Compare last ¶, page 2 of this letter (from Kipp's consultant to DNR) with DNR's April 21, 1997 letter to Kipp. (Most tables are not attached, but we can provide them.)

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

2701 International Lane, Suite 210
Madison, Wisconsin 53704
608 244 1788 Tel
608 244 7823 Fax

May 30, 1997

RECEIVED
JUN 2 1997
DEPT. OF NATURAL RESOURCES
SO HEADQUARTERS

Mr. Patrick McCutcheon
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: Results of Geoprobe Soil Sampling,
Modification to Proposed Soil Remediation Strategy, and
Establishment of Site-Specific Soil RCLs
Madison-Kipp Corporation, Madison, Wisconsin

Dear Mr. McCutcheon:

In previous mobilizations, Dames & Moore has identified two potential source areas of tetrachloroethene (PCE) loading to the groundwater at the Madison-Kipp Corporation (MKC) site. One area of impacted soil was found at the northeast corner of the facility. This location is the downgradient end of a former drainage ditch, which originated at a former above ground PCE tank. A second area was found approximately 250 feet south of the first area, at the location of a vent from a former PCE vapor degreaser (see Figure 1).

ADDITIONAL GEOPROBE SOIL SAMPLING

In April 1997, Dames & Moore returned to the site to collect additional Geoprobe soil samples to define the full horizontal and vertical extent of impacted soil at these two locations for purposes of remedial excavation. Sample locations are shown on Figure 2. At each of the two locations, one boring was advanced to the water table (GP-9 at the north location, GP-13 at the south). The remaining borings were advanced to the maximum contaminant depth, based upon head space monitoring. Boring logs are included as Attachment A.

Samples were selected for volatile organic compound analyses based upon head space analyses. The results of these analyses are presented in Table 1. Samples yielded PCE concentrations ranging from non-detect to 6.4 million µg/kg. Trichloroethene concentrations ranged from non-detect to 126,000 µg/kg. Laboratory reports are included as Attachment B.

PCE (tetrachloroethene)

← TCE

MODIFIED REMEDIAL APPROACH

In our March 18, 1997 letter to the WDNR we proposed the excavation of all impacted soil based

Soil contamination (and groundwater - in various other copied Dames & Moore Reports) by Kipp - PCE, TCE, etc

on assumed extent; however, the extent of impacted soil as defined by our April 1997 sampling shows complete soil remediation by means of excavation to be technically and economically infeasible. Boring GP-17 shows elevated concentrations beneath a drain pipe which is covered with thick concrete. Likewise, boring GP-14 indicates that elevated concentrations of contaminants exist beneath an outbuilding. Additionally, the depth of impacted soil (18 to 20 feet) would result in the need for areally extensive excavation or significant shoring requirements for slope stability. As Figure 3 shows, utilities and other obstructions would likely prohibit either of these options.

Consequently, we have re-evaluated the remedial strategy and recommend a modified excavation approach combined with soil vapor extraction (SVE), to remediate soils impacted at concentrations above site-specific residual contaminant levels (RCLs), as defined below. As Figure 4 shows, the stratigraphy in the impacted areas consists of approximately 8 to 10 feet of fine-grained material overlying sand. Dames & Moore recommends that the fine-grained material in the two areas indicated on Figure 3 be excavated and disposed. Subsequent to these activities, SVE well points will be installed and connected to a vacuum pump. (A detailed plan of the locations of the SVE points and operational schedule will be provided at a later date.)

SITE-SPECIFIC RESIDUAL CONCENTRATION LEVELS

As provided in Wisconsin Administrative Code (WAC) § NR 720.19, we have calculated site-specific RCLs for PCE at the MKC site. Several steps were completed in this process, based upon the estimated natural attenuation potential for PCE in groundwater at the site. In summary, the natural attenuation potential was estimated using the Domenico and Palciauskas equation (*Ground Water*, May-June, 1982). This equation yielded the acceptable PCE concentrations in groundwater at the source. (Note that we are using this equation only to arrive at a site-specific RCL for soil; we are not proposing the use of this approach for site-specific groundwater concentrations at this time.) This value was then used to calculate the site-specific RCL, using the dilution attenuation factor (DAF) equation.

The calculation is based in part on the establishment of a distance to the downgradient property line. Groundwater flow is primarily to the south; however, a southwesterly component has been observed. Figure 5 shows the approximate source area of groundwater loading. The figure also shows residential property inset into the western MKC property boundary. However, these properties are prohibited by City of Madison regulations from installing private wells. Additionally, a groundwater depth of 25 to 30 feet indicates that exposure to impacted groundwater as a result of excavation is not likely. Consequently, the property line at Atwood Avenue was selected for our calculations.

Calculation of Natural Attenuation Potential:
The equation developed by Domenico and Palciauskas is as follows:

$$\frac{C_B}{C_S} = erf\left[\frac{Z}{2\left(D_T\frac{y}{V_y}\right)^{1/2}}\right] erf\left[\frac{X}{4\left(D_T\frac{y}{V_y}\right)^{1/2}}\right]$$

Where:

C_B = Acceptable contaminant concentration in groundwater at the boundary (assumed to be the Preventive Action Limit of 0.5 µg/L);
C_S = Highest acceptable contaminant concentration in groundwater at the source;
Z = thickness of contaminant plume at the source (assumed to be the distance between the water table and piezometer well screen, 15 feet);
X = Width of contaminant plume at the source (assumed to be 50 feet, which is the approximate width of the area of impacted soil);
D_T = Transverse dispersion coefficient;
y = Distance from the source to the line of standards application (700 feet from the southern extent of the source to the southern property line at Atwood Avenue);
V_y = Velocity of contaminant movement in groundwater; and
erf = Error function (tabulated values).

Several of the parameters listed above require additional calculations. The estimation of the velocity of contaminant migration in the groundwater is as follows:

$$V_y = \frac{v}{R_I}$$

Where:

v = Groundwater velocity (219 feet/year - Dames & Moore, 1996); and
R_I = Retardation factor.

Retardation is calculated as follows:

$$R_1 = 1 + \left(\frac{\rho_b}{n}\right) K_d$$

Where:

ρ_b = Dry-weight bulk density of the aquifer matrix;
n = Aquifer matrix porosity (assumed to be 0.40); and
K_d = Distribution coefficient of the contaminant.

An undisturbed sample of the soil was not obtained for the measurement of dry-weight bulk density; however, that value can be estimated from the following equation (Freeze and Cherry, 1979):

$$n = 1 - \frac{\rho_b}{\rho_s}$$

Where:

ρ_s = Particle mass density, assumed to be 2.65 g/cm^3 (Freeze and Cherry, 1979).

Based upon the above equation, the bulk density is estimated to be 1.6 g/cm^3.

The distribution coefficient (K_d) is related to the octanol water partitioning coefficient (K_{ow}), the carbon/water partitioning coefficient (K_{oc}) and the fractional organic carbon content of the aquifer matrix (f_{oc}) as follows:

$$\log K_{oc} = \log K_{ow} - 0.21 \quad \text{(Karickhoff et al., 1979)}$$

and,

$$K_d = K_{oc} f_{oc}$$

For PCE, the log K_{ow} is assumed to be 2.88 (Walton, 1985). Using an assumed organic carbon content of 1 percent, the resulting value for the distribution coefficient is 4.7.

Based upon the values summarized above, a retardation value of 19.7 is calculated. This is considered conservative for organic chemicals, which can have retardation values as high as 1,000

(Walton, 1985). This results in an estimated contaminant velocity of 11 ft/year.

The transverse dispersion coefficient is calculated as follows:

$$D_T = \alpha_T V_Y$$

Where:

α_T = Coefficient of transverse dispersivity.

For our calculations, we have assumed a coefficient of transverse dispersivity of 1 percent of the plume length (National Research Council, 1990). The total plume length is assumed to be from the northeast corner of the MKC building to Atwood Avenue, a distance of approximately 990 feet. The resulting transverse dispersion coefficient is calculated as 110.

Using the information summarized above, and completing the calculation for natural attenuation, an acceptable groundwater concentration at the source is estimated to be 29 µg/L.

Calculation of the Dilution Attenuation Factor:

A two-step process is used to establish the site-specific RCL for soil. The first step is to calculate the dilution-attenuation factor (DAF), as follows:

$$DAF = \frac{d}{R_2} (K_{oc}) (f_{oc}) (\rho_b + n)$$

here:

d = Thickness of the groundwater mixing zone (using a default WAC § NR 720 value of 152.4 cm); and

R_2 = Groundwater recharge rate (using a default WAC § NR 720 value of 25.4 cm/year).

Based upon the information provided above, the DAF value is calculated as 56.2.

Calculation of Site-Specific RCL:

The information and calculated values presented above are incorporated into the RCL equation, which is as follows:

$$RCL = (C_S)\ (K_{oc})\ (f_{oc})\ (DAF)$$

This process yields an RCL value of 7,700 µg/kg.

Recommendation:

As discussed in the development of the equations used for our calculations, several assumptions are incorporated into the calculated RCL value. As a result, we are not proposing that the above RCL value be applied to the site. Rather, we recommend that a value of 1,000 (nearly one order of magnitude lower than the calculated value) be selected as the permissible site-specific RCL in the source area, with any soils which have been detected in excess of this value being remediated in accordance with the approach proposed above.

After your review of the information and recommendations discussed above, please provide us with your comments at your earliest convenience. It is our desire to complete the excavation activities during the week of June 30, when MKC business activities are greatly reduced.

Sincerely,

DAMES & MOORE

Robert J. Nauta, P.G.
Senior Hydrogeologist

David P. Trainor, P.E., P.G.
Project Director

at far north end of Kipp — just across bike path from Goodman!

(Depths are feet from ground surface)

TABLE 1
RESULTS OF SOIL ANALYSES - GEOPROBE SAMPLES
April 1997
All concentrations in µg/kg

PARAMETER	SAMPLE LOCATION & DEPTH (ft)						
	GP-9 2 - 4 ft.	GP-9 8 - 10 ft.	GP-10 7 - 9 ft.	GP-11 7 - 9 ft.	GP-12 7.5 - 9.5 ft.	GP-13 5 - 7 ft.	GP-13 12.5 - 14.5 ft.
n-Butylbenzene	489	206	ND	ND	ND	ND	ND
sec-Butylbenzene	1,200	121	ND	ND	ND	ND	ND
1,1-Dichloroethene	373	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	30,900	1,140	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	489	ND	ND	ND	ND	ND	ND
Ethylbenzene	283	ND	ND	ND	ND	ND	ND
Isopropylbenzene	695	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	721	51	ND	ND	ND	ND	ND
Naphthalene	3,990	63	ND	ND	ND	ND	ND
n-Propylbenzene	1,670	45	ND	ND	ND	ND	ND
Tetrachloroethene	6,440,000	109,000	2,410	278	3,100	ND	684
Toluene	2,060	ND	ND	ND	ND	ND	ND
Trichloroethene	126,000	2,300	37	ND	49	ND	ND
1,2,4-Trimethylbenzene	12,100	100	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	6,820	ND	ND	ND	ND	ND	ND
Total xylenes	6,690	ND	ND	ND	ND	ND	ND

ND - Not detected.

6.44 million µg/kg were found very close to the surface. Since contaminants can sink as much as 1½ feet/day, it is hard to see

TABLE 1 (cont.)
RESULTS OF SOIL ANALYSES - GEOPROBE SAMPLES
April 1997
All concentrations in µg/kg

PARAMETER	SAMPLE LOCATION & DEPTH (ft)							
	GP-14 7.5 - 9.5 ft.	GP-14 10 - 12 ft.	GP-15 7.5 - 9.5 ft.	GP-15 10 - 12 ft.	GP-16 7.5 - 9.5 ft.	GP-17 3.5 - 5.5 ft.	GP-18 8.5 - 10.5 ft.	GP-20 3.5 - 5.5 ft.
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	95
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	65
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	87	6,120	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	40	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	40
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	770	385	1,170	5,540	391	856	330	52
Toluene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	48	ND	37	ND	ND	48	1,590	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	56
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Total xylenes	ND	ND	ND	ND	ND	ND	ND	ND

ND - Not detected.

ATTACHMENT A
GEOPROBE BORING LOGS
MADISON-KIPP CORPORATION
APRIL 1997

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste
☐ Wastewater
☐ Emergency Response
☐ Haz. Waste
☐ Underground Tanks
☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
MADISON KIPP CORPORATION		GP-9

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
ON-SITE ENVIRONMENTAL SERVICES. Dennis Totzke	04 / 21 / 97 (MM DD YY)	04 / 21 / 97 (MM DD YY)	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		GP-9	N/A Feet MSL	Feet MSL	1.5 inches

Boring Location
State Plane N E S/C/N | Lat Long
NE 1/4 of SW 1/4 of Section 5 T 7 N, R 19 E

Local Grid Location (If Applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
DANE	13	CITY OF MADISON / TOWN OF BURKE

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/ Comments
1	20		1	FILL, SAND and GRAVEL, some silty clay, loose, poorly graded, moist, dark brown (cinders & brick fragments).				15						
			2	CLAY, silty, moist, firm, low plasticity, mottled greenish brown.	CL									
2	20		3	- 3" sand seam @ 3' - Stained black with solvent odor @ 3.5'				2500+						
			4											
3	18		5	CLAY, silty, trace sand, trace gravel, moist, firm, low plasticity, light yellow brown.				2500+						
			6											
4	4		7					2327						
			8											
5	14		9	- Becoming siltier with depth.	CL-ML			1211						
			10	SILT, some fine sand, slightly moist, firm, non-plastic, light grayish brown.	ML									
6	18		11	SAND, some silt, little gravel, slightly moist, loose, poorly graded, light yellow brown.	SM			2028						
			12											
			13											
7	16		14					187						

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

Signature [signature] Firm Dames and Moore, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A 7-91

Boring Number GP-9 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	RQD/ Comments
8	16		15–18	SAND, some silt, little gravel, slightly moist, loose, poorly graded, light yellow brown.	SM			91						
			18–36	EOB @ 18 ft. Backfileld with graunular bentonite.										

a:\wpp-97\gp-09-2.gem

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste
☐ Wastewater
☐ Emergency Response
☐ Haz. Waste
☐ Underground Tanks
☐ Water Resources
☐ Other

SOIL BORING LOG INFORMATION

Form 4400-122 7-91

Page 1 of 1

Facility / Project Name	License/Permit/Monitoring Number	Boring Number
MADISON KIPP CORPORATION		GP-10

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
ON-SITE ENVIRONMENTAL SERVICES. Dennis Totzke	04 / 21 / 97 (MM DD YY)	04 / 21 / 97 (MM DD YY)	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		GP-10	N/A Feet MSL	Feet MSL	1.5 inches

Boring Location
State Plane ____ N. ____ E S/C/N | Lat ____ Long ____
NE 1/4 of SW 1/4 of Section 5 T 7 N, R 19 E

Local Grid Location (If Applicable)
____ Feet ☐ N ☐ S ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
DANE	1 3	CITY OF MADISON / TOWN OF BURKE

Sample Number	Sample Length Recovered (in)	Blow Counts (N)	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	ROD/ Comments
			1	Asphalt - driveway 3"										
1	16		2	FILL, SAND and GRAVEL, some silty clay, loose, wet, poorly graded, dark brown. (Contains cinders and brick fragments.)	FILL			89						
			3											
2	20		4	CLAY, silty, trace sand, trace gravel, moist, firm, low plasticity, little yellow brown.	CL			63						
			5											
3	18		6					37						
			7											
4	18		8					30						
			9											
			10	EOB @ 9 ft. Backfilled with graunular bentonite.										
			11											
			12											
			13											
			14											

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

Signature [signature] Firm Dames and Moore, Madison, WI

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a seperate offense, pursuant to ss 144.99 and 162.06, Wis. Stats

a:\kipp-497\gp-10.gem

NET ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: Dames & Moore
ADDRESS: 2701 International Lane Suite 210
PHONE: 608/244-7555 FAX: 608/244-7823
PROJECT NAME/LOCATION: Madison Kipp Corporation - Madison
PROJECT NUMBER: 20011-007
PROJECT MANAGER: Robert Nacht

REPORT TO: Dames & Moore
INVOICE TO: Dames & Moore
P.O. NO.:
NET QUOTE NO.:

SAMPLED BY (PRINT NAME): Mark McCulloch — SIGNATURE: Mark A McCulloch
(PRINT NAME): — SIGNATURE:

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	OTHER	ANALYSES: MeOH pres. VOCs 8021	% Solids
4/21	840A	GP-9 2-4'	S	X						2	1	1
	915A	GP-9 8-10'	S	X							1	1
	1000A	GP-10 7-9'	S	X							1	1
	1095A	GP-11 7-9'	S	X							1	1
	320A	GP-17 3.5-5.5'	S	X							1	1
	355P	GP-18 8.5-10.5'	S	X							1	1
	420P	GP-19 6-8'	S	X							1	1
	450P	GP-20 3.5-8.5'	S	X							1	1
		Temp Blank (water)										

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ____ No ____

Is this work being conducted for regulatory enforcement action? Yes ____ No ____

Which regulations apply: RCRA ____ NPDES Wastewater ____ UST ____ Drinking Water ____ Other ____ None ____

COMMENTS

Strong solvent odor noted upon light click

Overweight - cancel per Jim

Strong odor / Jars say 3.5-5.5

Note: For each sample, 1 40z glass jar for all MeOH pres. and 1 plastic jar for solids.

CONDITION OF SAMPLE: BOTTLES INTACT? (YES) NO FIELD FILTERED? YES (NO)

COC SEALS PRESENT AND INTACT? (YES) NO VOLATILES FREE OF HEADSPACE? ~~YES~~ NO

TEMPERATURE UPON RECEIPT: 0.3°C Bottles supplied by NET? YES (NO) 4/23 1256

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ____ I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS ____ DATE ____

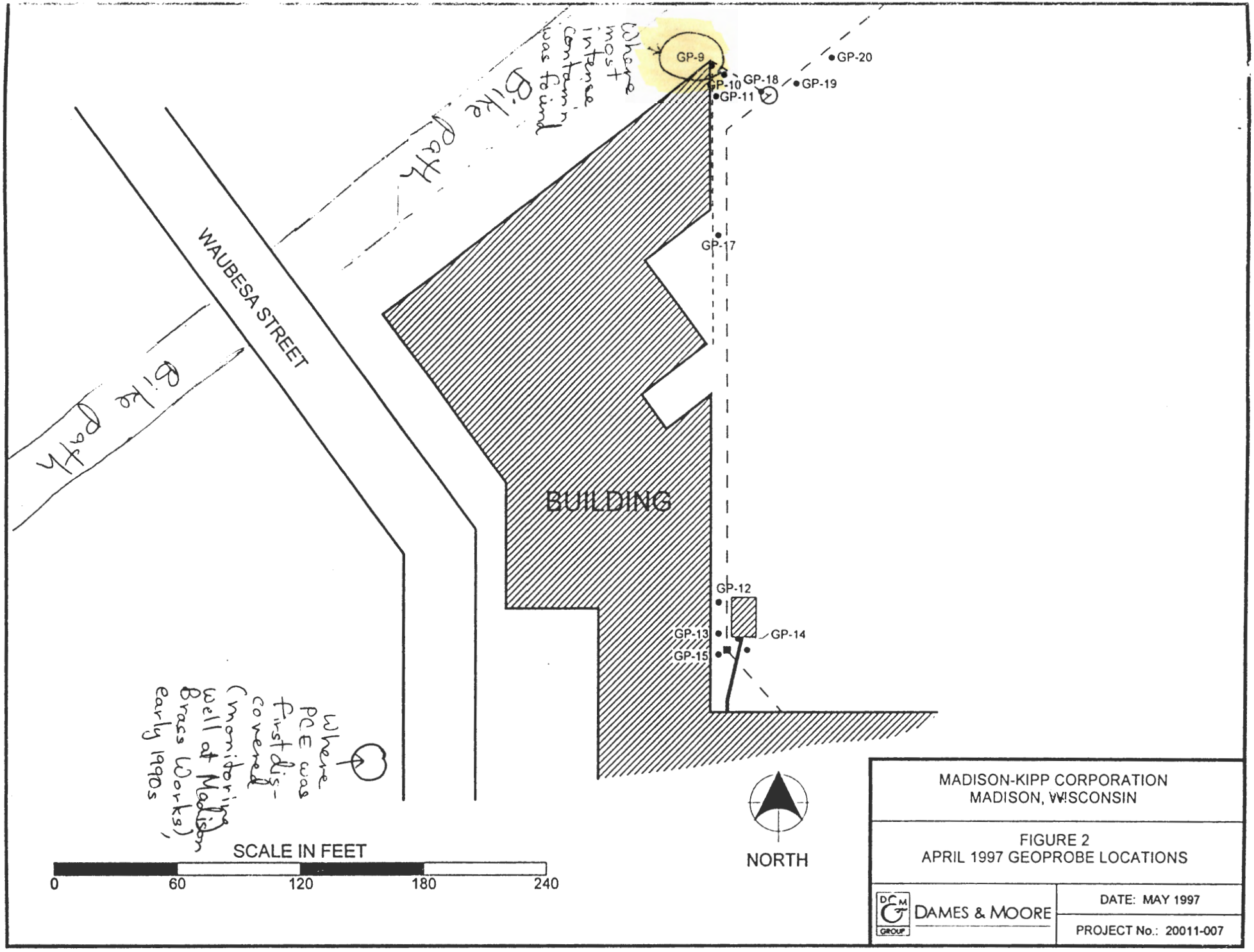
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
Mark A McCulloch	4-22-97	1230PM	Dun-hand Express				4/23/97

METHOD OF SHIPMENT: Dunham

REMARKS: Analyze all soil samples for VOCs by 8021, Suspect TCE/PCE, and degradation by-product VOCs (volatile organic compounds)

degradation by-products

PK1 ORIGINAL WHITE PK2 - NET PROJECT MANAGER - YELLOW PK3 CUSTOMER COPY - PINK



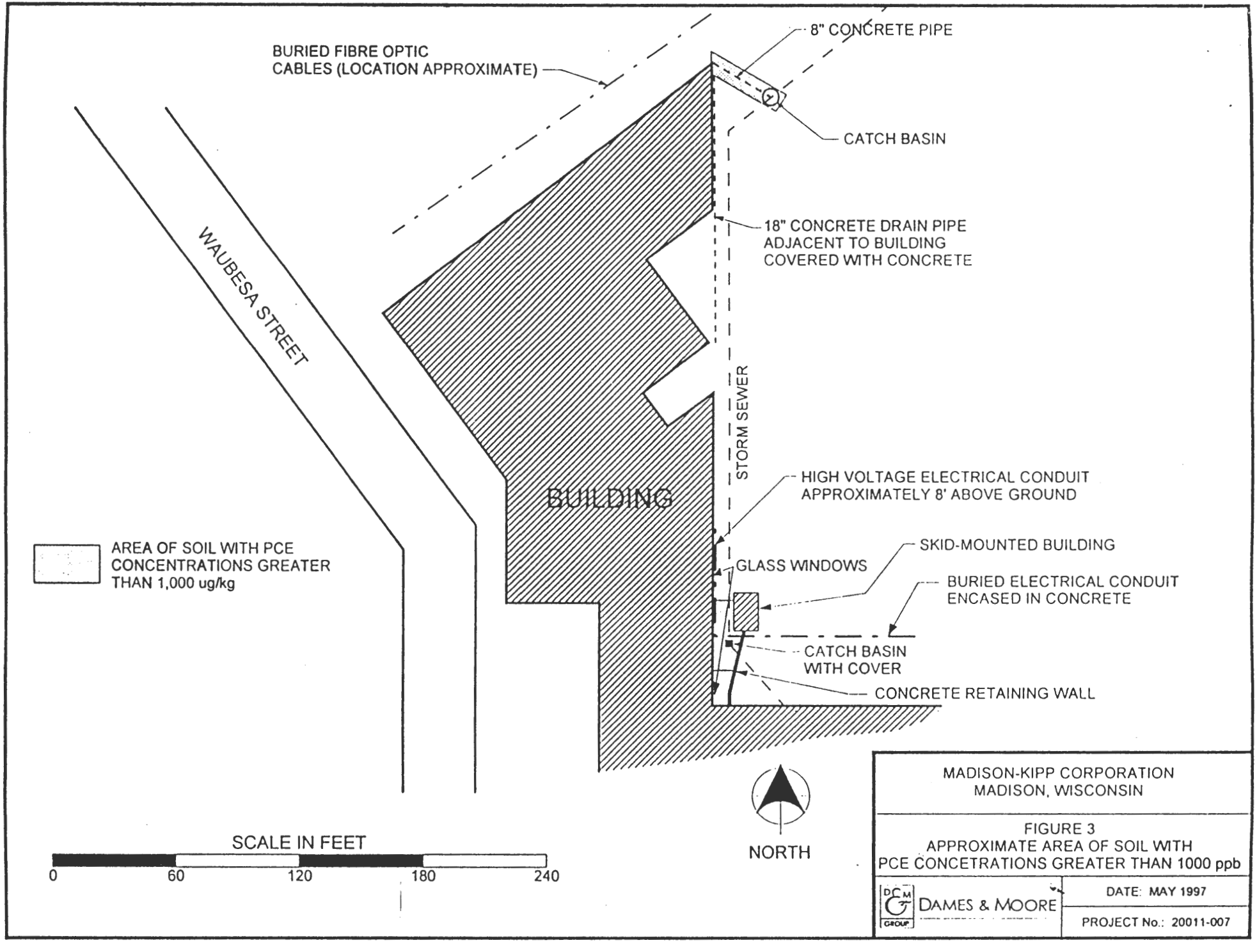
MADISON-KIPP CORPORATION
MADISON, WISCONSIN

FIGURE 2
APRIL 1997 GEOPROBE LOCATIONS

DAMES & MOORE

DATE: MAY 1997

PROJECT No.: 20011-007



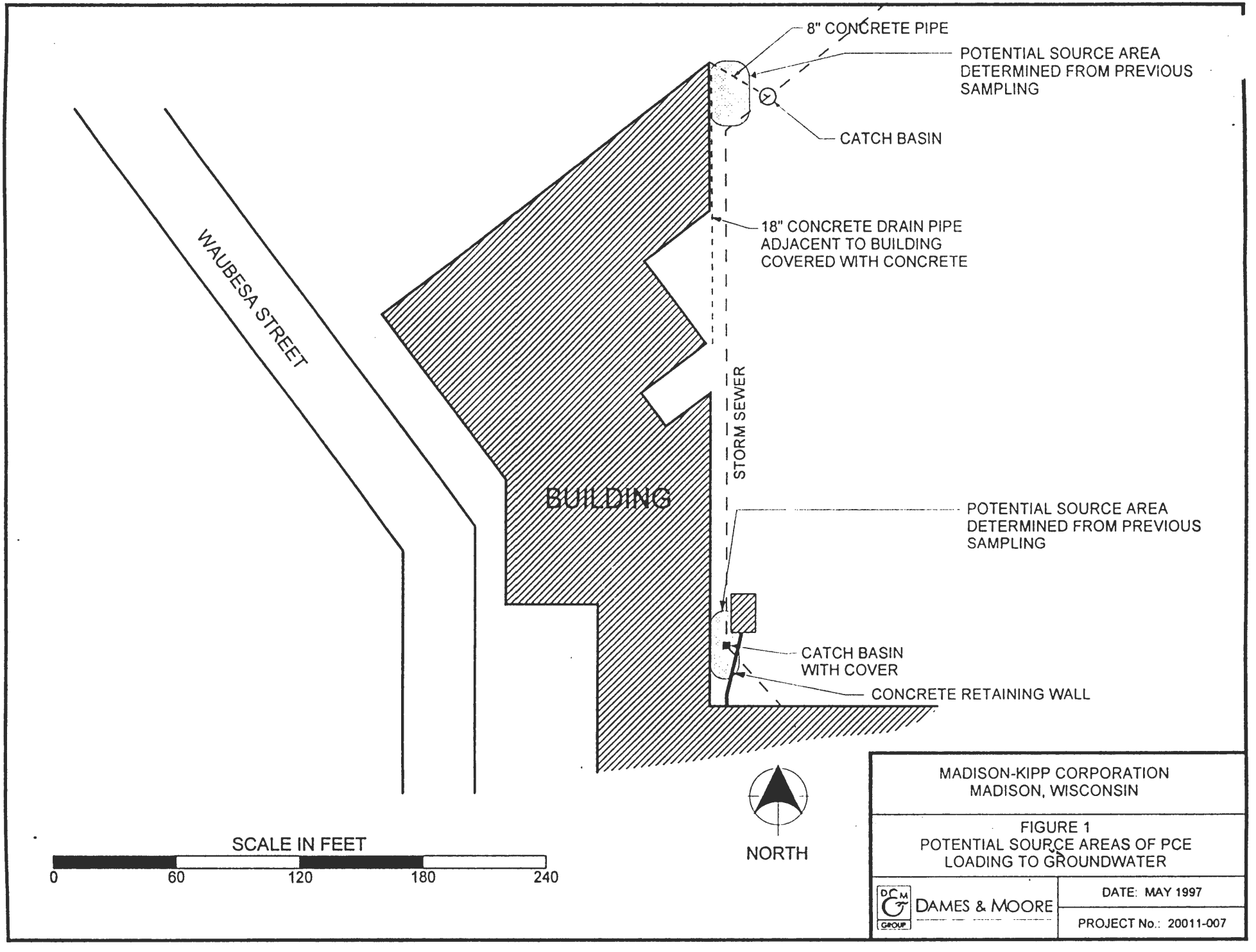
MADISON-KIPP CORPORATION
MADISON, WISCONSIN

FIGURE 3
APPROXIMATE AREA OF SOIL WITH
PCE CONCETRATIONS GREATER THAN 1000 ppb

DAMES & MOORE

DATE: MAY 1997

PROJECT No.: 20011-007



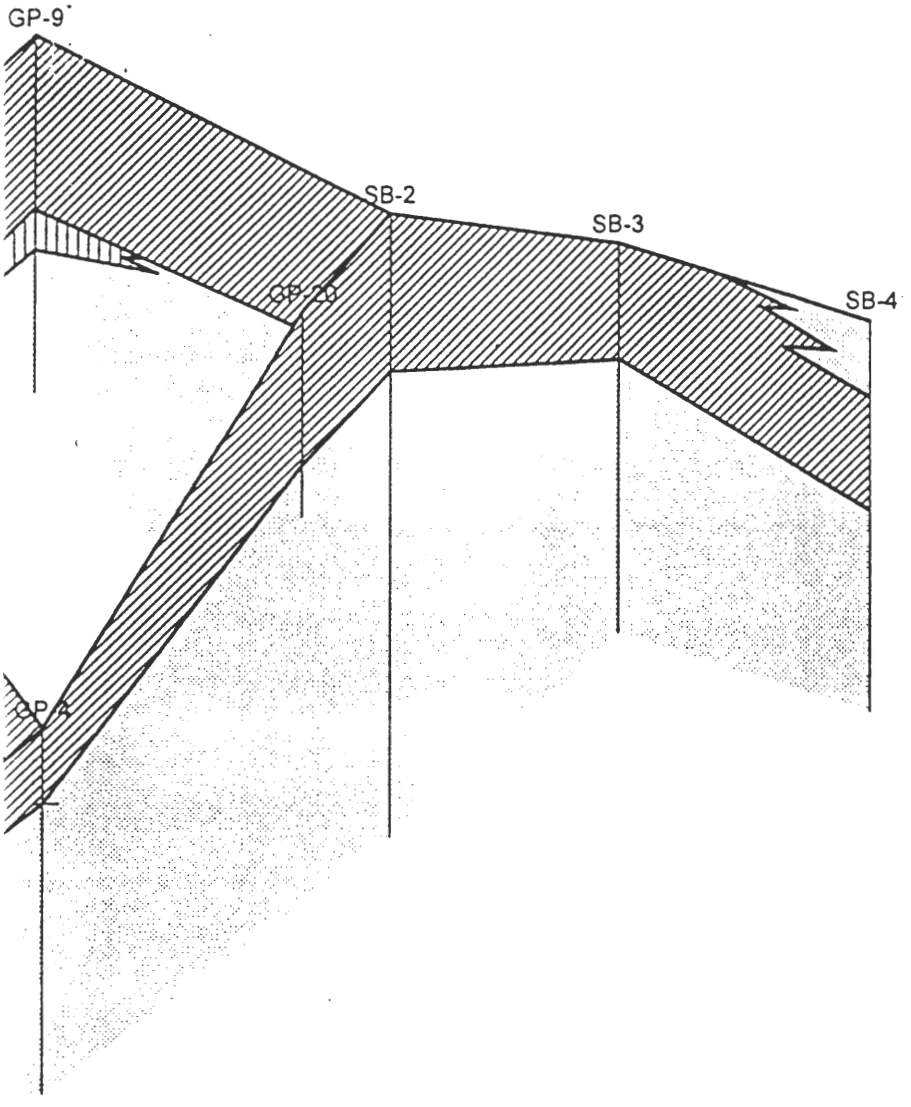
MADISON-KIPP CORPORATION
MADISON, WISCONSIN

FIGURE 1
POTENTIAL SOURCE AREAS OF PCE LOADING TO GROUNDWATER

DAMES & MOORE

DATE: MAY 1997

PROJECT No.: 20011-007



MADISON-KIPP CORPORATION

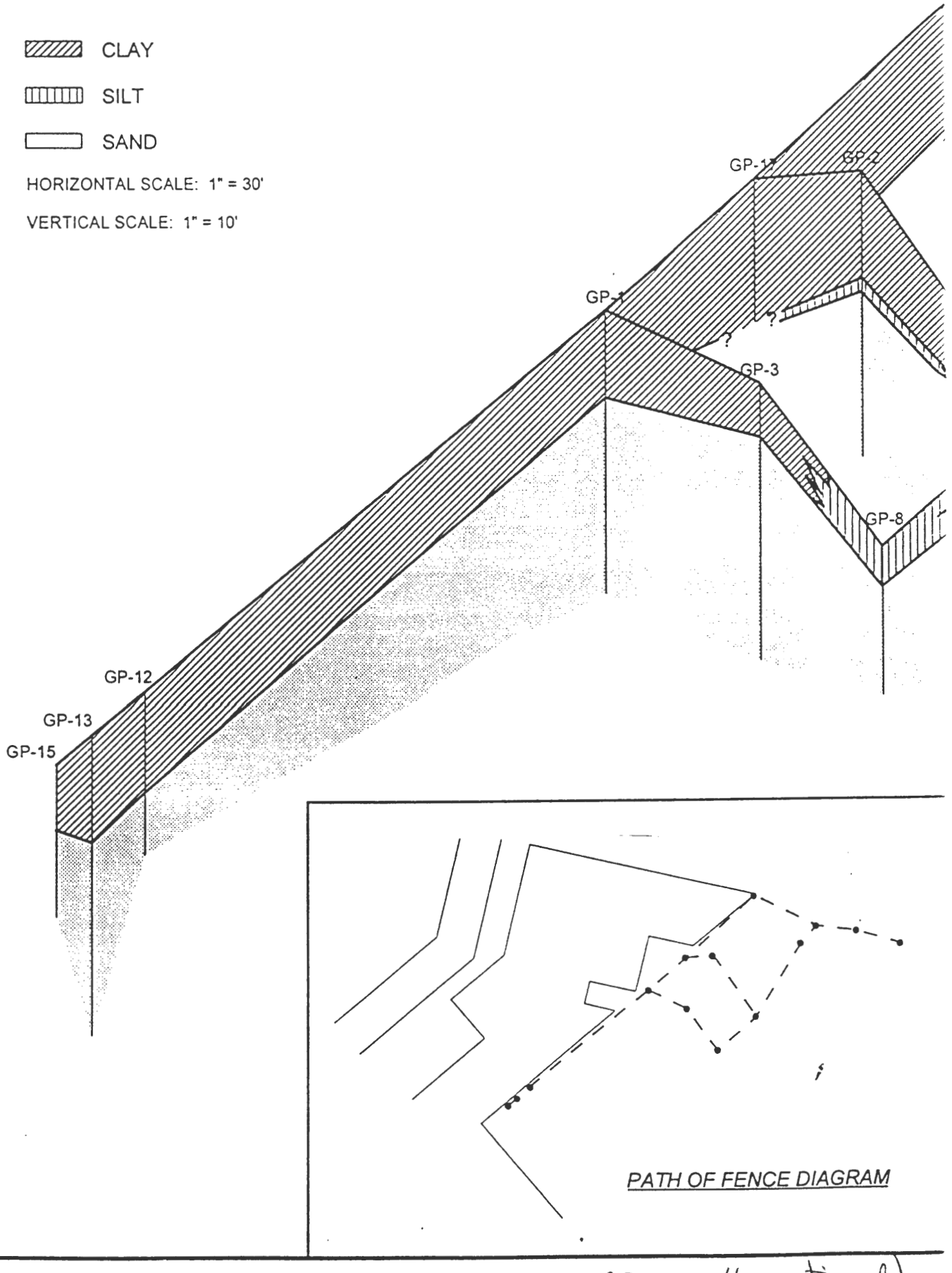
MADISON, WISCONSIN

FIGURE 4
STRATIGRAPHIC FENCE DIAGRAM

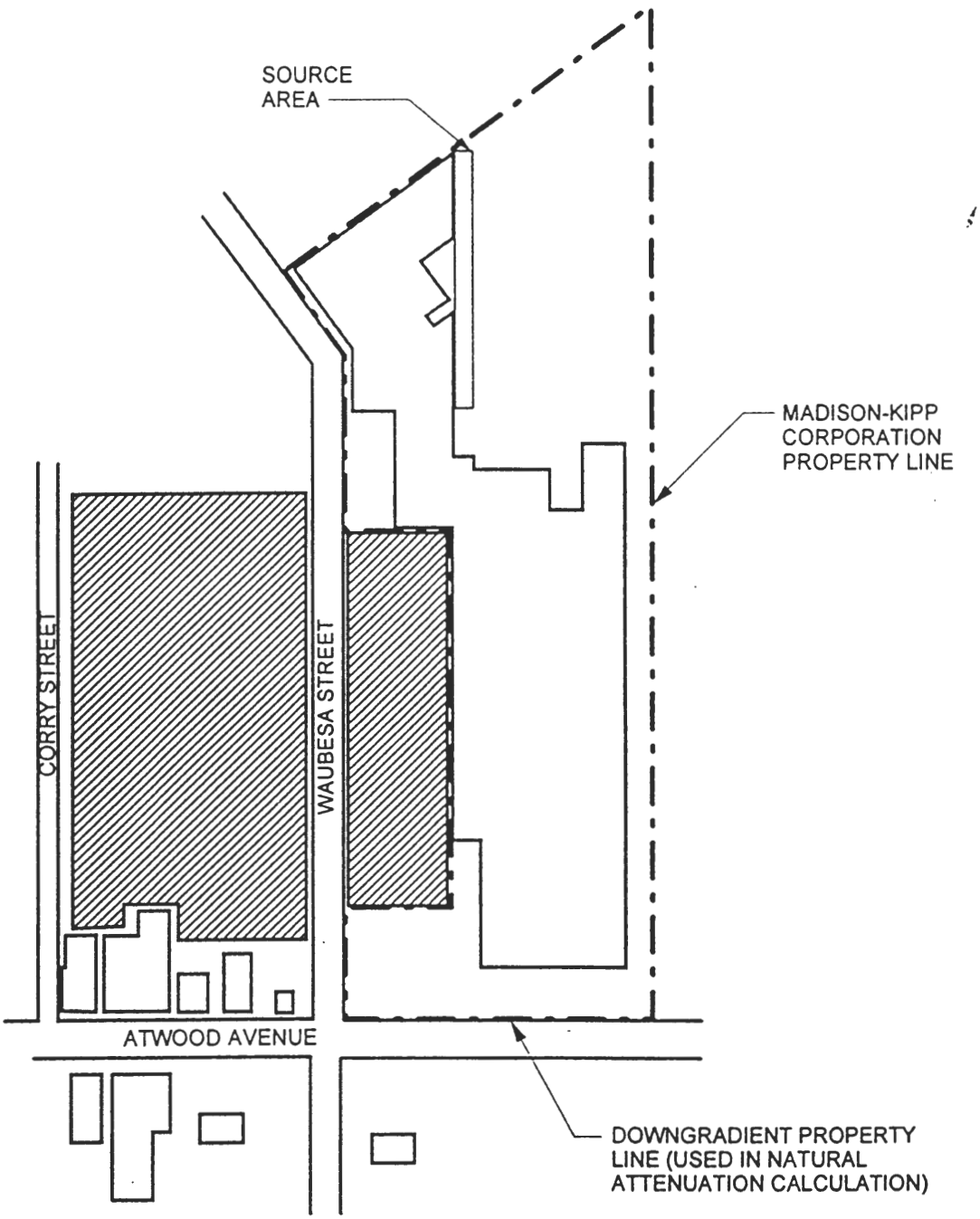
DAMES & MOORE

DATE: MAY 1997

PROJ. No.: 20011-007



(Figure 4, continued)



RESIDENTIAL AREA

SCALE IN FEET

0 100 200 300 400

NORTH

MADISON-KIPP CORPORATION

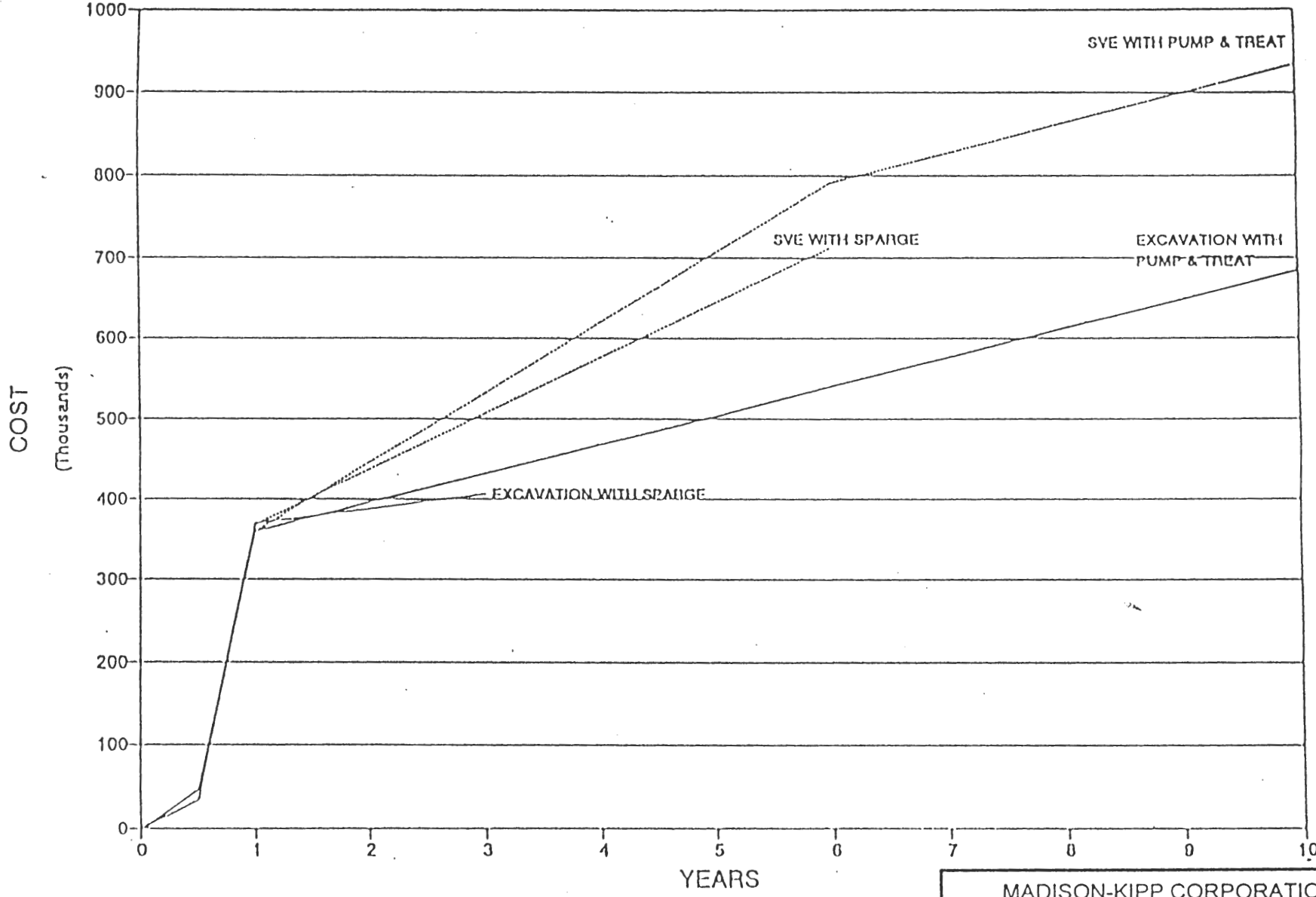
MADISON, WISCONSIN

FIGURE 5
MADISON-KIPP PROPERTY BOUNDARY

DAMES & MOORE

DATE: MAY 1997

PROJ. No.: 20011-006



MADISON-KIPP CORPORATION
MADISON, WISCONSIN

FIGURE B-3
ESTIMATED COSTS AND SCHEDULE
FOR REMEDIATION SCENARIOS

DAMES & MOORE

DATE: JANUARY 1997

PROJ. No.: 20011-006