WETLAND DELINEATION REPORT

32.4-ACRE CHEVRON CINCINNATI FACILITY REMEDY CONSTRUCTION AREAS
HOOVEN, HAMILTON COUNTY, OHIO

Prepared for:

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
TRIHYDRO CORPORATION

Prepared by:

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CEC Project No. 071-242

July 9, 2007

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1.0 INTRODUCTION

1.1 General Information

This report presents the findings of a wetland and stream delineation conducted at the 32.4-Acre Chevron Cincinnati Facility Remedy Construction Areas (the Project Areas), located in Hooven, Hamilton County, Ohio. The Project Areas are located in the vicinity of the intersection of U.S. Highway 50 and State Route 128 (Figure 1). The Project Areas are divided into six irregularly-shaped survey areas. Although six distinct areas were investigated as part of the wetland delineation, primary bank stabilization construction activities are confined to Area 4. The remaining five areas comprise locations at which preliminary analyses conducted by Chevron indicate that excavation of river sediments may assist in bank stabilization efforts in the primary construction area (Area 4). Results of ongoing hydraulic modeling performed by Chevron will determine if excavation of sediments in these alternate locations is waranted. Refer to Table 1 for details regarding the six survey areas.

TABLE 1
PROJECT AREA DESCRIPTIONS
Chevron Cincinnati Facility Remedy Construction Areas
Hamilton County, Ohio

Project Area	Approximate Acreage	Relative Location	Plant Community/Description
Area 1	9.7	Island within Great Miami River, northernmost survey area	Area 1 is an island within the channel of the Great Miami River, below the ordinary high water mark (OHWM). Limited trees and emergent vegetation are present in Area 1.
Area 2	1.5	East bank of Great Miami River, located south of Area 1	The majority of Area 2 is located below the OHWM of the Great Miami River. The eastern fringe of Area 2 is vegetated by second growth floodplain forest.
Area 3	0.5	East bank of Great Miami River, located south of Areas 1 and 2	Area 3 is dominated by second growth floodplain forest. A flood channel of the Great Miami River is also present in Area 3.
Area 4	15.9	West bank of the Great Miami River, located within the fence line of the Chevron Facility	Area 4 is dominated by second growth floodplain forest. Small areas of urban/industrial turf and old field vegetation are also present in Area 4. An island below the OHWM of the Great Miami River is also within Area 4.
Area 5	2.7	East bank of Great Miami River, located across the River from the southern	The majority of Area 5 is located below the OHWM of the Great Miami River. The eastern fringe of Area is 5 is vegetated by second growth floodplain

TABLE 1 PROJECT AREA DESCRIPTIONS Chevron Cincinnati Facility Remedy Construction Areas Hamilton County, Ohio			
		portion of Area 4	forest.
Area 6	2.1	East bank of Great Miami River, southernmost survey area that spans north and south below the U.S. 50 bridge	The majority of Area 6 is within a flood channel of the Great Miami River. The eastern and western banks of this channel are vegetated by second growth floodplain forest.

The wetland and stream delineation site visit was conducted by Civil & Environmental Consultants, Inc. (CEC) on June 14-15, 2007.

1.2 Methodology

The purpose of the study was to identify and delineate the boundaries of wetlands and other jurisdictional waters within the proposed Project Areas. The delineation was based on CEC's professional judgment and interpretation of the technical criteria presented in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987).

The wetland delineation was conducted using the routine on-site determination method described in the 1987 Corps Manual, supplemented by the *National List of Plant Species That Occur in Wetlands: Northeast Region (Region 1)* (Reed 1988) and *Hydric Soils of the United States* (USDA 1991). Additionally, in areas where disturbance had occurred, CEC made assumptions based upon historic information contained in the soil survey and observed current site conditions. CEC completed the following scope of services to identify and delineate jurisdictional wetland boundaries at the site:

1. Office Data Review: CEC personnel reviewed the U.S. Geological Survey (USGS) topographic map (Figure 1), U.S. Department of Agriculture (USDA) *Soil Survey of Hamilton County, Ohio* (USDA 1992; Figure 2), U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map (Figure 3), and the USDA Natural Resources Conservation Service (NRCS) list of hydric soils for Hamilton County, Ohio (USDA 2006). These resources were used to establish site characteristics that aided in the identification of potential wetland areas.

2. Site Reconnaissance: CEC performed the wetland delineation on June 14-15, 2007. The wetland delineation work was completed using the routine on-site determination method. First, plant communities present on the site were identified. The dominant plant species within each community were identified and an assessment was made on whether or not the plant community was dominated by hydrophytic (wetland) plants. Next, a representative test site was located within the plant community and soils were sampled using a spade shovel to assess the presence of hydric soil indicators. Lastly, the test site was inspected for indicators of wetland hydrology (ponding, soil saturation, etc.). If areas having wetland vegetation, hydric soils, and wetland hydrology were found, a test site was located outside the wetland to delineate where the wetland boundary could be located. Additionally, wetlands (if located on the site) were marked in the field with consecutively numbered surveyor's ribbon flags and subsequently located onto the Addyston and Hooven, Ohio quadrangles of the USGS 7.5-minute topographic map using a Trimble GeoXT Global Positioning System (GPS) unit. Other potential jurisdictional waters, such as ephemeral, intermittent or perennial streams located within the project area were also identified, where applicable.

3. Data Collection: Data forms for the routine on-site determination method were completed for six representative locations within the Project Area (see Figure 4 for locations and Appendix I for the wetland data forms). The data forms were completed to record the vegetation, soils and hydrology at each test site. Photographs of the wetlands, streams, and other representative habitats present on the property were also taken (Appendix II).

4. Preparation of Wetland and Stream Delineation Report: This wetland and stream delineation report documents CEC's methodology, findings, wetland delineation map, regulatory considerations, and conclusions.

2.0 FINDINGS

2.1 National Wetlands Inventory Map

NWI maps have been prepared by the USFWS based on high altitude infrared aerial photography and limited ground truthing. Wetlands and deep-water habitats are identified on these maps and classified according to the system developed by Cowardin and co-workers (1979). The NWI map for the Addyston and Hooven, Ohio quadrangles identified the Great Miami River as *R2UBH- riverine, lower perennial, unconsolidated bottom, and permanently flooded* (Figure 3). Based on the NWI maps, no other wetlands were identified within the boundaries of the Project Areas.

2.2 Soils

The *Soil Survey of Hamilton County, Ohio* (USDA 1992) shows four soil types within the Project Area (Table 2, Figure 2). Two of the four soil types within the Project Area have been identified by the NRCS as hydric (USDA 2006).

TABLE 2
SOILS INFORMATION
Chevron Cincinnati Facility Remedy Construction Areas
Hamilton County, Ohio

Soil Mapping Unit Name (Symbol)	Taxonomy	Hydric Soil List Designation
Casco silt loam, 25 to 35 percent slopes (CdE)	Typic Hapludalfs	Non-Hydric
Jules silt loam, occasionally flooded (Ju)	Typic Udifluvents	Hydric
Stonelick fine sandy loam, frequently flooded (St)	Typic Udifluvents	Hydric
Pits, gravel (Po)	--	Non-Hydric

2.3 Plant Communities

As outlined in Table 1, the majority of the Project Areas located above the OHWM of the Great Miami River consisted of second growth floodplain forest. The overstory of the second growth floodplain forests within the Project Areas were dominated by American sycamore (*Platanus occidentalis*), silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), common

hackberry (*Celtis occidentalis*), box elder (*Acer negundo*), eastern cottonwood (*Populus deltoides*) and black willow (*Salix nigra*). The moderately dense understory of these forests were dominated by false nettle (*Boehmeria cylindrica*), wingstem (*Verbesina alternifolia*), black snakeroot (*Sanicula marilandica*), Virginia creeper (*Parthenocissus quinquefolia*), honewort (*Cryptotaenia canadensis*), aniseroot (*Osmorhiza longistylis*), garlic mustard (*Alliaria petiolata*), Amur honeysuckle (*Lonicera maackii*), and poison hemlock (*Conium maculatum*).

Urban/industrial turf, which consisted of a gravel road, was present within the western portion of Area 4, and paralleled the Great Miami River throughout the survey area. Old field vegetation was identified within the southern portion of Areas 4 and 6, and included hooked buttercup (*Ranunculus recurvatus*), yellow sweet clover (*Melilotus officinalis*), japanese honeysuckle (*Lonicera japonica*), common mullein (*Verbascum thapsus*), goldenrod (*Solidago* spp.), and daisy fleabane (*Erigeron annuus*).

The vegetation identified at each wetland sample point has been detailed in the individual wetland determination data forms presented in Appendix I. Representative photos of each habitat type identified in the Project Areas are presented in Appendix II.

2.4 Hydrology

The Project Areas primarily consisted of a relatively level floodplain with moderate to steeply-sloped banks occurring along the Great Miami River. Elevations within the Project Areas ranged from approximately 450 to 480 feet above mean sea level (AMSL). As seen in Figure 4, hydrologic features within the Project Area include Hooven Ditch, located in Area 4 (Stream 1); one unnamed intermittent stream, located in Area 6 (Stream 2); the Great Miami River which is located throughout the Project Areas (Stream 3), and an overflow/flood channel of the Great Miami River, which is located in Areas 3 and 6 (Stream 4). Drainage throughout the Project Area is to the Great Miami River.

Stream 1 consisted of Hooven Ditch, a non-USGS-identified ephemeral stream located within Area 4. This stream originates outside of Area 4, and functions as a storm water drainage ditch

for the town of Hooven. Site drainage from the Chevron facility is reportedly not routed through Hooven Ditch. Stream 1 enters into the northwest corner of Area 4 through a culvert underneath a gravel access road, and flows southeast to the Great Miami River. Stream 1 was characterized by a width of approximately 6 feet and a depth of approximately 1 foot. The substrate of Stream 1 consisted of rip rap (from the culvert), gravel, and silt. The steep banks of Stream 1 were vegetated by second growth floodplain forest. No water was observed within the channel at the time of the field survey.

Stream 2 consisted of an unnamed non-USGS-identified intermittent stream located within Area 6. Stream 2 enters into the eastern portion of Area 6 north of U.S. 50 through a culvert below a construction lane and flows west to Stream 4, an overflow/flood channel of the Great Miami River. Stream 2 was characterized by a width of approximately eight feet and a depth of approximately three feet. The substrate of Stream 2 consisted of boulders, gravel, and silt. The steep banks of Stream 2 were vegetated by second growth floodplain forest. No water was observed within the channel at the time of the field survey.

Stream 3 consisted of the USGS-identified Great Miami River, which was located within the survey area boundaries for each Project Area with the exception of Area 6. The width of Stream 3 was variable throughout the Project Area; depth and substrate could not be determined during the site visit. The banks of Stream 3 ranged from gently sloping to steep, and were vegetated by second growth floodplain forest. Water was observed flowing south in the channel at the time of the survey, but the depth was not determined.

Stream 4 consisted of the non-USGS-identified overflow/flood channel of the Great Miami River, which was located within Areas 3 and 6. This channel diverts flows from the Great Miami River during high water events within Area 3 and rejoins the River south of Area 6. The bank width of Stream 4 was variable within Areas 3 and 6, as was the depth. At the southern end of Area 6, the width of this channel was approximately 40 feet. No water was observed in Stream 4 within the Project Areas. The substrate of Stream 4 was characterized by sand and gravel. The banks of Stream 4 were vegetated by second growth floodplain forest.

2.5 Wetlands

No wetlands were identified or delineated within the Project Areas. Six sites within the Project Areas were sampled using the on-site wetland determination method described above in Section 1.2. The wetland determination data forms for these six sites are provided in Appendix I. The locations of these sample sites were recorded using a Trimble GeoXT GPS unit. The locations of all sites within the Project Area that were sampled using the on-site determination method are shown on Figure 4.

2.6 Other Waters

As part of this work scope, CEC identified on-site streams and open water features that could be considered jurisdictional at the state and federal levels. Using CEC's professional judgment and field indicators such as flow, substrate composition, embeddedness, defined bed and banks, and vegetation, CEC classified the on-site streams into one of three categories: ephemeral, intermittent, or perennial (Table 3). As noted in Section 2.4, four streams were identified in the Project Area by CEC. The limits of the streams were recorded in the field with a Trimble GeoXT GPS unit, and subsequently transferred to Figure 4. The on-site lengths of the waterbodies are summarized below. The linear feet calculated for the Great Miami River (Stream 3) is based upon linear measurements of the OHWM within the Project Areas. For Area 1, which was entirely located below the Great Miami River OHWM, the linear footage was calculated based on the approximate length of the island located within Area 1. The portion of the Great Miami River that is within the Project Area is listed by the U.S. Army Corps of Engineers (USACE) as a Section 10 navigable water.

TABLE 3
STREAM INFORMATION
Chevron Cincinnati Facility Wetland Delineation
Hamilton County, Ohio

Stream Segment Identifier	Location	Approximate On-site Length (linear feet)	Stream Classification
Stream 1-Hooven Ditch	Area 4	457	Ephemeral
Stream 2-Unnamed intermittent stream	Area 6	191	Intermittent
Stream 3- Great Miami River	Area 1	2,120	Perennial

TABLE 3
STREAM INFORMATION
Chevron Cincinnati Facility Wetland Delineation
Hamilton County, Ohio

Stream Segment Identifier	Location	Approximate On-site Length (linear feet)	Stream Classification
	Area 2	480	
	Area 4	1931	
Stream 4- Overflow/flood channel of the Great Miami River	Area 3	474	Intermittent/ephemeral
	Area 6	677	
Total		6,330	--

3.0 REGULATORY CONSIDERATIONS

3.1 Meetings with Regulatory Agencies

No meetings between regulatory agencies and CEC have taken place at the time this report was prepared. The wetland delineation findings presented in this document were developed based upon CEC's professional training and experience, and the results of the June 14-15, 2007, site visit.

3.2 Regulatory Issues

Impacts to jurisdictional streams are regulated in the state of Ohio by the USACE and the Ohio Environmental Protection Agency (OEPA). Discharges of dredged or fill material into waters of the United States, as well as relocation of waters of the United States, require permits from the USACE under the provisions of Section 404 of the Clean Water Act, as well as Section 401 Water Quality Certification from the OEPA Division of Surface Water.

Based on the results of the wetland delineation, CEC identified approximately 6,330 linear feet of potentially jurisdictional streams within the study area. It is noted that this stream length is "all inclusive" and may include significant portions of streams that may not be impacted as part of Trihydro Corporation's proposed bank reinforcement and other associated activities. It is also noted that the Great Miami River within the Project Areas is considered a Section 10 water by the USACE and a jurisdictional determination will be required to determine if the flood channel within the Project Areas is classified as a part of the Great Miami River.

A formal jurisdictional determination conducted by the USACE, and potentially the OEPA, is required to verify CEC's wetland delineation findings, prior to initiation of permit issuance. The jurisdictional determination may require a site visit by these agencies.

Two types of Section 404 Clean Water Act permits are available from the USACE for those seeking to develop property, Nationwide Permits (NWPs) and Individual Section 404 Permits,

which are both utilized in conjunction with OEPA 401 Water Quality Certifications. The purpose of NWPs is to protect the aquatic environment and public interest while authorizing activities that have minimal individual and cumulative adverse effects on the aquatic environment. The NWPs were reissued by the USACE on March 17, 2007, and became effective on March 19, 2007. These NWPs will expire on March 18, 2012. When impacts to waterbodies are greater than allowed by NWPs, an Individual Section 404 Permit is typically required. A pre-construction notification (PCN) may be required for coverage under a NWP depending upon proposed waterbody impacts. The OEPA certifies the NWP by providing certain regional conditions which must be met in order to satisfy the General Conditions of the NWP. In this manner, the OEPA has pre-granted Section 401 Water Quality Certifications to the NWP, as long as all regional conditions are met. If impacts to streams and wetlands exceed the limits set forth under the NWP, then an Individual Section 404 Permit would be typically required from the USACE and Section 401 Water Quality Certification would be typically required from the OEPA.

The Chevron Facility Remedy Construction Areas project could potentially be authorized under NWP 38 – Cleanup of Hazardous and Toxic Waste. NWP 38 authorizes activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. A PCN is required to be submitted to the District Engineer of the USACE in accordance with the General Condition 27. NWP 38 does not limit the footage of stream impact.

The OEPA has issued Draft Section 401 Certifications for the reissued NWPs. The OEPA Draft Certifications for NWP 38 grant authorization only to projects that are performed, ordered, or sponsored by a state or federal government agency with established legal or regulatory authority. The State of Ohio General Limitations and Conditions that limit the temporary and permanent footage impacts to streams are waived for NWP 38. Based on the OEPA Draft Section 401 Certifications, no consultation is required with the OEPA for this project, as long as all regional conditions are met for NWP 38.

4.0 CONCLUSIONS

No wetlands were identified and delineated by CEC on the property. CEC identified one ephemeral stream, one intermittent stream, the Great Miami River, and an overflow channel to the Great Miami River within the Project Areas, together totaling approximately 6,330 linear feet (Figure 4). The locations of these potentially jurisdictional waters were recorded by CEC using a sub-meter accuracy Trimble GeoXT GPS unit.

5.0 LEVEL OF CARE

The wetland delineation services performed by CEC were conducted in a manner consistent with the criteria contained in the 1987 Corps Manual and with the level of care and skill ordinarily exercised by members of the environmental consulting profession practicing contemporaneously under similar conditions in the locality of the project. It must be recognized that the jurisdictional wetland delineation was based on field observations and CEC's professional interpretation of the criteria in the 1987 Corps Manual at the time of our fieldwork. Wetland determinations may change subsequent to CEC's delineation based on changes in the regulatory criteria, seasonal variations in hydrology, alterations to drainage patterns and other human activities and/or land disturbances. Therefore, the findings and opinions are relevant to the dates of our site work and should not be relied on to represent conditions at substantially later dates. References herein to interpreted jurisdictional waters on the subject property are the opinion of CEC and are subject to change pending formal review by the USACE and/or OEPA. The actual regulated extent and limits of jurisdictional waters are not established until formally sanctioned by the USACE and OEPA as part of a Jurisdictional Determination.

This report is intended for the use of Trihydro and Chevron only, consistent with the qualifications outlined herein and the terms and conditions of CEC's proposal. Our services have been performed under mutually agreed upon terms and conditions. If other parties wish to rely on this report, please have them contact us so that a mutual understanding and agreement of the terms and conditions for our services can be established prior to their use of this information.

6.0 REFERENCES

Cowardin, L. M., V. Carter, and F. C. Golet. 1979. Classification of Wetlands and Deep Water Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service. Washington D. C. FWS/OBS-79/31.

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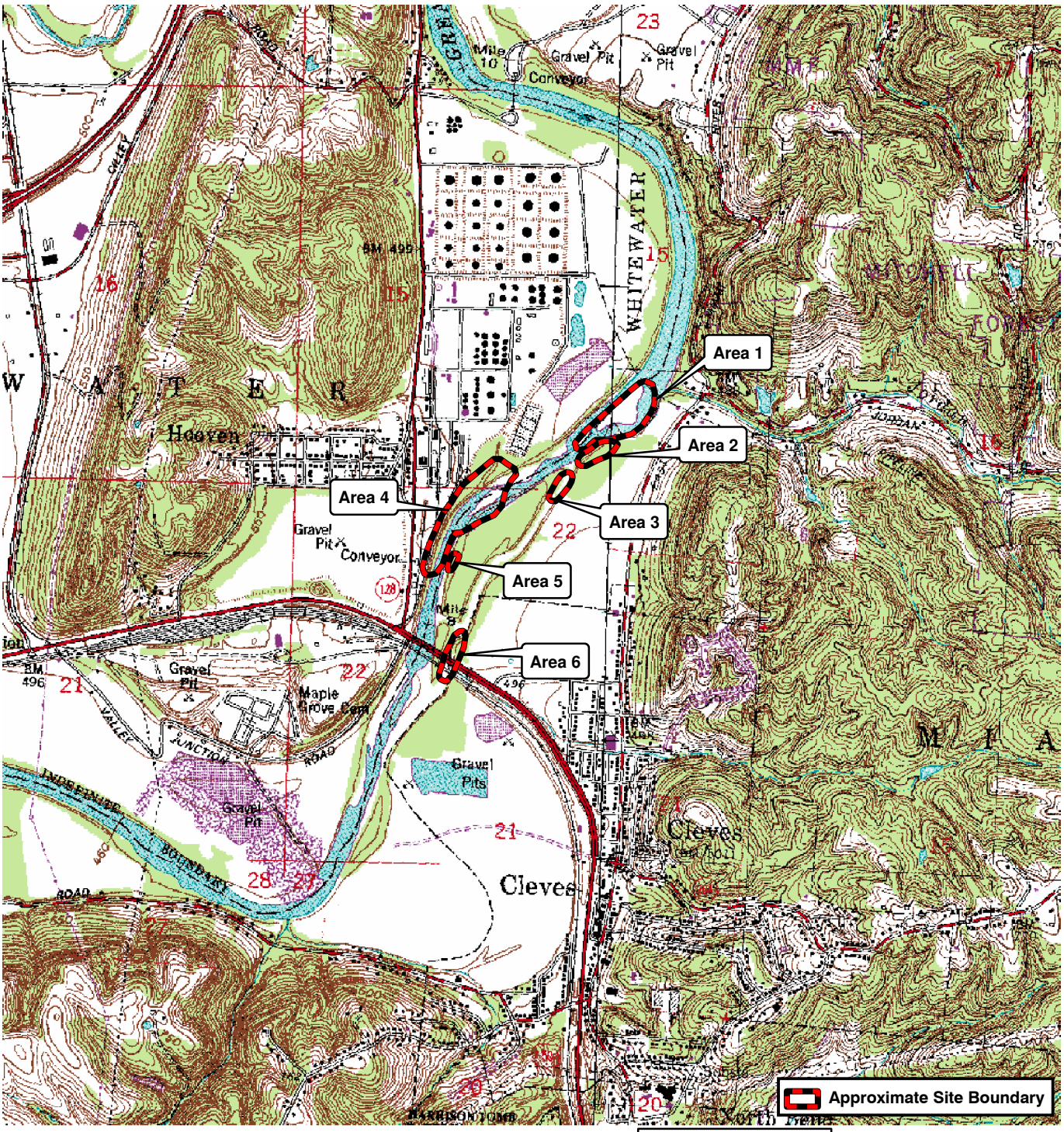

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP - ADDYSTON 1982 AND HOOVEN, OHIO1982.

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Site Location Map

CHEVRON - CINCINNATI FACILITY

State Route 128 and U.S. Bypass 50
Hooven, Hamilton County, Ohio

DWN. BY: MJB	SCALE: AS NOTED	DATE: June 2007	PROJECT NO: 071-242	FIGURE NO: 1
CHKD. BY: MVB				

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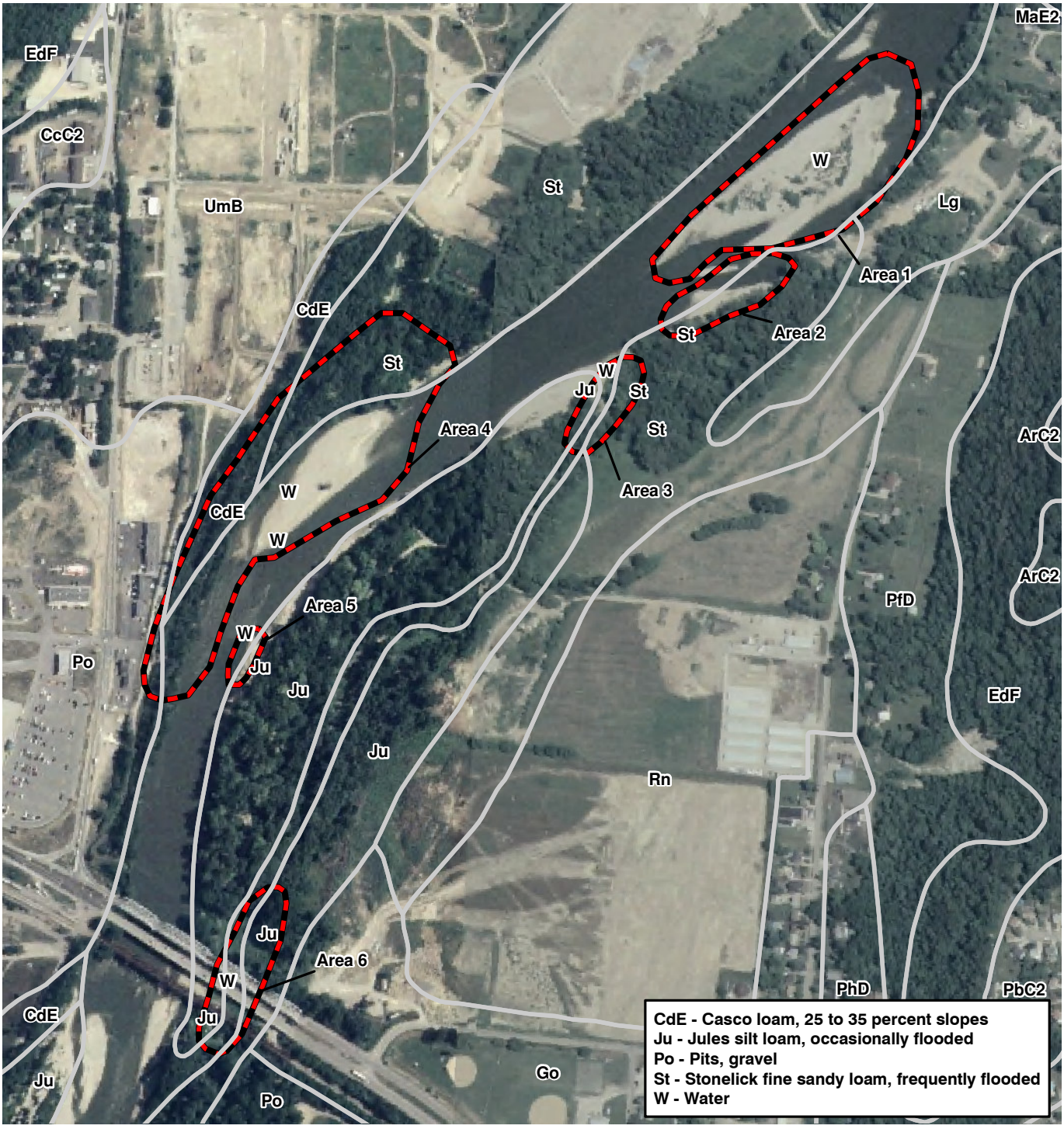

SOURCE: PORTION OF A NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) COUNTY COLOR AERIAL MOSAIC, HAMILTON COUNTY, OHIO 2006. SOILS DATA OBTAINED FROM THE USDA NRCS SOIL DATAMART WEBSITE, http://soildatamart.nrcs.usda.gov/

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USDA NRCS Soils Map

CHEVRON - CINCINNATI FACILITY

State Route 128 and U.S. Bypass 50
Hooven, Hamilton County, Ohio

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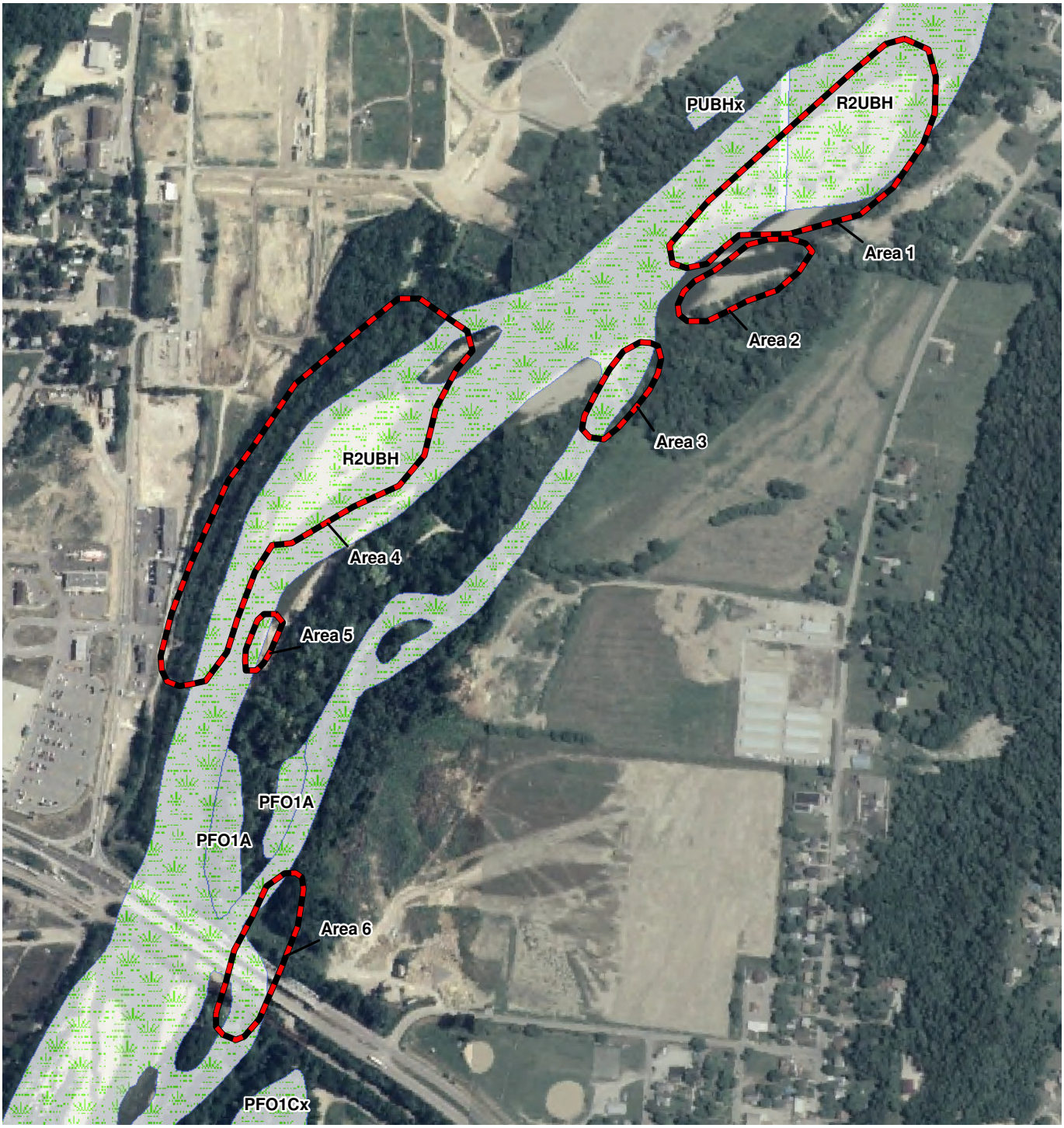

N

300 150 0 300 600
Feet

USFWS - NWI Feature
Approximate Site Boundary

SOURCE: PORTION OF A NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) COUNTY COLOR AERIAL MOSAIC, HAMILTON COUNTY, OHIO 2006. WETLAND DATA OBTAINED FROM THE USFWS - WETLANDS DATA EXTRACTION TOOL WEBSITE - http://wetlandsfws.er.usgs.gov/NWI/download.html

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USFWS - NWI Features Map

CHEVRON - CINCINNATI FACILITY

State Route 128 and U.S. Bypass 50
Hooven, Hamilton County, Ohio

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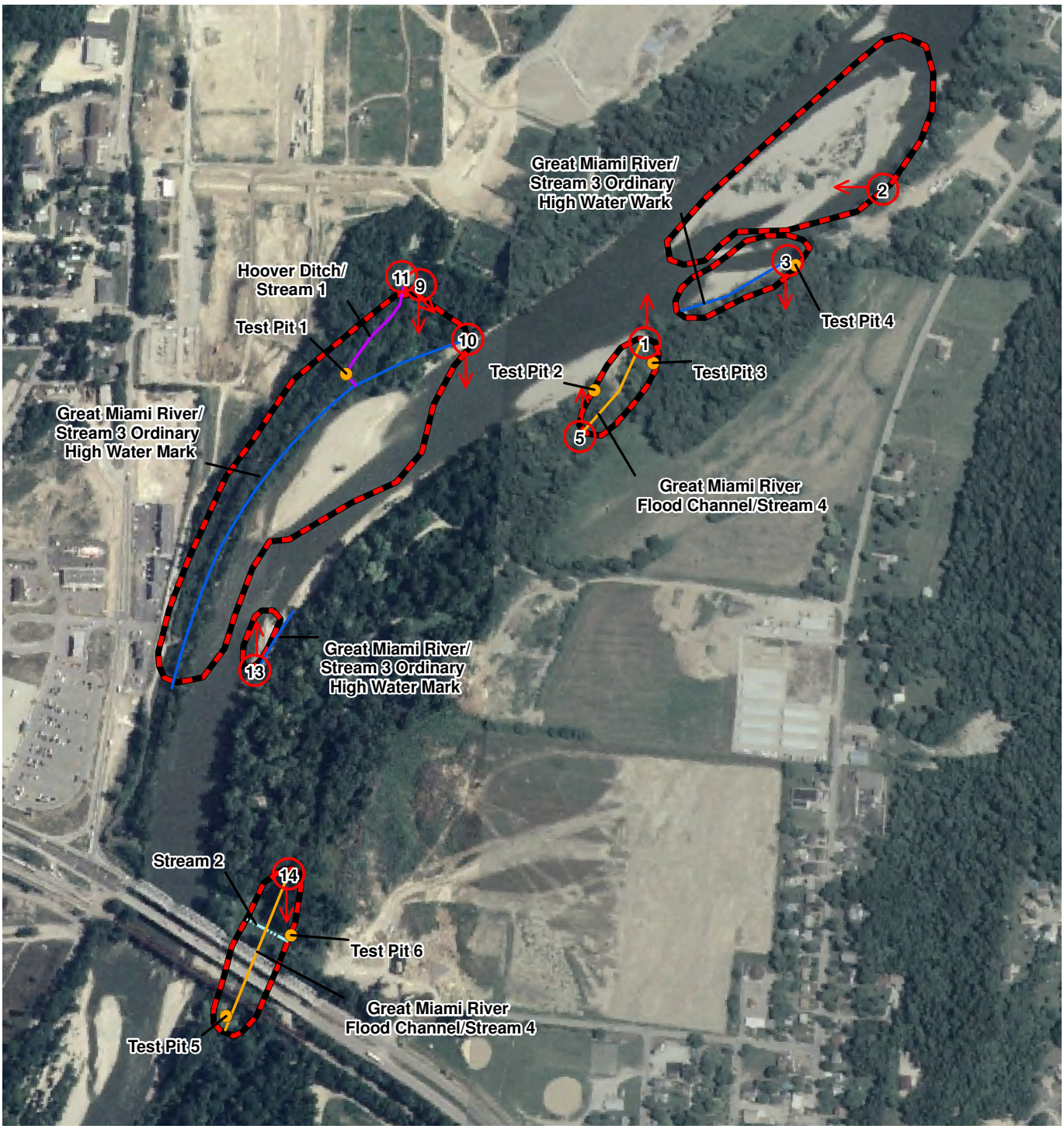

SOURCE: PORTION OF A NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) COUNTY COLOR AERIAL MOSAIC, HAMILTON COUNTY, OHIO 2006.

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Wetland Delineation Map
CHEVRON - CINCINNATI FACILITY REMEDY CONSTRUCTION AREAS

State Route 128 and U.S. Bypass 50
Hooven, Hamilton County, Ohio

DWN. BY: MJB	SCALE:	DATE:	PROJECT NO:	FIGURE NO:
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APPENDIX I

WETLAND DETERMINATION DATA FORMS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas			**Date:**	6/14/2007
Applicant/Owner:	Trihydro Corporation/Chevron			**County:**	Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac			**State:**	OH
Do normal circumstances exist on the site?		Yes **X**	No	**Community ID:**	
Is the site significantly disturbed (Atypical?)		Yes	No **X**	Area 4	
Is the area a potential problem area?		Yes	No **X**	**Plot ID:**	TP-1
(if needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:	Dominant Plant Species:	Stratum:	Indicator:
1.	*Plantanus occidentalis*	Tree	FACW-	10.		
2.	*Celtis occidentalis*	Tree	FACU	11.		
3.	*Boehmeria cylindrica*	Herb	FACW+	12.		
4.	*Verbesina alternifolia*	Herb	FAC	13.		
5.	*Alliaria petiolata*	Herb	FACU	14.		
6.	*Sanicula marilandica*	Herb	NI/UPL	15.		
7.				16.		
8.				17.		
9.				18.		

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 50%

Remarks:

Test pit in floodplain forest

HYDROLOGY

_____	Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**	
_____	Stream, Lake, or Tide Gauge	Primary Indicators:	
X	Aerial Photographs	_____	Inundated
_____	No Recorded Data Available	_____	Saturated in upper 12 inches
		_____	Water Marks
Field Observations:		_____	Drift Lines
		_____	Sediment Deposits
Depth of Surface Water:	>16 (inches)	_____	Drainage Patterns in Wetlands
Depth to Free Water in Pit:	>16 (inches)	Secondary Indicators:	
		_____	Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil:	>16 (inches)	_____	Water Stained Leaves
		X	Local Soil Survey Data
		_____	FAC-Neutral Test
		_____	Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-1

SOILS

Map Unit Name:
(Series and Phase): Stonelick fine sandy loam, frequently flooded
(Taxonomy Subgroup): Typic Udifluvents
Drainage Class: Well Drained
Field Observations Confirm Mapped Type?
Yes X No

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	10YR 4/2	none	none	sandy loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soil
	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low Chroma Colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes	No	X	Yes
Hydric Soils Present?	Yes	No	X	No X

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas			**Date:**	6/15/2007
Applicant/Owner:	Trihydro Corporation/Chevron			**County:**	Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac			**State:**	OH
Do normal circumstances exist on the site?		Yes **X**	No	**Community ID:**	
Is the site significantly disturbed (Atypical?)		Yes	No **X**	Area 3	
Is the area a potential problem area?		Yes	No **X**	**Plot ID:**	TP-2
(if needed, explain on reverse.)					

VEGETATION

Dominant Plant Species:	Stratum:	Indicator:	Dominant Plant Species:	Stratum:	Indicator:
1. *Acer saccharinum*	Tree	FACW	10.		
2. *Populus deltoides*	Tree	FAC	11.		
3. *Ranunculus recurvatus*	Herb	FAC+	12.		
4. *Verbesina alternifolia*	Herb	FAC	13.		
5. *Conium maculatum*	Herb	FACW	14.		
6. *Sanicula marilandica*	Herb	NI/UPL	15.		
7.			16.		
8.			17.		
9.			18.		

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 83%

Remarks:

Test pit in floodplain forest

HYDROLOGY

_____	Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**	
_____	Stream, Lake, or Tide Gauge	Primary Indicators:	
X	Aerial Photographs	_____	Inundated
_____	No Recorded Data Available	_____	Saturated in upper 12 inches
		_____	Water Marks
Field Observations:		_____	Drift Lines
		_____	Sediment Deposits
Depth of Surface Water:	>16 (inches)	_____	Drainage Patterns in Wetlands
Depth to Free Water in Pit:	>16 (inches)	Secondary Indicators:	
Depth to Saturated Soil:	>16 (inches)	_____	Oxidized Root Channels in Upper 12 Inches
		_____	Water Stained Leaves
		X	Local Soil Survey Data
		_____	FAC-Neutral Test
			Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-2

SOILS

Map Unit Name:
(Series and Phase): Jules silt loam, occasionally flooded
(Taxonomy Subgroup): Typic Udifluvents
Drainage Class: Well Drained
Field Observations Confirm Mapped Type?
Yes ____ No X

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	10YR 4/3	none	none	sandy loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ____	No	X	Yes ____
Hydric Soils Present?	Yes ____	No	X	No X

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas			**Date:**	6/15/2007
Applicant/Owner:	Trihydro Corporation/Chevron			**County:**	Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac			**State:**	OH
Do normal circumstances exist on the site?		Yes **X**	No	**Community ID:**	
Is the site significantly disturbed (Atypical?)		Yes	No **X**	Area 3	
Is the area a potential problem area?		Yes	No **X**	**Plot ID:**	TP-3
(if needed, explain on reverse.)					

VEGETATION

Dominant Plant Species:	Stratum:	Indicator:	Dominant Plant Species:	Stratum:	Indicator:
1. *Acer saccharinum*	Tree	FACW	10.		
2. *Populus deltoides*	Tree	FAC	11.		
3. *Boehmeria cylindrica*	Herb	FACW+	12.		
4. *Impatiens pallida*	Herb	FACW	13.		
5. *Viola sororia*	Herb	FAC	14.		
6. *Geum laciniatum*	Herb	FAC+	15.		
7.			16.		
8.			17.		
9.			18.		

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 100%

Remarks:

Test pit in floodplain forest

HYDROLOGY

_____	Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**	
_____	Stream, Lake, or Tide Gauge	Primary Indicators:	
X	Aerial Photographs	_____	Inundated
_____	No Recorded Data Available	_____	Saturated in upper 12 inches
		_____	Water Marks
Field Observations:		_____	Drift Lines
		_____	Sediment Deposits
Depth of Surface Water:	>16 (inches)	_____	Drainage Patterns in Wetlands
Depth to Free Water in Pit:	>16 (inches)	Secondary Indicators:	
Depth to Saturated Soil:	>16 (inches)	_____	Oxidized Root Channels in Upper 12 Inches
		_____	Water Stained Leaves
		X	Local Soil Survey Data
		_____	FAC-Neutral Test
			Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-3

SOILS

Map Unit Name:
(Series and Phase): Stonelick fine sandy loam, frequently flooded
(Taxonomy Subgroup): Typic Udifluvents
Drainage Class: Well Drained
Field Observations Confirm Mapped Type?
Yes X No

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	2.5YR 4/2	none	none	sandy loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soil
	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low Chroma Colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes	No	X	Yes
Hydric Soils Present?	Yes	No	X	No X

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas		**Date:** 6/15/2007
Applicant/Owner:	Trihydro Corporation/Chevron		**County:** Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac		**State:** OH
Do normal circumstances exist on the site?	Yes **X**	No	**Community ID:**
Is the site significantly disturbed (Atypical?)	Yes	No **X**	Area 2
Is the area a potential problem area?	Yes	No **X**	**Plot ID:** TP-4
(if needed, explain on reverse.)			

VEGETATION

Dominant Plant Species:	Stratum:	Indicator:	Dominant Plant Species:	Stratum:	Indicator:
1. *Acer negundo*	Tree	FAC+	10. *Oxalis stricta*	Herb	UPL
2. *Celtis occidentalis*	Tree	FACU	11. *Veronica anagallis-aquatica*	Herb	OBL
3. *Boehmeria cylindrica*	Herb	FACW+	12.		
4. *Impatiens pallida*	Herb	FACW	13.		
5. *Elymus canadensis*	Herb	FACU+	14.		
6. *Conium maculatum*	Herb	FACW	15.		
7. *Sanicula marilandica*	Herb	NI/UPL	16.		
8. *Alliaria petiolata*	Herb	FACU-	17.		
9. *Hemerocallis fulva*	Herb	NI/UPL	18.		

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 36%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: >16 (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
X Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-4

SOILS

Map Unit Name:
(Series and Phase): Stonelick fine sandy loam, frequently flooded
(Taxonomy Subgroup): Typic Udifluvents
Drainage Class: Well Drained
Field Observations Confirm Mapped Type?
Yes ____ No X

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	10YR 3/4	none	none	sandy loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ____	No	X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ____	No	X	Yes ____
Hydric Soils Present?	Yes ____	No	X	No X

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas			**Date:**	6/15/2007
Applicant/Owner:	Trihydro Corporation/Chevron			**County:**	Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac			**State:**	OH
Do normal circumstances exist on the site?		Yes **X**	No	**Community ID:**	
Is the site significantly disturbed (Atypical?)		Yes	No **X**	Area 6	
Is the area a potential problem area?		Yes	No **X**	**Plot ID:**	TP-5
(if needed, explain on reverse.)					

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	*Salix nigra*	Tree	FACW+	10.			
2.	*Phytolacca americana*	Herb	FACU+	11.			
3.	*Sanicula marilandica*	Herb	NI/UPL	12.			
4.	*Conium maculatum*	Herb	FACW	13.			
5.	*Ranunculus recurvatus*	Herb	FAC+	14.			
6.	*Rumex orbiculatus*	Herb	OBL	15.			
7.	*Polygonum hydropiperoides*	Herb	OBL	16.			
8.				17.			
9.				18.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 71%

Remarks:

Test pit on bank of flood/overflow channel of Great Miami River

HYDROLOGY

	Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**	
	Stream, Lake, or Tide Gauge	Primary Indicators:	
X	Aerial Photographs		Inundated
	No Recorded Data Available		Saturated in upper 12 inches
			Water Marks
Field Observations:			Drift Lines
			Sediment Deposits
Depth of Surface Water:	>16 (inches)		Drainage Patterns in Wetlands
Depth to Free Water in Pit:	>16 (inches)	Secondary Indicators:	
			Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil:	>16 (inches)		Water Stained Leaves
		X	Local Soil Survey Data
			FAC-Neutral Test
			Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-5

SOILS

Map Unit Name:
(Series and Phase): Jules silt loam, occasionally flooded
Drainage Class: Well Drained
(Taxonomy Subgroup): Typic Udifluvents
Field Observations Confirm Mapped Type?
Yes X No

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	10YR 4/3	none	none	sandy silt

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soil
	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low Chroma Colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes	No	X	Yes
Hydric Soils Present?	Yes	No	X	No X

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-242/Chevron Cincinnati Facility Remedy Construction Areas			**Date:**	6/15/2007
Applicant/Owner:	Trihydro Corporation/Chevron			**County:**	Hamilton
Investigator(s):	Maggie Vuturo Bosiljevac			**State:**	OH
Do normal circumstances exist on the site?		Yes **X**	No	**Community ID:**	
Is the site significantly disturbed (Atypical?)		Yes	No **X**	Area 6	
Is the area a potential problem area?		Yes	No **X**	**Plot ID:**	TP-6
(if needed, explain on reverse.)					

VEGETATION

Dominant Plant Species:	Stratum:	Indicator:	Dominant Plant Species:	Stratum:	Indicator:
1. *Salix nigra*	Tree	FACW+	10.		
2. *Acer saccharinum*	Tree	FACW	11.		
3. *Phytolacca americana*	Herb	FACU+	12.		
4. *Cryptotaenia canadensis*	Herb	FAC	13.		
5. *Impatiens pallida*	Herb	FACW	14.		
6. *Oxalis stricta*	Herb	UPL	15.		
7. *Boehmeria cylindrica*	Herb	FACW+	16.		
8.			17.		
9.			18.		

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = 71%

Remarks:

Test pit on bank of flood/overflow channel of Great Miami River

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: >16 (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
X Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-242/Chevron Cincinnati Facility Remedy Construction Areas
Site/Area ID: TP-5

SOILS

Map Unit Name:
(Series and Phase): Jules silt loam, occasionally flooded
Drainage Class: Well Drained
(Taxonomy Subgroup): Typic Udifluvents
Field Observations Confirm Mapped Type?
Yes X No

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16+	A/B	10YR 4/3	none	none	sandy silt

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soil
	Aquic Moisture Regimes	X	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low Chroma Colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes	No	X	Yes
Hydric Soils Present?	Yes	No	X	No X

Remarks:

APPENDIX II

SITE PHOTOGRAPHS

Photo #1: View of southern portion of Area 1, an island located within the Great Miami River. Photo taken facing north.

Photo #2: View of northern portion of Area 1. Photo taken facing west.

Photo #3: View of Area 2, the majority of which is located below the OHWM of the Great Miami River. Second growth floodplain forest is located on the eastern fringe of Area 2. Photo taken facing south.

Photo #4: View from Test Pit 4 within Area 2. Photo taken facing northeast.

Photo #5: View of the southern portion of Area 3, showing the flood channel of the Great Miami River and second growth floodplain forest. Photo taken facing north.

Photo #6: View of northern portion of Area 3, below the OWHM of the Great Miami River. Photo taken facing south.

Photo #7: View from Test Pit 2 within Area 3. Photo taken facing northeast.

Photo #8: View from Test Pit 3 within Area 3. Photo taken facing northwest.

Photo #9: View of second growth floodplain forest and urban/industrial turf within Area 4. Old field vegetation was present along the gravel road. Photo taken facing south.

Photo #10: View of northern portion of island in the Great Miami River within Area 4. Photo taken facing south.

Photo #11: View of Hooven Ditch (Stream 1) within the northern portion of Area 4. Photo taken facing southeast.

Photo #12: View from Test Pit 1 within Area 4. Photo taken facing south.

Photo #13: View of Area 5. Photo taken facing north.

Photo #14: View of Area 6, showing the flood channel of the Great Miami River and second growth floodplain forest. Photo taken facing east.

Photo #15: View from Test Pit 5 within Area 6. Photo taken facing northwest.

Photo #16: View from Test Pit 6 within Area 6. Photo taken facing north.

Photo #17: View of an unnamed intermittent tributary to the Great Miami River (Stream 2). Photo taken facing west.