

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Williams Sampling Date: 8/3/10
 Applicant/Owner: _____ State: ND Sampling Point: U1
 Investigator(s): Kjar/Krapp Section, Township, Range: 36 156 095
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.288228 Long: -102.848834 Datum: _____
 Soil Map Unit Name: 281-Bowdle loam 0-2-1. Slope NWI classification: _____
 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <input checked="" type="checkbox"/>				
3. <input checked="" type="checkbox"/>				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Symphoricarpos occidentalis</u>	<u>30</u>	<u>+</u>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>5</u> x 4 = <u>20</u> UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = <u>4</u>
2. <u>Rosa arkansana</u>		<u>+</u>	<u>NL</u>	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Helianthus rigida</u>	<u>5</u>	<u>-</u>	<u>INL</u>	___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ 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.
2. <u>Artemisa ludoviciana</u>	<u>5</u>	<u>-</u>	<u>FACU</u>	
3. <u>Stipa spartea</u>	<u>20</u>	<u>+</u>	<u>NL</u>	
4. <u>Stipa viridula</u>	<u>30</u>	<u>+</u>	<u>NL</u>	
5. <u>Peranarea angophylla</u>	<u>5</u>	<u>-</u>	<u>NL</u>	
6. <u>Dalea purpurea</u>	<u>2</u>	<u>-</u>	<u>NL</u>	
7. <u>Echinachos angustifolia</u>	<u>+</u>	<u>-</u>	<u>NL</u>	
8. <u>Lactis purcata</u>	<u>5</u>	<u>-</u>	<u>NL</u>	
9. <u>Artemisia frigida</u>	<u>5</u>	<u>-</u>	<u>NL</u>	
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No <input checked="" type="checkbox"/>
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: _____				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-8	10YR3/1						sl	
	7.5 YR 8/1	60	10YR3/1	40%			sl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

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:

Runoff site

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Williams Sampling Date: 8/3/10
 Applicant/Owner: _____ State: ND Sampling Point: W2
 Investigator(s): Kjar/Krapp Section, Township, Range: 36 156 095
 Landform (hillslope, terrace, etc.): Upland swale Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): _____ Lat: 48.288189 Long: -102.848743 Datum: _____
 Soil Map Unit Name: 281-Bowdle loam 0-2-1 slope NWI classification: PEM2

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
_____ = Total Cover				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:50%;">Total % Cover of:</th> <th style="width:50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>110</u></td> <td>x 1 = <u>110</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>120</u></td> <td>(A) <u>130</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.1</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>110</u>	x 1 = <u>110</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: <u>120</u>	(A) <u>130</u> (B)	Prevalence Index = B/A = <u>1.1</u>	
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OBL species <u>110</u>	x 1 = <u>110</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: <u>120</u>	(A) <u>130</u> (B)																			
Prevalence Index = B/A = <u>1.1</u>																				
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																				
Herb Stratum (Plot size: _____) 1. <u>Typha latifolia</u> <u>20</u> <u>+</u> <u>OBL</u> 2. <u>Polygonum amphibian</u> <u>5</u> <u>-</u> <u>OBL</u> 3. <u>Spartina pectinata</u> <u>10</u> <u>-</u> <u>OBL</u> 4. <u>Alisma graminea</u> <u>20</u> <u>+</u> <u>OBL</u> 5. <u>Aster lanceolatus</u> <u>10</u> <u>-</u> <u>NI</u> 6. <u>Glyceria</u> <u>20</u> <u>+</u> <u>OBL</u> 7. <u>Eleocharis parviflora</u> <u>30</u> <u>+</u> <u>OBL</u> 8. <u>Lysmachia thyrsoifolia</u> <u>5</u> <u>-</u> <u>OBL</u> 9. <u>Hordeum jubatum</u> <u>10</u> <u>-</u> <u>FACW</u> 10. _____ _____ = Total Cover																				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover																				
% Bare Ground in Herb Stratum <u>0</u> _____ = Total Cover																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0'
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks:
Cirsium arvense along fringe of wetland

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10YR 3/1						scl	
7-14	10YR 3/1		7.5YR 4/6	80			scl	Iron
14-							gravel	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: gravel
Depth (inches): 14"

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

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 – Great Plains Region

Project/Site: BLRP City/County: Williams Sampling Date: 08/03/10
 Applicant/Owner: _____ State: ND Sampling Point: W3
 Investigator(s): Rjan/Krapp Section, Township, Range: 36 156 095
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.288612 Long: -102.836016 Datum: _____
 Soil Map Unit Name: 674 Farnuf loam 0-2-1 slope NWI classification: _____

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>upland swale</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. <u>X</u>																				
3. _____																				
4. _____																				
_____ = Total Cover				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>115</u></td> <td>x 1 = <u>115</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>196</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.4</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>115</u>	x 1 = <u>115</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species _____	x 3 = _____	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>135</u> (A)	<u>196</u> (B)	Prevalence Index = B/A = <u>1.4</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>115</u>	x 1 = <u>115</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species _____	x 3 = _____																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>135</u> (A)	<u>196</u> (B)																			
Prevalence Index = B/A = <u>1.4</u>																				
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. <u>X</u> 3. _____ 4. _____ 5. _____ _____ = Total Cover																				
Herb Stratum (Plot size: <u>10' x 25'</u>) 1. <u>Grindelia squarrosa</u> <u>5</u> <u>N</u> <u>UPL</u> 2. <u>Poa palustris</u> <u>80</u> <u>Y</u> <u>OBL</u> 3. <u>Juncus balticus</u> <u>20</u> <u>N</u> <u>OBL</u> 4. <u>Artemisia ludoviciana</u> <u>10</u> <u>N</u> <u>FACU</u> 5. <u>Hordeum jubatum</u> <u>5</u> <u>N</u> <u>FACW</u> 6. <u>Carex lasiocarpa</u> <u>5</u> <u>N</u> <u>OBL</u> 7. <u>Spartina pectinata</u> <u>5</u> <u>N</u> <u>OBL</u> 8. <u>Lysmachia thysifolia</u> <u>5</u> <u>N</u> <u>OBL</u> 9. _____ 10. _____ _____ = Total Cover																				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. <u>X</u> _____ = Total Cover																				
% Bare Ground in Herb Stratum <u>0</u> _____ = Total Cover																				
Remarks: _____																				

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0'
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

SOIL

3
Sampling Point: W3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5YR 3/1							
10-17	7.5YR 2.5/1							
10-17			7.5YR 4/4	25%				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: Rocky
 Depth (inches): 18

Hydric Soil Present? Yes No

Remarks:
 depletion indicators @ 17"
 10YR 8/4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:
 topography poorly drained

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Williams Sampling Date: 8/3/10
 Applicant/Owner: _____ State: ND Sampling Point: W4
 Investigator(s): Rjar/KraPP Section, Township, Range: 36 156 095
 Landform (hillslope, terrace, etc.): Upland hole Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.28873 Long: -102.833987 Datum: _____
 Soil Map Unit Name: G74 Farnuf. loam 0-2:1 Slope NWI classification: _____
 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?	Unusual area Yes <u>X</u> No _____
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No _____		

Remarks: This is a deep hole w/ a huge rock in the center some wetland plants are in the bottom and a barren clay area. Side slopes are steep w/ upland species

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>8</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>50</u> (A/B)
4. _____	_____	_____	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species <u>4</u>	x 1 = <u>4</u>
3. _____	_____	_____	_____	FACW species <u>4</u>	x 2 = <u>8</u>
4. _____	_____	_____	_____	FAC species _____	x 3 = _____
5. _____	_____	_____	_____	FACU species <u>3</u>	x 4 = <u>12</u>
= Total Cover				UPL species <u>5</u>	x 5 = <u>25</u>
Herb Stratum (Plot size: <u>entire</u>)				Column Totals:	<u>16</u> (A) <u>49</u> (B)
1. <u>Rumex crispus</u>	<u>3</u>	<u>+</u>	<u>FACW</u>	Prevalence Index = B/A = <u>3.1</u>	
2. <u>Juncus balticus</u>	<u>3</u>	<u>+</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators:	
3. <u>Grindelia squarrosa</u>	<u>5</u>	<u>+</u>	<u>UPL</u>	— Dominance Test is >50%	
4. <u>Poa pratensis</u>	<u>1</u>	<u>+</u>	<u>FACU</u>	— Prevalence Index is ≤3.0 ¹	
5. <u>Poa palustris</u>	<u>1</u>	<u>+</u>	<u>FACW</u>	— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. <u>Polygonum aviculare</u>	<u>1</u>	<u>+</u>	<u>FACU</u>	— Problematic Hydrophytic Vegetation ¹ (Explain)	
7. <u>Echinochloa crusgali</u>	<u>1</u>	<u>+</u>	<u>OBL</u>	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. <u>Artemisia ludoviciana</u>	<u>1</u>	<u>+</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
= Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
= Total Cover					
% Bare Ground in Herb Stratum <u>85</u>					

Remarks: over 1/2 is Rock

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/1						C	
3-15	2.5Y 5/4		7.5YR 5/8	20%			C	
			5Y 2.5/1	10%				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

Restrictive Layer (if present):
 Type: Rocky gravel
 Depth (inches): 15"

Hydric Soil Present? Yes No

Remarks: mixed layer w/ a lot of mottles, sand and gravel; large grade rock in center

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)		

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks: circular 7' deep granite rock 12' x 6' x 6' in size

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 08/03/10
 Applicant/Owner: McCain State: NO Sampling Point: W1
 Investigator(s): Kjar/Krapp Section, Township, Range: 31 156 094
 Landform (hillslope, terrace, etc.): upland swale Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.289403 Long: -102.81429 Datum: _____
 Soil Map Unit Name: 23B Williams-Zahl loams 3-6-1 slope NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>11</u> x 1 = <u>11</u> FACW species <u>185</u> x 2 = <u>370</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>296</u> (A) <u>381</u> (B) Prevalence Index = B/A = <u>1.3</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa Palustris</u>	<u>80</u>	<u>+</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0' _____ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Spartina patinata</u>	<u>80</u>	<u>+</u>	<u>FACW</u>	
3. <u>Eleocharis acicularis</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
4. <u>Polygonum amphib.</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
5. <u>Holden jubatum</u>	<u>10</u>	<u>-</u>	<u>FACW</u>	
6. <u>Rumex crispus</u>	<u>5</u>	<u>-</u>	<u>FACW</u>	
7. <u>Marsilea vestita</u>	<u>1</u>	<u>-</u>	<u>OBL</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> _____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____				

SOIL

Sampling Point: 31-w1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
0-8	10YR 2/1						sl	
8-10	10YR 2/1						sl	
10-18	10YR 2/1		10YR 7/6	20-30				mottles gen
18-25	5Y 2/3/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

swale, small area

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Montreal Sampling Date: 08/03/10
 Applicant/Owner: McGin State: ND Sampling Point: U1
 Investigator(s): Rip/Krapp Section, Township, Range: 31 156 094
 Landform (hillslope, terrace, etc.): upland drain Local relief (concave, convex, none): linear Slope (%): 10
 Subregion (LRR): _____ Lat: 48.289422 Long: -102.814163 Datum: PENAD
 Soil Map Unit Name: 23B Williams-Zahl loams 3-6% slope NWI classification: NA

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 X 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 _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>110</u> x 4 = <u>440</u> UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = <u>4</u>
Sapling/Shrub Stratum (Plot size: _____) 1. <u>Symphoricarpos occidentalis</u> <u>20</u> <u>y</u> <u>NI</u>				
2. _____ 3. _____ 4. _____ 5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Poa pratensis</u> <u>80</u> <u>+</u> <u>FACU</u> 2. <u>Andropogon gerardii</u> <u>10</u> <u>-</u> <u>FACU</u> 3. <u>Artemisia ludoviciana</u> <u>20</u> <u>+</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> _____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Remarks: _____ _____ _____				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
0-24	10YR 2/1							uniform

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: compacted
 Depth (inches): 24"

Hydric Soil Present? Yes No

Remarks: NO mottles or indicator are present

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary indicators (minimum of one required; check all that apply)</u>		<u>Secondary indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: 14 Cum City/County: Montreal Sampling Date: 08/04/18
 Applicant/Owner: McCain State: ND Sampling Point: W2
 Investigator(s): Krac/Krapp Section, Township, Range: 31 155 094
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.289475 Long: -102.808963 Datum: _____
 Soil Map Unit Name: 23B Williams-Zahl loam 3-6-1 slope NWI classification: PEMC

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? NO Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>X</u>	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>210</u> x 1 = <u>210</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>250</u> (A) <u>290</u> (B) Prevalence Index = B/A = <u>1.2</u>
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ _____ 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.
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: WZ

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 2/1						sl	
10+	10YR 3/1		7.5YR 4/1	30			scl	block

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Elack Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: 1/2 om on surface

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks: Upland depression large area

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Monteville Sampling Date: 08/03/10
 Applicant/Owner: Mc Cain State: ND Sampling Point: U2
 Investigator(s): Kjar/Krapp Section, Township, Range: 31 156 094
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 10
 Subregion (LRR): _____ Lat: 48.289482 Long: -102.80909 Datum: _____
 Soil Map Unit Name: 23B Williams-Zahl loams 3 to 1 slope NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.) higher precip recent
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>5</u> x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>50</u> x 4 = <u>200</u> UPL species _____ x 5 = _____ Column Totals: <u>50</u> (A) <u>200</u> (B) Prevalence Index = B/A = <u>4</u>
Tree Stratum (Plot size: _____)	_____	_____	_____	
1. <u>Symphoricarpos occidentalis</u>	<u>40</u>	<u>y</u>	<u>NI</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Stipa Viridula</u>	<u>30</u>	<u>y</u>	<u>NI</u>	
2. <u>Glycyrrhiza lepidota</u>	<u>20</u>	<u>y</u>	<u>FACU</u>	
3. <u>Achillea millefolium</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Stipa comata</u>	<u>10</u>	<u>N</u>	<u>NI</u>	
5. <u>Prospitenn.</u>	<u>20</u>	<u>y</u>	<u>FACU</u>	
6. <u>Stipa spurea</u>	<u>20</u>	<u>y</u>	<u>NI</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>0</u>	_____	_____	_____	
Remarks:				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 3/1							loamy sand ✓
14+	10YR 5/2							sandier w/ depth

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____ **NO**

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

Runoff area

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountrail Sampling Date: 8/4/10
Applicant/Owner: McCain State: ND Sampling Point: W1
Investigator(s): Kjaer/Krapp Section, Township, Range: 32 156 94
Landform (hillslope, terrace, etc.): SWale Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: 48.289133 Long: -102.802545 Datum:
Soil Map Unit Name: 17 Hamerly-Tonka C-3.1 slopes NWI classification: PEMC

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

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

Table with 4 columns: Hydrophytic Vegetation Present?, Hydric Soil Present?, Wetland Hydrology Present?, Is the Sampled Area within a Wetland?
Yes ___ No ___ Yes ___ No ___ Yes ___ No ___ Yes X No ___

Remarks:
extreme edge of wetland in corridor; majority is south

VEGETATION – Use scientific names of plants.

Table with columns for Tree Stratum, Sapling/Shrub Stratum, Herb Stratum, Woody Vine Stratum, and % Bare Ground in Herb Stratum. Includes Dominance Test worksheet, Prevalence Index worksheet, and Hydrophytic Vegetation Indicators.

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
0-8	10YR 2/1							
8-18	7.5YR 4/1							gleyed

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: No
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: No mottles present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

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 – Great Plains Region

4
adjacent to w1

Project/Site: BLLP City/County: Montreal Sampling Date: 08/04/10
 Applicant/Owner: McCain State: ND Sampling Point: U2
 Investigator(s): Kipp/Kopp Section, Township, Range: 32 156 94
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): _____ Slope (%): 6
 Subregion (LRR): _____ Lat: 48.289275 Long: -102.802503 Datum: _____
 Soil Map Unit Name: 17-Hamerly-Tanka complex 0-3-1-Slope NWI classification: PFMC adjacent
 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 X
 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>tilled detailed soils not completed no wetland veg or hydrology and hydrology absent</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Total Number of Dominant Species Across All Strata: <u>0</u> (B)
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	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 = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ 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.
Herb Stratum (Plot size: _____)				
1. <u>Helictotrichon hookeri</u>	<u>80</u>	<u>+</u>	<u>NI</u>	
2. <u>Medicago sativa</u>	<u>40</u>	<u>-</u>	<u>NI</u>	
3. <u>Kochia scoparia</u>	<u>20</u>	<u>=</u>	<u>NI</u>	
4. <u>Triticum aestivum</u>	<u>10</u>	<u>-</u>	<u>NI</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
= Total Cover				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks: <u>High ground cover not situated in grass stream</u>				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
	10 YR/7/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) (LRR F)</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR G)</p> <p><input type="checkbox"/> High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)</p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/></p>

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>		<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p> <p><input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)</p>	
<p>Field Observations:</p> <p>Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____</p>		<p>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></p>	

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

4

Project/Site: BLP City/County: Madison Sampling Date: 8/4/10
 Applicant/Owner: McCain State: ND Sampling Point: U1
 Investigator(s): Kipp/Kopp Section, Township, Range: 32-156-094
 Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): convex Slope (%): _____
 Subregion (LRR): _____ Lat: 48.289632 Long: -102.806288 Datum: _____
 Soil Map Unit Name: 25C - Zehl-Williams - Bonwell loams 3-9t NWI classification: PEMA

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 X
 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	

Remarks: tiled + seeded

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)	
2. <u>X</u>	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>0</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover				Total % Cover of: _____ Multiply by: _____	
_____ = Total Cover				OBL species <u>0</u> x 1 = _____	
_____ = Total Cover				FACW species <u>0</u> x 2 = _____	
_____ = Total Cover				FAC species <u>0</u> x 3 = _____	
_____ = Total Cover				FACU species <u>58</u> x 4 = <u>232</u>	
_____ = Total Cover				UPL species <u>60</u> x 5 = <u>300</u>	
_____ = Total Cover				Column Totals: <u>113</u> (A) <u>518</u> (B)	
_____ = Total Cover				Prevalence Index = B/A = <u>4.5</u>	
_____ = Total Cover				Hydrophytic Vegetation Indicators:	
_____ = Total Cover				— Dominance Test is >50%	
_____ = Total Cover				— Prevalence Index is ≤3.0 ¹	
_____ = Total Cover				— Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
_____ = Total Cover				— Problematic Hydrophytic Vegetation ¹ (Explain)	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-16"	10YR 3/2						Sic	
16"	10YR 4/2						Sic	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: no mottling or indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not filled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountrail Sampling Date: 08/04/10
 Applicant/Owner: McCain State: ND Sampling Point: W2
 Investigator(s): Kjar/Krapp Section, Township, Range: 32-156-94
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.289379 Long: -102.787547 Datum: NAD83
 Soil Map Unit Name: 23 Williams loam a-3-l slope NWI classification: _____

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 X
 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 <u>X</u> No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: <u>tilled area</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>0</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species <u>3</u> x 2 = <u>6</u>
4. _____				FAC species <u>5</u> x 3 = <u>15</u>
5. _____				FACU species <u>3</u> x 4 = <u>12</u>
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: <u>11</u> (A) <u>33</u> (B)
				Prevalence Index = B/A = <u>3</u>
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Hordeum jubatum</u>	<u>3</u>	-	FACW	___ Dominance Test is >50% - <u>NI ?</u>
2. <u>Medicago sativa</u>	<u>60</u>	+	NI	<u>X</u> Prevalence Index is ≤3.0' - <u>see domin...</u>
3. <u>Polygonum convolvulus</u>	<u>5</u>	-	FAC	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>Hieracium</u>	<u>20</u>	+	NI	
6. _____				
7. <u>Coryza canadensis</u>	<u>3</u>	-	FACU	
8. _____				
9. _____				
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No <u>X</u>
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>				
Remarks:				

only dominant species on NI

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

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

32 W2
Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
D-11	10YR 3/1		—				sl	
11-24	2.5Y 3/1						lc	
	mottles		7.5YR 4/5	2.5Y 2				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Soil-filled upper layer - xerice @ this mottles start @ about 11 depth

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes No

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

Remarks:

slight swale, run-in area

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 08/04/10
 Applicant/Owner: McGinn State: ND Sampling Point: U3
 Investigator(s): Kier/Krapp Section, Township, Range: 32-156-94
 Landform (hillslope, terrace, etc.): upland Local relief (concave, convex, none): linear Slope (%): -
 Subregion (LRR): _____ Lat: 48.289258 Long: -102.794332 Datum: NAD83
 Soil Map Unit Name: 23-Williams loam 0-3.1 slope NWI classification: _____

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 X
 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>soil not sampled - not necessary to determine wetland status</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <u>0</u> (B)
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	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 = <u>N/A</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ 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.
Herb Stratum (Plot size: _____)				
1. <u>Medicago sativa</u>	<u>90</u>	<u>+</u>	<u>NI</u>	
2. <u>wheat</u>	<u>5</u>	<u>-</u>	<u>NI</u>	
3. <u>Helictis hookeri</u>	<u>10</u>	<u>-</u>	<u>NI</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No _____
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>	<u>105</u>	= Total Cover		

Remarks: wetland veg would not occur in similar area not filled

32 / U3

Sampling Point: U3

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:
*Rocky surface
 glacial till / well drained*

HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required, check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No _____

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

Remarks:
landscape barren area but not enough to hold water, vegetat or is not stress =) and does

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Montreal Sampling Date: 08/04/10
 Applicant/Owner: McCain State: ND Sampling Point: U4
 Investigator(s): Kjar/Krapp Section, Township, Range: 32-156-94
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.289279 Long: -102.792272 Datum: NAD83
 Soil Map Unit Name: 23B-Williams-Zahl loams 3-6-1-slope NWI classification: PEMARD
 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 X
 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 <u>X</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Remarks: <u>tiled</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)	
2. <u>X</u>				Total Number of Dominant Species Across All Strata: <u>0</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)	
4. _____					
= Total Cover					
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. _____				Total % Cover of: _____ Multiply by: _____	
2. <u>X</u>				OBL species _____ x 1 = _____	
3. _____				FACW species _____ x 2 = _____	
4. _____				FAC species _____ x 3 = _____	
5. _____				FACU species <u>5</u> x 4 = <u>20</u>	
= Total Cover				UPL species _____ x 5 = _____	
				Column Totals: <u>5</u> (A) <u>20</u> (B)	
				Prevalence Index = B/A = <u>4</u>	
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>Medicago sativa</u>	<u>80</u>	<u>+</u>	<u>NI</u>	___ Dominance Test is >50%	
2. <u>wheat</u>	<u>20</u>	<u>+</u>	<u>NI</u>	___ Prevalence Index is ≤3.0 ¹	
3. <u>Lactuca germicola</u>	<u>5</u>	<u>-</u>	<u>FACU</u>	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Helictotrichon hookeri</u>	<u>20</u>	<u>+</u>	<u>NI</u>	___ Problematic Hydrophytic Vegetation ¹ (Explain)	
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
= Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1. _____				Yes _____ No <u>X</u>	
2. <u>X</u>					
= Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks: <u>wetland veg would not grow on similar site w/out tiled</u>					

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Upland Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

Line 6B Replacement Project
Waterbody Data Sheet

ENBRIDGE

FEATURE ID: 34156094-51
 WATERBODY NAME: White Earth Creek
 River

SURVEY DATE: 8-4-10
 INVESTIGATOR: RJK

FLOW CHARACTERISTICS

EPHEMERAL
 INTERMITTENT
 PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 15 FT
 CURRENT WATER DEPTH AT CROSSING: 1-4 FT

SUBSTRATE

BEDROCK
 GRAVEL
 SAND
 OTHER _____

SILT
 CLAY

RUNS
 POOLS
 RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 6 FT	HEIGHT: 10 FT
SLOPE <input type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input checked="" type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°	SLOPE <input type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input checked="" type="checkbox"/> 61-90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): 30 FT	
EVIDENCE OF EROSION: Yes	
SCOUR POTENTIAL: Yes	

RIPARIAN HABITAT

RIPARIAN VEGETATION YES NO

RIPARIAN SPECIES PRESENT: ~~Red Top~~
 Baltic Rush + Tall stem
 Submerged Veg (N. M. Hoil)

INVASIVES/NOXIOUS VEGETATION YES NO
 IF YES, SPECIES PRESENT: Wormwood

ADJACENT WETLAND YES NO

T & E SPECIES YES NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

<input checked="" type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input checked="" type="checkbox"/> SHELVING
<input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input checked="" type="checkbox"/> SEDIMENT DEPOSITION	<input checked="" type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input checked="" type="checkbox"/> SEDIMENT SORTING	<input type="checkbox"/> WATER STAINING
<input checked="" type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input checked="" type="checkbox"/> PRESENCE OF WRACK LINE	

PHOTOGRAPHS

Yes

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Montpelier Sampling Date: 08/04/10
 Applicant/Owner: _____ State: ND Sampling Point: U1
 Investigator(s): Kjar/Krapp Section, Township, Range: 35 156 94
 Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.291187 Long: -102.721355 Datum: _____
 Soil Map Unit Name: 23B Williams-Zahl loams 3-6 - slopes NWI classification: PEMC
 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 X 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Current Pipeline went through wetland if there was one</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata:	<u>0</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
4. _____				= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____				Total % Cover of:	Multiply by:
2. _____				OBL species _____	x 1 = _____
3. _____				FACW species _____	x 2 = _____
4. _____				FAC species _____	x 3 = _____
5. _____				FACU species _____	x 4 = _____
= Total Cover				UPL species <u>80</u>	x 5 = <u>400</u>
Herb Stratum (Plot size: _____)				Column Totals:	<u>0</u> (A) <u>400</u> (B)
1. <u>Stipa comata</u>	<u>80</u>	<u>+</u>	<u>NL</u>	Prevalence Index = B/A = <u>5</u>	
2. <u>Stipa viridula</u>	<u>30</u>	<u>+</u>	<u>NL</u>	Hydrophytic Vegetation Indicators:	
3. <u>Vicia americana</u>	<u>5</u>	<u>-</u>	<u>NI</u>	___ Dominance Test is >50%	
4. <u>Bouteloua gracilis</u>	<u>80</u>	<u>+</u>	<u>U1</u>	___ Prevalence Index is ≤3.0 ¹	
5. <u>Artemisia frigida</u>	<u>tr</u>		<u>NIL</u>	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
6. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
9. _____					
10. _____					
= Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
= Total Cover					
% Bare Ground in Herb Stratum <u>0</u>					

Remarks:
This veg on both sides of existing line

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 9/1						SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

no mottling or gleying

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- 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)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

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

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:

Vegetation on pipeline
Stipa viridula 50 Intermediate wheatgrass 50

WETLAND DETERMINATION DATA FORM – Great Plains Region

9

Project/Site: BLLP City/County: Montreal Sampling Date: 08/04/10
 Applicant/Owner: _____ State: ND Sampling Point: W1
 Investigator(s): Kjar/Krapp Section, Township, Range: 33 156 093
 Landform (hillslope, terrace, etc.): upland sward Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.297538 Long: -102.654113 Datum: _____
 Soil Map Unit Name: 25C-2alt Williams-Bonbells loams 3-9-1 slope NWI classification: FEMA

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:
 possibly a tilled and seeded area; immediate area is seeded, this is either seeded in a dry year or invaded, etc

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>1/2 50%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>140</u> (A) <u>490</u> (B) Prevalence Index = B/A = <u>490/140 3.5</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Polygonum amplifolium</u> <u>40</u> <u>+</u> <u>OBL</u> 2. <u>Bromus inermis</u> <u>80</u> <u>+</u> <u>UPL</u> 3. <u>Phlox subulata</u> <u>10</u> <u>-</u> <u>FACW</u> 4. <u>Rumex crispus</u> <u>5</u> <u>-</u> <u>FACW</u> 5. <u>Cirsium arvense</u> <u>5</u> <u>-</u> <u>FACU</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				

Remarks:

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5 YR	2.5/1					SC	
10+14	11		7.5 YR 9/2	5			CL	
14+	7.5 YR	3/2						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	wetland hydrology must be present,
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:

Swales are

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountrail Sampling Date: 08/04/10
 Applicant/Owner: _____ State: ND Sampling Point: U1
 Investigator(s): Kjar / Krapp Section, Township, Range: 32 156 093
 Landform (hillslope, terrace, etc.): upland swale Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.296502 Long: -102.671964 Datum: _____
 Soil Map Unit Name: 23B-Williams-Zahl loams 3-6:1 Slopes NWI classification: PEMA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) high precip
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 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 _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>tilled + seeded / glacial till</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>0</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <u>X</u>	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>5</u> (A) <u>10</u> (B) Prevalence Index = B/A = <u>5</u>
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. <u>X</u> 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: _____) 1. <u>Wheat</u> 90 + NI 2. <u>Echinochloa crus-gali</u> 5 - FACW 3. <u>Bromus japonicus</u> 80 + FACU 4. <u>Helictotrichon boreale</u> 5 - NI 5. <u>Cirsium arvensis</u> 5 - FACU 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. <u>X</u> _____ = Total Cover				
% Bare Ground in Herb Stratum _____ = Total Cover				
Remarks: <u>Wheat is slightly lower in stature - maybe 1" but otherwise similar across field</u>				

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0'¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-28	10YR 3/1						sel	uniform rocky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No _____

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

Remarks:

slight swaled area /

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 08/05/10
 Applicant/Owner: _____ State: _____ Sampling Point: 2
 Investigator(s): Kim Kemp Section, Township, Range: 33 156 093
 Landform (hillslope, terrace, etc.): upland slope Local relief (concave, convex, none): slight Slope (%): -1%
 Subregion (LRR): _____ Lat: 48.297506 Long: -102.644789 Datum: _____
 Soil Map Unit Name: 25C-Zahl-Williams-Bowbells loams 39.1 NWI classification: PEMA

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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: <u>tiled @ on time = seeded / upland, very shallow</u> <u>soils may be in water for a year or more</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. <input checked="" type="checkbox"/> _____				
3. _____				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				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 = _____
1. <input checked="" type="checkbox"/> _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0' ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Medicago sativa</u>	<u>30</u>	<u>+</u>	<u>NI</u>	
2. <u>Melilotis officinalis</u>	<u>30</u>	<u>+</u>	<u>FACU-</u>	
3. <u>Promus inermis</u>	<u>90</u>	<u>+</u>	<u>UP</u>	
4. <u>Cirsium arvense</u>	<u>10</u>	<u>-</u>	<u>FACU</u>	
5. <u>Poa palustris</u>	<u><3</u>	<u>=</u>	<u>DBL</u>	
6. <u>Paspalum</u>	<u>20</u>	<u>+</u>	<u>FACU</u>	
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				<input type="checkbox"/> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
Remarks:				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1							slt loam
12-20	10YR 3/1							
24+	10YR 3/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No mottling / deep water table

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No _____

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

Remarks:

Very shallow water table

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: B L L P City/County: Mountain State: NO Sampling Date: 08/15/10
Applicant/Owner: State: NO Sampling Point: 3
Investigator(s): Kras/Krapp Section, Township, Range: 33 156 093
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: 48.296936 Long: -102.638033 Datum:
Soil Map Unit Name: 17-Hamerly-Tonka complex 0-3.1 slopes NWI classification: PEMC
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 X 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 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:) Absolute % Cover Dominant Species? Indicator Status
1.
2.
3. X
4.
= Total Cover
Sampling/Shrub Stratum (Plot size:)
1.
2. X
3.
4.
5.
= Total Cover
Herb Stratum (Plot size:)
1. Phloxis arundinacea 80 + FACW
2. Polygonum amphibium 20 + OBL
3.
4.
5.
6.
7.
8.
9.
10.
= Total Cover
Woody Vine Stratum (Plot size:)
1.
2.
= Total Cover
% Bare Ground in Herb Stratum
Remarks:
Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 20 x 1 = 20
FACW species 80 x 2 = 160
FAC species x 3 =
FACU species x 4 =
UPL species x 5 =
Column Totals: 100 (A) 180 (B)
Prevalence Index = B/A = 180/100 = 1.8
Hydrophytic Vegetation Indicators:
Dominance Test is >50%
Prevalence Index is <= 3.0
Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
Hydrophytic Vegetation Present? Yes No

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4								organic matter
4-10	10YR 2/1						sicl	Roots
11-16	10YR 2/1		7.5YR 4/4	40			cl	
17+	10YR 2/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input checked="" type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)			

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 adjacent upland is tilled Brownie silt loam is dominant soil - lot of roots present below 20" of soil adjacent to wheat field 0-12 10YR 2/1 16-24 sandy loam no roots

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <i>with N of corridor</i>	<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <i>N area</i>	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)	

Field Observations:

Surface Water Present? Yes No Depth (inches): 10-12

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

Saturation Present? Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:
 center of grassland is brownish, contains more or more water wetter than other areas etc. + brown depth 1-2' 3'

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Montreal Sampling Date: 8/5/10
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): Rjar/Knapr Section, Township, Range: 34 156 93
 Landform (hillslope, terrace, etc.): drain Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.296489 Long: -102.625834 Datum: _____
 Soil Map Unit Name: 25C-72h1-Williams-Bowbells loam 3-91 NWI classification: _____

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 X
 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 _____	Hydic Soil Present? Yes _____ No _____	Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>tilled area</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
2. <u>X</u>				
3. _____				
4. _____				
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <u>8</u> (B)
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>3</u> x 1 = <u>3</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>12</u> x 4 = <u>36</u> UPL species _____ x 5 = _____ Column Totals: <u>24</u> (A) <u>53</u> (B) Prevalence Index = B/A = <u>2.2</u>
2. <u>Y</u>				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0' <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) <small>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</small>
Herb Stratum (Plot size: <u>15 x 15'</u>)				
1. <u>Euphorbia corollata</u>	<u>8</u>	<u>+</u>	<u>-</u>	
2. <u>Lithum lewisii</u>	<u>3</u>	<u>+</u>	<u>-</u>	
3. <u>Cirsium altissimu</u>	<u>3</u>	<u>+</u>	<u>FACU</u>	
4. <u>Bromus tectorum</u>	<u>3</u>	<u>+</u>	<u>FACU</u>	
5. <u>Rumex crispus</u>	<u>3</u>	<u>+</u>	<u>FAC</u>	
6. <u>Polygonum convolvulus</u>	<u>3</u>	<u>+</u>	<u>Obl</u>	
7. <u>Hordeum jubatum</u>	<u>3</u>	<u>+</u>	<u>FACU</u>	
8. <u>Amaranthus retrofractus</u>	<u>3</u>	<u>+</u>	<u>FACU</u>	
9. <u>Sagina glauca</u>	<u>3</u>	<u>+</u>	<u>FAC</u>	
10. <u>Polygonum convolvulus</u>	<u>3</u>	<u>+</u>	<u>FAC</u>	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No _____
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>50</u>				

Remarks: What strata of the vegetation are present? dense smooth prairie w/ Lithum lewisii Rumex crispus

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10"	10YR 2/1						sl	
11+	10YR 2/1		10YR 4/1	25			cl	prismatic

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Adjacent upland 100% wheat, 30% Bare soil for till area numerous rocks soils 0-2" 10YR 2/1 NO mottling

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

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:

too wet to support wheat crop

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 8/5/10
Applicant/Owner: _____ State: ND Sampling Point: 2
Investigator(s): Kjer/Krapp Section, Township, Range: 34 156 93
Landform (hillslope, terrace, etc.): Upland swale Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: 48.296607 Long: -102.624271 Datum: _____
Soil Map Unit Name: 23B - Williams Zahl loams 3-6% slopes NWI classification: PEMA2

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 X
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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Wetland is dissected by manmade berm; open water areas are most likely borrow pits</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: Multiply by:
2. _____				OBL species <u>43</u> x 1 = <u>43</u>
3. _____				FACW species <u>68</u> x 2 = <u>136</u>
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: <u>111</u> (A) <u>179</u> (B)
				Prevalence Index = B/A = <u>1.6</u>
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Rumex crispus</u>	<u>5</u>	-	FACW	___ Dominance Test is >50%
2. <u>Phalaris arundinacea</u>	<u>60</u>	+	FACW	___ Prevalence Index is ≤3.0 ¹
3. <u>Polygonum amphibium</u>	<u>35</u>	+	OBL	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Poa palustris</u>	<u>3</u>	-	FACW	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. <u>Sarcobatus</u>	<u>5</u>	-	OBL	
6. _____				
7. <u>Alisma graminea</u>	<u>3</u>	-	OBL	
8. _____				
9. _____				
10. _____				
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?
1. _____				Yes <u>X</u> No _____
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum	<u>0</u>			

Remarks:
Area to left side of open water is 80% Phalaris arundinacea 10% Rumex crispus 5% Cirsium discolor 10% bare ground

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	60					cl	om 5-8" high in #
4+	2.5Y 5/2	60	10YR 6/3	35			c	gleyed large random mottles
			7.5YR 5/8	5				
	2YF	mottles						prismatic block

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Soils on adjacent area for 1 20% rock, acid loamy surface
0-8" 2.5Y 5/2 | 8" 10YR 7/2 sand] which 90% + 5% brown
mottles 5% 7.5YR 6/8

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
Water Table Present? Yes No Depth (inches): _____
Saturation Present? Yes No Depth (inches): 10"

Wetland Hydrology Present? Yes No

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

Remarks:

3415693-2

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: RLLP City/County: Mauntenail Sampling Date: 10/6/2010
 Applicant/Owner: Enbridge State: ND Sampling Point: W2422
 Investigator(s): Gow Section, Township, Range: 34 156 93
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): _____ Slope (%): < 1
 Subregion (LRR): F Lat: 48° 17' 47.948" N Long: 102° 37' 7.846" W Datum: NAD83
 Soil Map Unit Name: 23B Williams-Zahl loams 3-6% slopes NWI classification: PEMA/PEMC
 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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>Shallow depression wetland connected to large basin to south</u>	
<u>UP - 341569342 Peds - 100 sideslope w/hydrology</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>ECACRU</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>POLAMP</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>	
3. <u>ARTBLE</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				
= Total Cover				
Remarks: _____				

3415693-2

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100	7.5YR 5/6	5	C		sil	
8-16	10YR 3/1	95	7.5YR 5/6	5	C	m	sil	
16-24	2.5Y 4/2	85	2.5YR 5/4	15	C	m	sil	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**
- Histosol (A1)
 - Histic Epipedon (A2)
 - Black Histic (A3)
 - Hydrogen Sulfide (A4)
 - Stratified Layers (A5) (LRR F)
 - 1 cm Muck (A9) (LRR F, G, H)
 - Depleted Below Dark Surface (A11)
 - Thick Dark Surface (A12)
 - Sandy Mucky Mineral (S1)
 - 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
 - 5 cm Mucky Peat or Peat (S3) (LRR F)
 - 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)
 - High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)
- Indicators for Problematic Hydric Soils³:**
- 1 cm Muck (A9) (LRR I, J)
 - Coast Prairie Redox (A16) (LRR F, G, H)
 - Dark Surface (S7) (LRR G)
 - High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: uPL - 3415693-2
 0-4 10YR 3/2 100 - sil
 6-12 2.5YR 5/4 - 150 - sil

HYDROLOGY

- Wetland Hydrology Indicators:**
- Primary Indicators (minimum of one 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)
 - Water-Stained Leaves (B9)
 - Salt Crust (B11)
 - Aquatic Invertebrates (B13)
 - Hydrogen Sulfide Odor (C1)
 - Dry-Season Water Table (C2)
 - Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
 - Presence of Reduced Iron (C4)
 - Thin Muck Surface (C7)
 - Other (Explain in Remarks)
- Secondary Indicators (minimum of two required)
- Surface Soil Cracks (B6)
 - Sparsely Vegetated Concave Surface (B8)
 - Drainage Patterns (B10)
 - Oxidized Rhizospheres on Living Roots (C3) (where tilled)
 - Crayfish Burrows (C8)
 - Saturation Visible on Aerial Imagery (C9)
 - Geomorphic Position (D2)
 - FAC-Neutral Test (D5)
 - Frost-Heave Hummocks (D7) (LRR F)

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: uPL - no hydrology side slope

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: BLLP City/County: Montreal Sampling Date: 08/05/10
Applicant/Owner: _____ State: _____ Sampling Point: 4
Investigator(s): Kjar/Krapp Section, Township, Range: 33 156 093
Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): _____ Slope (%): 3
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: 23B - Williams - Zahl loams 3-6-1 slope NWI classification: _____

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 X
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 <u>✓</u> No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: <u>has been tilled through</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>0</u> (B)
3. <u>X</u>				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. <u>X</u>				OBL species <u>5</u> x 1 = <u>5</u>
3. _____				FACW species <u>15</u> x 2 = <u>30</u>
4. _____				FAC species <u>44</u> x 3 = <u>132</u>
5. _____				FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: <u>64</u> (A) <u>167</u> (B)
1. <u>Helianthus annuus</u>	<u>40</u>	<u>+</u>	<u>FACU</u>	Prevalence Index = B/A = <u>2.6</u>
2. <u>wheat</u>	<u>30</u>	<u>+</u>	<u>NL</u>	
3. <u>Schizanthus mus-gal</u>	<u>5</u>	<u>-</u>	<u>FACW</u>	
4. <u>Rumex crispus</u>	<u>10</u>	<u>-</u>	<u>FACW</u>	
5. <u>Lactuca scariola</u>	<u>2</u>	<u>-</u>	<u>FACU</u>	
6. <u>Agropyron intermedium</u>	<u>5</u>	<u>-</u>	<u>NL</u>	
7. <u>Chenopodium hybridum</u>	<u>5</u>	<u>-</u>	<u>NL</u>	
8. <u>marijuana</u>	<u>5</u>	<u>-</u>	<u>FACU</u>	
9. <u>Draba aurea</u>	<u>2</u>	<u>-</u>	<u>FACU</u>	
10. <u>Lysimachia thysifolia</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum <u>10</u>				
Remarks: <u>Not dominated. tilled area</u>				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
0-7	10YR 2/1						sic1	
7-11	10YR 2/1						cl	gleyed /
12+	10YR 2/1							prismatic structure
			no apparent mottling					

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Adjacent upland 10YR 2/1 to 24" mixed from tiller
planted w/ wheat. NO clay or mottling. Runoff to site

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- 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)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

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

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 hydrology - shallow drainage extending 200' from road
on to north, some standing water, not in the corridor
US Army Corps of Engineers completed basin (water) but not in the corridor

FEATURE ID: 36 156094 - 51
WATERBODY NAME: White Earth River
Tributary

SURVEY DATE: 8-4-16
INVESTIGATOR: KJK / PJK

FLOW CHARACTERISTICS
 EPHEMERAL 1-10' wide
 INTERMITTENT mostly Dune
 PERENNIAL
 CURRENT WATER WIDTH AT CROSSING: 2 FT
 CURRENT WATER DEPTH AT CROSSING: 0.5 FT

SUBSTRATE
 BEDROCK SILT
 GRAVEL CLAY
 SAND
 OTHER _____
 RUNS
 POOLS
 RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 10 FT	HEIGHT: 1 FT
SLOPE <input type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input checked="" type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°	SLOPE <input type="checkbox"/> 0-30° <input checked="" type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): 40 FT	
EVIDENCE OF EROSION: <i>N</i>	
SCOUR POTENTIAL: <i>Y</i>	

RIPARIAN HABITAT
 RIPARIAN VEGETATION YES NO
 RIPARIAN SPECIES PRESENT:
 INVASIVES/NOXIOUS VEGETATION YES NO
 IF YES, SPECIES PRESENT:
C. Thrythe
 ADJACENT WETLAND YES NO
 T & E SPECIES YES NO
 IF YES, IDENTIFY SPECIES AND LOCATION:
Purpurea crispus *Hordeum jubatum*
Carex emargini *Plantago lanceolata*
Spartina patens - *Beckmannia*

OHWM CRITERIA

<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input checked="" type="checkbox"/> SHELVING
<input type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input type="checkbox"/> SEDIMENT DEPOSITION	<input checked="" type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input type="checkbox"/> SEDIMENT SORTING	<input type="checkbox"/> WATER STAINING
<input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> PRESENCE OF WRACK LINE	

PHOTOGRAPHS

*Canada thistle (Cirsium arvense)
on higher area*

*Creek meanders through area
soil saturated
small water pools remain*

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 8/5/10
 Applicant/Owner: _____ State: ND Sampling Point: W1
 Investigator(s): Kjar / Krapp Section, Township, Range: 35 156 093
 Landform (hillslope, terrace, etc.): upland swale Local relief (concave, convex, none): _____ Slope (%): -
 Subregion (LRR): _____ Lat: 48.296569 Long: -102.595947 Datum: _____
 Soil Map Unit Name: ZSC-Zahl-Williams-Bowbells loams 3-9-1 slope NWI classification: PEMA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.) high precipitation
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NI Are "Normal Circumstances" present? Yes ✓ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NI (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 <u>✓</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u> No _____
Hydric Soil Present?	Yes <u>✓</u> No _____		
Wetland Hydrology Present?	Yes <u>✓</u> No _____		
Remarks: <u>till plains</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A)
2. <u>X</u>				
3. _____				
4. _____				
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <u>4</u> (B)
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>55</u> x 1 = <u>55</u> FACW species <u>95</u> x 2 = <u>190</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>8</u> x 4 = <u>32</u> UPL species <u>-</u> x 5 = <u>0</u> Column Totals: <u>158</u> (A) <u>277</u> (B) Prevalence Index = B/A = <u>1.8</u>
2. <u>X</u>				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>entire wetland</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Hordeum jubatum</u>	<u>40</u>	<u>+</u>	<u>FACW</u>	
2. <u>Poa palustris</u>	<u>30</u>	<u>+</u>	<u>FACW</u>	
3. <u>Juncus balticus</u>	<u>10</u>	<u>-</u>	<u>OBL</u>	
4. <u>Phalaris arundinacea</u>	<u>25</u>	<u>+</u>	<u>FACW</u>	
5. <u>Aster simplex</u>	<u>2</u>	<u>-</u>	<u>NI</u>	
6. <u>Polygonum amphibium</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
7. <u>Carex laminoarpa</u>	<u>40</u>	<u>+</u>	<u>OBL</u>	
8. <u>Artemisia ludoviciana</u>	<u>3</u>	<u>-</u>	<u>FACU</u>	
9. <u>Poa pratensis</u>	<u>5</u>	<u>-</u>	<u>FACU</u>	
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. <u>X</u>				Hydrophytic Vegetation Present? Yes <u>✓</u> No _____
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: <u>Poa pratensis arundinacea</u>				

SOIL

WI 35 156 093

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2								organic matter/rod
2-4	7.5YR 2.5/1						sl	numerous roots
4-7	10YR 4/1	60%	7.5YR 4/1	40%			sl	
8+	7.5YR 2.5/1						c	sub/blocky structure

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	wetland hydrology must be present,	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)		

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 adjacent upland: Poa pratensis 80% Artemisia ludoviciana 10% Stipa viridula
 20% Solidago missouriensis 3% Persicaria angustifolia 3% Helianthus
 10% 3 A. trichosperma 1% Rosa alba 1% / soil sandy till 10YR 2/1
 no horizon change to 24" / Hydrology Runoff 6% slope

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:
 low water small rise to north end
 symptoms for waterlogging will raise
 soil color

WETLAND DETERMINATION DATA FORM – Great Plains Region

11

Project/Site: BLLP City/County: Apurul Sampling Date: 8/5/10
 Applicant/Owner: _____ State: ND Sampling Point: 2
 Investigator(s): Kjar/Krapp Section, Township, Range: 25 156 093
 Landform (hillslope, terrace, etc.): upland depression Local relief (concave, convex, none): _____ Slope (%): —
 Subregion (LRR): _____ Lat: 48.296943 Long: -102.591287 Datum: _____
 Soil Map Unit Name: 25C-Zahl-Williams-Bombells loam 3-9.1 slope NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.) high precip
 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>till area</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25%</u> (A/B)
2. <u>X</u>				
3. <u>X</u>				
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Symphoricarpos occidentalis</u>	<u>20</u>	<u>+</u>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>21</u> x 2 = <u>42</u> FAC species <u>0</u> x 3 = _____ FACU species <u>118</u> x 4 = <u>472</u> UPL species _____ x 5 = _____ Column Totals: <u>139</u> (A) <u>514</u> (B) Prevalence Index = B/A = <u>3.4</u>
2. <u>Rosa arkansana</u>	<u>5</u>	<u>+</u>	<u>NI</u>	
3. _____				
4. _____				
5. _____				
<u>25</u> = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Poa palustris</u>	<u>20</u>	<u>+</u>	<u>FACW</u>	— Dominance Test is >50% — Prevalence Index is ≤3.0 ¹ — 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.
2. <u>Poa pratensis</u>	<u>80</u>	<u>+</u>	<u>FACU</u>	
3. <u>Anemone canadensis</u>	<u>1</u>	<u>-</u>	<u>FACW</u>	
4. <u>Cirsium Flodmani</u>	<u>5</u>	<u>-</u>	<u>NI</u>	
5. <u>Artemisia ludoviciana</u>	<u>15</u>	<u>-</u>	<u>FACU</u>	
6. <u>Cirsium Flodmani</u>	<u>5</u>	<u>-</u>	<u>NI</u>	
7. <u>Helianthus rigida</u>	<u>3</u>	<u>-</u>	<u>NL</u>	
8. <u>Solidago mollis</u>	<u>3</u>	<u>-</u>	<u>FACU</u>	
9. _____				
10. _____				
<u>132</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. <u>X</u>				Yes _____ No <input checked="" type="checkbox"/>
2. _____				
<u>0</u> = Total Cover				
<u>157</u> = Total Cover				
Remarks:				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type	Loc ²		
0-2								OM - Roots
2-4	10YR 4/2						ls	
4+	10YR 5/2		10YR 4/4	20			ls	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks: Well drained

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

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 – Great Plains Region

Project/Site: BLLP City/County: Mountain Sampling Date: 8/5/10
 Applicant/Owner: _____ State: ND Sampling Point: 3
 Investigator(s): Kjar/Krupp Section, Township, Range: 35 156 093
 Landform (hillslope, terrace, etc.): Upland depression Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.297277 Long: -102.589002 Datum: _____
 Soil Map Unit Name: 23B-Williams-Zahl loams 3-6-1 slopes NWI classification: PEM C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.) high precip
 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>area is a closed basin in a hilly prairie, hills ~20' above on all sides</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>90</u> x 1 = <u>90</u> FACW species <u>56</u> x 2 = <u>112</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>146</u> (A) <u>202</u> (B) Prevalence Index = B/A = <u>202/146</u> <u>1.4</u>
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input checked="" type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Mentha arvensis</u>	<u>3</u>	<u>-</u>	<u>FACW</u>	
2. <u>Phalaris arundinacea</u>	<u>50</u>	<u>+</u>	<u>FACW</u>	
3. <u>Circaea maculata</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
4. <u>Polygonum amphibium</u>	<u>50</u>	<u>+</u>	<u>OBL</u>	
5. <u>Alliaria germanica</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	
6. <u>Typha latifolia</u>	<u>25</u>	<u>+</u>	<u>OBL</u>	
7. <u>Rubus cuneifolius</u>	<u>3</u>	<u>-</u>	<u>FACW</u>	
8. _____				
9. _____				
10. _____				
<u>141</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>	_____ = Total Cover			
Remarks:				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2								OM - Roots
2-9	10YR 3/1							
10-24	7.5YR 3/1	60	7.5YR 4/4	40				gleyed

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)

- 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)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Adjacent upland loamy sand 0-10+ 7.5YR 3/4
Prosopis 80%
Cirsium sp. < 5 Solidago rigida < 5 Aster trace
Runoff area 15% slope

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- 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)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): 4"

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

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 – Great Plains Region

Project/Site: BLLP City/County: Mo... Sampling Date: 8/5/10
 Applicant/Owner: _____ State: ND Sampling Point: W1
 Investigator(s): Kran/Kroop Section, Township, Range: 36 156 093
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.297277 Long: -102.589007 Datum: _____
 Soil Map Unit Name: 23B Williams-Zahlloans 3-6-1 slopes NWI classification: PEMC
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.) high precip
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
majority of wetland is north of the corridor grazed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
1. _____				
2. <u>X</u>				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
3. _____				
4. _____				OBL species <u>65</u> x 1 = <u>65</u>
_____ = Total Cover				FACW species <u>41</u> x 2 = <u>82</u>
Sapling/Shrub Stratum (Plot size: _____)				FAC species <u>0</u> x 3 = _____
1. _____				FACU species <u>0</u> x 4 = _____
2. <u>X</u>				UPL species <u>0</u> x 5 = _____
3. _____				Column Totals: <u>100</u> (A) <u>147</u> (B)
4. _____				Prevalence Index = B/A = <u>147/100 = 1.47</u>
5. _____				Hydrophytic Vegetation Indicators: <u>X</u> Dominance Test is >50% <u>X</u> Prevalence Index is ≤3.0' Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Spartina pectinata</u>	<u>20</u>	<u>+</u>	<u>FACW</u>	
2. <u>Rumex crispus</u>	<u>5</u>	<u>-</u>	<u>FACW</u>	
3. <u>Carex laevivirens</u>	<u>30</u>	<u>+</u>	<u>OBL</u>	
4. <u>Poa palustris</u>	<u>15</u>	<u>-</u>	<u>OBL</u>	
5. <u>Aster simplex</u>	<u>3</u>	<u>-</u>	<u>NI</u>	
6. <u>Beckmannia</u>	<u>10</u>	<u>-</u>	<u>OBL</u>	
7. <u>Polygonum amphibium</u>	<u>10</u>	<u>-</u>	<u>OBL</u>	
8. <u>Mentha arvensis</u>	<u>3</u>	<u>-</u>	<u>FACU</u>	
9. <u>Lysimachia thysaliflora</u>	<u>3</u>	<u>-</u>	<u>FACU</u>	
10. <u>Phalaris arundinacea</u>	<u>5</u>	<u>-</u>	<u>FACW</u>	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. <u>X</u>				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				
Remarks:				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2								am/Roots
3-6	10YR 3/1						sl	lots of roots
7-12	10YR 3/1	60	10YR 4/1	30			cl	prostrating
			7.5YR 4/6	10				
13-	10YR 3/1						cc	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 Adjacent am 1" 1-30 sandy loam 10YR 3/1
 Veg: 50% prairie, 50% occidentalis 50% 5% prairie 60%
 Solid organic S 5% 10% 10% 10% 10% 10% 10% 10%

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3								OM / Roots
3-24	10YR 2/1	95	7.5YR 5/3	5			Sic	lots of roots
24+	10YR 2/1	100					c	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:
 Adyca soil / Sandy loam 10YR 2/1 0-10 and 10YR 3/1 10+ loamy sand /
 Stipa spartea to And spore germination 15 Paspalum 30
 Artemisia ludoviciana S. Achillea lanata; 8% slope NW of

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Geomorphic Position (D2)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: BLLP City/County: Maudslayi Sampling Date: 8/5/10
 Applicant/Owner: _____ State: ND Sampling Point: W13
 Investigator(s): Kron/Kropp Section, Township, Range: 36 156 098
 Landform (hillslope, terrace, etc.): bottom Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: 48.297554 Long: -102.576125 Datum: _____
 Soil Map Unit Name: 2-Parnell silt loam NWI classification: PE MC
 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 X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>X</u>				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>X</u>				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>73</u> x 2 = <u>146</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>133</u> (A) <u>206</u> (B) Prevalence Index = B/A = <u>1.5</u>
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. <u>X</u>				
3. _____				
Herb Stratum (Plot size: <u>wetland</u>)				
1. <u>Rumex crispus</u>	<u>15</u>	<u>-</u>	<u>FACU</u>	
2. <u>Spartina pectinata</u>	<u>20</u>	<u>+</u>	<u>FACW</u>	
3. <u>Carex lasiocarpa</u>	<u>40</u>	<u>+</u>	<u>OBL</u>	
4. <u>Hordeum jubatum</u>	<u>10</u>	<u>-</u>	<u>FACW</u>	
5. <u>Poa palustris</u>	<u>5</u>	<u>-</u>	<u>FACW</u>	
6. <u>Phalaris arundinacea</u>	<u>20</u>	<u>+</u>	<u>FACU</u>	
7. <u>Sporobolus</u>	<u>20</u>	<u>+</u>	<u>OBL</u>	
8. <u>Lysichiton albertensis</u>	<u>3</u>	<u>-</u>	<u>FACW</u>	
9. _____				
10. _____				
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0' <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. <u>X</u>				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
% Bare Ground in Herb Stratum <u>0</u>				
Remarks: _____ _____ _____				

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2								OM / roots
3-24+	10YR 2/1	95	7.5YR 9/3	5			sic	rooty

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Adjacent sandy loam 10YR 2/1 0-10"; 10YR 3/1 10"+ (loamy sand)
 Runoff area 10% slope
 Slope vertical 60% Gleyed matrix 20% (reduced iron) 5

HYDROLOGY Border argophyte B Sign area = 10 Slope vertical = 70

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

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

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

Saturation Present? Yes No Depth (inches): 3"

Wetland Hydrology Present? Yes No

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

Remarks: