WETLAND DETERMINATION DATA FORM Great Plains Region

Project/Site: Applicant:		L3R Enbridge									Date: County:	09/18/14 Marshall
Investigators	¥				Subregion (MLRA or LRR): MLRA 56							MN
Soil Unit:	Soil Unit: <u>165A</u>				NWI Classification: PEMCd							
Landform:					Local Relief: CC						Sample Point	: w-155n46w2-f2
Slope (%):	0 - 2%		_atitude: 48.			Longitude:			Datum:		Quettiens	
	· · ·	nditions on the site			-	I ? (If no, exp	1			\Box No	Section:	
Are Vegetation		□, or Hydrology □, or Hydrology	•				AIE	e normal circun ☑ Yes		esent?	Township: Range:	Dir:
SUMMARY O								2 103			Range.	
Hydrophytic '			Yes	6					Hydric Soi	Is Present?	Yes	
· · · · · ·					Yes				Is This Sampling Point Within A Wetland? Yes			
Remarks:	A shallow m	arsh dominated by	hybrid cat	tail. All	l parame	ters of we	etland co	nditions are pre	esent.			
HYDROLOG	Y											
Wetland Hy	drology Indi	cators (Check all t	hat apply;	Minimu	im of one	e primary	or two se	econdary requi	red):			
Primary		Matar			_		Omiset			Secondary:		
 A1 - Surface Water A2 - High Water Table 						B11 - Salt (B13 - Aqua					B6 - Surface S B8 - Sparselv	Vegetated Concave Surface
	A3 - Saturation	n				C1 - Hydro	gen Sulfid	le Odor			B10 - Drainag	e Patterns
	B1 - Water Ma					C2 - Dry So			Roota (not till			Rhizospheres on Living Roots (tilled)
	B2 - Sediment B3 - Drift Dep	•				C3 - Oxidiz C4 - Prese		spheres on Living duced Iron			C8 - Crayfish C9 - Saturatio	n Visible on Aerial Imagery
	B4 - Algal Mat	or Crust				C7 - Thin N					D2 - Geomorp	phic Position
	B5 - Iron Depo					Other (Exp	olain)				D5 - FAC-Neu	
	B7 - Inundatio B9 - Water-St	n Visible on Aerial Ima ained Leaves	gery								טו - Frost-Hea	aved Hummocks (LRR F)
_	20 110101 01											
Field Obser	vations:											
Surface Wat	er Present?	Yes 🛛	De	oth:		(in.)			Wotland H	łydrology	Prosont?	γ
Water Table		Yes 🛛	•	oth:		(in.)			Wetland I	iyurology	Fiesent:	
Saturation P	resent?	Yes 🗆	De	oth:		(in.)						
Describe Rec	orded Data (s	tream gauge, monito	oring well, a	aerial ph	notos, pre	vious insp	pections).	if available.				
				-	-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Remarks:	Indicators of	f wetland hydrology	are prese	nt.		•						
	Indicators of	f wetland hydrology	are prese	nt.			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
SOILS			·		the indic				dicators)			
SOILS Profile Descri	ption (Descri	f wetland hydrology be to the depth nee etion, RM=Reduced Mat	ded to doo	cument		cator or co	onfirm the	e absence of in				
SOILS Profile Descri	ption (Descri	be to the depth nee etion, RM=Reduced Mat	ded to doo	cument		cator or co	onfirm the tion: PL=P	e absence of in ore Lining, M=Matr				
SOILS Profile Descri (Type: C=Concer	ption (Descri	be to the depth nee etion, RM=Reduced Mat Matrix	ded to doo rix, CS=Cove	cument ered/Coat	ted Sand G	cator or co Brains; Loca	onfirm the tion: PL=Pe Mottle	e absence of in ore Lining, M=Matr es	ix)			
SOILS Profile Descri (Type: C=Concer Depth (In.)	iption (Descri	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist)	eded to doo rix, CS=Cove	cument ered/Coat		cator or co Brains; Loca	onfirm the tion: PL=P	e absence of in ore Lining, M=Matr		Texture		Remarks
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10	iption (Descri Intration, D=Deple Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1	eded to doo rix, CS=Cove	cument ered/Coate	ted Sand G	cator or co Grains; Loca Moist)	onfirm the tion: PL=P Mottle	e absence of in ore Lining, M=Matr es Type	Location	MMI	the mineral comp	Remarks
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18	iption (Descri Intration, D=Deple Hue_10YR Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2	eded to doo rix, CS=Cove	cument ered/Coate 6 00 5 Hue	Color (N e_10YR	cator or co Grains; Loca Moist) 5/8	onfirm the tion: PL=P Mottle %	e absence of in ore Lining, M=Matr es Type C	Location	MMI FS		
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10	iption (Descri Intration, D=Deple Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1	eded to doo rix, CS=Cove	cument ered/Coate 6 00 5 Hue	ted Sand G	cator or co Grains; Loca Moist) 5/8	onfirm the tion: PL=P Mottle	e absence of in ore Lining, M=Matr es Type	Location	MMI	the mineral comp CaCO3-rich	
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18	iption (Descri Intration, D=Deple Hue_10YR Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2	eded to doo rix, CS=Cove	cument ered/Coate 6 00 5 Hue	Color (N e_10YR	cator or co Grains; Loca Moist) 5/8	onfirm the tion: PL=P Mottle %	e absence of in ore Lining, M=Matr es Type C	Location	MMI FS		
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SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18	iption (Descri Intration, D=Deple Hue_10YR Hue_10YR Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1	eded to doo rix, CS=Cove	cument ered/Coate 6 20 5 Hue 5 Hue	Color (N e_10YR e_7.5YR	Cator or co Drains; Loca Moist) 5/8 2.5/3	onfirm the tion: PL=P Mottle % 5 5	e absence of in ore Lining, M=Matr es Type C	Location	MMI FS		
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18	iption (Descri Intration, D=Deple Hue_10YR Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1	eded to doo rix, CS=Cove	cument ered/Coate 6 20 5 Hue 5 Hue	Color (N e_10YR e_7.5YR	Cator or co Drains; Loca Moist) 5/8 2.5/3	onfirm the tion: PL=P Mottle % 5 5	e absence of in ore Lining, M=Matr es Type C C	Location	MMI FS FS		ponent is a fine sandy loam
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1	eded to doo rix, CS=Cove	cument ered/Coato 6 5 Hue 5 Hue indicato	Color (N e_10YR e_7.5YR ors are n	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen	onfirm the tion: PL=P Mottle % 5 5	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS <u>Indicators 1</u> A9 - 1 cm M	CaCO3-rich for Problemati fuck (LRR I, J)	ponent is a fine sandy loam
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR ic Soil Field	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che	eded to doo rix, CS=Cove	cument ered/Coato 6 5 Hue 5 Hue 5 Hue indicato	Color (N e_10YR e_7.5YR ors are n Sandy Re Stripped	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen	onfirm the tion: PL=Pe Mottle % 5 5 5	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS <u>Indicators</u> A9 - 1 cm M A16 - Coast	CaCO3-rich for Problemati fuck (LRR I, J) t Prairie Redox	c Soils ¹ (LRR F, G, H)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Gric Soil Field A1- Histosol A2 - Histic Epi A3 - Black His	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che	eded to doo rix, CS=Cove	cument ered/Coato 6 00 5 Hue 5 Hue 5 Hue 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Color (N e_10YR e_7.5YR ors are n Sandy Re Stripped Loamy M	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen edox Matrix ucky Miner	onfirm the tion: PL=P Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS <u>Indicators f</u> A9 - 1 cm M A16 - Coast S7 - Dark S	CaCO3-rich for Problemati fuck (LRR I, J) t Prairie Redox urface (LRR G)	oonent is a fine sandy loam <u>c Soils¹</u> (LRR F, G, H)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR ic Soil Field A1- Histosol A2 - Histic Epi A3 - Black His A4 - Hydroger	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che	eded to doo rix, CS=Cove	cument ered/Coato 6 5 Hue 5 Hue 5 Hue 5 Hue 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Color (N e_10YR e_7.5YR e_7.5YR ors are n Sandy Re Stripped Loamy M Loamy G Depleted	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matrii Matrix	onfirm the tion: PL=Pe Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS <u>Indicators f</u> A9 - 1 cm M A16 - Coast S7 - Dark S	for Problemati fuck (LRR I, J) Prairie Redox urface (LRR G)	c Soils ¹ (LRR F, G, H)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Generation Hue_10YR HuE_10YR HuE_10YR HuE_10YR HUR HI HI HI HI HI HI HI HI HI HI HI HI HI	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che pedon tic n Sulfide Layers (LRR F) ck (LRR FGH)	eded to doo rix, CS=Cove	cument ered/Coato 6 00 5 Hue 5 Hue 5 Hue 6 5 Hue 6 5 Hue 7 5 Hue 7 5 Hue 7 5 Hue 7 7 8 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Color (N e_10YR e_7.5YR e_7.5YR ors are n Sandy Re Stripped Loamy M Loamy G Depleted Redox Da	Advist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matrix leyed Matrix ark Surface	onfirm the tion: PL=Pe Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS <u>Indicators f</u> A9 - 1 cm M A16 - Coast S7 - Dark S F16 - High F F18 - Reduc TF2 - Red F	for Problemati Muck (LRR I, J) t Prairie Redox urface (LRR G) Plains Depression ced Vertic Parent Material	c Soils ¹ (LRR F, G, H)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR A1- Histosol A2 - Histic Epi A3 - Black His A4 - Hydroger A5 - Stratified A9 - 1 cm Muc A11 - Depleter	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che ipedon tic n Sulfide Layers (LRR F) ck (LRR FGH) d Below Dark Surface	eded to doo rix, CS=Cove	Cument ered/Coato 6 0 5 Hue 5 Hue 5 Hue 1 5 Hue 5 5 Hue 5 5 Hue 5 5 5 5 5 5 5 5 5 5 5 5 5	Color (N e_10YR e_7.5YR b_7.5Y	cator or co Grains; Locar Moist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matria leyed Matria Matrix ark Surface Dark Surface	al x	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M	MMI FS FS	for Problemati for Problemati fuck (LRR I, J) t Prairie Redox urface (LRR G) Plains Depressi ced Vertic Parent Material y Shallow Dark S	c Soils ¹ (LRR F, G, H) ONS (LRR H, outside MLRA 72, 73)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Generation Hue_10YR HuE_10YR HuE_10YR HuE_10YR HUR HI HI HI HI HI HI HI HI HI HI HI HI HI	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che ipedon tic n Sulfide Layers (LRR F) ck (LRR FGH) d Below Dark Surface ark Surface	eded to doo rix, CS=Cove	cument ered/Coato 6 00 5 Hue 5 Hue 5 Hue 6	Color (N e_10YR e_7.5YR e_7.5YR cors are n Sandy Re Stripped Loamy G Depleted Redox Da Depleted Redox Da	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matrix ucky Minera leyed Matrix ark Surface Dark Surface epressions	onfirm the tion: PL=Pe Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M I	MMI FS FS	for Problemati Muck (LRR I, J) t Prairie Redox urface (LRR G) Plains Depression ced Vertic Parent Material	c Soils ¹ (LRR F, G, H) ONS (LRR H, outside MLRA 72, 73)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR A1- Histosol A2 - Histic Epi A3 - Black His A4 - Hydroger A5 - Stratified A9 - 1 cm Muc A11 - Depleter A12 - Thick Da S1 - Sandy Mu S2 - 2.5 cm M	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che ipedon tic n Sulfide Layers (LRR F) ck (LRR FGH) d Below Dark Surface ark Surface ucky Mineral ucky Peat or Peat (LR	eded to doo rix, CS=Cove	cument ered/Coato 6 00 5 Hue 5 Hue 5 Hue 6	Color (N e_10YR e_7.5YR e_7.5YR cors are n Sandy Re Stripped Loamy G Depleted Redox Da Depleted Redox Da	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matrix ucky Minera leyed Matrix ark Surface Dark Surface epressions	onfirm the tion: PL=Pe Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M I	MMI FS FS A9 - 1 cm M A16 - Coast S7 - Dark S F16 - High F F18 - Reduc TF2 - Red F TF12 - Very Other (Expla	CaCO3-rich CaCO3-rich for Problemati Auck (LRR I, J) t Prairie Redox urface (LRR G) Plains Depression ced Vertic Parent Material of Shallow Dark S ain in Remarks)	c Soils ¹ (LRR F, G, H) ONS (LRR H, outside MLRA 72, 73)
SOILS Profile Descri (Type: C=Concer Depth (In.) 0-10 10-18 10-18 10-18 NRCS Hydr	Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR Hue_10YR A1- Histosol A2 - Histic Epi A3 - Black His A4 - Hydroger A5 - Stratified A9 - 1 cm Muc A11 - Depleter A12 - Thick Da S1 - Sandy Mu S2 - 2.5 cm Muc	be to the depth nee etion, RM=Reduced Mat Matrix Color (Moist) 2/1 6/2 5/1 Indicators (che ipedon tic n Sulfide Layers (LRR F) ck (LRR FGH) d Below Dark Surface ark Surface ucky Mineral ucky Peat or Peat (LRR	eded to doo rix, CS=Cove	cument ered/Coato 6 00 5 Hue 5 Hue 5 Hue 6	Color (N e_10YR e_7.5YR e_7.5YR cors are n Sandy Re Stripped Loamy G Depleted Redox Da Depleted Redox Da	cator or co Grains; Loca Moist) 5/8 2.5/3 ot presen edox Matrix ucky Minera leyed Matrix ucky Minera leyed Matrix ark Surface Dark Surface epressions	onfirm the tion: PL=Pe Mottle % 5 5 5 t):	e absence of in ore Lining, M=Matr es Type C C	ix) Location M M I	MMI FS FS A9 - 1 cm M A16 - Coast S7 - Dark S F16 - High F F18 - Reduc TF2 - Red F TF12 - Very Other (Expla	CaCO3-rich CaCO3-rich for Problemati Muck (LRR I, J) t Prairie Redox urface (LRR G) Plains Depression ced Vertic Parent Material y Shallow Dark S ain in Remarks)	c Soils ¹ (LRR F, G, H) ONS (LRR H, outside MLRA 72, 73)
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WETLAND DETERMINATION DATA FORM Great Plains Region

Project/Site:	: L3R				Sample Point: w-155n46w2-f2
VEGETATION		e non-native	species.)		
Tree Stratum	(Plot size: 30 ft. radius) Species Name	<u>% Cover</u>	Dominant	Ind.Status	Dominance Test Worksheet
1.			Dominant	IIIU.Status	
2.	-				Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
3.					
4.					Total Number of Dominant Species Across All Strata: 2 (B)
5.	-				
<u> </u>	-				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.					
8.					Prevalence Index Worksheet
9.	-				<u>Total % Cover of:</u> <u>Multiply by:</u>
10.	-				OBL spp. 100 X 1 = 100
10.	 Total Cover =	0			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
		v	—	l	FACW spp. 15 x $2 =$ 30 FAC spp. 0 x $3 =$ 0 FACU spp. 5 x $4 =$ 20
Sapling/Shrub {	Stratum (Plot size: 15 ft. radius)				FACUspp 5 x 4 = 20
1.	Salix petiolaris	10	Y	OBL	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
2.			··		
3.					Total 120 (A) 150 (B)
4.					
5.					Prevalence Index = $B/A = 1.250$
6.	-				
7.	-				
8.					Hydrophytic Vegetation Indicators:
9.	-				Rapid Test for Hydrophytic Vegetation
10.	-				X Dominance Test is > 50%
	 Total Cover =	10			$\frac{1}{X} \qquad \text{Prevalence Index is } \le 3.0 \text{ *}$
			_		Morphological Adaptations (Explain) *
Horb Stratum ((Plot size: 5 ft. radius)				Problem Hydrophytic Vegetation (Explain) *
1.	Typha X glauca	70	Y	OBL	
2.	Lycopus asper	15		OBL	* Indicators of hydric soil and wetland hydrology must be
3.	Phalaris arundinacea	15	N	FACW	
4.	Symphyotrichum boreale	5	N	OBL	Definitions of Vegetation Strata:
5.	Cirsium arvense	5	N	FACU	
6				17.00	Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.					height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH, regardless of height.
10.					
11.					4
12.	-				Herb - All herbaceous (non-woody) plants, regardless of size.
12.					
14.					-
14.	1				Woody Vines - All woody vines, regardless of height.
15.	Total Cover -	110			
	Total Cover =	110	—		
Marady Mino St	(Distainer Offerending)				
	tratum (Plot size: 30 ft. radius)				-
1. 2					-
2.					- Underschutte Versetetien Drecent? V
3.					Hydrophytic Vegetation Present? Y
5.					
4.					
Demarka	Total Cover =		bularid our		we we have a setted and the two towe connect he reliably concreted in
Remarks:	· · · · · · · · · · · · · · · · · · ·		•		row-leaf cattail and hybrid cattail, and the two taxa cannot be reliably separated in
	the wetland area, so they were lumped as Ty	/pna x giai	JCa. Hyun	opnytic ve	getation is present.
Additional R	<u>Remarks:</u>				