WETLAND AND STREAM DELINEATION REPORT

LINE 6B 2012
MAINTENANCE AND REHABILITATION PROJECT

Lake and LaPorte Counties, Indiana

(Cardno JFNew Project No. 1103110)

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WETLAND AND STREAM DELINEATION REPORT
LINE 6B 2012 MAINTENANCE AND REHABILITATION PROJECT
LAKE AND LAPORTE COUNTIES, INDIANA

1.0 INTRODUCTION

Cardno JFNew performed a jurisdictional determination and delineation of the boundaries of regulated wetlands, streams, and water bodies which occur within the designated survey corridor of the Enbridge Energy, Limited Partnership (Enbridge) Line 6B 2012 Maintenance and Rehabilitation Project (Project) in Lake and LaPorte Counties, Indiana (Figure 1). The survey corridor consists of two approximate 5 mile segments of Line 6B and was approximately 225 to 250 feet wide. The first segment of the survey corridor begins at the Griffith substation in Lake County and continues approximately five miles east. The second segment begins at the LaPorte substation in LaPorte County and continues approximately five miles northeast.

Cardno JFNew identified thirty-nine (39) wetlands and nine (9) stream sections within the study area. Approximately half of the wetlands identified within the survey corridor were characterized as emergent wetlands (53%), approximately 41% were forested wetlands, 3% were considered scrub-shrub wetlands, and 3% were ponds with emergent wetland fringes. The majority of the streams identified within the survey corridor were considered intermittent (40%) or perennial (40%), 20% were considered ephemeral.

This report identifies the jurisdictional status of the project area based on Cardno JFNew's best professional understanding and interpretation of the *Corps of Engineers Wetland Delineation Manual (1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Version 2.0; 2010,* and U.S. Army Corps of Engineers (USACE) guidance documents and regulations. Jurisdictional determinations for other "waters of the United States" were made based on definitions and guidance found in 33 CFR 328.3, Corps Regulatory Guidance Letters, and the wetland delineation manual. The USACE administers Section 404 of the Clean Water Act (CWA) which regulates the discharge of fill or dredged material into all "waters of the United States," and is the regulatory authority that must make the final determination as to the jurisdictional status of the project area.

2.0 REGULATORY DEFINITIONS

2.1 "Waters of the United States"

"Waters of the United States" are within the jurisdiction of the USACE under the CWA. "Waters of the United States" is a broad term which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the "Ordinary High Water Mark (OHWM)." Also included are manmade waterbodies such as quarries and ponds which are no longer actively being mined or constructed. Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "waters of the United States" can be found in the Federal Register (33 CFR 328.3).

2.2 Wetlands

Wetlands are a category of "waters of the United States" for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual (1987)* and its supplements, wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

2.2.1 Wetland Vegetation

In the course of developing the wetland determination methodology the USACE, in cooperation with the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the Soil Conservation Service, compiled a comprehensive list of wetland vegetation. The indicator status of plant species is expressed in terms of the estimated probabilities of that species occurring in wetland conditions within a given region. The indicator categories as defined by the USACE are:

Obligate Wetland (OBL) Occur almost always (estimated probability >99%) under natural conditions in wetlands.

Facultative Wetland (FACW) Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.

Facultative (FAC) Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Facultative Upland (FACU) Usually occur in non-wetlands, but occasionally found in wetlands (estimated probability 1%-33%).

Obligate Upland (UPL) Occur almost always (estimated probability >99%) in uplands.

Vegetation dominance is determined within a series of four strata: trees, shrubs/saplings, herbaceous, and woody vines. Trees consist of woody plants greater than 3 inches in diameter at breast height (DBH). Shrubs and saplings are woody plants that are over 1 meter in height and less than 3 inches DBH. Herbaceous vegetation consists of woody and non-woody plants, regardless of size, that are less than 1 meter in height. Woody vines consist of vines such as wild grape (*Vitis* sp.) that are greater than 1 meter in height.

The percentage of the dominant wetland species in each of the vegetation strata in the sample area determines the hydrophytic, or wetland status of the plant community. Dominant species are chosen independently from each stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total. Soil type and hydroperiod are two factors important in controlling species composition.

2.2.2 Hydric Soils

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA Soil Conservation Service,

1994). Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation for more than a few days. Saturation or inundation, when combined with microbial activity in the soil, causes the depletion of oxygen. This anaerobiosis promotes certain biogeochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils in the field (USDA Natural Resources Conservation Service, 2006). The indicators that we use are a subset of the NTCHS *Field Indicators of Hydric soils in the United States, Version 7.0, 2010* that are commonly found in the Midwest. Indicators are presented in three groups. Indicators for "All Soils" include eleven indicators of hydric soil regardless of soil texture. There are eight indicators for "Sandy Soils" for use in soil layers with a texture of loamy fine sand or coarser. There are eight indicators for "Loamy and Clayey Soils" in the Midwest for use in soil layers with a loamy very fine sand or finer texture.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma, which are combined in that order to form the color designation. The *hue* notation of a color indicates its relation to red, yellow, green, blue, and purple; the *value* notation indicates its lightness; and the *chroma* notation indicates its strength or departure from a neutral of the same lightness.

The symbol for *hue* consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for *value* consists of numbers from 0 for absolute black to 10 for absolute white. The notation for *chroma* consists of numbers beginning with /0 for neutral grays and increasing at equal intervals. Soil color along with its texture and depth provides the basis for assigning a hydric soil indicator.

2.2.3 Wetland Hydrology

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Wetland hydrology indicators for the Midwest Region include primary and secondary indicators grouped as: A) Observation of Surface Water or Saturated Soils, B) Evidence of Recent Inundation, C) Evidence of Current or Recent Soil Saturation, and D) Evidence of Other Site Conditions or Data. One primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

2.2.4 Wetland Definition Summary

In general, an area must meet all three criteria to be classified as a wetland. In certain "naturally problematic" areas such as seasonal wetlands which are not wet at all times, or in recently disturbed situations, an area may be considered a wetland if only two criteria are met.

3.0 SITE INVESTIGATION AND DESCRIPTION

3.1 Investigation Methodology

Prior to conducting field work, the following sources of information were consulted to identify potential wetlands:

- United States Geological Survey (USGS) Topographical Map (Highland, Gary, and Michigan City East Quadrangles)
- U.S. Fish and Wildlife Service's *National Wetlands Inventory* (NWI) Maps
- United Stated Department of Agriculture - Natural Resource Conservation Service (USDA-NRCS) Web *Soil Survey Database for Lake and LaPorte Counties, Indiana.*
- 2010 Aerial Photograph, Lake and LaPorte Counties, Indiana

These sources were used in conjunction with field reconnaissance information to identify potential wetlands and wetland soil units on the site. The NWI maps were prepared from high altitude photography and in most cases, were not field checked. Because of this, wetlands are sometimes erroneously identified, missed or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the USACE. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The mapping units are often generalized based on topography, and many mapping units contain inclusions of other soil types for up to 15% of the area of the unit. The USACE does not accept the use of either of these maps to make wetland determinations.

The delineation of wetlands and other "waters of the United States" on the site was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest, Version 2.0; 2010* as required by current USACE policy.

Prior to conducting the field work, the background information was closely reviewed to establish the probability and approximate location of streams and potential wetlands within the survey corridor. The survey corridors were walked with the specific intent of delineating wetland boundaries and identifying regulated streams. Paired data points were established at representative locations along the wetland and upland sides of the delineated boundaries to document soil characteristics, evidence of hydrology, and dominant vegetation (see Appendix A). Note that no attempt was made to examine a full soil profile to confirm any soil series designations. However, soils were examined to a depth of at least 16-18 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil surveys for these counties.

Cardno JFNew conducted investigations of the survey corridor from June 13 to September 13, 2011. The survey corridor spans across two counties in Indiana, each with a length of approximately 5 miles (Figure 1). The survey corridor for each county begins at an Enbridge substation.

During completion of the field delineation, Cardno JFNew implemented a unique wetland/stream feature numbering system. The following protocol was used for naming the specific features delineated:

Wetlands: "W" for wetland designation; three digit milepost number for location of the wetland, (e.g., 466 indicates the wetland occurred east of pipeline milepost 466); and alphabet letter to identify the order of wetlands identified between milepost sections. For example, a label designation of w-466-a would indicate that a wetland occurs east of pipeline milepost 466. W-466-b would be the next wetland identified in that milepost section.

Stream: "S" for stream and the remaining part of the label follows as previously described for wetlands.

The wetland and stream boundaries that were delineated, along with the data point locations, were located using sub-meter accuracy GPS units. Cardno JFNew utilized Trimble Geo XH units. GPS unit data was downloaded and integrated into the Wetland and Stream Delineation Maps using ArcView GIS software. Pursuant to Merjent's request, wetland and stream boundaries were not demarcated with flagging.

Photographs of each delineated feature are provided in Appendix B. These photographs represent the visual documentation of conditions at the time of inspection. The photographs are intended to provide representative visual samples of wetlands, streams, or other special features and habitats found within the survey corridor.

3.2 General Site Conditions

Land use along the survey corridor consists predominately of agricultural and open land within Lake and LaPorte Counties. The wetlands that are crossed by the survey corridor have little to moderate plant diversity. Most of the wetlands delineated within the survey corridor had a presence of invasive species within its boundaries. Garlic mustard was observed in many upland and wetland wooded areas throughout the project corridor. Approximately 10 percent of the herbaceous layer was dominated by garlic mustard. In a few areas there was up to 50 percent cover in the herbaceous layer.

The survey corridor crosses mostly small streams except in LaPorte County where it crosses Waterford Creek.

3.3 Wetland Investigation Results

A total of thirty-nine (39) wetland areas were identified within the designated survey corridor (Table 1). Approximately half of the wetlands identified within the survey corridor were characterized as emergent wetlands (51%), approximately 43% were forested wetlands, 3% were considered scrub-shrub wetlands, and 3% were ponds with emergent wetland fringes.

Table 1. Wetland data for the Indiana segments. *Note: Jurisdictional status has not been verified by the USACE or IDEM at this time.

County	Wetland Name	Wetland Type	Jurisdictional Status/Isolated Class I, II, III
Lake	W-465-A	PEM	IDEM; Isolated wetland, Class I
Lake	W-466-A	PEM/PSS	USACE
Lake	W-466-F	PEM	USACE
Lake	W-466r-A	PFO/PEM	USACE
Lake	W-466-B	PFO/PEM	USACE
Lake	W-466-C	PEM	USACE
Lake	W-466-D	PEM	IDEM; Isolated wetland, Class I
Lake	W-466-E	PFO/PEM	USACE
Lake	W-467-C	PFO	USACE
Lake	W-467-A	PEM	USACE
Lake	W-467r-B	PEM	USACE
Lake	W-467r-A	PSS	USACE
Lake	W-467-F	PFO/PEM	USACE
Lake	W-467-E	PEM	USACE
Lake	W-467-B	PFO/PEM	USACE
Lake	W-467-D	PFO/PEM	USACE
Lake	W-467r-C	PEM	USACE
Lake	W-468r-A	PEM	USACE
Lake	W-469-D	PEM/PSS	USACE
Lake	W-469-C	PEM/PSS	USACE
Lake	W-469-E	PFO	USACE
Lake	W-469-A	PFO/PSS	USACE
Lake	W-469-B	PFO/PEM	USACE
Lake	P-470-A	PUGX	USACE
Lake	W-470-A	PFO/PSS	IDEM; Isolated wetland, Class I
Lake	W-470-B	PEM/PSS	USACE
LaPorte	W-500-A	PEM	USACE
LaPorte	W-501-A	PEM	USACE
LaPorte	W-501-B	PFO	USACE
LaPorte	W-501-C	PEM	USACE
LaPorte	W-501-D	PEM	USACE
LaPorte	W-502-A	PFO	USACE
LaPorte	W-503-A	PFO	USACE
LaPorte	W-503-B	PFO	USACE
LaPorte	W-503-C	PFO	USACE
LaPorte	W-503-D	PEM	USACE
LaPorte	W-503-E	PEM	IDEM; Isolated wetland, Class I
LaPorte	W-504-A	PFO	USACE
LaPorte	W-504-B	PEM	IDEM; Isolated wetland, Class I

Lake County (Griffith Segment)

Cardno JFNew identified 26 wetlands within the Griffith Segment in Lake County, in which 12 were emergent wetlands, 11 were forested wetlands, one was a scrub-shrub wetland, and one was a pond with wetland fringe (Table 1). Representative descriptions are listed below.

Emergent wetlands within the survey corridor in Lake County are depressional and generally associated with a stream, depressional areas within open fields, or within agricultural fields. Dominant vegetation occurring within these wetlands include prairie ironweed (*Vernonia fasciculata*), giant golden-rod (*Solidago gigantea*), creeping spikerush (*Eleocharis palustris*), reed canary grass (*Phalaris arundinacea*), northern swamp buttercup (*Ranunculus septentrionalis*), marsh seedbox (*Ludwigia palustris*), broad-leaf cattail (*Typha latifolia*), green bulrush (*Scirpus atrovirens*), lakebank sedge (*Carex lacustris*), sandbar willow (*Salix exigua*), silky dogwood (*Cornus amomum*), slender rush (*Juncus tenuis*).

Forested wetlands – This plant community is dominated by silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), elderberry (*Sambucus candensis*), glossy buckthorn (*Rhamnus frangula*), red-osier dogwood (*Cornus stolonifera*), box elder (*Acer negundo*), reed canary grass, jewelweed (*Impatiens capensis*), Virginia creeper (*Parthenocissus quinquefolia*), garlic mustard (*Alliaria petiolata*), clasping-leaf dogbane (*Apocynum cannabinum*), giant golden-rod, white avens (*Geum canadense*), green ash (*Fraxinus pennsylvanica*), black willow (*Salix nigra*), pin oak (*Quercus palustris*), meadow willow (*Salix petiolaris*), field horsetail (*Equisetum arvense*),

Scrub-shrub wetland – This plant community is dominated by sandbar willow, black walnut (*Juglans nigra*), American elm (*Ulmus americana*), cottonwood, silver maple, elderberry, glossy buckthorn, and reed canary grass.

Unconsolidated Bottom – A representative plant community for this habitat includes cottonwood, reed canary grass, jewelweed, and silver maple.

LaPorte County (LaPorte Segment)
Cardno JFNew identified 13 wetlands within the LaPorte Segment in LaPorte County, in which 7 were emergent wetlands and 6 were forested wetlands. Representative descriptions are listed below.

Emergent wetlands – green ash, hop sedge (*Carex lupulina*), giant golden-rod, sensitive fern (*Onoclea sensibilis*), blunt spikerush (*Eleocharis obtusa*), uptight sedge (*Carex stricta*), reed canary grass, fox sedge (*Carex vulpinoidea*), cottonwood, broad-leaf cattail, wool grass (*Scirpus cyperinus*), and lakebank sedge, lady's thumb (*Polygonum persicaria*), curly dock (*Rumex crispus*), and soybean (*Glycine max*).

Forested wetlands – black cherry (*Prunus serotina*), sassafras (*Sassafras albidum*), sugar maple (*Acer saccharum*), tartarian honeysuckle (*Lonicera tartarica*), multiflora rose (*Rosa multiflora*), Virginia creeper, and Pennsylvania smartweed (*Polygonum pennsylvanicum*), meadow willow, Allegheny blackberry (*Rubus allegheniensis*), tall golden-rod (*Solidago altissima*), lakebank sedge, shagbark hickory (*Carya ovata*), northern spicebush (*Lindera benzoin*), pin oak, cottonwood, fox sedge, silver maple, jewelweed, poison ivy (*Toxicodendron radicans*), American elm, calico aster (*Aster lateriflorus*), garlic mustard, red maple (*Acer rubrum*), swamp jack-in-the-pulpit (*Arisaema triphyllum*), and Canada moonseed (*Menispermum canadense*).

3.4 Stream Investigation Results

A total of nine (9) stream sections were identified within the designated study areas during the site reconnaissance. A majority of the streams identified were narrow perennial (40%) or

intermittent (40%) corridors. The table below identifies all the streams found within the project corridor in Indiana.

Table 2. Stream data for the Indiana segments.

COUNTY	FEATURE ID	Stream (S)/ Wetland (W)	WATER DEPTH (FEET)	OHWM DEPTH (FEET)	BANK FULL DEPTH (FEET)	BANK FULL WIDTH (FEET)	OHWM WIDTH (FEET)	FLOW (E,I,P)
Griffith	s-467-a	s	0.08	0.25	2	10	4	I
Griffith	s-467r-b	s/w	1	1.3	5	18	2	P
Griffith	s-468r-a	s/w	0.5	1	5	8	3	I
Griffith	s-468r-b	s/w	1	1.3	20	20	12	P
Griffith	s-470-a	s	2.5	3.2	4.5	15	10	I
LaPorte	s-500-b	s/w	0.41	1	1	3	3	E
LaPorte	s-500-a	s	0.25	0.5	6	25	2	P
LaPorte	s-502-a	s/w	0.16	0.5	0.5	2	2	E
LaPorte	s-504-a	s/w	0.16	1	2.5	1.5	1.5	P

4.0 SUMMARY AND CONCLUSIONS

Cardno JFNew completed the field investigation of the Line 6B 2012 Maintenance and Rehabilitation Project in Indiana on June 17, 2011. A total of thirty-nine (39) wetland areas and nine (9) streams were identified to be within the survey corridor.

This report identifies the jurisdictional status of the project based on Cardno JFNew's best professional understanding and interpretation of guidance documents and regulations. The final jurisdictional determination status of the project area is the authority of the Chicago District USACE. We strongly recommend that our conclusion be verified by the USACE prior to site planning.

5.0 REFERENCES CITED

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Figures

0 3 6 Miles

N W E S

merjent

ENBRIDGE

Figure 1
General Location Map
Line 6B 2012 Maintenance and Rehabilitation Program
Enbridge Energy, Limited Partnership

Proposed Route

Source: Z:\Clients\E_H\Enbridge\Line_6B\ArcGIS\2012\01\General_Location_Map\General_Location_Map_IN.mxd

Date: (1/10/2012)

APPENDIX A

USACE Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merient Line 6B Griffith City/County: Lake Sampling Date: 6-14-11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: w-466r-a DP1

Investigator(s): B Ewoldt, R Roos Section, Township, Range: T35N, R9W, Sec. 5

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mm - Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____
Hydric Soil Present?	Yes X	No _____
Wetland Hydrology Present?	Yes X	No _____

Is the Sampled Area within a Wetland? Yes X No _____

Remarks:

Photo 1, NW

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ø			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Ø			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5 ft)			
1. Potentilla simplex	5		FACU
2. Vernonia fasciculata	15	Y	FACW
3. Sassafras albidum	10		FACU
4. Solidago gigantea	15	Y	FACW
5. Fragaria virginiana	3		FAC
6. Apocynum cannabinum	7		FAC
7. Rumex crispus	5		FAC
8. Eleocharis palustris	20	Y	OBL
9.			
10.			
	80 = Total Cover		

Woody Vine Stratum (Plot size: 30 ft)			
1. Ø			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

FQA: POPDEL, TRAOHI, RHAFRA, PHAARU, ACHMIL, ERIANU, ROSMUL, OXASTR, AGRPAR, PRUSER, PARQUI, VITRIP, QUERUB, LON sp., AMBART, ZTZAUR, ERYYUC, CORTRI, ALLPET (10%)

SOIL

Sampling Point: w-466r-a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	N 2/0	100					silt loam	
10-20	10YR 2/1	100					silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1"

Water Table Present? Yes X No ___ Depth (inches): 10"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 3"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

6-14-11

Project/Site: Merjent Line 68 Griffith City/County: Lake Sampling Date: _____

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: w-466r-a

Investigator(s): B Ewoldt, R Roos Section, Township, Range: T35N, R9W, Sec3upland

Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): convex

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: WK- Watseka loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Photo 2- SW

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Taraxacum officinale	5	N	FACU
2. Trifolium repens	35	Y	FACU+
3. Oxalis stricta	10	N	UPL
4. Poa pratensis	50	Y	FAC-
5. Reed canary grass	10	N	FACW
6.			
7.			
8.			
9.			
10.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	10	x 2 = 20
FAC species	50	x 3 = 150
FACU species	5	x 4 = 20
UPL species	10	x 5 = 50
Column Totals:	75 (A)	240 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)
mowed lawn

SOIL

Sampling Point: w-466r-a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14"	10YR 2/2	100					Sandy silt loam	
14-18"	10YR 3/4	95	7.5YR 4/6	5			Sandy silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

upland
wetland
DP3

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merjent-Griffith Line 6B City/County: Lake Sampling Date: 6-14-11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: W-466-b

Investigator(s): B.Ewoldt R.Ross Section, Township, Range: T35N, R9W, Sec. 2

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: MmMaumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	35	Y	FACt
2. Quercus palustris	10	N	FACW
3. Acer Saccharinum	10	N	FACW
4.			
5.			
	55 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rhamnus frangula	15	N	FACt
2. Cornus stolonifera	65	Y	FACW
3. Sambucus canadensis	20	Y	FACW-
4. Acer Negundo	20	Y	FAC-
5.			
	120 = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	20	Y	FACW
2. ~~Parthenocissus quinquefolia~~	~~20~~		
3. Alaria petiolata	5	N	FAC
4. Impatiens capensis	25	Y	FACW
5. Onoclea sensibilis	15	N	FACW
6. Solidago gigantea	10	N	FACW
7. Galium (sticky)	3	N	
8.			
9.			
10.			
	78 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Vitis riparia	5	N	FACW-
2. parthenosissus quinque folia	20	Y	FAC-
	25 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

OSMCIN, PHRAUS, MORALB, AGRPAR, CIRARV, SALNIG, RUMCRI, LONICERA SP.

SOIL

Sampling Point: W-4606-b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 2/1							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 1"

Water Table Present? Yes ✓ No _____ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): Surface

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

upland
DP 4

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merjent-Griffith Line 6b City/County: Lake Sampling Date: 6-14-11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: W-466-b

Investigator(s): B Ewoldt, K Ross Section, Township, Range: T35N, R9W, Sec. 2

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): Convex

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: MM - Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5ft)			
1. Festuca arundinacea	90	Y	FACU
2. Phalaris arundinacea	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WL-4606-b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	100	—				sisalo	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

wetland 5

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merient - Griffith Line 66 City/County: Lake Sampling Date: W-466-C

Applicant/Owner: Enbridge Energy limited partnership State: IN Sampling Point: 6-14-11

Investigator(s): B. Ewoldt, R. Roos Section, Township, Range: T35N, R9W, Sec. 2

Landform (hillslope, terrace, etc.): Roadside ditch/swale Local relief (concave, convex, none): Concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mm - Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	40	Y	FACW
2. Ranunculus septentrionalis	20	Y	FACW+
3. Submerged plant (wide leaf)	40	Y	
4. Ludwigia palustris amer.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-466-C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10"	10 YR 2/1	100					Silty loam	
10" - 20"	10 YR 3/1	80	2.5 Y/R 4/8	20			Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 7"

Water Table Present? Yes ✓ No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

upland 6

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merrent - Griffith Line 6b City/County: Lake Sampling Date: 6-14-2011

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: W-466-C

Investigator(s): B. Ewoldt, R. Roos Section, Township, Range: T35N, R9W, Sec. 2

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): convex

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mon-Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Festuca arundinacea	50	Y	FACU+
2. Poa Pratensis	50	Y	FAC-
3. Trifolium pratense	20	N	FACU+
4. Plantago	20	N	
5.			
6.			
7.			
8.			
9.			
10.			
	120 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	50	x 3 = 150
FACU species	50	x 4 = 200
UPL species	0	x 5 = 0
Column Totals:	100 (A)	350 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-4166-C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 3/2	100	—				Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Meijer - Griffith Line 6B City/County: Lake Sampling Date: 6/14/11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: W-166-d

Investigator(s): B. Ewoldt, R. Roos Section, Township, Range: T35N, R9W, Sec. 2

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mm-Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Tile drain blow out

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	50	Y	FACW
2. Ranunculus septentrionalis	3	N	FACW+
3. Eleocharis palustris	40	Y	Obl
4. Rumex crispus	5	N	FAC+
5.			
6.			
7.			
8.			
9.			
10.			
	98 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-466-d

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR3/1	100	—				Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Concrete

Depth (inches): 4"

Hydric Soil Present? Yes ___ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2"

Water Table Present? Yes ✓ No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Mergent - Griffith Line 6B City/County: Lake Sampling Date: 6/14/2011

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: ~~W-467~~ W-4b-e

Investigator(s): B. Ewoldt, R. Roos Section, Township, Range: T35N, R9W, Sec 2

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mm-Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus bicolor	5	N	FACW+
2. Acer saccharinum	5	N	FACW
3.			
4.			
5.			
	10 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sambucus canadensis	5	N	FACW-
2. Rhamnus frangula	35	Y	FAC+
3.			
4.			
5.			
	40 = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Osmunda cinnamomea	10	N	FACW
2. Phalaris arundinacea	80	Y	FACW
3. morning glory	1	—	—
4. Rosa multiflora	5	N	FACU
5. Typha x glauca	5	N	OBL
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8"	N2/0	100					Silt sand loam	
8-12"	10YR 3/1	30	10YR 3/6	10			Sandy silt loam	
8-12"	10YR 2/1	60					Sandy silt loam	
12-18"	10YR 2/1	100					Sandy silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 2"

Water Table Present? Yes ✓ No _____ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): Surface

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

forested wetland

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Morgan - Griffith Line 6B City/County: Lake Sampling Date: 6-14-11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: ~~W-467 GW~~ W-466-e

Investigator(s): B. Gualt, R. Ross Section, Township, Range: T35N R9W Sec. 2

Landform (hillslope, terrace, etc.): ~~Upland flat~~ Woods Depression Local relief (concave, convex, none): ~~Convex~~ Concave

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Mm-Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	25	Y	FACW
2. Populus deltoides	20	Y	FACW
3.			
4.			
5.			
	45 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Sambucus canadensis	20	Y	FACW-
2. Rhamnus frangula (buckthorn)	30	Y	FACW
3.			
4.			
5.			
	60 = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. phalaris arundinacea	15	N	FACW
2. Rhamnus frangula	15	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Vitis riparia	15	N	FACW-
2. Parthenocissus quinquefolia	15	N	FAC-
	30 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WI-467-a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	N 2/0	100					silo	
8-10	10YR 3/2	100					silo	
10-18	2.5Y 4/2	~~100~~ 95	7.5YR 5/8	5	C	M	silo	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1"

Water Table Present? Yes ✓ No ___ Depth (inches): 5"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

upland

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Merjent - Griffith Line 6B City/County: Lake Sampling Date: 6-14-11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: ~~W-467~~ W-466-C

Investigator(s): B Ewoldt, K Roos Section, Township, Range: T35N R9W Sec 2

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): Convex

Slope (%): ____ Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	5	N	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rhamnus frangula	10	N	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Bracken Pteridium aquilinum	5	N	FACU
2. Rubus occidentalis	2	N	UPL
3. unknown	25	—	
4. Rhamnus frangula	45	Y	FACW
5. Rosa multiflora	25	Y	FACU
6. Phalaris arundinacea	10	N	FACW
7. Agrimonia parviflora	15	N	FACW
8. Potentilla simplex	5	N	FACU-
9.			
10.			
	107 = Total Cover		

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	2	N	FAC-
2.			
	2 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	70 (A)		235 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-467-a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					Sisalo	
6-18	10YR 3/2	80					Sisalo	
6-18	10YR 4/3	15	10YR 3/6	5			Sisalo	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRIFFITH SEG City/County: Merrillville / LAKE Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: W-467-C

Investigator(s): J. von Walde, W. Bird Section, Township, Range: Section 2, T35N, R9W DP1

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CONCAVE

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes	No	
Wetland Hydrology Present?	Yes	No	

Remarks: NO ALLIARIA PETIOLATA IN THIS WETLAND

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	25	YES	FAC
2. Acer saccharinum	10	YES	FACW
3.			
4.			
5.			
	35 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	30	YES	FACW
2. Salix exigua	40	YES	OBL
3. Rhus typhina	10	NO	FACU
4.			
5.			
	80 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	75	YES	FACW
2. Lythrum salicaria	10	NO	FACW
3. Carex stricta	10	NO	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		

Woody Vine Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	10	YES	FACU
2.			
	10 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

5% bare ground FQA- Salix petiolaris, Rhamnus frangula, Cornus stolonifera, Phragmites australis, Salix nigra, Rumex crispus, Spiderwort, Cirsium arvense

SOIL

Sampling Point: w-467-c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					mucky sand	
5-18	10YR 3/1	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 2"

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRAIN SEG City/County: MERRILLVILLE/LAKE Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: W-467-C

Investigator(s): J. Vanwohlde, W. Bird Section, Township, Range: Section 2, T35N, R9W DP2

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): None

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Maumee loamy fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Trifolium repens	40	YES	FACW
2. Plantago lanceolata	10	No	FAC
3. Poa pratense	20	YES	FAC
4. Taraxacum officinale	30	YES	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15')			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	10	x 3 = 30
FACU species	70	x 4 = 280
UPL species	0	x 5 = 0
Column Totals:	80 (A)	310 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: w-467-c

DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9in	10YR 2/1	98	10YR 4/4	2			Silt Loam	
9-18in	10YR 6/2	95	10YR 5/6	5			Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): None

Water Table Present? Yes X No ___ Depth (inches): 12in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 2in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRIFFITH SEG. City/County: Merrillville / LAKE Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: W-467-a DP1

Investigator(s): J. von Wahlde, W. Bird Section, Township, Range: Section 2, T35N, R9W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CONCAVE

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Maumee loamy fine sand NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No
Hydric Soil Present?	Yes X	No
Wetland Hydrology Present?	Yes X	No

Is the Sampled Area within a Wetland? Yes X No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Typha latifolia	60	YES	OBL
2. Carex stricta	10	NO	OBL
3. Cornus stolonifera	10	NO	FACW
4. Phalaris arundinacea	20	NO	FACW
5. Daucus carota	5	NO	FACU
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		

Woody Vine Stratum (Plot size: 15')			
1. NONE			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

50% or Less

50% - 20%

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

ELEOCHARIS OBTUSA, RANUNCULUS BULBOSA

SOIL

Sampling Point: W-467-a DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10in	10YR 3/1	95	10YR 4/4	5			Sandy loam	
10-18in	10YR 5/2	98	10YR 5/6				Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0"

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRIFFITH SEG. City/County: Merrillville/LAKE Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: W-467-a DP2

Investigator(s): J. vanWalwe / W. Bird Section, Township, Range: Section 2, T35N, R9W

Landform (hillslope, terrace, etc.): FIELD Local relief (concave, convex, none): NONE

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Maumee loamy fine sand NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are 'Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: ____)			
1. Bromus inermus	100	YES	FACU
2. Taraxacum officinale	20	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	120 = Total Cover		

Woody Vine Stratum (Plot size: 15')			
1. NONE			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals:	120 (A)		480 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-467-a DP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7in	10YR 3/1						Sandy Loam	
7-18in	10YR 6/1	98	10YR 5/6	2			Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): None

Water Table Present? Yes X No ___ Depth (inches): 12in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 68, 2012 GRIFFITH SEG. City/County: Merrillville/Lake Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: w-467-f DP3

Investigator(s): J. von Wahlde / W. Bird Section, Township, Range: Section 1, T.35N, R9W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CONCAVE

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Watseka loamy fine sand NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: FILL ACTIVITIES SURROUND THIS WETLAND

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	50	YES	FAC
2. Acer saccharinum	50	YES	FACW
3. Acer negundo	20	NO	FACW
4.			
5.			
	120 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Rhamnus frangula	60	YES	FAC
2. Acer negundo	20	YES	FACW
3.			
4.			
5.			
	80 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	25	YES	FAC
2. Apocynum cannabinum	25	YES	FAC
3. Solidago gigantea	25	YES	FACW
4. Geum canadense	25	YES	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15')			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

FOA: Toxicodendron radicans, Carex stricta, Polygonum persicaria, Onoclea sensibilis, Impatiens capensis

SOIL

Sampling Point: w-467-f

DP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12 in	10YR 3/2	98	10YR 3/6	2			Sand	
12-18 in	10YR 2/1	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 3 in

Water Table Present? Yes X No ___ Depth (inches): 8 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6 in

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRIFFITH SEG. City/County: MERRILLVILLE/LAKE Sampling Date: 6/16/11

Applicant/Owner: ENBRIDGE ENERGY LIMITED PARTNERSHIP State: IN Sampling Point: w-467-f DP 4

Investigator(s): J. VanWalhide/M. Bird Section, Township, Range: Section 1, T35N, R9W

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): None

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Plainfield fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Solidago altissima	50	YES	FACU
2. Lolium perenne	30	YES	FACU
3. Apocynum cannabinum	10	NO	FAC
4. Alliaria petiolata	15	NO	FAC
5. Physalis virginiana	5	NO	UPL
6.			
7.			
8.			
9.			
10.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 15')			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	25	x 3 = 75
FACU species	80	x 4 = 320
UPL species	5	x 5 = 25
Column Totals:	110 (A)	420 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: w-467-f DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16in	10YR 3/2						Sandy Loam	
16-18in	10YR 2/2						Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): None

Water Table Present? Yes _____ No X Depth (inches): >20in

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >20in

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: LINE 6B, 2012 GRIFFITH SEG City/County: Merrillville/Lake Sampling Date: 6/16/11

Applicant/Owner: Enbridge Energy Limited Partnership State: IN Sampling Point: w-467-e

Investigator(s): J. von Wahlde, W. Bird Section, Township, Range: Section 2, T35N, R9W DP5

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-1 Lat: Long: Datum:

Soil Map Unit Name: Plainfield fine sand NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation NO, Soil YES, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: WETLAND ADJACENT TO FARMFIELD – DISTURBED W/ FILL ENCROACHMENT ON NORTH SIDE

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix exigua	30	YES	OBL
2.			
3.			
4.			
5.			
	30 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex stricta	15	NO	OBL
2. Rumex crispus	10	NO	FACW
3. Scirpus atrovirens	50	YES	OBL
4. Eupatorium perfoliatum	10	NO	FACW
5. Carex lacustris	30	YES	OBL
6. Typha lat. folia	20	NO	OBL
7.			
8.			
9.			
10.			
	115 = Total Cover		

Woody Vine Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. NONE			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Eleocharis obtusa, Phalaris arundinacea, Lycopus americanus, Acorus calamus, Equisetum arvense, Trifolium repens, Xanthium strumarium, Bidens connata