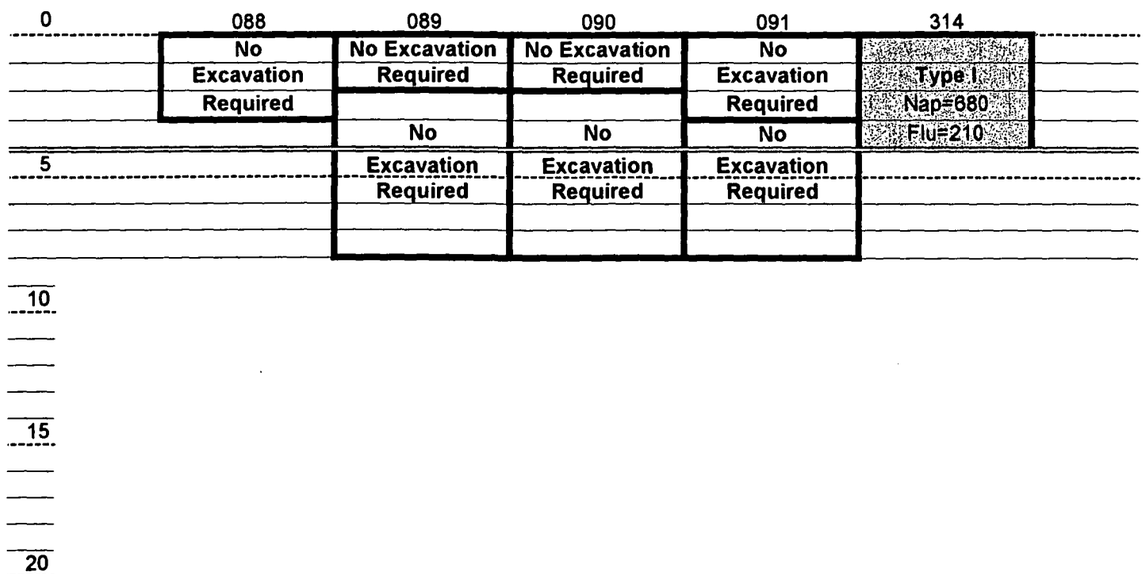
15

20

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

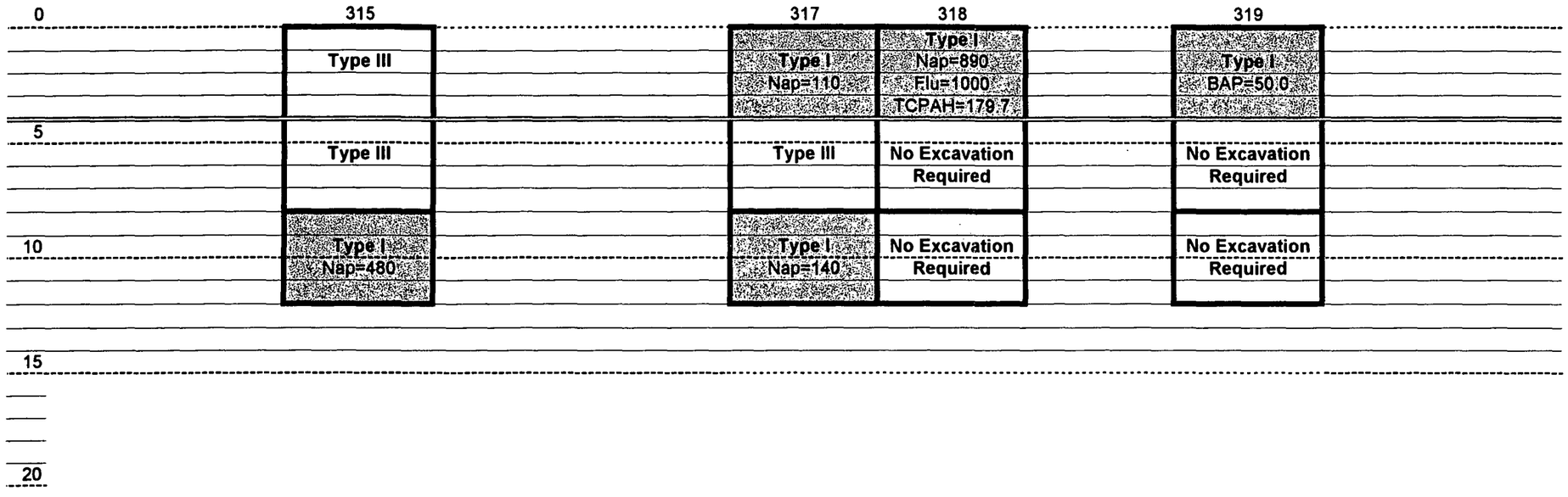
Area T9 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

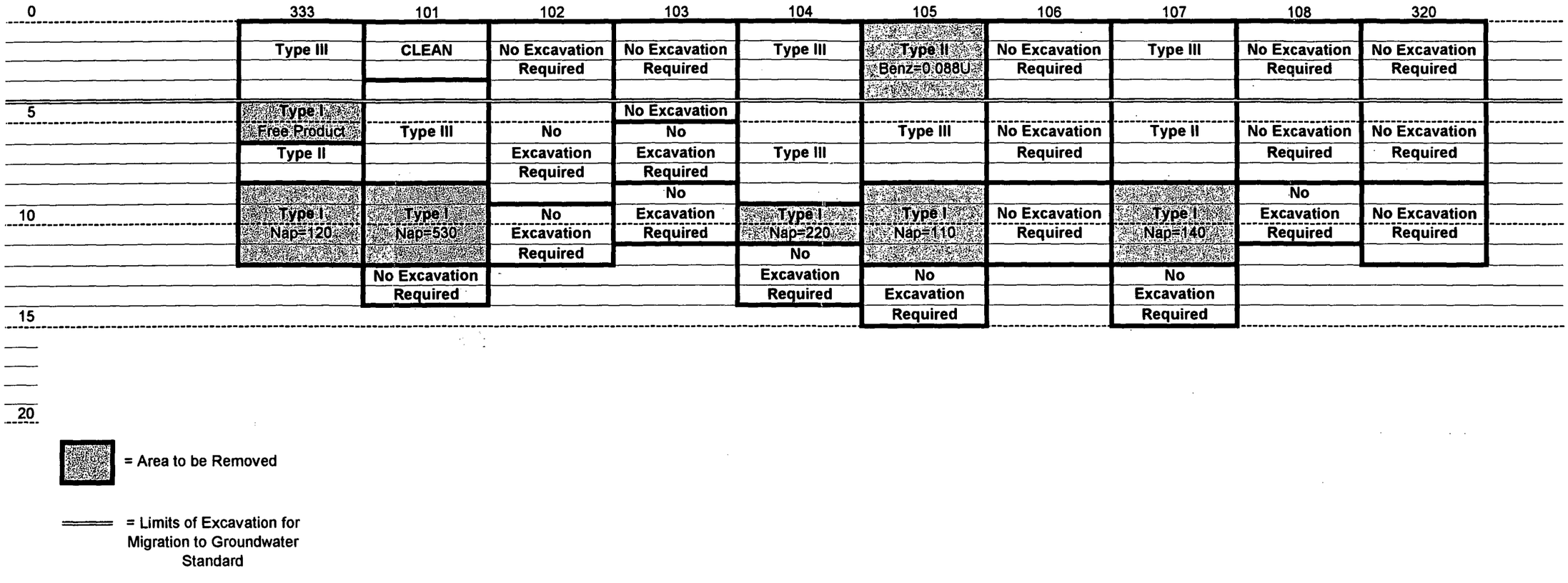
Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

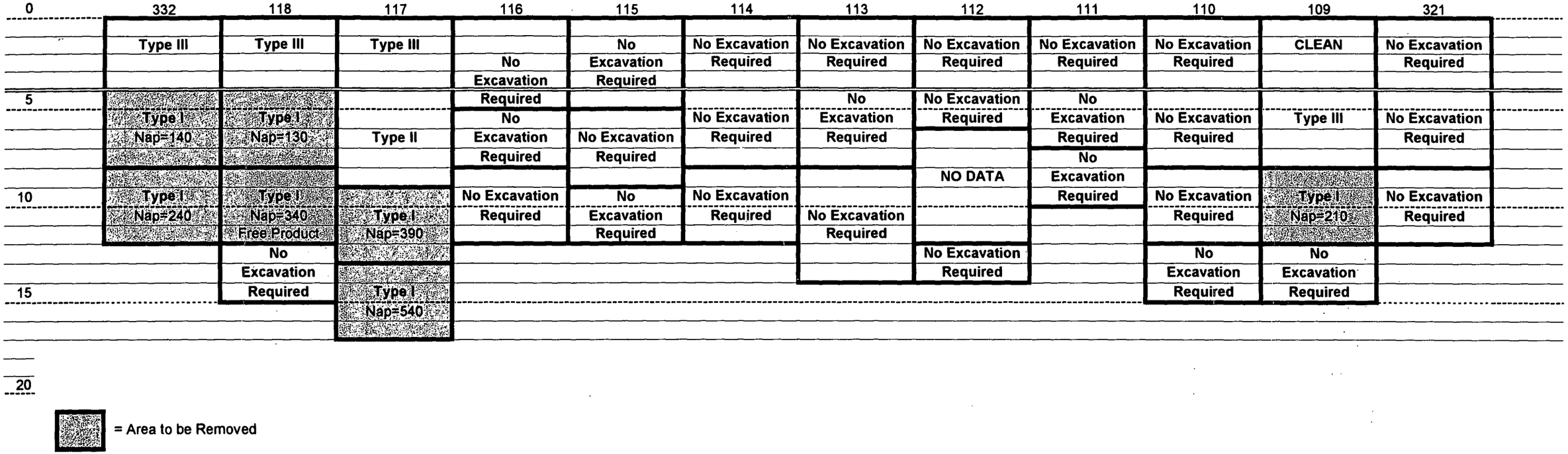
Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

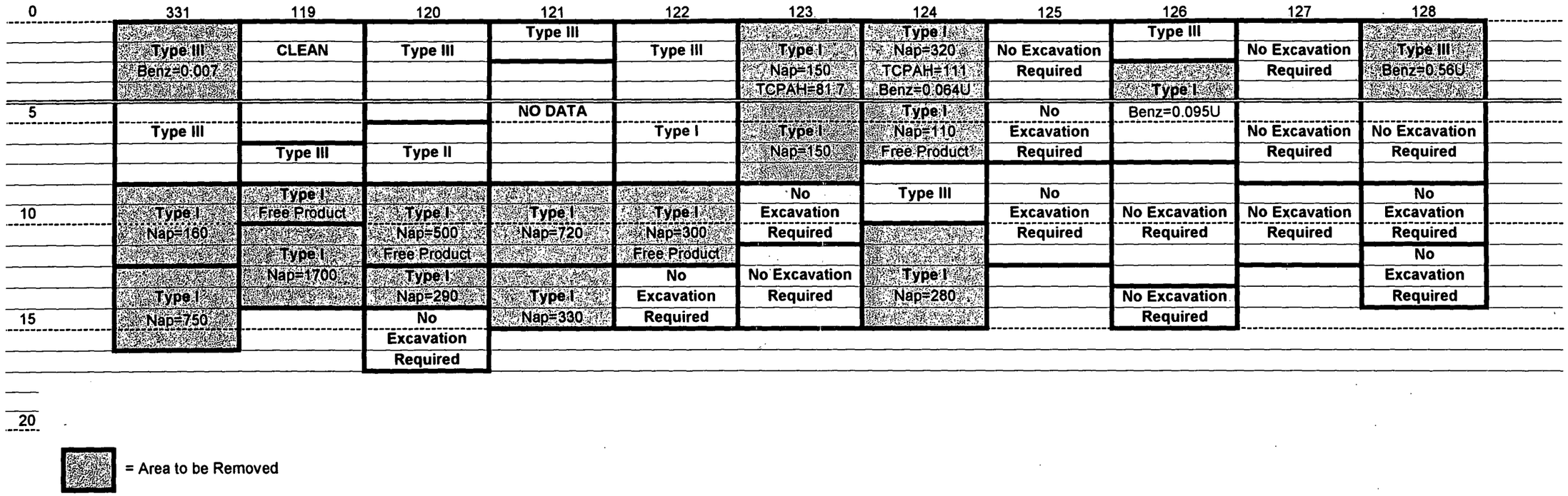
Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

Depth	330	138	137	136	135	134	133	132	131	130	129
0					Type I						
	Type I	CLEAN	Type III	Type III	Nap=240	Type I	Type I	Type III	Type III	Type III	No Excavation
					Flu=740	Free Product	Benz=0.13		Benz=0.015	Benz=0.067U	Required
					TCPAH=354.5						
5											
	Type I	Type II	NO DATA	Type I	Type I	Type I	Type I	Type I	Type I	No Excavation	No Excavation
					Nap=440	Nap=340	Nap=350	Nap=1200	Nap=280	Required	Required
								Type I		No	
10	Type I	Type I	Type II	Type I	Type I	Type I	Type I	Nap=470		Excavation	
	Nap=150	Nap=160		Nap=1700	Nap=160	Nap=910	Nap=800		No	Required	No
				Free Product					Excavation		Excavation
						No	No Excavation	No Excavation	Required	No	Required
			Type I	Type I	No Excavation	Excavation	Required	Required		Excavation	
15			Nap=310	Nap=440	Required	Required				Required	
											No Excavation
20											

= Area to be Removed

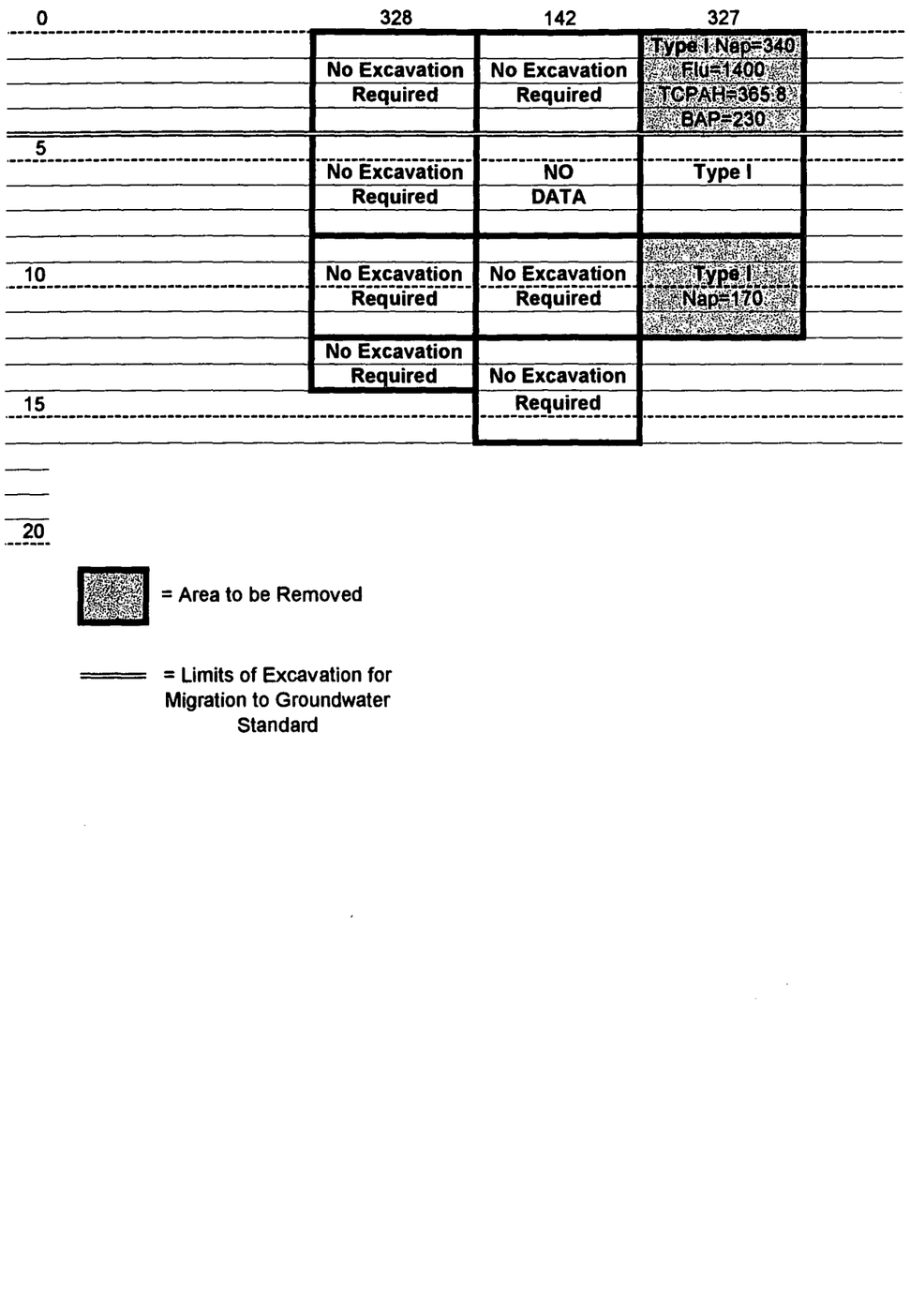
= Limits of Excavation for Migration to Groundwater Standard

Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

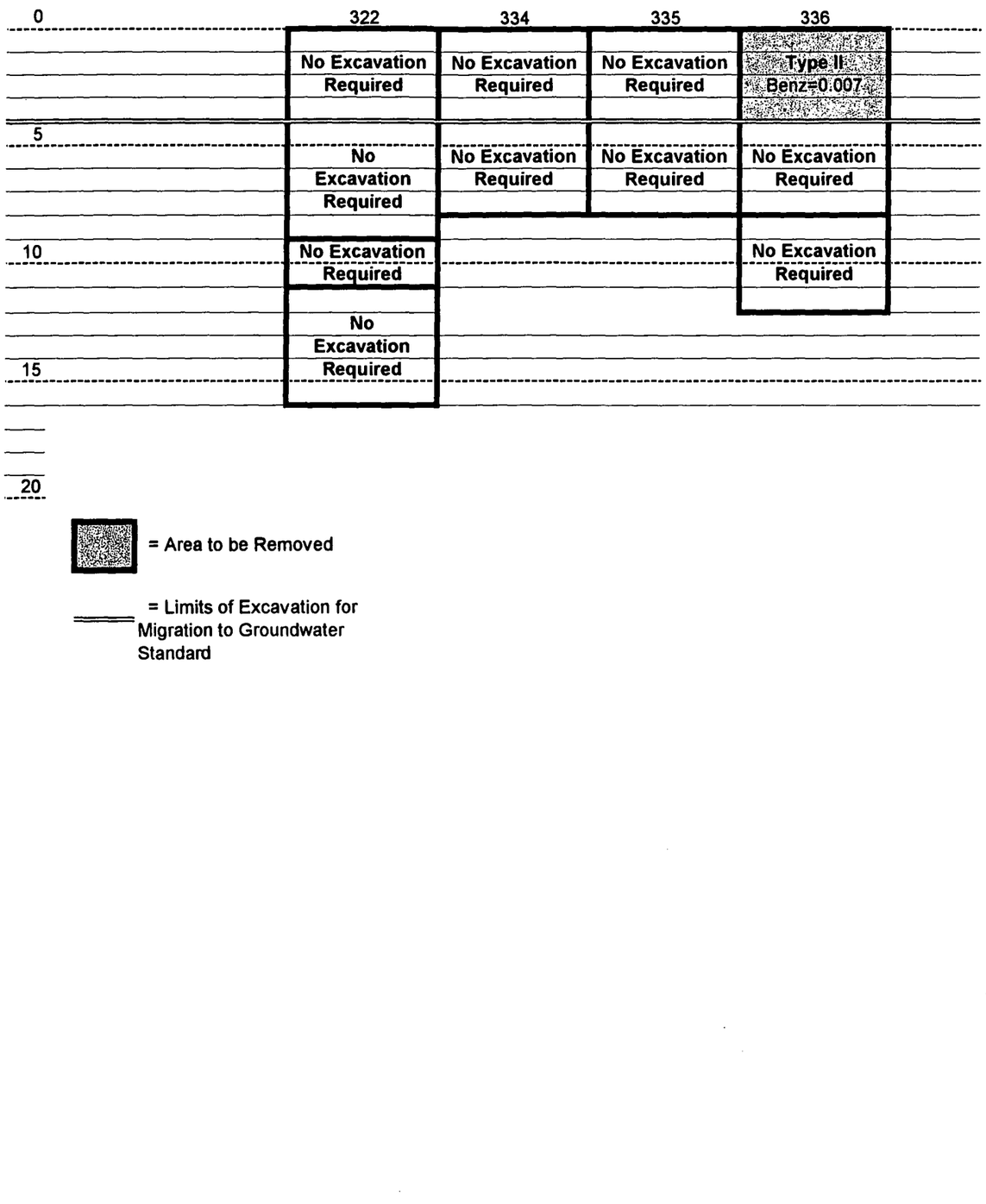
Area T10 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

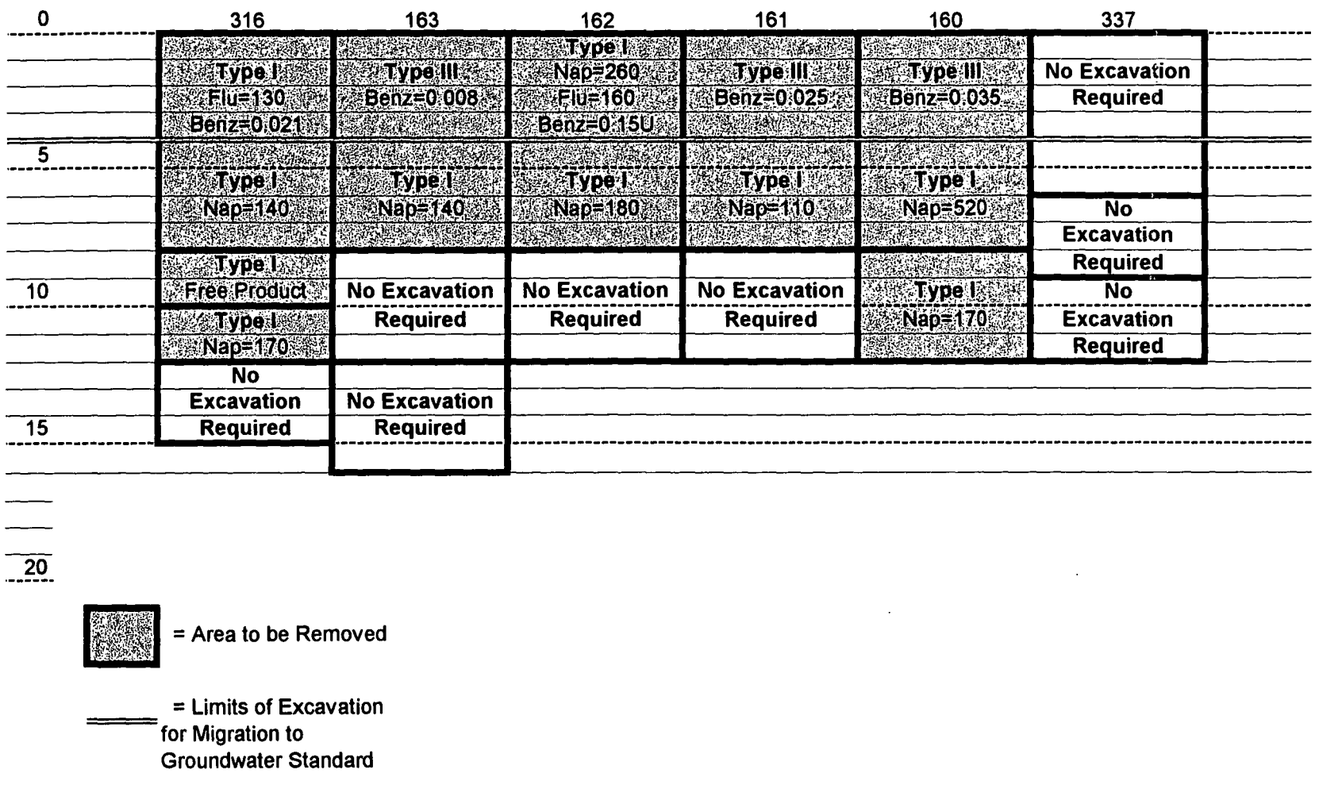
Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

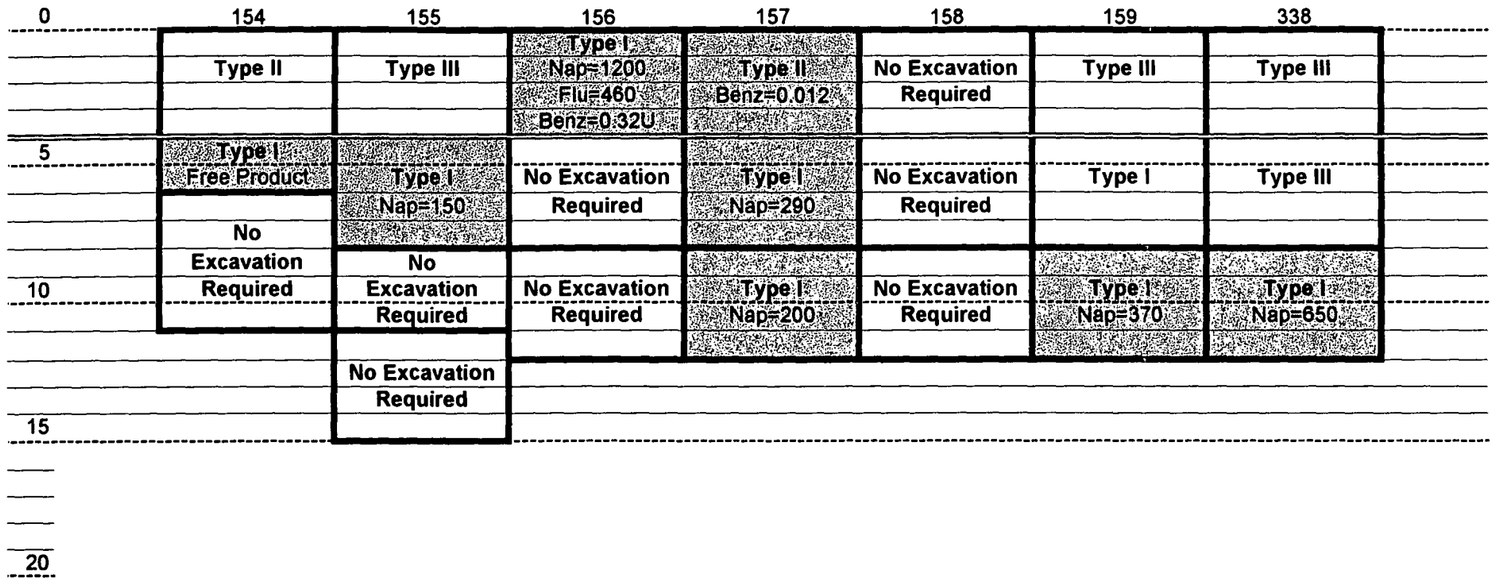
Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

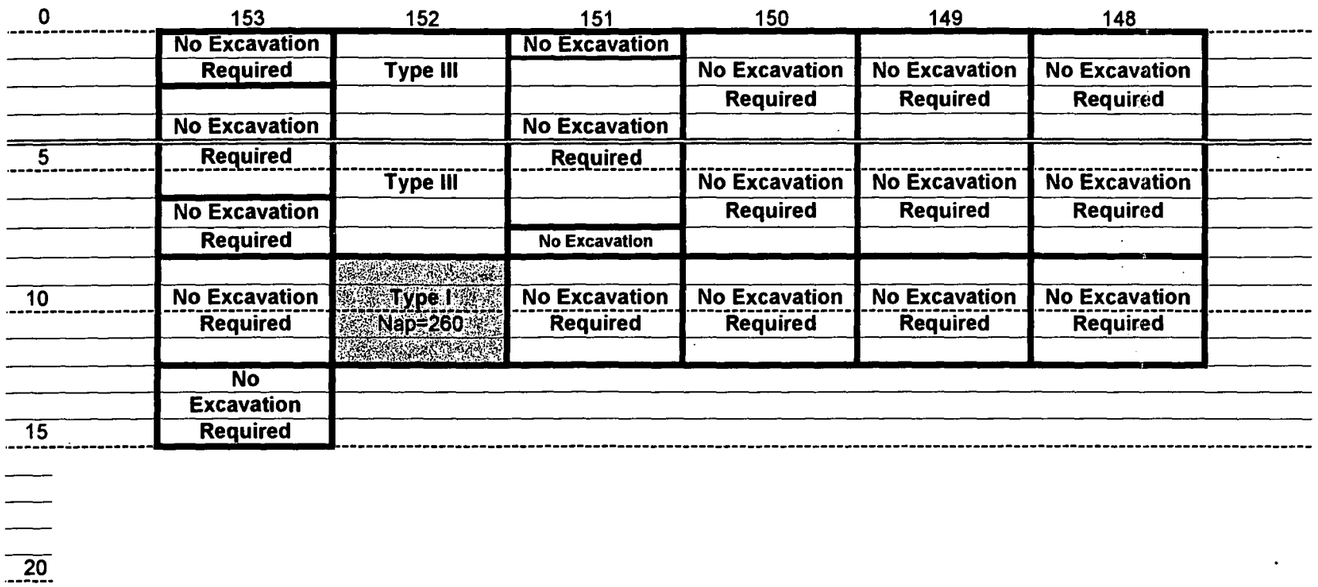
Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

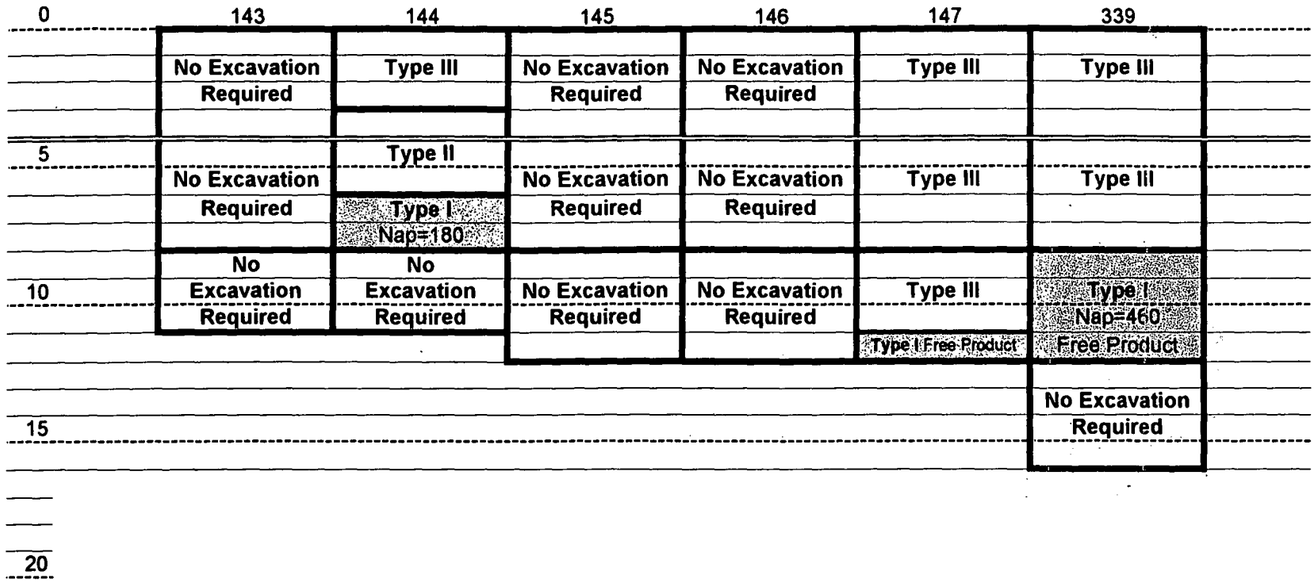
Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin



= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Area T11 Cross-Section
Moss-American Site
Milwaukee, Wisconsin

= Area to be Removed

= Limits of Excavation for Migration to Groundwater Standard

Attachment E

Summary of Benzene Verification Sampling

Table E-1
Verification of Benzene Concentrations
Moss-American Site
Milwaukee, Wisconsin

Boring	Area	Sample ID	Phase	Benzene, mg/kg	Result
051	T7	051-1	I	0.0160	Soil Unit to be Excavated
		051-1A	II	0.0130	
059	T7	059-1	I	0.0080	Soil Unit Eliminated from Excavation Plan
		059-1A	II	0.0040	
102	T10	102-1	I	0.0380	Soil Unit Eliminated from Excavation Plan
		102-1A	II	0.0010U	
129	T10	129-1	I	0.0060	Soil Unit Eliminated from Excavation Plan
		129-1A	II	0.0050	
130	T10	130-1	I	0.0100	Soil Unit to be Excavated
		130-1A	II	0.0670U	
166	T4/5	166-2	I	0.0460U	Soil Unit Eliminated from Excavation Plan
		166-2A	II	0.0010U	
177	T4/5	177-1	I	0.0060	Soil Unit Eliminated from Excavation Plan
		177-1A	II	0.0010U	
193	T6	193-1	I	0.0060	Soil Unit to be Excavated
		193-1A	II	0.0060	
197	T6	197-1	I	0.0110	Soil Unit Eliminated from Excavation Plan
		197-1A	II	0.0050	
199	T6	199-1	I	0.0110	Soil Unit Eliminated from Excavation Plan
		199-1A	II	0.0050	
219	T6	219-1	I	0.0090	Soil Unit to be Excavated
		219-1A	II	0.0060	
221	T6	221-1	I	0.0650U	Soil Unit Eliminated from Excavation Plan
		221-1A	II	0.0030	
228	T6	228-2	I	0.0060	Soil Unit to be Excavated
		228-1A	II	0.0640U	