Project/Site:	L3R				Date:	09/26/14
Applicant:	Enbridge				County:	Pennington
Investigators:	BEH/NTT		Subregion (MLRA or LRR):	MLRA 56	State:	MN
Soil Unit:	I48A		NWI Classification:			
Landform:	Depression		Local Relief: CC		Sample Point:	w-154n44w19-c2
Slope (%):	0 - 2%	Latitude: 48.14912226	Longitude: -96.35098426	Datum:		

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

Are Vegetation ☐ Soil ☐, or Hydrology ☐significantly disturbed? | Township:
Are Vegetation ☐ Soil ☐, or Hydrology ☐naturally problematic?   Are normal circumstances present? ☑ Yes ☐No | Range: Dir:

SUMMARY OF FINDINGS

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

Remarks: Sedge meadow dominated by arctic rush and woolly sedge with a mixture of forbs and grasses. Site is located in a pasture; the ground is hummocked from animal grazing in wet spots.

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
- ☐ 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: _____	(in.)	
Water Table Present?	Yes	☐	Depth: _____	(in.)	**Wetland Hydrology Present? Y**
Saturation Present?	Yes	☐	Depth: _____	(in.)	

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

Remarks: Site is in a depression feature that would collect water and vegetation passes the FAC-neutral test.

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)	%	Mottles Color (Moist)	%	Type	Location	Texture	Remarks
0-4	Hue_10YR 2/1	100					MMI	
4-5	Hue_10YR 2/1	70					MMI	
4-5	Gley1 4/5GY	30					SCL	
5-12	Hue_2.5Y 6/3	90	Hue_10YR 7/8	10	C	M	SCL	abundant pebbles and gravel
12-21	Hue_2.5Y 6/3	25	Hue_10YR 6/8	75	C	M	SCL	abundant pebbles and gravel

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: Soil surface is black loamy mucky mineral with the bottom inch mixed with gleyed sandy clay loam. Bottom two layers are light yellow-brown sandy clay loam with increasing redox concentrations down the profile; both layers contain a high volume of gravel and pebble fragments. Profile meets hydric soil indicator F1-Loamy Mucky Mineral

WETLAND DETERMINATION DATA FORM
Great Plains Region

Project/Site:	L3R	Sample Point:	w-154n44w19-c2

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)

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

Herb Stratum (Plot size: 5 ft. radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	Juncus arcticus	35	Y	FACW
2.	Carex pellita	25	Y	OBL
3.	Argentina anserina	20	Y	FACW
4.	Spartina pectinata	10	N	FACW
5.	Phalaris arundinacea	10	N	FACW
6	Lysimachia ciliata	5	N	FACW
7.	Symphyotrichum lanceolatum	5	N	FACW
8.	Carex granularis	5	N	OBL
9.	Mentha arvensis	5	N	FACW
10.	Eleocharis palustris	5	N	OBL
11.	Juncus dudleyi	5	N	FACW
12.				
13.				
14.				
15.				
	Total Cover =	130		

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

	Species Name	% Cover	Dominant	Ind.Status
1.				
2.				
3.				
5.				
4.				
	Total Cover =	0		

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	40	x 1 =	40
FACW spp.	95	x 2 =	190
FAC spp.	0	x 3 =	0
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: Meadow dominated by arctic rush, silverweed cinquefoil, and woolly sedge. Scattered meadow willow is also present.

Additional Remarks: