



Milwaukee Chicago Green Bay Madison

One Honey Creek Corporate Center
125 S. 84th Street, Suite 401
Milwaukee, Wisconsin 53214
Telephone (414) 259-1500 • FAX (414) 259-0037
www.gasal.com

June 8, 1998

Dr. Thomas Graan
Roy F. Weston, Inc.
3 Hawthorne Parkway, Suite 400
Vernon Hills, IL 60061-1450

SUBJECT: Wetland Investigation
Moss-American Superfund Site
Northeast Quarter of Section 8, T8N, R21E
City of Milwaukee, Milwaukee County, WI

Dear Dr. Graan:

Graef, Anhalt, Schloemer & Associates, Inc. (GAS) conducted a wetland investigation on the subject property on May 14th and 15th, 1998. The study area is shown on Figure 1 (enclosed) and consists of the portion of the Moss-American Superfund site that lies to the west of the Little Menomonee River. The purpose of the investigation was to identify, delineate, and collect data on all jurisdictional wetlands in the study area.

Three wetlands, W-1, W-2, and W-3 were observed in the study area (Figure 2). Methods outlined in the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Manual) was used to mark wetland W-1's boundaries which exist within a shoreland zone (proximate to navigable waters of the State of Wisconsin). The 1987 *Corps of Engineers Wetlands Delineation Manual* (Corps Manual) was used to mark wetland W-2 and W-3's boundaries which exist outside of a shoreland zone. The boundaries of W-1 through W-3 were marked with 132, 38, and 40 sequentially numbered blue wire flags, respectively.

Data forms for sample points representing wetland and upland conditions within and proximate to wetlands W-1, W-2 and W-3 were completed (enclosed). Plant lists for wetlands W-1, W-2, and W-3 were prepared during field investigations. For the purposes of preparing the plant lists, W-1 was divided into two separate wetlands identified as W-1 and W-1A. This was due to the difference in plant communities encountered within W-1. The plant lists are provided as an attachment to this report. One portion of Wetland W-1 may be classified as fresh (wet) meadow / shallow marsh, while the other (W-1A) may be classified as floodplain forest. These classifications are based on the system outlined in *Wetland Plants and Plant Communities of Minnesota and Wisconsin* by Eggers and Reed, 1987. Wetland W-2 may be classified as fresh (wet) meadow / shallow marsh, and wetland W-3 may be classified as a fresh (wet) meadow using the same classification system.

According to the *Wisconsin Wetland Inventory* (WWI) map for Milwaukee County (Figure 3), W-1 is classified as a forested, broad-leaved deciduous, wet soil palustrine (T3K) wetland. Wetlands W-2 and W-3 are not shown on the WWI. The discrepancies between results of field investigations performed by GAS and what is shown on the WWI can be explained by the methods used to delineate wetlands. Wetland boundaries depicted on the WWI are based



upon aerial photograph interpretation. Those boundaries shown for wetlands W-1, W-2 and W-3 on Figure 2 are based upon the application of the aforementioned methods directly in the field.

The *Soil Survey of Milwaukee and Waukesha Counties, Wisconsin* (Steingraeger and Reynolds, 1971) shows the Colwood silt loam (Cw), Matherton silt loam (MmA), and Loamy land (Lu) soil mapping units within the area of wetlands W-1 through W-3 (Figure 4). The Colwood mapping unit is listed on the County hydric soils list as "whole soil unit", while the Matherton mapping unit is listed as "wetter soils as inclusions." Only the Colwood mapping unit is listed on the state and federal hydric soils lists.

Aerial photographs of the site from the years 1963, 1967, 1970, 1975, 1980, 1985, 1990, 1995, are included (Figures 5 through 12). Specifically, the aerial photograph taken in 1990 shows the Southeastern Wisconsin Regional Planning Commission (SEWRPC) designations of primary environmental corridor and wetland boundaries. It can be seen from this aerial photograph that the SEWRPC designation of wetland boundaries varies significantly from what was determined as a result of the GAS field investigation. Again, this discrepancy can be explained by the methods used to delineate wetlands. The wetland delineation depicted on Figure 11 was derived from aerial photograph interpretation. To our knowledge, a field check was not performed by representatives of SEWRPC to validate this interpretation.

Sample points described adjacent to and within wetlands W-1 through W-3 included observations regarding vegetation and hydrology but did not include soils. Soils were composed of various fill materials. Redoximorphic features that may be associated with poor drainage conditions would be difficult to distinguish from colors encountered within the fill. The fill was comprised of material which gave a very "rusty" appearance to the observer. Sample points described in the field are included with this report.

Each wetland existing on the Moss-American site was assessed using the Wisconsin Department of Natural Resources' *Rapid Assessment Method for Evaluating Wetland Functional Values*. These assessments are also included with this report. Wetland W-1 was determined to possess low functional significance in fishery habitat and shoreline protection; medium functional significance in floral diversity, groundwater and aesthetics / recreation / education; and high functional significance in wildlife habitat, flood / stormwater attenuation and water quality protection. Wetlands W-2 and W-3 possessed low significance for all rated functions except flood / stormwater attenuation which was rated medium.

The *Swink-Wilhelm Floristic Quality Index (FQI)* was used to quantitatively determine the floristic quality of plant communities described within wetlands W-1, W-2, and W-3. The FQI is derived from lists of observed plants within each wetland plant community type within W-1, W-2 and W-3 (Appendix C).

The authors of this method have assigned each plant species a number between 0 and 10 based upon the estimated probability that plant was obtained in a relatively intact and undisturbed plant community indigenous to the region. The FQI value that is obtained is related to the diversity of plants present at a site today and their relative fidelity to native plant communities in this region prior to the European settlement in the early 1800's. Generally, an FQI lower than 20 is considered a highly disturbed plant community that is not significant by most standards. An FQI value above 20 indicates that a plant community may be relatively undisturbed, possess high floristic quality, but may not necessarily be ecologically significant.



According to the authors of the method, an FQI above 35 is rare and indicates a plant community with regional ecological significance.


Wetland plant communities for W-1, W-1A (floodplain forest), W-2, and W-3 had FQI's of 20.3, 17.9, 11.8, and 8.49. Based upon knowledge of site history combined with the results of the FQI's, it can be deduced that the wetland plant communities described above are highly disturbed and are not significant by most standards.

Filling or excavating in wetlands W-1, W-2 or W-3 would require a Section 404 permit from the U.S. Army Corps of Engineers and Section 401 certification from the Wisconsin Department of Natural Resources (WDNR). Under some types of Section 404 nationwide permits, the WDNR would require that an extensive alternatives analysis under section NR 103 of Wis. Adm. Code be performed prior to certifying the proposed filling or excavation. A copy of the NR103 alternatives analysis form is included with this report. If impacts are associated with a federal or state mandated cleanup, nationwide permit 38 may apply. If this permit applies, state certification review would be expedited.

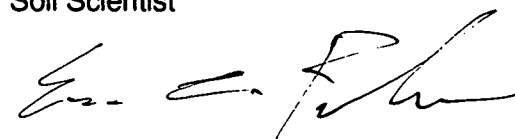
GAS appreciates the opportunity to conduct this wetland investigation for you. If you have any further questions, please feel free to call us at (414) 259-1500.

Sincerely,

GRAEF, ANHALT, SCHLOEMER
& Associates, Inc.



Brian J. Karczewski
Soil Scientist

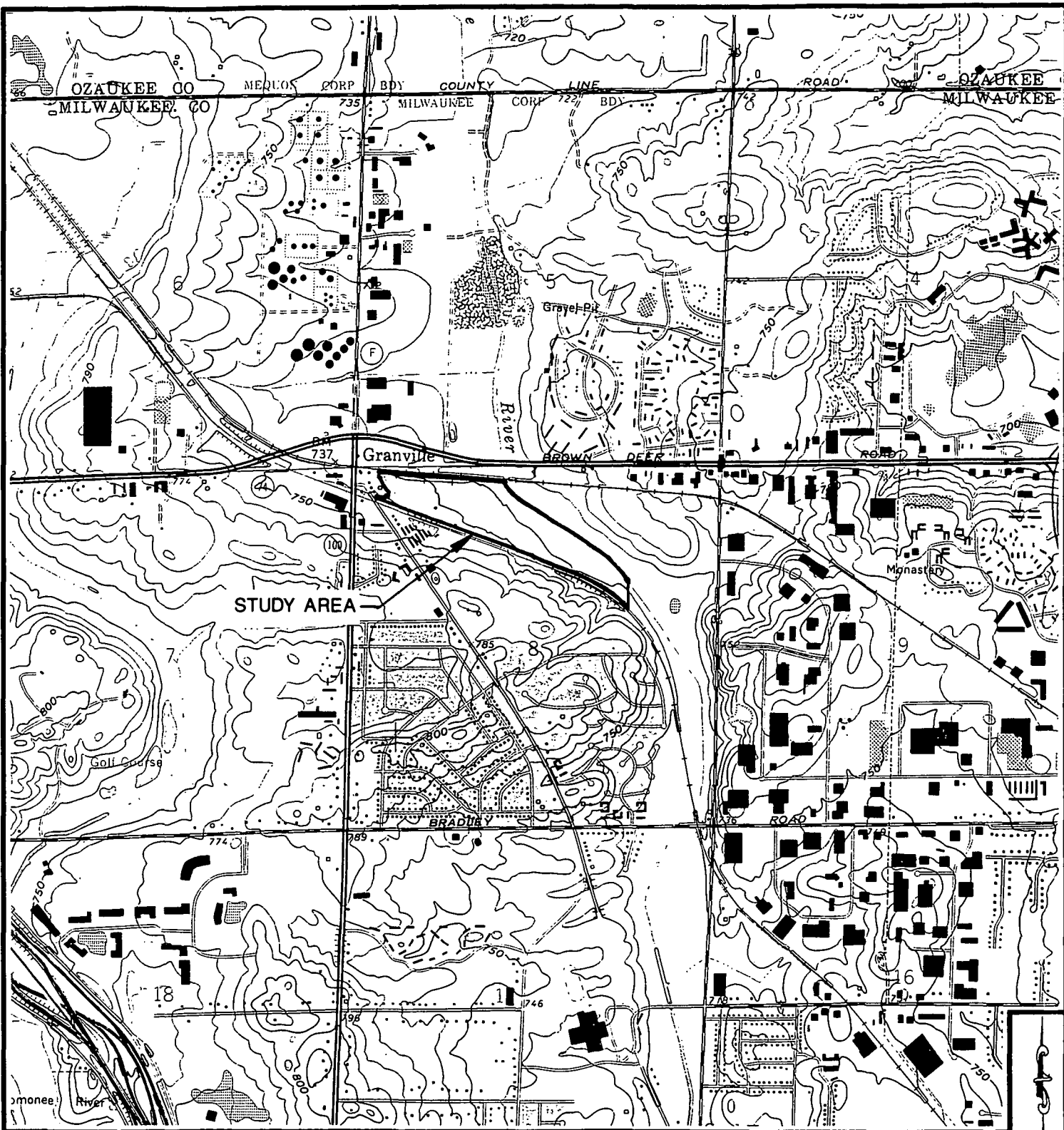


Eric C. Parker, P.W.S.
Wetland Scientist

980187WetRpt

BJK:bjk EnvShare2/980187/RPT/980187WetRpt
enclosures

FIGURES



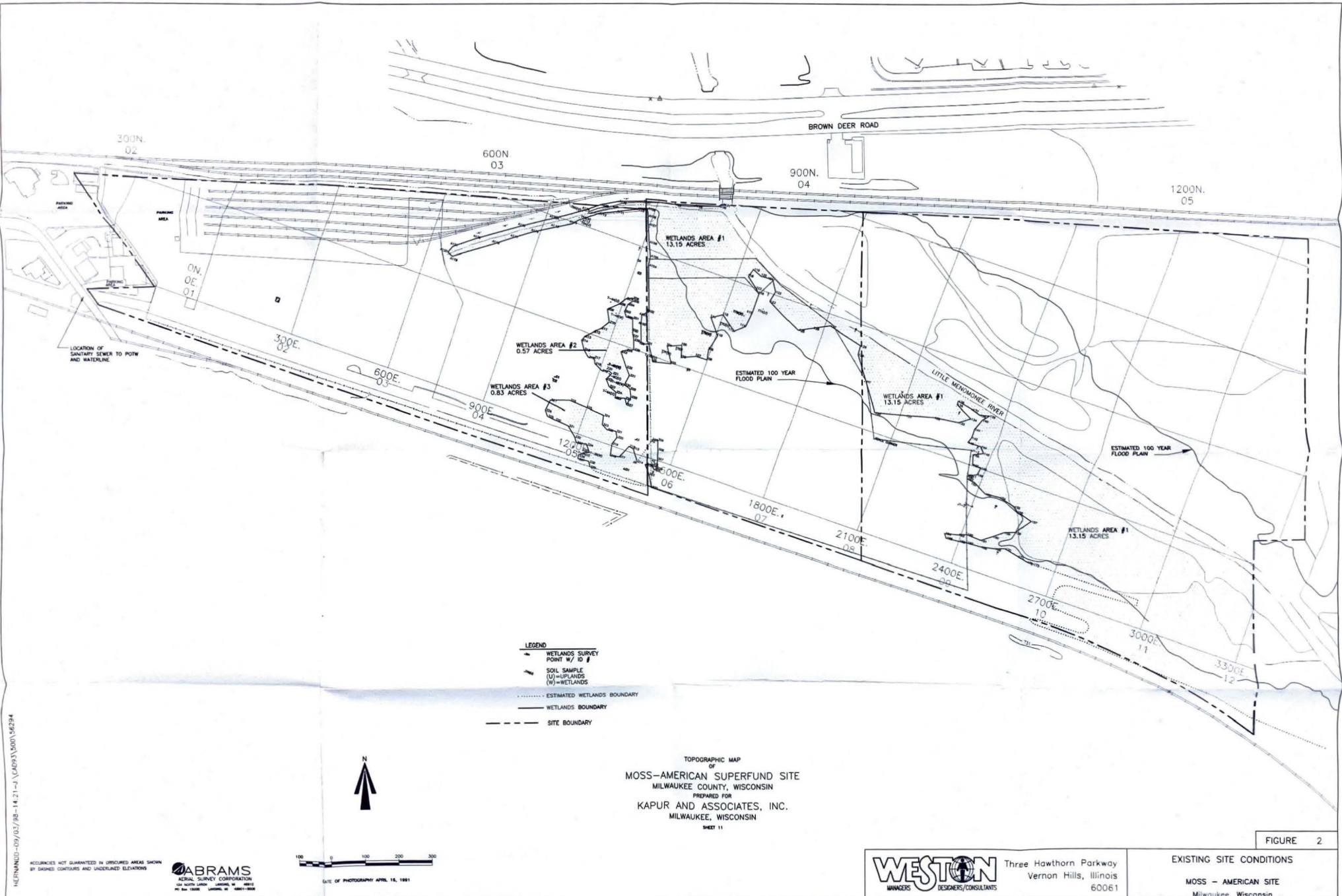
SOURCE: USGS, 7.5 MINUTE SERIES (TOPOGRAPHIC), MEMONEE FALLS QUADRANGLE, WISCONSIN, 1994

SITE LOCATION MAP

**MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN**

SCALE:	1" = 2,000'
DATE:	05-18-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	

**GRAEF
ANHALT
SCHLOEMER**
and Associates Inc.
ENGINEERS AND SCIENTISTS



LOCATION OF
SANITARY SEWER TO POTW
AND WATERLINE

- LEGEND**
- WETLANDS SURVEY POINT W/ ID #
 - SOIL SAMPLE (U)=UPLANDS (W)=WETLANDS
 - ESTIMATED WETLANDS BOUNDARY
 - WETLANDS BOUNDARY
 - - - - - SITE BOUNDARY



DATE OF PHOTOGRAPHY APRIL 18, 1981

TOPOGRAPHIC MAP
OF
MOSS-AMERICAN SUPERFUND SITE
MILWAUKEE COUNTY, WISCONSIN
PREPARED FOR
KAPUR AND ASSOCIATES, INC.
MILWAUKEE, WISCONSIN
SHEET 11

FIGURE 2

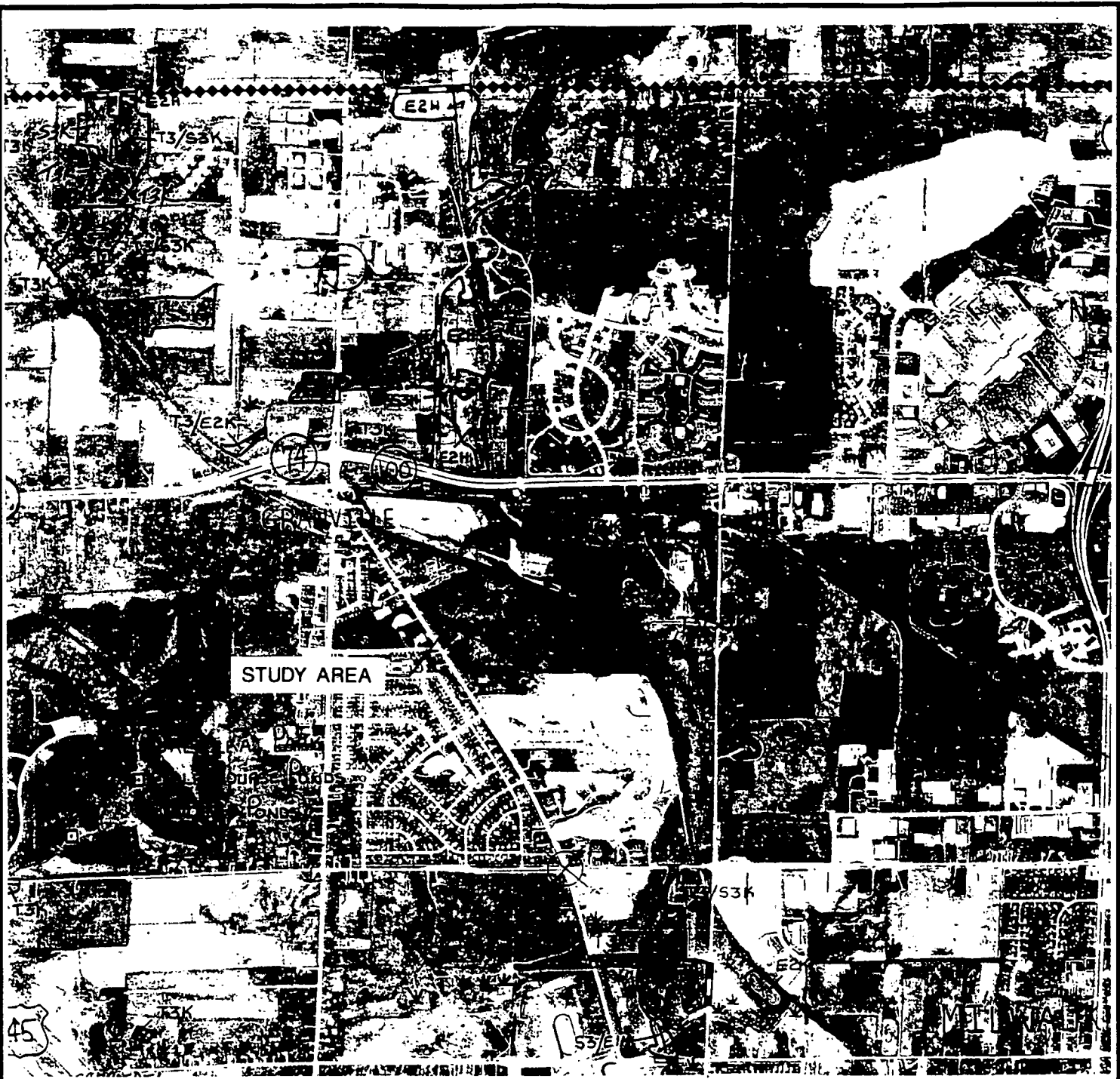
H:\MANNING-09\07\78-14-21-1\CAD09\3000\56234

ACCURACIES NOT GUARANTEED IN UNSHADED AREAS SHOWN BY DASHED CONTOURS AND UNDERLINED ELEVATIONS



Three Hawthorn Parkway
Vernon Hills, Illinois
60061

EXISTING SITE CONDITIONS
MOSS - AMERICAN SITE
Milwaukee, Wisconsin



SOURCE:

WDNR, WISCONSIN WETLAND INVENTORY,
MILWAUKEE COUNTY; T8N, R21E;
LAST REVISION 2-27-89

KEY:

T3K = Forested; Broad-leaved deciduous
Wet soil; Palustrine



WDNR WISCONSIN WETLAND INVENTORY MAP

**MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN**

SCALE: 1" = 2,000'

DATE: 05-18-98

PROJECT MGR: ECP

DRAWN BY: JZ

JOB NUMBER: 980187

REVISION DATE:

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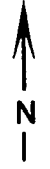


SOURCE:

USDA, NRCS SOIL SURVEY OF
MILWAUKEE COUNTY,
WISCONSIN, 1971

LEGEND:

- Cw = Colwood silt loam, Hydric
- Lu = Loamy land, Non-hydric
- MmA = Matherton silt loam, 1 to 3 percent slopes,
Wetter soils as inclusions



NRCS SOILS MAP

**MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN**

SCALE: 1" = 1,320'

DATE: 05-18-98

PROJECT MGR: ECP

DRAWN BY: JZ

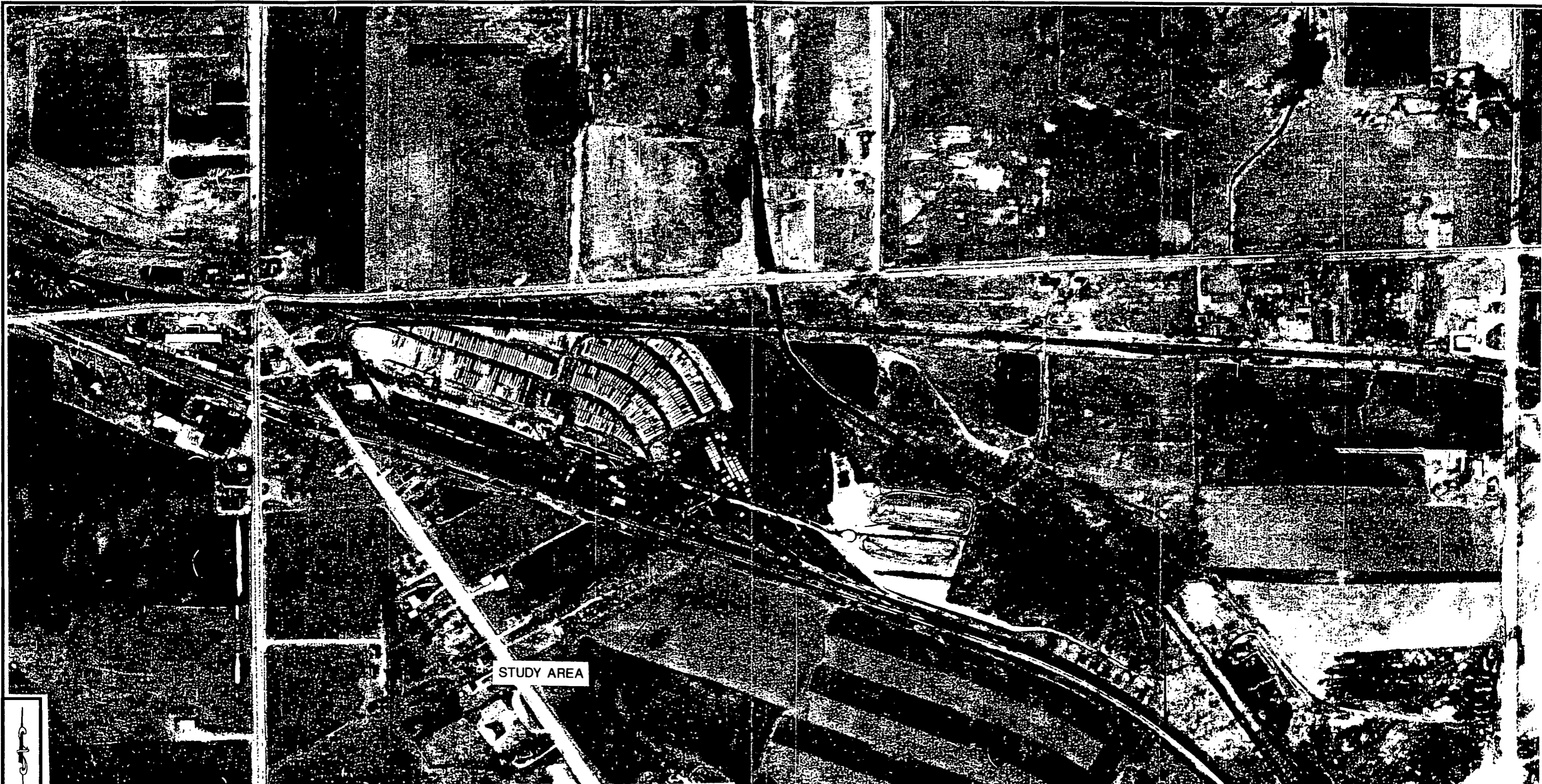
JOB NUMBER: 980187

REVISION DATE:



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STUDY AREA

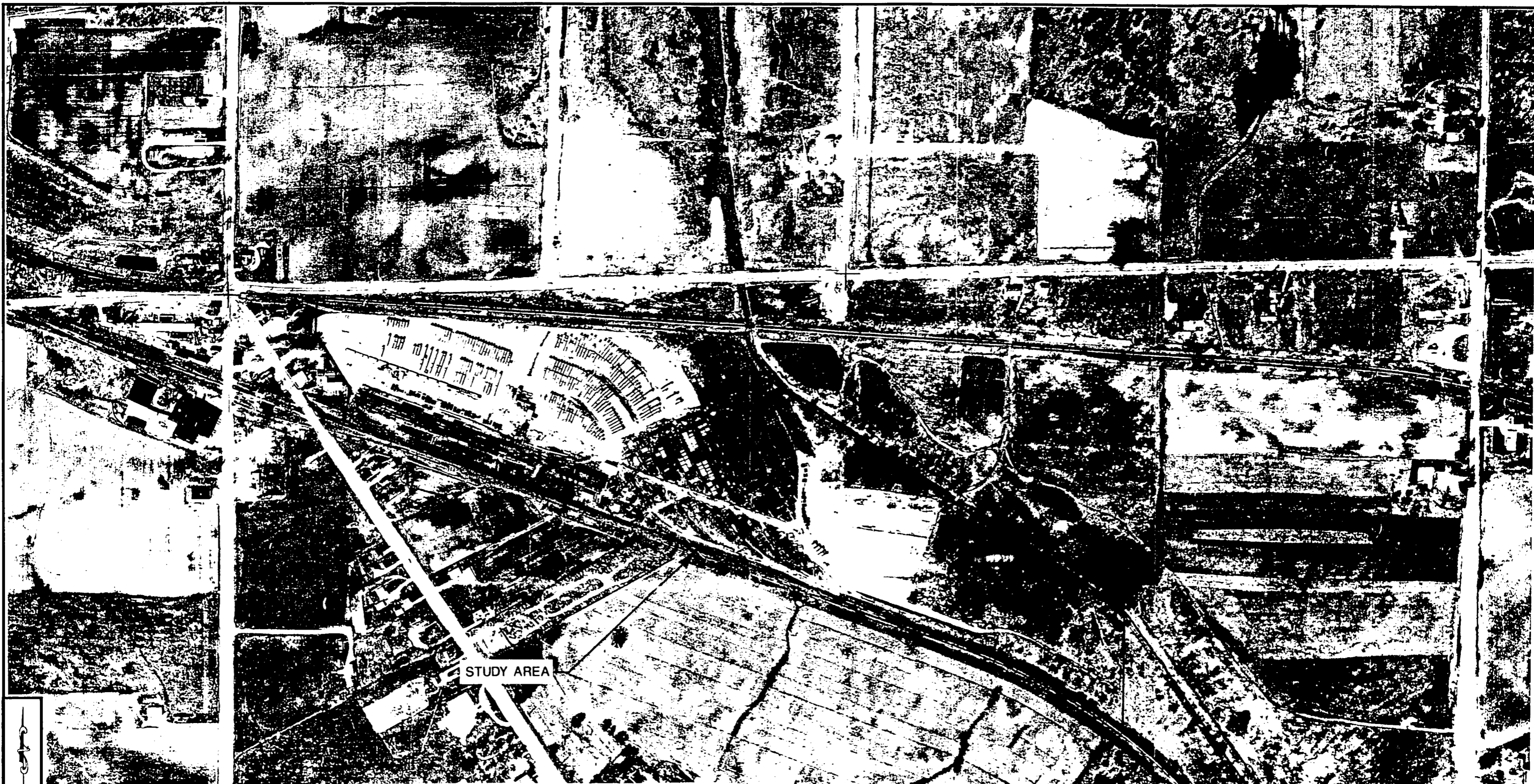
SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
March 1963

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


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SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
April 1967

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
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REVISION DATE:	



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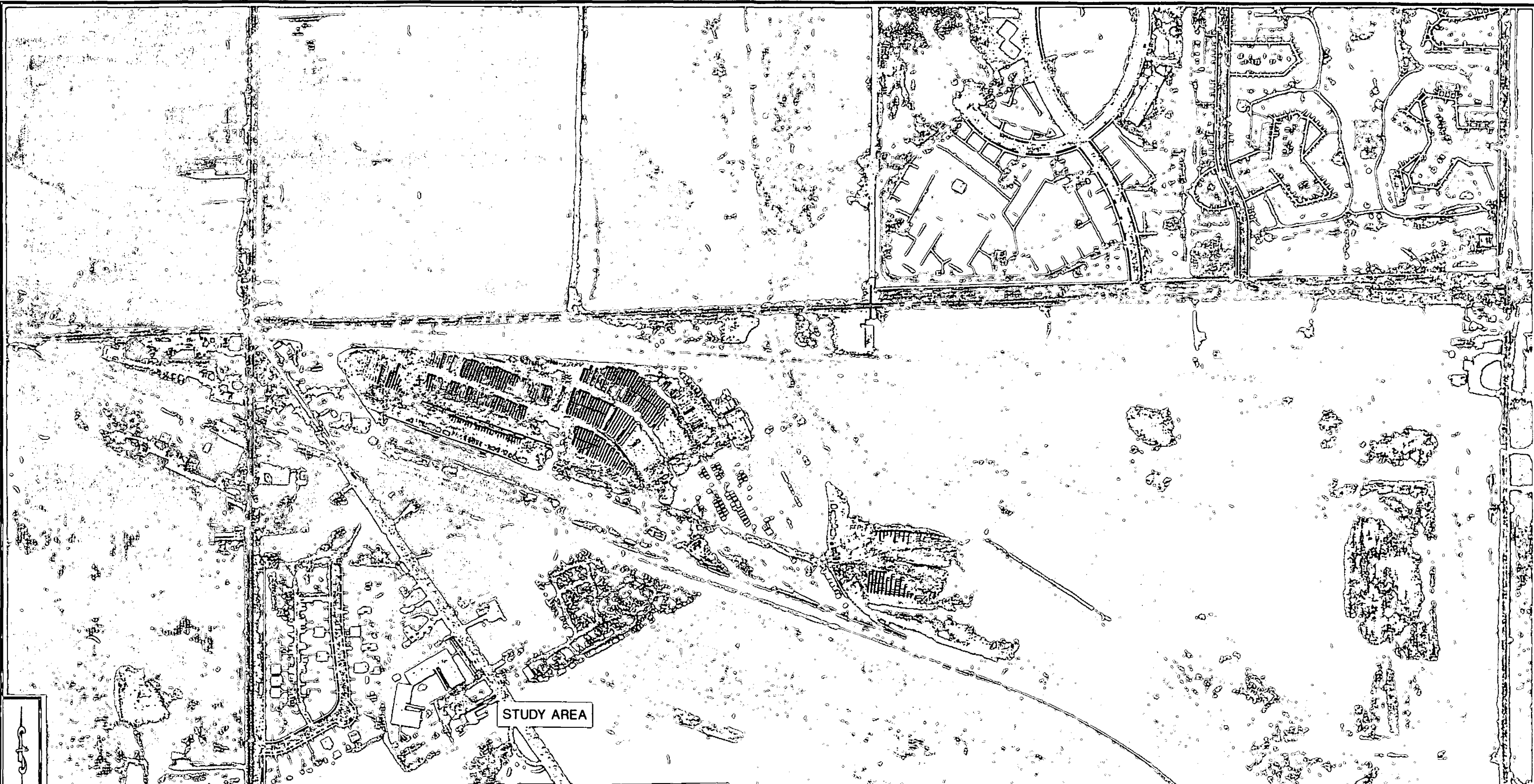
SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
April 1970

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


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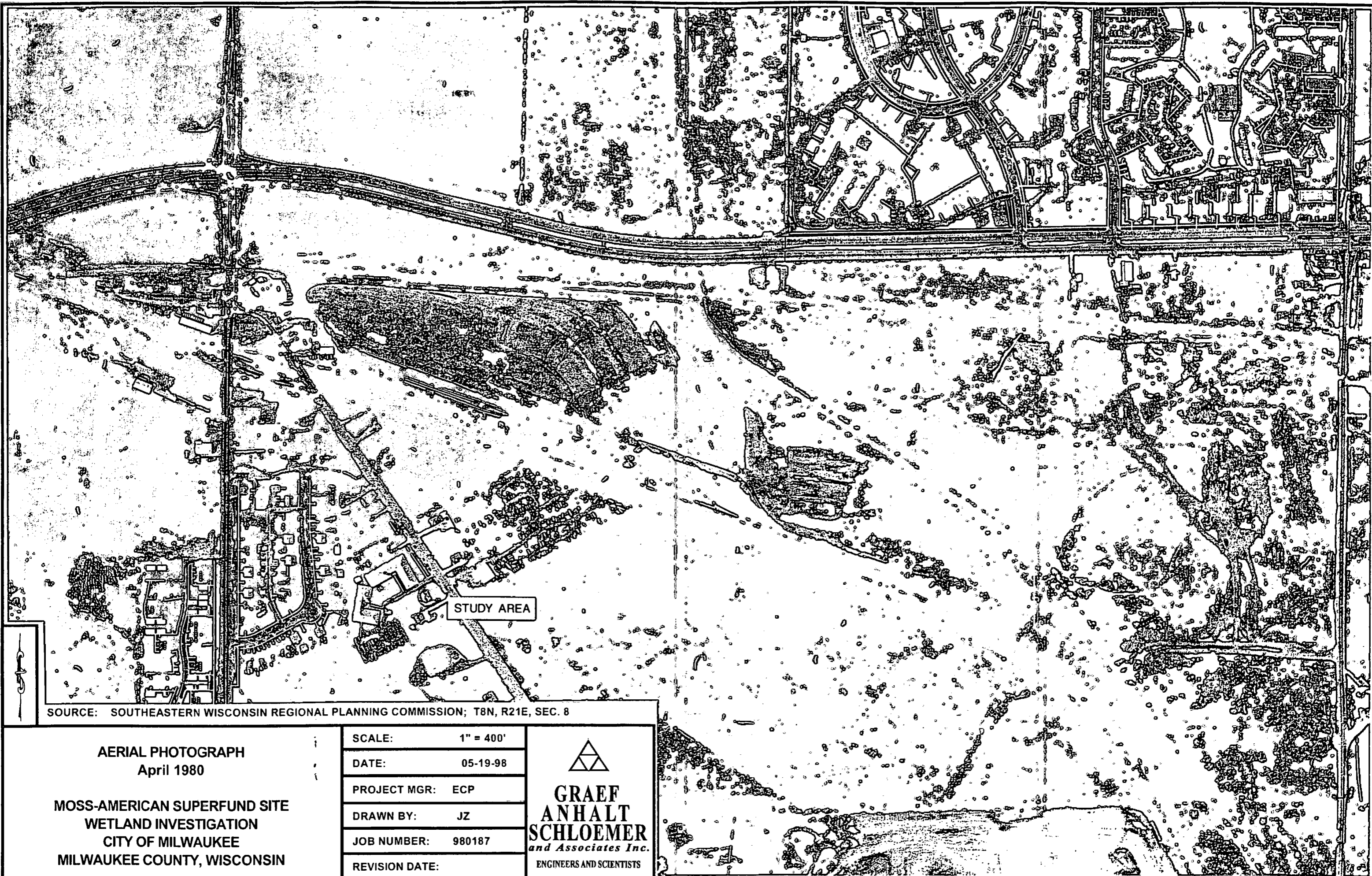
SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
May 1975

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


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SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
April 1980

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


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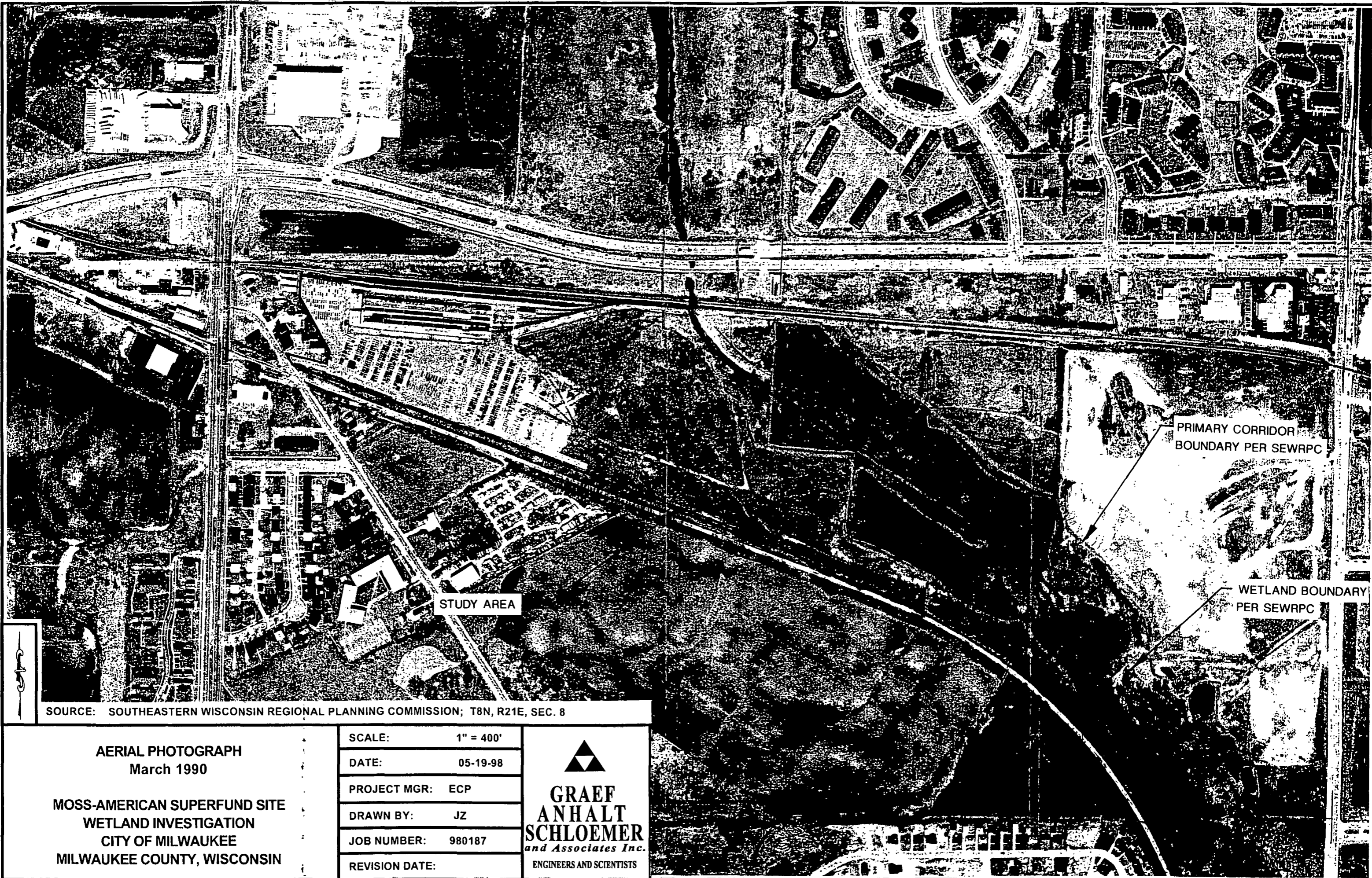
SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
April 1985

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


GRAEF
ANHALT
SCHLOEMER
and Associates Inc.
ENGINEERS AND SCIENTISTS




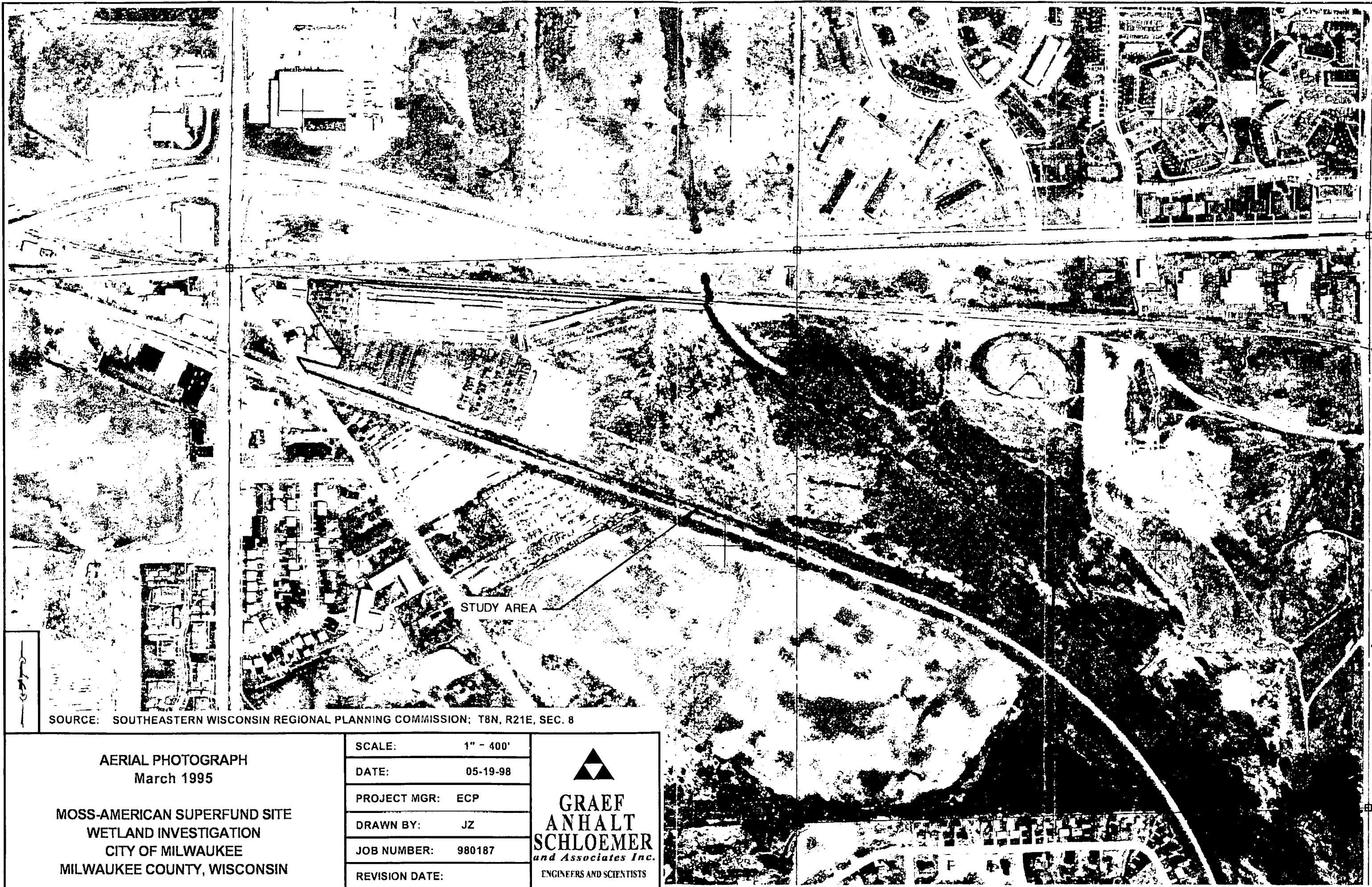
SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
March 1990

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	


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and Associates Inc.
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STUDY AREA

SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T8N, R21E, SEC. 8

AERIAL PHOTOGRAPH
March 1995

MOSS-AMERICAN SUPERFUND SITE
WETLAND INVESTIGATION
CITY OF MILWAUKEE
MILWAUKEE COUNTY, WISCONSIN

SCALE:	1" = 400'
DATE:	05-19-98
PROJECT MGR:	ECP
DRAWN BY:	JZ
JOB NUMBER:	980187
REVISION DATE:	



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**Wetland Determination
Data Forms**

DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate _____
Comprehensive _____

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: _____	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No Plant Community I.D.: W-1

Is the site significantly disturbed? Yes No Transect I.D.: T-5

Is the area a potential problem area? Yes No Plot I.D.: T-5 A(u)

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Elytrigia repens </u>	<u> ground </u>	<u> FACU </u>	9. _____	_____	_____
2. <u> Daucus carota </u>	<u> ground </u>	<u> UPL </u>	10. _____	_____	_____
3. <u> Hypericum perforatum </u>	<u> ground </u>	<u> UPL </u>	11. _____	_____	_____
4. <u> Rhamnus cathartica </u>	<u> shrub </u>	<u> FACU </u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW and/or FAC: 25%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): <input type="checkbox"/> Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Mark other field indicators of surface inundation or soil saturation below: <input type="checkbox"/> Oxidized root zones - living roots <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Water - borne sediment deposits <input type="checkbox"/> Water - stained leaves <input type="checkbox"/> Surface scoured areas <input type="checkbox"/> Wetland drainage patterns <input type="checkbox"/> Morphological plant adaptations <input type="checkbox"/> Hydric soil characteristics
---	---

Field Observations/Measurements:

Is the ground surface inundated? Yes _____ No X Surface water depth: N/A inches

Is the soil saturated? Yes _____ No X Depth to saturation: N/A inches

Depth to free-standing water in pit/soil probe hole: _____ inches

Remarks: _____

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name (Series and Phase): <u>Loamy Land (Lu)</u>		Drainage Class: <u>N/A</u>			
Taxonomy (Subgroup): <u>N/A</u>		Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Hydric Soil Indicators (mark all that are present):					
<input type="checkbox"/>	Organic Soils	<input type="checkbox"/>	High Organic Contents in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Histic Epipedons	<input type="checkbox"/>	Organic Streaking in Subsurface Layers of Sandy Soils		
<input type="checkbox"/>	Sulfidic Material	<input type="checkbox"/>	Reducing Conditions (Confirmed by Measurement)		
<input type="checkbox"/>	Aquic or Peraquic Moisture Regime	<input type="checkbox"/>	Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils		
<input type="checkbox"/>	Iron and Manganese Concretions	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: No soil pit completed. This sample point is on the side slope of a wetland ditch.					

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/> No	(Circle)	Is this Sampling Point with a Wetland?	Yes	<input type="checkbox"/> No	(Circle)
Wetland Hydrology Present?	Yes	<input type="checkbox"/> No					
Hydric Soils Present?	Yes	<input type="checkbox"/> No					
Remarks:							

G.L. (6/94)

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Taxonomy (Subgroup): N/A Field Observations
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hydric Soil Indicators (mark all that are present):

- | | | | |
|--------------------------|-----------------------------------|--------------------------|---|
| <input type="checkbox"/> | Organic Soils | <input type="checkbox"/> | High Organic Contents in Surface Layer in Sandy Soils |
| <input type="checkbox"/> | Histic Epipedons | <input type="checkbox"/> | Organic Streaking in Subsurface Layers of Sandy Soils |
| <input type="checkbox"/> | Sulfidic Material | <input type="checkbox"/> | Reducing Conditions (Confirmed by Measurement) |
| <input type="checkbox"/> | Aquic or Peraquic Moisture Regime | <input type="checkbox"/> | Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils |
| <input type="checkbox"/> | Iron and Manganese Concretions | <input type="checkbox"/> | Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle) Is this Sampling Point with a Wetland? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Remarks:

G.L. (6/94)

DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate _____
Comprehensive _____

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: _____	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No

Is the site significantly disturbed? Yes No

Is the area a potential problem area? Yes No

(If needed, explain on reverse.)

Plant Community I.D.: W-1
Transect I.D.: T-5
Plot I.D.: T-5 C(u)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Poa pratensis </u>	<u> ground* </u>	<u> FAC- </u>	9. _____	_____	_____
2. <u> Oenothera biennis </u>	<u> ground </u>	<u> FACU </u>	10. _____	_____	_____
3. <u> Elytrigia repens </u>	<u> ground </u>	<u> FACU </u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW and/or FAC: 33%

Remarks: _____

HYDROLOGY

<u> X </u> Recorded Data (describe in remarks): <u> </u> Stream or Lake Gauge <u> X </u> Aerial Photographs/Slides <u> </u> Other <u> </u> No Recorded Data Available	Mark other field indicators of surface inundation or soil saturation below: <u> </u> Oxidized root zones - living roots <u> </u> Water marks <u> </u> Drift lines <u> </u> Water - borne sediment deposits <u> </u> Water - stained leaves <u> </u> Surface scoured areas <u> </u> Wetland drainage patterns <u> </u> Morphological plant adaptations <u> </u> Hydric soil characteristics
--	--

Field Observations/Measurements:

Is the ground surface inundated? Yes _____ No X Surface water depth: N/A inches

Is the soil saturated? Yes _____ No X Depth to saturation: N/A inches

Depth to free-standing water in pit/soil probe hole: _____ inches

Remarks: _____

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name (Series and Phase): <u>Loamy Land (Lu)</u>		Drainage Class: <u>N/A</u>			
Taxonomy (Subgroup): <u>N/A</u>		Field Observations			
		Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Hydric Soil Indicators (mark all that are present):					
<input type="checkbox"/>	Organic Soils	<input type="checkbox"/>	High Organic Contents in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Histic Epipedons	<input type="checkbox"/>	Organic Streaking in Subsurface Layers of Sandy Soils		
<input type="checkbox"/>	Sulfidic Material	<input type="checkbox"/>	Reducing Conditions (Confirmed by Measurement)		
<input type="checkbox"/>	Aquic or Peraquic Moisture Regime	<input type="checkbox"/>	Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils		
<input type="checkbox"/>	Iron and Manganese Concretions	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.					

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/> No	(Circle)	Is this Sampling Point with a Wetland?	Yes	<input type="checkbox"/> No	(Circle)
Wetland Hydrology Present?	Yes	<input type="checkbox"/> No					
Hydric Soils Present?	Yes	<input type="checkbox"/> No					
Remarks:							

G.L. (6/94)

DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate _____
Comprehensive _____

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: _____	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No

Is the site significantly disturbed? Yes No

Is the area a potential problem area? Yes No

(If needed, explain on reverse.)

Plant Community I.D.: W-1
Transect I.D.: T-7
Plot I.D.: T-7 A(u)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Solidago canadensis </u>	<u> ground </u>	<u> FACU </u>	9. _____	_____	_____
2. <u> Ambrosia artemisiifolia </u>	<u> ground </u>	<u> FACU </u>	10. _____	_____	_____
3. <u> Salix sp. (cut) </u>	<u> ground </u>	<u> FAC- FACW </u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW and/or FAC: 33%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): <input type="checkbox"/> Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Mark other field indicators of surface inundation or soil saturation below: <input type="checkbox"/> Oxidized root zones - living roots <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Water - borne sediment deposits <input type="checkbox"/> Water - stained leaves <input type="checkbox"/> Surface scoured areas <input type="checkbox"/> Wetland drainage patterns <input type="checkbox"/> Morphological plant adaptations <input type="checkbox"/> Hydric soil characteristics
---	---

Field Observations/Measurements:

Is the ground surface inundated? Yes _____ No Surface water depth: _____ N/A inches

Is the soil saturated? Yes _____ No Depth to saturation: _____ N/A inches

Depth to free-standing water in pi/soil probe hole: _____ inches

Remarks: _____

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name (Series and Phase): <u>Loamy Land (Lu)</u>		Drainage Class: <u>N/A</u>			
Taxonomy (Subgroup): <u>N/A</u>		Field Observations Confirm Mapped Type? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Hydric Soil Indicators (mark all that are present):					
<input type="checkbox"/>	Organic Soils	<input type="checkbox"/>	High Organic Contents in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Histic Epipedons	<input type="checkbox"/>	Organic Streaking in Subsurface Layers of Sandy Soils		
<input type="checkbox"/>	Sulfidic Material	<input type="checkbox"/>	Reducing Conditions (Confirmed by Measurement)		
<input type="checkbox"/>	Aquic or Peraquic Moisture Regime	<input type="checkbox"/>	Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils		
<input type="checkbox"/>	Iron and Manganese Concretions	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.					

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/> No	(Circle)	Is this Sampling Point with a Wetland?	Yes	<input type="checkbox"/> No	(Circle)
Wetland Hydrology Present?	Yes	<input type="checkbox"/> No					
Hydric Soils Present?	Yes	<input type="checkbox"/> No					
Remarks:							

G.L. (6/94)

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.

Hydric Soil Indicators (mark all that are present):

<input type="checkbox"/>	Organic Soils	<input type="checkbox"/>	High Organic Contents in Surface Layer in Sandy Soils
<input type="checkbox"/>	Histic Epipedons	<input type="checkbox"/>	Organic Streaking in Subsurface Layers of Sandy Soils
<input type="checkbox"/>	Sulfidic Material	<input type="checkbox"/>	Reducing Conditions (Confirmed by Measurement)
<input type="checkbox"/>	Aquic or Peraquic Moisture Regime	<input type="checkbox"/>	Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils
<input type="checkbox"/>	Iron and Manganese Concretions	<input type="checkbox"/>	Other (Explain in Remarks)

Remarks:
No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No (Circle)	Is this Sampling Point with a Wetland?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No (Circle)
Wetland Hydrology Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Hydric Soils Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			

Remarks:

DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate _____
Comprehensive _____

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: _____	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No

Is the site significantly disturbed? Yes No

Is the area a potential problem area? Yes No

(If needed, explain on reverse.)

Plant Community I.D.: W-1
Transect I.D.: T-7
Plot I.D.: T-7 C(u)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Solidago canadensis </u>	<u> ground </u>	<u> FACU </u>	9. _____	_____	_____
2. <u> Phalaris arundinacea </u>	<u> ground </u>	<u> FACW+ </u>	10. _____	_____	_____
3. <u> Fragaria virginiana </u>	<u> ground </u>	<u> FAC- </u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW and/or FAC: 66%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): <input type="checkbox"/> Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Mark other field indicators of surface inundation or soil saturation below: <input type="checkbox"/> Oxidized root zones - living roots <input type="checkbox"/> Water marks <input type="checkbox"/> Drift lines <input type="checkbox"/> Water - borne sediment deposits <input type="checkbox"/> Water - stained leaves <input type="checkbox"/> Surface scoured areas <input type="checkbox"/> Wetland drainage patterns <input type="checkbox"/> Morphological plant adaptations <input type="checkbox"/> Hydric soil characteristics
---	---

Field Observations/Measurements:

Is the ground surface inundated? Yes _____ No Surface water depth: _____ N/A _____ inches

Is the soil saturated? Yes _____ No Depth to saturation: _____ N/A _____ inches

Depth to free-standing water in pit/soil probe hole: _____ inches

Remarks: _____

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hydric Soil Indicators (mark all that are present):

<input type="checkbox"/>	Organic Soils	<input type="checkbox"/>	High Organic Contents in Surface Layer in Sandy Soils
<input type="checkbox"/>	Histic Epipedons	<input type="checkbox"/>	Organic Streaking in Subsurface Layers of Sandy Soils
<input type="checkbox"/>	Sulfidic Material	<input type="checkbox"/>	Reducing Conditions (Confirmed by Measurement)
<input type="checkbox"/>	Aquic or Peraquic Moisture Regime	<input type="checkbox"/>	Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils
<input type="checkbox"/>	Iron and Manganese Concretions	<input type="checkbox"/>	Other (Explain in Remarks)

Remarks:
No soil pit completed. Soils were graded in the past in association with a railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle) Is this Sampling Point with a Wetland? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Remarks:



SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.

Hydric Soil Indicators (mark all that are present):

- | | | | |
|--------------------------|-----------------------------------|--------------------------|---|
| <input type="checkbox"/> | Organic Soils | <input type="checkbox"/> | High Organic Contents in Surface Layer in Sandy Soils |
| <input type="checkbox"/> | Histic Epipedons | <input type="checkbox"/> | Organic Streaking in Subsurface Layers of Sandy Soils |
| <input type="checkbox"/> | Sulfidic Material | <input type="checkbox"/> | Reducing Conditions (Confirmed by Measurement) |
| <input type="checkbox"/> | Aquic or Peraquic Moisture Regime | <input type="checkbox"/> | Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils |
| <input type="checkbox"/> | Iron and Manganese Concretions | <input type="checkbox"/> | Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes	No (Circle)	Is this Sampling Point with a Wetland?	<input checked="" type="checkbox"/> Yes	No (Circle)
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes	No			
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes	No			

Remarks:



DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate
Comprehensive

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: <u> </u>	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No Plant Community I.D.: W-1

Is the site significantly disturbed? Yes No Transect I.D.: T-7

Is the area a potential problem area? Yes No Plot I.D.: T-7 E(u)

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Fragaria virginiana </u>	<u> ground </u>	<u> FAC </u>	9. <u> </u>	<u> </u>	<u> </u>
2. <u> Solidago canadensis </u>	<u> ground </u>	<u> FACU </u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u> Poa compressa </u>	<u> ground </u>	<u> FACU+ </u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW and/or FAC: 33%

Remarks:

HYDROLOGY

<u> X </u>	Recorded Data (describe in remarks):	Mark other field indicators of surface inundation or soil saturation below:
<u> </u>	Stream or Lake Gauge	<u> </u> Oxidized root zones - living roots
<u> X </u>	Aerial Photographs/Slides	<u> </u> Water marks
<u> </u>	Other	<u> </u> Drift lines
<u> </u>	No Recorded Data Available	<u> </u> Water - borne sediment deposits
		<u> </u> Water - stained leaves
		<u> </u> Surface scoured areas
		<u> </u> Wetland drainage patterns
		<u> </u> Morphological plant adaptations
		<u> </u> Hydric soil characteristics

Field Observations/Measurements:

Is the ground surface inundated? Yes No X Surface water depth: N/A inches

Is the soil saturated? Yes No X Depth to saturation: N/A inches

Depth to free-standing water in pit/soil probe hole: inches

Remarks:

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Taxonomy (Subgroup): N/A Field Observations
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hydric Soil Indicators (mark all that are present):

- | | | | |
|--------------------------|-----------------------------------|--------------------------|---|
| <input type="checkbox"/> | Organic Soils | <input type="checkbox"/> | High Organic Contents in Surface Layer in Sandy Soils |
| <input type="checkbox"/> | Histic Epipedons | <input type="checkbox"/> | Organic Streaking in Subsurface Layers of Sandy Soils |
| <input type="checkbox"/> | Sulfidic Material | <input type="checkbox"/> | Reducing Conditions (Confirmed by Measurement) |
| <input type="checkbox"/> | Aquic or Peraquic Moisture Regime | <input type="checkbox"/> | Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils |
| <input type="checkbox"/> | Iron and Manganese Concretions | <input type="checkbox"/> | Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle) Is this Sampling Point with a Wetland? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Remarks:

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hydric Soil Indicators (mark all that are present):

- | | | | |
|--------------------------|-----------------------------------|--------------------------|---|
| <input type="checkbox"/> | Organic Soils | <input type="checkbox"/> | High Organic Contents in Surface Layer in Sandy Soils |
| <input type="checkbox"/> | Histic Epipedons | <input type="checkbox"/> | Organic Streaking in Subsurface Layers of Sandy Soils |
| <input type="checkbox"/> | Sulfidic Material | <input type="checkbox"/> | Reducing Conditions (Confirmed by Measurement) |
| <input type="checkbox"/> | Aquic or Peraquic Moisture Regime | <input type="checkbox"/> | Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils |
| <input type="checkbox"/> | Iron and Manganese Concretions | <input type="checkbox"/> | Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input checked="" type="checkbox"/> Yes	No (Circle)	Is this Sampling Point with a Wetland?	<input checked="" type="checkbox"/> Yes	No (Circle)
Wetland Hydrology Present?	<input checked="" type="checkbox"/> Yes	No			
Hydric Soils Present?	<input checked="" type="checkbox"/> Yes	No			

Remarks:

DATA FORM
WETLAND DETERMINATION†
(1989 Interagency Delineation Manual)

(Indicate Method)
Routine X
Intermediate
Comprehensive

Project/Site: <u> Moss American Superfund Site </u>	Date: <u> 5/15/98 </u>
Applicant/Owner: <u> </u>	County: <u> Milwaukee </u>
Investigator: <u> ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc. </u>	State: <u> WI </u>

Do normal environmental conditions exist at the plant community? Yes No Plant Community I.D.: W-1

Is the site significantly disturbed? Yes No Transect I.D.: T-7

Is the area a potential problem area? Yes No Plot I.D.: T-7 G(u)

(If needed, explain on reverse.)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u> Poa compressa </u>	<u> ground </u>	<u> FACU </u>	9. <u> </u>	<u> </u>	<u> </u>
2. <u> Fragaria virginiana </u>	<u> ground </u>	<u> FAC- </u>	10. <u> </u>	<u> </u>	<u> </u>
3. <u> Poa pratensis </u>	<u> ground </u>	<u> FAC- </u>	11. <u> </u>	<u> </u>	<u> </u>
4. <u> Daucus carota </u>	<u> ground </u>	<u> UPL </u>	12. <u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	13. <u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	14. <u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	15. <u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	16. <u> </u>	<u> </u>	<u> </u>

Percent of Dominant Species that are OBL, FACW and/or FAC: 50%

Remarks:

HYDROLOGY

<u> X </u> Recorded Data (describe in remarks): <u> </u> Stream or Lake Gauge <u> X </u> Aerial Photographs/Slides <u> </u> Other <u> </u> No Recorded Data Available	Mark other field indicators of surface inundation or soil saturation below: <u> </u> Oxidized root zones - living roots <u> </u> Water marks <u> </u> Drift lines <u> </u> Water - borne sediment deposits <u> </u> Water - stained leaves <u> </u> Surface scoured areas <u> </u> Wetland drainage patterns <u> </u> Morphological plant adaptations <u> </u> Hydric soil characteristics
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Field Observations/Measurements:

Is the ground surface inundated? Yes No X Surface water depth: N/A inches

Is the soil saturated? Yes No X Depth to saturation: N/A inches

Depth to free-standing water in pit/soil probe hole: inches

Remarks:

† This data form can be used for all methods when assessing soils, hydrology and the plant community. When site conditions require more intensive vegetative sampling, the appropriate form should be attached.

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Taxonomy (Subgroup): N/A Field Observations
 Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Structure Concretions, etc.

Hydric Soil Indicators (mark all that are present):

- | | | | |
|--------------------------|-----------------------------------|--------------------------|---|
| <input type="checkbox"/> | Organic Soils | <input type="checkbox"/> | High Organic Contents in Surface Layer in Sandy Soils |
| <input type="checkbox"/> | Histic Epipedons | <input type="checkbox"/> | Organic Streaking in Subsurface Layers of Sandy Soils |
| <input type="checkbox"/> | Sulfidic Material | <input type="checkbox"/> | Reducing Conditions (Confirmed by Measurement) |
| <input type="checkbox"/> | Aquic or Peraquic Moisture Regime | <input type="checkbox"/> | Gleyed, Low-Chroma, and Low-Chroma/Mottled Soils |
| <input type="checkbox"/> | Iron and Manganese Concretions | <input type="checkbox"/> | Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

LANDSCAPE POSITION

Draw a diagram showing location of sampling point on landscape (e.g. foot slope, depression, side slope, knoll, swale, floodplain)

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle) Is this Sampling Point with a Wetland? Yes No (Circle)
 Wetland Hydrology Present? Yes No
 Hydric Soils Present? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u>
Is the site significantly disturbed (Atypical Situation) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-4</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-4 A(u)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Elytrigia repens</u>	<u>ground</u>	<u>FACU</u>	9. _____	_____	_____
2. <u>Daucus carota</u>	<u>ground</u>	<u>UPL</u>	10. _____	_____	_____
3. <u>Trifolium pratense</u>	<u>ground</u>	<u>FACU+</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks:

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (describe in remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream or Lake Gauge</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Aerial Photographs/Slides</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:*</p> <p>Depth to Surface Water: <u>N/A</u> (inches)</p> <p>Depth to Free Water in Pit: <u>N/A</u> (inches)</p> <p>Depth to Saturated Soil: <u>N/A</u> (inches)</p>	
<p>Remarks:</p>	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u> Transect I.D.: <u>T-4</u> Plot I.D.: <u>T-4 B(w)</u>
Is the site significantly disturbed (Atypical Situation) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>ground</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Scirpus validus</u>	<u>ground</u>	<u>OBL</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): _____ Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides _____ Other _____ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: _____ Inundated _____ Saturated in Upper 12 inches <input checked="" type="checkbox"/> Water Marks _____ Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): _____ Oxidized Root Channels in Upper 12 inches _____ Water-Stained Leaves _____ Local Soil Survey Data _____ FAC-Neutral Test _____ Other (Explain in Remarks)
Field Observations:* Depth to Surface Water: <u>0-3</u> (inches) Depth to Free Water in Pit: _____ (inches) Depth to Saturated Soil: _____ (inches)	
Remarks:	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:
 No soil pit completed. Gravelly soil with potential contamination.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u>
Is the site significantly disturbed (Atypical Situation) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-6</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-6 A(u)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Fragaria virginiana</u>	<u>ground</u>	<u>FAC-</u>	9. _____	_____	_____
2. <u>Poa compressa</u>	<u>ground</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Hypericum perforatum</u>	<u>ground</u>	<u>UPL</u>	11. _____	_____	_____
4. <u>Daucus carota</u>	<u>ground</u>	<u>UPL</u>	12. _____	_____	_____
5. <u>Geum candense</u>	<u>ground</u>	<u>FAC</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 40%

Remarks:

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (describe in remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream or Lake Gauge</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Aerial Photographs/Slides</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:*</p> <p>Depth to Surface Water: <u>N/A</u> (inches)</p> <p>Depth to Free Water in Pit: <u>N/A</u> (inches)</p> <p>Depth to Saturated Soil: <u>N/A</u> (inches)</p>	
<p>Remarks:</p>	

SOILS

Map Unit Name

(Series and Phase): Loamy Land (Lu)

Drainage Class: N/A

Field Observations

Taxonomy (Subgroup): N/A

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Hydric Soils Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u>
Is the site significantly disturbed (Atypical Situation) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-6</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot I.D.: <u>T-6 B(w)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>ground</u>	<u>FACW+</u>	9. _____	_____	_____
2. <u>Fragaria virginiana</u>	<u>ground</u>	<u>FAC-</u>	10. _____	_____	_____
3. <u>Juncus tenuis</u>	<u>ground</u>	<u>FAC</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: _____

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (describe in remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream or Lake Gauge</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Aerial Photographs/Slides</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input checked="" type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:*</p> <p>Depth to Surface Water: _____ (inches)</p> <p>Depth to Free Water in Pit: _____ (inches)</p> <p>Depth to Saturated Soil: _____ (inches)</p>	
<p>Remarks: _____</p>	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u>
Is the site significantly disturbed (Atypical Situation) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-6</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-6 C(u)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Poa compressa</u>	<u>ground</u>	<u>FACU</u>	9. _____	_____	_____
2. <u>Solidago canadensis</u>	<u>ground</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Fragaria virginiana</u>	<u>ground</u>	<u>FAC-</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 33%

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): <input type="checkbox"/> Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations:* Depth to Surface Water: _____ (inches) Depth to Free Water in Pit: _____ (inches) Depth to Saturated Soil: _____ (inches)	
Remarks:	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>5/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-2</u>
Is the site significantly disturbed (Atypical Situation) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-6</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-6 D(w)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>ground</u>	<u>FACW+</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks:

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (describe in remarks): <input type="checkbox"/> Stream or Lake Gauge <input checked="" type="checkbox"/> Aerial Photographs/Slides <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations:* Depth to Surface Water: _____ (inches) Depth to Free Water in Pit: _____ (inches) Depth to Saturated Soil: _____ (inches)	
Remarks:	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

No soil pit completed. Soils were graded in the past in association with a former railroad yard and industrial facility. Soils were observed to be stony, and were potentially contaminated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>05/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc., Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-3</u>
Is the site significantly disturbed (Atypical Situation) <input type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-3</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-3A(u)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Melilotus sp.</u>	<u>ground</u>	<u>FACU</u>	9. _____	_____	_____
2. <u>Elytrigia repens</u>	<u>ground</u>	<u>FACU</u>	10. _____	_____	_____
3. <u>Daucus carota</u>	<u>ground</u>	<u>UPL</u>	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: **Associates observed:**
Equisetum arvense
Oenothera biennis
Cirsium vulgare
Solidago altissima

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (describe in remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream or Lake Gauge</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Aerial Photographs/Slides</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:*</p> <p>Depth to Surface Water: <u>N/A</u> (inches)</p> <p>Depth to Free Water in Pit: <u>•</u> (inches)</p> <p>Depth to Saturated Soil: _____ (inches)</p>	
<p>Remarks:</p> <p>No pit dug - cinder, slag, brick, stone fill present on the entirety of the site - lack of hydrophytic vegetation suggests a well drained condition.</p>	

SOILS

Map Unit Name
 (Series and Phase): Loamy Land (Lu) Drainage Class: N/A
 Field Observations
 Taxonomy (Subgroup): N/A Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	
	<u>cinder, slag, brick, stone fill</u>				

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks:
Soil pit was not described - cinder, slag, brick, stone fill materials present across the site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is this Sampling Point Within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION†
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>Moss American Superfund Site</u>	Date: <u>05/15/98</u>
Applicant/Owner: _____	County: <u>Milwaukee</u>
Investigator: <u>ECP/BJK - Graef, Anhalt, Schloemer & Assoc. Inc.</u>	State: <u>WI</u>
Do Normal Conditions exist on the site? <input type="checkbox"/> Yes <input type="checkbox"/> No	Community I.D.: <u>W-3</u>
Is the site significantly disturbed (Atypical Situation) <input type="checkbox"/> Yes <input type="checkbox"/> No	Transect I.D.: <u>T-3</u>
Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot I.D.: <u>T-3B(w)</u>
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Equisetum arvense</u>	<u>ground</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>Juncus tenuis</u>	<u>ground</u>	<u>FAC</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p><input checked="" type="checkbox"/> Recorded Data (describe in remarks):</p> <p style="padding-left: 20px;"><input type="checkbox"/> Stream or Lake Gauge</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Aerial Photographs/Slides</p> <p style="padding-left: 20px;"><input type="checkbox"/> Other</p> <p><input type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:*</p> <p>Depth to Surface Water: <u>2</u> (inches)</p> <p>Depth to Free Water in Pit: <u>•</u> (inches)</p> <p>Depth to Saturated Soil: <u>•</u> (inches)</p>	
<p>Remarks:</p> <p style="text-align: center;">*Soil pit not described.</p>	

SOILS

Map Unit Name

(Series and Phase): Loamy Land (Lu)

Drainage Class: N/A

Field Observations

Taxonomy (Subgroup): N/A

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	REDOXIMORPHIC FEATURES		Texture, Structure Concretions, etc.
			Color (Munsell Moist)	Abundance/Size/ Contrast	
	<u>cinder, stone, slag, brick fill</u>				

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol | <input type="checkbox"/> Concretions |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Listed on Local Hydric Soils List |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma Colors | <input type="checkbox"/> Other (Explain in Remarks) |

Remarks:

Soil pit not dug - cinder, stone, brick, slag fill material present across the entire site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Soil not checked, but due to the dominance of hydrophytic vegetation, it is assumed to be hydric.

Approved by HQUSACE 3/92

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Plant Lists

INDICATOR CATEGORY INFORMATION

The representative vascular plant species for both the wetland and the adjacent proximate uplands are listed in the following tables, along with their indicator categories. The indicator category information was obtained from the National List of Plant Species That Occur in Wetlands: North Central (Region 3). The indicator category designates the expected frequency of occurrence of a given plant species in wetlands of the North Central Region of the United States. The following is an explanation of the indicator category designation:

<u>Indicator Category</u>	<u>Expected Frequency of Occurrence</u>
OBL (Obligate)	Greater than 99%
FACW (Facultative Wetland)	Greater than 66% Less than 99%
FAC (Facultative)	33% - 66%
FACU (Facultative Upland)	1% - less than 33%
UPL (Upland)	Less than 1%

A "plus" following an indicator category denotes that the species generally has a greater estimated probability of occurring in wetlands than species having the general indicator category, but a lesser estimated probability of occurring in wetlands than those having the next highest general indicator. The converse is true for those having a "minus" following the indicator category.

TABLE W-1

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES
WETLAND W-1/ Fresh (Wet) Meadow / Shallow Marsh

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

	SCIENTIFIC NAME			INDICATOR [^]	
	<u>GENUS</u>	<u>SPECIES</u>	<u>COMMON NAME</u>	<u>CATEGORY</u>	<u>C VALUE</u>
1	<u>Alisma</u>	<u>subcordatum</u>	southern water-plantain	OBL	4
2	<u>Asclepias</u>	<u>incarnata ssp. incarnata</u>	marsh milkweed	OBL	4
3	<u>Carex</u>	<u>lacustris</u>	common lake sedge	OBL	6
4	<u>Carex</u>	<u>stricta var. stricta</u>	common hummock sedge	OBL	5
5	<u>Carex</u>	<u>vulpinoidea var. vulpinoidea</u>	brown fox sedge	OBL	2
6	<u>Eleocharis</u>	<u>acicularis var. acicularis</u>	least spikerush	OBL	2
7	<u>Epilobium</u>	<u>coloratum</u>	cinnamon willow-herb	OBL	3
8	<u>Polygonum</u>	<u>hydropiper</u>	water pepper	OBL	2
9	<u>Ranunculus</u>	<u>sceleratus var. sceleratus</u>	cursed crowfoot	OBL	6
10	<u>Salix</u>	<u>nigra</u>	black willow	OBL	4
11	<u>Scirpus</u>	<u>atrovirens</u>	green bulrush	OBL	4
12	<u>Scirpus</u>	<u>validus</u>	soft-stem bulrush	OBL	5
13	<u>Typha</u>	<u>angustifolia</u>	narrow-leaf cattail	OBL	1

* Dominant or Co-dominant Plant Species

^ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

I.D. Code:
8n21e8aw1

CBD Value cannot be determined.

TABLE W-1
(CONTINUED)

	SCIENTIFIC NAME			INDICATOR [^]	
	GENUS	SPECIES	COMMON NAME	CATEGORY	C VALUE
14	<u>Typha</u>	<u>latifolia</u>	broad-leaf cattail	OBL	1
15	<u>Aster</u>	<u>firmus</u>	swamp aster	FACW plus	7
16	<u>Eupatorium</u>	<u>perfoliatum var. perfoliatum</u>	common boneset	FACW plus	4
17	<u>Lycopus</u>	<u>americanus</u>	American bugleweed	FACW plus	5
18	<u>Phalaris</u>	<u>arundinacea</u>	reed canary grass	FACW plus	n/a
19	<u>Phragmites</u>	<u>australis</u>	giant reed grass	FACW plus	1
20	<u>Polygonum</u>	<u>lapathifolium var. lapathifolium</u>	nodding smartweed	FACW plus	0
21	<u>Rudbeckia</u>	<u>laciniata var. laciniata</u>	cut-leaf coneflower	FACW plus	5
22	<u>Verbena</u>	<u>hastata var. hastata</u>	blue vervain	FACW plus	4
23	<u>Aster</u>	<u>novae-angliae</u>	New England aster	FACW	4
24	<u>Aster</u>	<u>simplex var. simplex</u>	panicked aster	FACW	3
25	<u>Bidens</u>	<u>frondosa</u>	common beggar's ticks	FACW	1
26	<u>Cornus</u>	<u>sericea ssp. sericea</u>	red-osier dogwood	FACW	6
27	<u>Echinocystis</u>	<u>lobata</u>	wild cucumber	FACW	5
28	<u>Fraxinus</u>	<u>pennsylvanica</u>	green ash	FACW	1
29	<u>Juncus</u>	<u>torreyi</u>	Torrey's rush	FACW	4

* Dominant or Co-dominant Plant Species

^ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8aw1

TABLE W-1
(CONTINUED)

	SCIENTIFIC NAME			INDICATOR ^Λ	
	<u>GENUS</u>	<u>SPECIES</u>	<u>COMMON NAME</u>	<u>CATEGORY</u>	<u>C VALUE</u>
30	<u>Muhlenbergia</u>	<u>mexicana</u>	leafy satin grass	FACW	5
31	<u>Ribes</u>	<u>americanum</u>	wild black currant	FACW	7
32	<u>Salix</u>	<u>amygdaloides</u>	peach-leaved willow	FACW	5
33	<u>Solidago</u>	<u>gigantea</u>	giant goldenrod	FACW	4
34	<u>Cornus</u>	<u>foemina ssp. racemosa</u>	gray dogwood	FACW minus	1
35	<u>Equisetum</u>	<u>hyemale var. affine</u>	rough horsetail	FACW minus	3
36	<u>Euthamia</u>	<u>graminifolia var. nuttallii</u>	hairy grass-leaved goldenrod	FACW minus	3
37	<u>Helianthus</u>	<u>grosseserratus</u>	sawtooth sunflower	FACW minus	2
38	<u>Sambucus</u>	<u>canadensis</u>	common elderberry	FACW minus	1
39	<u>Apocynum</u>	<u>cannabinum var. hypericifolium</u>	prairie dogbane	FAC plus	2
40	<u>Rumex</u>	<u>crispus</u>	curled dock	FAC plus	n/a
41	<u>Salix</u>	<u>fragilis</u>	crack willow	FAC plus	n/a
42	<u>Urtica</u>	<u>dioica ssp. gracilis var. gracilis</u>	American stinging nettle	FAC plus	2
43	<u>Carex</u>	<u>blanda</u>	common wood sedge	FAC	1
44	<u>Equisetum</u>	<u>arvense</u>	field horsetail	FAC	0
45	<u>Geum</u>	<u>canadense var. canadense</u>	white avens	FAC	1

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

I.D. Code:
8n21e8aw1

CBD Value cannot be determined.

TABLE W-1
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR CATEGORY [^]	C VALUE	
GENUS	SPECIES				
46	<u>Juncus</u>	<u>tenuis</u>	path rush	FAC	0
47	<u>Potentilla</u>	<u>norvegica ssp. hirsuta</u>	rough cinquefoil	FAC	0
48	<u>Solanum</u>	<u>dulcamara var. villosissimum</u>	bittersweet nightshade	FAC	n/a
49	<u>Fragaria</u>	<u>virginiana ssp. virginiana</u>	wild strawberry	FAC minus	1
50	<u>Poa</u>	<u>pratensis</u>	Kentucky bluegrass	FAC minus	n/a
51	<u>Alliaria</u>	<u>petiolata</u>	garlic mustard	FACU plus	n/a
52	<u>Parthenocissus</u>	<u>vitacea</u>	thicket creeper	FACU	1
53	<u>Elaeagnus</u>	<u>angustifolia</u>	Russian olive	FACU minus	n/a

$I = \frac{\bar{C}}{N} \sqrt{N}^\dagger$
 TOTAL = 138
 N = 46
 $\bar{C} = 3.00$
 FQI = 20.3

Where: I = Rating Index
 C = Mean C Value
 N = Number of recorded taxa

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

* Dominant or Co-dominant Plant Species

^ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8aw1

TABLE U-1

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES [UPLANDS ADJACENT TO WETLAND W-1]

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

SCIENTIFIC NAME		COMMON NAME	INDICATOR CATEGORY [^]	C VALUE
GENUS	SPECIES			
1	<u>Erigeron philadelphicus</u>	common fleabane	FACW	4
2	<u>Cornus foemina ssp. racemosa</u>	gray dogwood	FACW minus	1
3	<u>Ranunculus abortivus</u>	small-flowered crowfoot	FACW minus	0
4	<u>Rubus idaeus ssp. strigosus</u>	wild red raspberry	FACW minus	3
5	<u>Populus deltoides ssp. deltoides</u>	eastern cottonwood	FAC plus	2
6	<u>Equisetum arvense</u>	field horsetail	FAC	0
7	<u>Erigeron annuus</u>	white-top fleabane	FAC minus	0
8	<u>Fragaria virginiana ssp. virginiana</u>	wild strawberry	FAC minus	1
9	<u>Nepeta cataria</u>	catnip	FAC minus	n/a
10	<u>Poa pratensis</u>	Kentucky bluegrass	FAC minus	n/a
11	<u>Prunus virginiana var. virginiana</u>	choke cherry	FAC minus	3
12	<u>Rhamnus cathartica</u>	common buckthorn	FAC minus	n/a
13	<u>Alliaria petiolata</u>	garlic mustard	FACU plus	n/a
14	<u>Allium tricoccum var. tricoccum</u>	small wild leek	FACU plus	7
15	<u>Festuca elatior</u>	tall fescue	FACU plus	n/a
16	<u>Poa compressa</u>	Canada bluegrass	FACU plus	n/a

* Dominant or Co-dominant Plant Species

^ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au1

TABLE U-1
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR CATEGORY ^Λ	C VALUE	
GENUS	SPECIES				
17	<u>Trifolium</u>	<u>pratense</u>	red clover	FACU plus	n/a
18	<u>Allium</u>	<u>canadense var. canadense</u>	wild garlic	FACU	2
19	<u>Circaea</u>	<u>lutetiana ssp. canadensis</u>	common enchanter's nightshade	FACU	1
20	<u>Geranium</u>	<u>maculatum</u>	wild cranesbill	FACU	4
21	<u>Maianthemum</u>	<u>racemosum ssp. racemosum</u>	feathery false Solomon's seal	FACU	3
22	<u>Oenothera</u>	<u>biennis</u>	common evening primrose	FACU	0
23	<u>Podophyllum</u>	<u>peltatum</u>	May apple	FACU	4
24	<u>Solidago</u>	<u>canadensis var. scabra</u>	tall goldenrod	FACU	1
25	<u>Taraxacum</u>	<u>officinale</u>	common dandelion	FACU	n/a
26	<u>Cirsium</u>	<u>vulgare</u>	bull thistle	FACU minus	n/a
27	<u>Robinia</u>	<u>pseudoacacia var.</u>	black locust	FACU minus	n/a
28	<u>Scrophularia</u>	<u>marilandica</u>	late figwort	FACU minus	4
29	<u>Solidago</u>	<u>rigida ssp. rigida</u>	stiff goldenrod	FACU minus	4
30	<u>Arctium</u>	<u>minus</u>	common burdock	UPL	n/a
31	<u>Centaurea</u>	<u>maculosa</u>	spotted knapweed	UPL	n/a
32	<u>Daucus</u>	<u>carota</u>	Queen Anne's lace	UPL	n/a
33	<u>Erythronium</u>	<u>albidum var. albidum</u>	white trout-lily	UPL	5
34	<u>Hypericum</u>	<u>perforatum</u>	common St. Johnswort	UPL	n/a

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au1

TABLE U-1
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR ^Λ		
GENUS	SPECIES		CATEGORY	C VALUE	
35	<u>Pastinaca</u>	<u>sativa var. sativa</u>	wild parsnip	UPL	n/a
36	<u>Populus</u>	<u>alba</u>	white poplar	UPL	n/a
37	<u>Ulmus</u>	<u>pumila</u>	Siberian elm	UPL	n/a
38	<u>Verbascum</u>	<u>thapsus</u>	common mullein	UPL	n/a
39	<u>Lonicera</u>	<u>x bella</u>	hybrid bush honeysuckle	NI	n/a
40	<u>Viola</u>	<u>sp.</u>	wild violet	CBD	CBD

$$I = \bar{C} \sqrt{N}^\dagger$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

TOTAL = 49
N = 21
 \bar{C} = 2.33
FQI = 10.7

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au1

TABLE W-1A

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES WETLAND W-1A/ Floodplain Forest

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

	SCIENTIFIC NAME			INDICATOR ^Λ	
	GENUS	SPECIES	COMMON NAME	CATEGORY	C VALUE
1	<u>Angelica</u>	<u>atropurpurea</u>	great angelica	OBL	7
2	<u>Caltha</u>	<u>palustris var. palustris</u>	common marsh marigold	OBL	5
3	<u>Cardamine</u>	<u>bulbosa</u>	spring cress	OBL	6
4	<u>Carex</u>	<u>stricta var. stricta</u>	common hummock sedge	OBL	5
5	<u>Chelone</u>	<u>glabra var. glabra</u>	broad-leaf turtlehead	OBL	8
6	<u>Glyceria</u>	<u>striata</u>	fowl manna grass	OBL	4
7	<u>Iris</u>	<u>virginica var. shrevei</u>	southern blue flag	OBL	5
8	<u>Symplocarpus</u>	<u>foetidus</u>	skunk cabbage	OBL	8
9	<u>Phalaris</u>	<u>arundinacea</u>	reed canary grass	FACW plus	n/a
10	<u>Salix</u>	<u>x rubens</u>	hybrid crack willow	FACW plus	n/a
11	<u>Fraxinus</u>	<u>pennsylvanica</u>	green ash	FACW	1
12	<u>Impatiens</u>	<u>capensis</u>	orange jewelweed	FACW	3
13	<u>Lysimachia</u>	<u>ciliata</u>	fringed loosestrife	FACW	4
14	<u>Hydrhophyllum</u>	<u>virginianum</u>	Virginia waterleaf	FACW minus	5
15	<u>Thalictrum</u>	<u>dasycarpum var. dasycarpum</u>	tall meadow rue	FACW minus	5

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8bw1

TABLE W-1A
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR CATEGORY ^Λ	C VALUE	
GENUS	SPECIES				
16	<u>Ulmus</u>	<u>americana</u>	American elm	FACW minus	3
17	<u>Salix</u>	<u>fragilis</u>	crack willow	FAC plus	n/a
18	<u>Viburnum</u>	<u>lentago</u>	nannyberry	FAC plus	5
19	<u>Equisetum</u>	<u>arvense</u>	field horsetail	FAC	0
20	<u>Geum</u>	<u>canadense var. canadense</u>	white avens	FAC	1
21	<u>Helianthus</u>	<u>tuberosus</u>	Jerusalem artichoke	FAC	3
22	<u>Solanum</u>	<u>dulcamara var. villosissimum</u>	bittersweet nightshade	FAC	n/a
23	<u>Maianthemum</u>	<u>stellatum</u>	starry false Solomon's seal	FAC minus	5
24	<u>Prunus</u>	<u>virginiana var. virginiana</u>	choke cherry	FAC minus	3
25	<u>Rhamnus</u>	<u>cathartica</u>	common buckthorn	FAC minus	n/a
26	<u>Alliaria</u>	<u>petiolata</u>	garlic mustard	FACU plus	n/a
27	<u>Carex</u>	<u>spp.</u>	sedges	CBD	CBD
28	<u>Crataegus</u>	<u>sp.</u>	hawthorne	CBD	CBD
29	<u>Viola</u>	<u>sp.</u>	wild violet	CBD	CBD

$$I = \bar{C} \sqrt{N}^{\dagger}$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

TOTAL = 86
N = 23
 \bar{C} = 3.74
FQI = 17.9

[†]Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8bw1

TABLE W-2

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES
WETLAND W-2/ Fresh (Wet) Meadow / Shallow Marsh

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

	SCIENTIFIC NAME			INDICATOR ^Λ	
	GENUS	SPECIES	COMMON NAME	CATEGORY	C VALUE
1	<u>Carex</u>	<u>stipata var. stipata</u>	common fox sedge	OBL	3
2	<u>Eleocharis</u>	<u>acicularis var. acicularis</u>	least spikerush	OBL	2
3	<u>Epilobium</u>	<u>coloratum</u>	cinnamon willow-herb	OBL	3
4	<u>Mentha</u>	<u>x piperita</u>	peppermint	OBL	n/a
5	<u>Ranunculus</u>	<u>sceleratus var. sceleratus</u>	cursed crowfoot	OBL	6
6	<u>Scirpus</u>	<u>atrovirens</u>	green bulrush	OBL	4
7	<u>Scirpus</u>	<u>validus</u>	soft-stem bulrush	OBL	5
8	<u>Typha</u>	<u>angustifolia</u>	narrow-leaf cattail	OBL	1
9	<u>Typha</u>	<u>latifolia</u>	broad-leaf cattail	OBL	1
10	<u>Phalaris</u>	<u>arundinacea</u>	reed canary grass	FACW plus	n/a
11	<u>Verbena</u>	<u>hastata var. hastata</u>	blue vervain	FACW plus	4
12	<u>Aster</u>	<u>novae-angliae</u>	New England aster	FACW	4
13	<u>Aster</u>	<u>simplex var. simplex</u>	panicked aster	FACW	3

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

I.D. Code:
8n21e8aw2

CBD Value cannot be determined.

TABLE W-2
(CONTINUED)

	SCIENTIFIC NAME			INDICATOR [^]	
	GENUS	SPECIES	COMMON NAME	CATEGORY	C VALUE
14	<u>Cornus</u>	<u>sericea ssp. sericea</u>	red-osier dogwood	FACW	6
15	<u>Erigeron</u>	<u>philadelphicus</u>	common fleabane	FACW	4
16	<u>Euthamia</u>	<u>graminifolia var. nuttallii</u>	hairy grass-leaved goldenrod	FACW minus	3
17	<u>Rumex</u>	<u>crispus</u>	curled dock	FAC plus	n/a
18	<u>Equisetum</u>	<u>arvense</u>	field horsetail	FAC	0
19	<u>Setaria</u>	<u>glauca</u>	yellow foxtail	FAC	n/a
20	<u>Fragaria</u>	<u>virginiana ssp. virginiana</u>	wild strawberry	FAC minus	1
21	<u>Oenothera</u>	<u>biennis</u>	common evening primrose	FACU	0
22	<u>Cirsium</u>	<u>vulgare</u>	bull thistle	FACU minus	n/a
23	<u>Agrostis</u>	<u>gigantea</u>	redtop grass	NI	n/a
24	<u>Salix</u>	<u>sp.</u>	willow	CBD	CBD

$$I = \frac{\bar{C}}{\sqrt{N}} \uparrow$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

TOTAL = 50
N = 18
 \bar{C} = 2.78
FQI = 11.8

* Dominant or Co-dominant Plant Species

^ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8aw2

TABLE U-2

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES [UPLANDS ADJACENT TO WETLAND W-2]

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

SCIENTIFIC NAME		COMMON NAME	INDICATOR ^Λ CATEGORY	C VALUE	
GENUS	SPECIES				
1	<u>Erigeron</u>	philadelphicus	common fleabane	FACW	4
2	<u>Rumex</u>	crispus	curled dock	FAC plus	n/a
3	<u>Barbarea</u>	vulgaris var. arcuata	bow-like common winter cress	FAC	n/a
4	<u>Juncus</u>	tenuis	path rush	FAC	0
5	<u>Setaria</u>	glauca	yellow foxtail	FAC	n/a
6	<u>Fragaria</u>	virginiana ssp. virginiana	wild strawberry	FAC minus	1
7	<u>Nepeta</u>	cataria	catnip	FAC minus	n/a
8	<u>Poa</u>	pratensis	Kentucky bluegrass	FAC minus	n/a
9	<u>Festuca</u>	elatior	tall fescue	FACU plus	n/a
10	<u>Poa</u>	compressa	Canada bluegrass	FACU plus	n/a
11	<u>Trifolium</u>	pratense	red clover	FACU plus	n/a
12	<u>Oenothera</u>	biennis	common evening primrose	FACU	0
13	<u>Solidago</u>	canadensis var. scabra	tall goldenrod	FACU	1
14	<u>Taraxacum</u>	officinale	common dandelion	FACU	n/a
15	<u>Cirsium</u>	vulgare	bull thistle	FACU minus	n/a

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au2

TABLE U-2
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR ^Λ	
GENUS	SPECIES		CATEGORY	C VALUE
16	<u>Verbascum</u>	<u>blattaria</u>	moth mullein	FACU minus n/a
17	<u>Asclepias</u>	<u>verticillata</u>	whorled milkweed	UPL 1
18	<u>Carduus</u>	<u>nutans ssp. leiophyllus</u>	nodding thistle	UPL n/a
19	<u>Centaurea</u>	<u>maculosa</u>	spotted knapweed	UPL n/a
20	<u>Daucus</u>	<u>carota</u>	Queen Anne's lace	UPL n/a
21	<u>Hypericum</u>	<u>perforatum</u>	common St. Johnswort	UPL n/a
22	<u>Linaria</u>	<u>vulgaris</u>	butter-and-eggs	UPL n/a

$$I = \frac{C}{N} \sqrt{N} \uparrow$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

TOTAL = 7
N = 6
 \bar{C} = 1.17
FQI = 2.87

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au2

TABLE W-3

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES WETLAND W-3/ Fresh (Wet) Meadow

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

	SCIENTIFIC NAME			INDICATOR ^Λ	
	GENUS	SPECIES	COMMON NAME	CATEGORY	C VALUE
1	<u>Eleocharis</u>	<u>acicularis var. acicularis</u>	least spikerush	OBL	2
2	<u>Epilobium</u>	<u>coloratum</u>	cinnamon willow-herb	OBL	3
3	<u>Lythrum</u>	<u>salicaria</u>	purple loosestrife	OBL	n/a
4	<u>Scirpus</u>	<u>atrovirens</u>	green bulrush	OBL	4
5	<u>Typha</u>	<u>angustifolia</u>	narrow-leaf cattail	OBL	1
6	<u>Phalaris</u>	<u>arundinacea</u>	reed canary grass	FACW plus	n/a
7	<u>Aster</u>	<u>simplex var. simplex</u>	panicled aster	FACW	3
8	<u>Cornus</u>	<u>sericea ssp. sericea</u>	red-osier dogwood	FACW	6
9	<u>Erigeron</u>	<u>philadelphicus</u>	common fleabane	FACW	4
10	<u>Fraxinus</u>	<u>pennsylvanica</u>	green ash	FACW	1
11	<u>Juncus</u>	<u>torreyi</u>	Torrey's rush	FACW	4
12	<u>Solidago</u>	<u>gigantea</u>	giant goldenrod	FACW	4
13	<u>Acer</u>	<u>negundo var. negundo</u>	common box elder	FACW minus	0

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

I.D. Code:
8n21e8aw3

CBD Value cannot be determined.

TABLE W-3
(CONTINUED)

SCIENTIFIC NAME		COMMON NAME	INDICATOR ^Λ CATEGORY	C VALUE	
GENUS	SPECIES				
14	<u>Populus</u>	<u>deltoides ssp. deltoides</u>	eastern cottonwood	FAC plus	2
15	<u>Carex</u>	<u>blanda</u>	common wood sedge	FAC	1
16	<u>Equisetum</u>	<u>arvense</u>	field horsetail	FAC	0
17	<u>Juncus</u>	<u>tenuis</u>	path rush	FAC	0
18	<u>Fragaria</u>	<u>virginiana ssp. virginiana</u>	wild strawberry	FAC minus	1
19	<u>Sonchus</u>	<u>arvensis ssp. uliginosus</u>	common sow thistle	FAC minus	n/a
20	<u>Oenothera</u>	<u>biennis</u>	common evening primrose	FACU	0
21	<u>Salix</u>	<u>sp.</u>	willow	CBD	CBD

$$I = \frac{C}{N} \sqrt{N} \dagger$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

TOTAL = 36
N = 18
 $\frac{C}{N}$ = 2.00
FQI = 8.49

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Value cannot be determined.

I.D. Code:
8n21e8aw3

TABLE U-3

REPRESENTATIVE PLANT LIST WITH INDICATOR CATEGORIES [UPLANDS ADJACENT TO WETLAND W-3]

Moss American Superfund Site
Milwaukee, Wisconsin

Date of Observation: 5/14/98
Observed By: E. Parker & B. Karczewski—G.A.S.

SCIENTIFIC NAME		COMMON NAME	INDICATOR ^Λ CATEGORY	C VALUE
GENUS	SPECIES			
1	<u>Vitis riparia</u>	riverbank grape	FACW minus	2
2	<u>Geum aleppicum</u>	yellow avens	FAC plus	7
3	<u>Rumex crispus</u>	curled dock	FAC plus	n/a
4	<u>Potentilla norvegica ssp. hirsuta</u>	rough cinquefoil	FAC	0
5	<u>Fragaria virginiana ssp. virginiana</u>	wild strawberry	FAC minus	1
6	<u>Poa pratensis</u>	Kentucky bluegrass	FAC minus	n/a
7	<u>Sonchus arvensis ssp. uliginosus</u>	common sow thistle	FAC minus	n/a
8	<u>Aster pilosus var. pilosus</u>	hairy aster	FACU plus	0
9	<u>Cirsium arvense var. arvense</u>	Canada thistle	FACU	n/a
10	<u>Melilotus officinalis</u>	yellow sweetclover	FACU	n/a
11	<u>Oenothera biennis</u>	common evening primrose	FACU	0
12	<u>Solidago canadensis var. scabra</u>	tall goldenrod	FACU	1
13	<u>Taraxacum officinale</u>	common dandelion	FACU	n/a
14	<u>Cichorium intybus</u>	chichory	UPL	n/a
15	<u>Daucus carota</u>	Queen Anne's lace	UPL	n/a

$$I = \frac{\sum C}{N}$$

Where: I = Rating Index
C = Mean C Value
N = Number of recorded taxa

†Following Swink & Wilhelm, Plants of the Chicago Region—4th Ed., Indiana Academy of Science, 1994

TOTAL = 11
N = 7
C̄ = 1.57
FQI = 4.15

* Dominant or Co-dominant Plant Species

Λ See INDICATOR CATEGORY INFORMATION (ATTACHED)

NI (No Indicator) - Sufficient information was not available when the publication mentioned in "Indicator Category Information" was written to determine an indicator category.

CBD Indicator category cannot be determined.

I.D. Code:
8n21e8au3

Rapid Assessment Methodology Forms

- W-1
- W-2/3

**RAPID ASSESSMENT METHODOLOGY FOR EVALUATING
WETLAND FUNCTIONAL VALUES**

GENERAL INFORMATION

Name of Wetland/Owner:	W-1										
Location: County	Milwaukee	;	1/4,	NE 1/4, Section	8	,	Township	8N	,	Range	21E
Project Name	Moss American Superfund Site Wetland Investigation										
Evaluator(s):	Eric C. Parker and Brian J. Karczewski of G.A.S., Inc.										
Date(s) of Site Visit(s):	5/14-15/98										

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration):

"Normal" climatologic and hydrologic conditions existed prior to and during the site evaluation. That is, no heavy rains or periods of drought took place immediately before or during the evaluation.

WETLAND DESCRIPTION

NWI classification:	T3K				
Wetland Type:	shallow open water	deep marsh	shallow marsh	seas. flooded basin	bog
	<u>floodplain forest</u>	alder thicket	sedge meadow	coniferous swamp	fen
	<u>wet meadow</u>	shrub-carr	low prairie	hardwood swamp	
Estimated size of wetland in acres:	25 acres (including part of wetland W-1 that is adjacent to, but outside of, the study area.)				

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat			X		
Fishery Habitat	X				
Flood/Stormwater Attenuation			X		
Water Quality Protection			X		
Shoreline Protection	X				
Groundwater		X			
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Primary Environmental Corridor**

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- Depressional (wet meadow portion)
 Riverine (floodplain forest portion)
 Lake Fringe
 Extensive Peatland

B. Y N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (underline those that apply)?

W-1 is mostly within the floodplain of the Little Menomonee River. The river appears to have been straightened/dredged prior to the earliest air photo in this study (1963). Air photos also show that much of the uplands have a long history of railroad and industrial use.

C. Y N Does the wetland have an inlet, outlet, or both (underline those that apply)?

The Little Menomonee River provides both an inlet and outlet for most of wetland W-1. Small drainageways on the site also provide inlets.

D. Y N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soil layer, or oxidized rhizospheres (underline those that apply)?

E. Y N Does the wetland have standing water, and if so what is the average depth in inches? 2-6 Approximately how much of the wetland is inundated? 15%

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- Permanently Flooded
 Seasonally Flooded (water absent at end of growing season)
 Saturated (surface water seldom present)
 Artificially Flooded
 Artificially Drained

G. Y N Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.

Wetland W-1 is partially within the floodplain of the Little Menomonee River. Therefore, a surface water connection exists between it and all other wetlands in the floodplain.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by :
	submerged aquatic community dominated by:
X	emergent community dominated by: Solidago gigantea
X	shrub community dominated by: Salix spp.
X	deciduous broad-leaved tree community dominated by: Fraxinus pennsylvanica, Salix fragilis,
	coniferous tree community dominated by: Ulmus americana and Populus deltoides
	open sphagnum mat or bog:
	sedge meadow / wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

Please refer to the following tables (attached):

Table W-1 (Non-forested portion of W-1)

Table W-1A (Floodplain Forested portion of W-1)

Table U-1 (Upland areas adjacent to W-1)

III. SOILS

A. NRCS Soils Map Classification: Colwood silt loam (Cw)

B. Field description:

 Organic (histosol)? If so, is it a muck or a peat?

 X Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (underline those that apply)?
- Soil Description: Most soils in the floodplain area were wet or saturated on 5/15.
- Depth of mottling/gleying: No soil pits were dug due to potential contamination.
- Depth of A Horizon _____
- Munsell Color of matrix and mottles
 - Matrix below the
 - A horizon (25cm depth): _____
 - Mottles: _____

V. SURROUNDING LAND USES

W-1

A. What is the estimated area of the wetland watershed in acres?

-2,500 acres

Page 4

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	50%
Agricultural/cropland	30%
Agricultural/grazing	1%
Forested	8%
Grassed recreation areas/parks	1%
Old field	5%
Highways or roads	5%
Other (specify)	

VI. SITE SKETCH

Please refer to the attached plot of the wetland boundary flags (Figure 2).

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

Special Features/RED FLAGS

1. Y N Is the wetland in or adjacent to an area of special natural resource interest? If so, check those that apply:

- a. Cold water community (including trout streams, their tributaries, and trout lakes);
- b. Lake Michigan or the Mississippi River;
- c. State or federal designated wild and scenic river;
- d. Designated state riverway;
- e. Designated state scenic urban waterway;
- f. Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advance delineation and identification study;
- g. Calcareous fen;
- h. State park, forest, trail or recreation area;
- i. State or federal fish and wildlife refuges and fish and wildlife management areas;
- j. State or federal designated wilderness area;
- k. Designated or dedicated state natural area;
- l. Wild rice water;
- m. Outstanding or exceptional surface resource water

2. Y N According to the applicable state agency or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern:

No federal or state endangered or threatened plant or animal species were observed during GAS's field visit, which lasted two days.

3. Y N Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination.

1. Y N Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. Y N Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrows, calls), or expected to utilize the wetland:

White tail deer, raccoon, gray squirrel, common grackle, brown-headed cowbird, red-winged blackbird, mallard, flicker, robin, blue jay.

2. Y N Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. Y N Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? 40 %
4. Y N Does the surrounding upland habitat likely support a variety of animal species?
5. Y N Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
6. Y N Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that require large home ranges (e.g. bear, woodland passerines)?
7. Y N Is the surrounding habitat and/or the wetland a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. Y N Are there other wetland areas near the subject wetland that may be important to wildlife?
9. Y N Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. Y N Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. Y N Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. Y N Is the wetland providing habitat that is scarce to the region?

1. Y N Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (underline those that apply)?
2. Y N Does the wetland significantly reduce run-off velocity due to its size, configurations, braided flow patterns, or vegetation type and density?
3. Y N Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. Y N Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. Y N Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. Y N Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. Y N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (underline that which applies)?
2. Y N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?
3. Y N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. Y N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. Y N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. Y N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

1. Y N Is the wetland in a lake fringe or riverine setting. If NO, STOP and enter "not applicable for this function. If YES, then answer the applicable questions.

Wetland W-1 is associated with the Little Menomonee River.

2. Y N Is the shoreline exposed to constant wave action caused by a long wind fetch or boat traffic?

3. Y N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decreases wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?

4. Y N Is the stream bank prone to erosion due to unstable soils, land uses, or ice flows?

5. Y N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. Y N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as water cress or marsh marigold present that tend to indicate the presence of groundwater springs?

2. Y N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?

3. Y N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. Y N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses (underline all that apply)?

2. Y N Is the wetland in or near any population centers?

3. Y N Is any part of the wetland in public or conservation ownership?

4. Y N Does the public have direct access to the wetland from public roads or waterways (underline all that apply)?

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. Y N Buildings?
- b. Y N Roads?
- c. Y N Other structures?
- d. Y N Trash?
- e. Y N Pollution?
- f. Y N Filling?
- g. Y N Dredging/drainage?
- h. Y N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. Y N Buildings?
- b. Y N Roads?
- c. Y N Other structures?

7. Y N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. Y N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. Y N Long views within the wetland?
- b. Y N Long views in the viewshed adjacent to the wetland?
- c. Y N Convoluted edges within and/or around the wetland border?
- d. Y N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. Y N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography	?	X
Hiking/biking/skiing	X	
Hunting/fishing/trapping	?	X
Boating/canoeing	X	
Food harvesting		
Other (list)		

11. Y N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (underline that which applies)?

Wisconsin Department of Natural Resources

W-2/3

Page 1

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING
WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland/Owner:	W-2 / W-3										
Location: County	Milwaukee	;	1/4,	NE 1/4, Section	8	,	Township	8N	,	Range	21E
Project Name	Moss-American Superfund Site Wetland Investigation										
Evaluator(s):	Eric C. Parker and Brian J. Karczewski of Graef, Anhalt, Schloemer & Assoc. Inc.										
Date(s) of Site Visit(s):	5/14/98 and 5/15/98										

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration):

"Normal" climatologic and hydrologic conditions existed prior to and during the site evaluation. That is, no heavy rains or periods of drought took place immediately before or during the evaluation.

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification:	None indicated				
Wetland Type:	shallow open water	deep marsh	shallow marsh	seas. flooded basin	bog
	floodplain forest	alder thicket	sedge meadow	coniferous swamp	fen
	<u>wet meadow</u>	shrub-carr	low prairie	hardwood swamp	
Estimated size of wetland in acres:	0.5 and 0.8 acres, respectively				

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation		X			
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": None

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- Depressional (includes slopes, potholes, small lakes, kettles, etc.)
 Riverine
 Lake Fringe
 Extensive Peatland

B. N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (underline those that apply)?

C. N Does the wetland have an inlet, outlet, or both (underline those that apply)?

D. N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soil layer, or pore linings (underline those that apply)?

Some standing water and soil saturation was observed within each wetland.

E. N Does the wetland have standing water, and if so what is the average depth in inches? one inch Approximately how much of the wetland is inundated? 25% for wetland W-2, 40% for W-3.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- Permanently Flooded
 Seasonally Flooded (water absent at end of growing season)
 Saturated (surface water seldom present) (some ponding)
 Artificially Flooded
 Artificially Drained

G. N Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.

V. SURROUNDING LAND USES

W-2/3

A. What is the estimated area of the wetland watershed in acres?

5 acres

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B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	50%
Agricultural/cropland	
Agricultural/grazing	
Forested	5%
Grassed recreation areas/parks	
Old field	40%
Highways or roads	5%
Other (specify)	

VI. SITE SKETCH

Refer to the wetland boundary map, which is a surveyed plot of wetland delineation flags GAS placed on May 14/15, 1998.

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

Special Features/RED FLAGS

1. Y N Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:

- a. Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, (including trout streams, their tributaries, and trout lakes);
- b. Lakes Michigan and Superior and the Mississippi River;
- c. State of federal designated wild and scenic river;
- d. Designated state riverway;
- e. Designated state scenic urban waterway;
- f. Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advance delineation and identification study;
- g. Calcareous fen;
- h. State park, forest, trail or recreation area;
- i. State or federal fish and wildlife refuges and fish and wildlife management areas;
- j. State or federal designated wilderness area;
- k. Designated or dedicated state natural area;
- l. Wild rice water listed in ch. NR 19.09, Wis. Adm. Code;
- m. Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code.

2. Y N According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern:

No federal or state endangered or threatened plant or animal species were observed during the GAS field visit. (This consisted of two days of observations.)

3. Y N Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination.

1. Y N Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. Y N Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrows, calls), or expected to utilize the wetland:

Ground nest w/ eggs (sparrow), killdeer, white-tail deer tracks, Canada geese, woodcock, gray squirrel, robin, cardinal, cottontail rabbit, chipping sparrow, starling, crayfish chimney in W-2.

2. Y N Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. Y N Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. Y N Does the surrounding upland habitat likely support a variety of animal species?
5. Y N Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
6. Y N Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that require large home ranges (e.g. bear, woodland passerines)? **Fences limit wildlife access for this use.**
7. Y N Is the surrounding habitat and/or the wetland a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. Y N Are there other wetland areas near the subject wetland that may be important to wildlife?
9. Y N Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. Y N Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. Y N Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. Y N Is the wetland providing habitat that is scarce to the region?

1. Y N Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (underline those that apply)?
2. Y N Does the wetland significantly reduce run-off velocity due to its size, configurations, braided flow patterns, or vegetation type and density?
3. Y N Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. Y N Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Past site grading.**
5. Y N Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]

The wetland is located in the mid-reaches of this sub-watershed for the Little Menomonee River.

Water Quality Protection

1. Y N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (underline that which applies)?
2. Y N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?
3. Y N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. Y N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. Y N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. Y N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

1. Y N Is the wetland in a lake fringe or riverine setting. If NO, STOP and enter "not applicable for this function. If YES, then answer the applicable questions.

N/A

2. Y N Is the shoreline exposed to constant wave action caused by a long wind fetch or boat traffic?

3. Y N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decreases wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?

4. Y N Is the stream bank prone to erosion due to unstable soils, land uses, or ice flows?

5. Y N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. Y N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as water cress or marsh marigold present that tend to indicate the presence of groundwater springs? **Positions of these wetlands on shallow slopes indicates groundwater may be discharging in these wetlands.**

2. Y N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?

3. Y N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. Y N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Underline all that apply.)

2. Y N Is the wetland in or near any population centers?

3. Y N Is any part of the wetland in public or conservation ownership?

4. Y N Does the public have direct access to the wetland from public roads or waterways? (Underline those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. Y N Buildings?
- b. Y N Roads?
- c. Y N Other structures?
- d. Y N Trash?
- e. Y N Pollution?
- f. Y N Filling?
- g. Y N Dredging/drainage?
- h. Y N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. Y N Buildings?
- b. Y N Roads?
- c. Y N Other structures?

7. Y N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. Y N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. Y N Long views within the wetland?
- b. Y N Long views in the viewshed adjacent to the wetland?
- c. Y N Convolved edges within and/or around the wetland border?
- d. Y N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. Y N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Other (list)		

11. Y N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (underline that which applies)?

**NR 103 Alternatives
Analysis**

ALTERNATIVE ANALYSIS FOR NR 103 COMPLIANCE

Project Name:

Project Location:

Application:

Date:

PART I WETLAND IMPACTS

A. Does this project have the potential to affect wetlands?

PART II WETLAND DEPENDENCY

A. Does this project require a wetland to complete its function?

PART III PRACTICABLE ALTERNATIVE ANALYSIS

A. Background of the Project

1. Describe the project and its purpose in detail. Include any pertinent construction plans.
2. Is this project an expansion of an existing work or is it new construction?
3. When did you start to develop the plan for this project?
4. Explain why this project must be located in or adjacent to the wetland to achieve its purpose.

B. Possible Alternatives

1. What are all the possible ways you can get the same results other than your proposed project?
2. How can your project be redesigned for this site without affecting the wetlands?
3. Can you make this project smaller and still meet your needs?
4. What other sites were considered?
 - a. What geographical area was searched for alternative sites?
 - b. Are there other, non-wetland sites available for development in the area?
 - c. Have you sold any lands in recent years that would have been suitable for the project?

C. Comparison of Alternatives

1. How do the expenses compare between your original plan and the alternatives considered in Part III, B. Possible Alternatives above?
2. Are there logistical reasons that limit the alternatives considered?
3. Are there technological reasons limiting the alternatives considered?

4. Are there any other reasons the alternatives are not feasible?

5. What will happen if you cannot proceed with your project at all?

D. Choice of Project Plan

1. If you have not chosen any of the alternatives (listed in Part III, B. Possible Alternatives) which would avoid wetland impacts, explain why your plan was selected.

PART IV WETLAND FUNCTIONAL ASSESSMENT

A. Describe in detail the wetland at the site which will be affected (include topography, plants, wildlife, hydrology, soils, etc.).

B. Describe in detail all potential impacts to the wetland.

1. Describe impacts to the following functional values of the wetland:

a. Storm and flood water storage

b. Hydrologic functions

c. Filtration and storage of sediments, nutrients, or toxic substances

d. Shoreline protection against erosion

- e. Habitat for aquatic organisms
 - f. Habitat for wildlife
 - g. Human use functional values
2. Impacts to wetland criteria (see NR 103.03(2)).
 3. Any other possible cumulative impacts?
 4. Any other possible secondary impacts?
 5. Any impacts to Areas of Special Natural Resource Interest (see NR 103.04 for list of areas)?