WETLAND DETERMINATION DATA FORM
Great Plains Region

Project/Site:	L3R			Date:	09/13/14
Applicant:	Enbridge			County:	Pennington
Investigators:	RAJ/BEH/MRK	Subregion (MLRA or LRR):	MLRA 56	State:	MN
Soil Unit:	Igp	NWI Classification:			
Landform:	Depression	Local Relief:	CC	Sample Point:	**w-154n44w31-a3**
Slope (%):	0 - 2%	Latitude: 48.122108	Longitude: -96.363921	Datum:	

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

Are Vegetation ☐, Soil ☑, or Hydrology ☑ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Section:
Township:
Range: Dir:

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes
Is This Sampling Point Within A Wetland? **Yes**

Remarks: An exit wetland point in a gravelly basin within a gravel pit area. The soils are disturbed from gravel mining operations; the topsoil has been removed, and there are abundant spoil piles around the area. The hydrology has also been disturbed from gravel mining in the area. The community is a wet meadow dominated by variegated scouring rush, yellow-green sedge, few-flowered spike rush, and other calciphiles. All parameters of wetland conditions are met. Note: the wetland area ends at a road; there is no place to take an upland exit point.

HYDROLOGY

Wetland Hydrology Indicators (Check all that apply; Minimum of one primary or two secondary required)**:**

Primary:
- ☑ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☑ B4 - Algal Mat or Crust
- ☑ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B9 - Water-Stained Leaves
- ☐ B11 - Salt Crust
- ☐ B13 - Aquatic Fauna
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C2 - Dry Season Water Table
- ☑ C3 - Oxidized Rhizospheres on Living Roots (not tille
- ☐ C4 - Presence of Reduced Iron
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B10 - Drainage Patterns
- ☐ C3 - Oxidized Rhizospheres on Living Roots (tilled)
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☑ D2 - Geomorphic Position
- ☑ D5 - FAC-Neutral Test
- ☐ D7 - Frost-Heaved Hummocks (LRR F)

Field Observations:

Surface Water Present?	Yes	☑	Depth: 1	(in.)
Water Table Present?	Yes	☑	Depth: 0	(in.)
Saturation Present?	Yes	☑	Depth: 0	(in.)

Wetland Hydrology Present? Y

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

Remarks: The wetland area has a saturated surface throughout with surface water in microdepressions. Living roots have distinctly oxidized rhizospheres. There is precipitated iron on the soil surface and an iron sheen on the surface water. The soil surface is covered in marl and algae with some calciphilic mosses. Wetland hydrology is present; the area is heavily influenced by groundwater inputs.

SOILS

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

(Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Depth (In.)	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture	Remarks
0-1	Hue_10YR	4/2	100						S	
1-14	Hue_2.5Y	6/1	90	Hue_7.5YR	3/4	5	C	M	FS	with irregular bands of coarse sand and with pebbles and gravel
				Hue_10YR	5/8	5	C	M	FS	concentrations in the matrix and around living plant roots

NRCS Hydric Soil Field Indicators (check here if indicators are not present)**:** ☐

- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers (LRR F)
- ☐ A9 - 1 cm Muck (LRR FGH)
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Mucky Mineral
- ☐ S2 - 2.5 cm Mucky Peat or Peat (LRR G, H)
- ☐ S3 - 5 cm Mucky Peat or Peat (LRR F)
- ☐ S4 - Sandy Gleyed Matrix
- ☑ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Mucky Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions
- ☐ F16 - High Plains Depressions (MLRA 72, 73 of LRR H)

Indicators for Problematic Soils[1]
- ☐ A9 - 1 cm Muck (LRR I, J)
- ☐ A16 - Coast Prairie Redox (LRR F, G, H)
- ☐ S7 - Dark Surface (LRR G)
- ☐ F16 - High Plains Depressions (LRR H, outside MLRA 72, 73)
- ☐ F18 - Reduced Vertic
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer Type: Depth:

Hydric Soil Present? Y

Remarks: The soil is a mix of sand and gravel. There are redox concentrations throughout most of the profile. The soils are disturbed from mining operations; the topsoil was removed some time ago. Soils could not be sampled deeper than 14 inches due to the water filling the pit extremely rapidly.

WETLAND DETERMINATION DATA FORM
Great Plains Region

Project/Site: L3R | Sample Point: **w-154n44w31-a3**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft. radius)

	Species Name	% Cover	Dominant	Ind.Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft. radius)

1.	*Salix bebbiana*	5	Y	FACW
2.	*Salix interior*	3	Y	FACW
3.	*Populus balsamifera*	3	Y	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
	Total Cover =	11		

Herb Stratum (Plot size: 5 ft. radius)

1.	*Equisetum variegatum*	60	Y	FACW
2.	*Eleocharis quinqueflora*	20	Y	OBL
3.	*Carex viridula*	15	N	OBL
4.	*Oligoneuron riddellii*	5	N	OBL
5.	*Solidago gigantea*	5	N	FAC
6	*Equisetum laevigatum*	5	N	FAC
7.	*Juncus alpinoarticulatus*	3	N	OBL
8.	*Juncus nodosus*	3	N	OBL
9.	*Symphyotrichum lanceolatum*	3	N	FACW
10.	*Scirpus pallidus*	3	N	OBL
11.	*Triglochin palustris*	1	N	OBL
12.	*Juncus longistylis*	1	N	FACW
13.				
14.				
15.				
	Total Cover =	124		

Woody Vine Stratum (Plot size: 30 ft. radius)

1.				
2.				
3.				
5.				
4.				
	Total Cover =	0		

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: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	50	x 1 =	50
FACW spp.	75	x 2 =	150
FAC spp.	10	x 3 =	30
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	135 (A)		230 (B)

Prevalence Index = B/A = ***1.704***

Hydrophytic Vegetation Indicators:

	Rapid Test for Hydrophytic Vegetation
X	Dominance Test is > 50%
X	Prevalence Index is ≤ 3.0 *
	Morphological Adaptations (Explain) *
	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH, regardless of height.

Herb - All herbaceous (non-woody) plants, regardless of size.

Woody Vines - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: A wet meadow community dominated by variegated scouring-rush and few-flowered spikerush with other calciphiles present. Hydrophytic vegetation is present.

Additional Remarks: