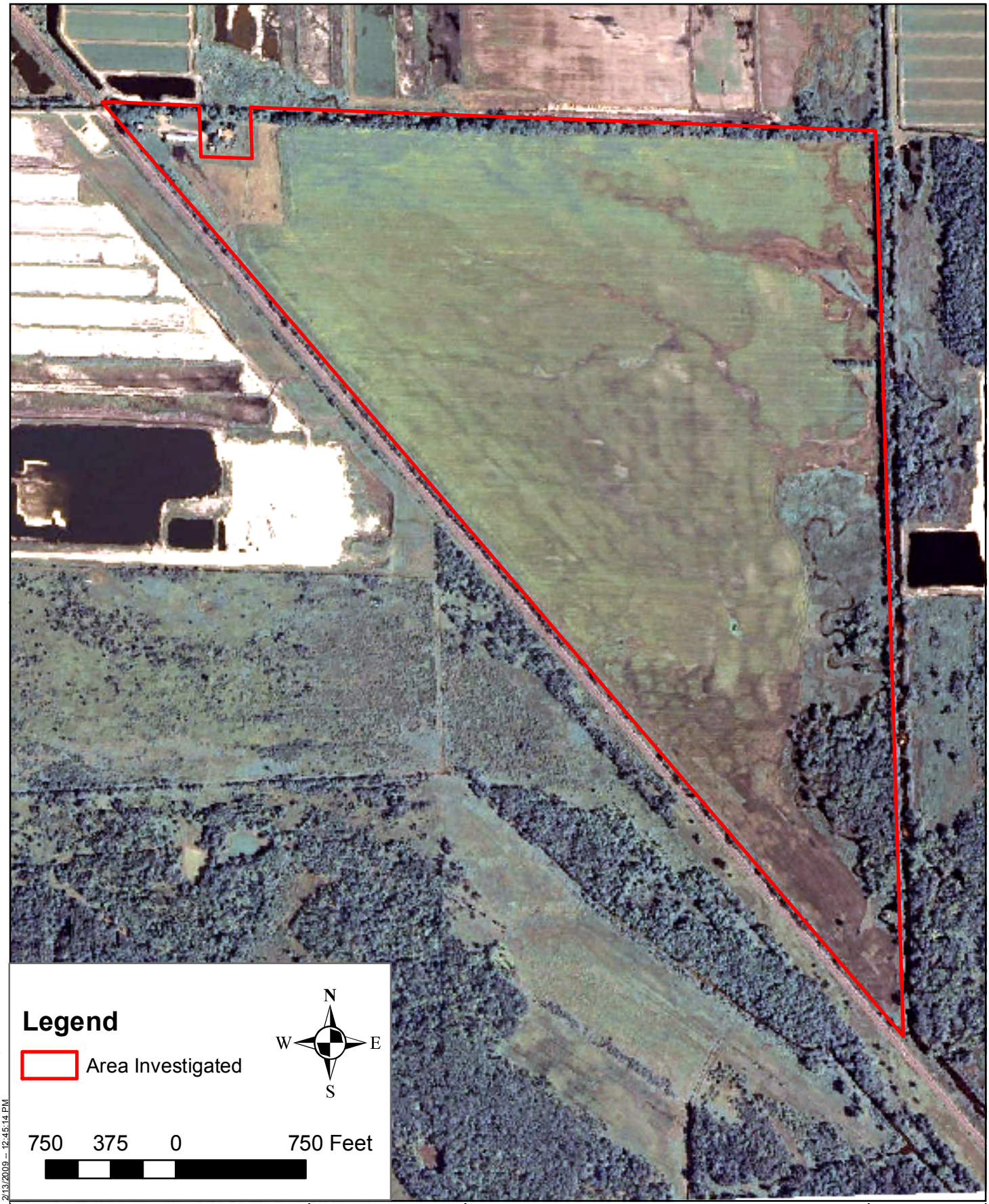

Map Document: (L:\Resources\Cartographic\Templates\EmptyLayouts\A_ANSI_8x11P\8x11P_Std.mxd)
2/13/2009 – 12:45:14 PM

SEH
421 FRENETTE DRIVE
CHIPPEWA FALLS WI 54729-3374
PHONE: (715) 720-6200
FAX: (715) 720-6300
www.sehinc.com

Project: REDOG 114987
Print Date: 09/13/2011

Map by: NAW
Projection: Monroe Co (ft)
Source: HIG, SEH

2010 AERIAL PHOTO

HI-CRUSH PROPPANTS - WYEVILLE SITE
Town of Byron, WI

Figure
A - 10

Appendix B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP1U
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S8,T18N,R01E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Newson loamy sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? No (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precipitation above normal. Sample point in an agricultural field - row cropped with soybeans.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP1U

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	60	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: SP1U

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 2/2						loamy sand	
8-20	10YR 7/1						sand	

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

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP1W
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none
Slope (%): 0 Lat.: Long.: Datum:
Soil Map Unit Name Newson loamy sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? No (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Wetland hydrology present?	Y	If yes, optional wetland site ID:	Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precipitation above normal. Floodplan forest associated with Lemonweir River and side channel.

HYDROLOGY

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes	____	No	X	Depth (inches):	____
Water table present?	Yes	X	No	____	Depth (inches):	6
Saturation present? (includes capillary fringe)	Yes	X	No	____	Depth (inches):	0

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP1W

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Acer rubrum*	30	Y	FAC
2	*Acer saccharinum*	20	Y	FACW
3	*Quercus ellipsoidalis*	5	N	NI
4				
5				
6				
7				
8				
9				
10				
		55	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Rhamnus frangula*	20	Y	FAC
2	*Sambucus canadensis*	15	Y	FACW
3				
4				
5				
6				
7				
8				
9				
10				
		35	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Phalaris arundinacea*	60	Y	FACW
2	*Calamagrostis canadensis*	20	N	OBL
3	*Spartina pectinata*	15	N	FACW
4	*Thelypteris palustris var. pubescens*	5	N	FACW
5	*Spiraea tomentosa*	5	N	FACW
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		105	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	11	28
Sapling/Shrub Stratum	7	18
Herb Stratum	21	53
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	20	x 1 =	20	
FACW species	120	x 2 =	240	
FAC species	50	x 3 =	150	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	190	(A)	410	(B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

SOIL **Sampling Point:** SP1W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1						loamy sand	
6-20	10YR 4/2	90	7.5YR 5/8	10	C	M	sand	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP2U
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): none
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Newson loamy sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precip above normal. Agricultural field, planted with soybeans.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP2U

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	60	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: SP2U

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	7.5YR 2.5/2						loamy sand	
16-24	10YR 7/1						sand	

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

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP2W
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave
Slope (%): 3 Lat.: Long.: Datum:
Soil Map Unit Name Dawson Peat NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Wetland hydrology present?	Y	If yes, optional wetland site ID:	Wetland 2

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precipitation above normal.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	20

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrologically connected to the Lemonweir River.

VEGETATION - Use scientific names of plants

Sampling Point: SP2W

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Rhamnus frangula*	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
		5	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Phalaris arundinacea*	50	Y	FACW
2	*Spartina pectinata*	40	Y	FACW
3	*Solidago gigantea*	5	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		95	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	1	3
Herb Stratum	19	48
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		205 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: SP2W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	10YR 2/1						loamy sand	
2-12	10YR 7/1	90	10YR 5/6	10	C	M	sand	
12-16	10YR 3/1						loamy sand	
16-20	10YR 7/1	95	10YR 5/6	5	C	M	sand	
20-24	10YR 3/1	90	5YR 3/4	10	C	M	sand	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- X Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP3U
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): none
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Newson loamy sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precip above normal. Agricultural field, planted with soybeans.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP3U

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	60	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: SP3U

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	7.5YR 2.5/2						loamy sand	
16-24	10YR 7/1						sand	

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

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP3W
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave
Slope (%): 5 Lat.: Long.: Datum:
Soil Map Unit Name Dawson Peat NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	
Wetland hydrology present? Y	If yes, optional wetland site ID: Wetland 3

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precipitation above normal.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	20

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland located in swale that connects to the Lemonweir River. Surface water in deepest part.

VEGETATION - Use scientific names of plants

Sampling Point: SP3W

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Rhamnus frangula*	5	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
		5	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Phalaris arundinacea*	80	Y	FACW
2	*Spartina pectinata*	20	N	FACW
3	*Solidago gigantea*	5	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		105	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	1	3
Herb Stratum	21	53
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	105	x 2 =	210
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	110 (A)		225 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

SOIL

Sampling Point: SP3W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	10YR 2/1						loamy sand	
2-12	10YR 7/1	90	10YR 5/6	10	C	M	sand	
12-16	10YR 3/1						loamy sand	
16-20	10YR 7/1	95	10YR 5/6	5	C	M	sand	
20-24	10YR 3/1	90	5YR 3/4	10	C	M	sand	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- X Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP4U
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): none
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Newson loamy sand NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precip above normal. Agricultural field, planted with soybeans.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes		No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP4U

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	60	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: SP4U

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	7.5YR 2.5/2						loamy sand	
8-24	10YR 7/1						sand	

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

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP4W
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Dawson peat NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Wetland hydrology present?	Y	If yes, optional wetland site ID:	Wetland 4

Remarks: (Explain alternative procedures here or in a separate report.)

Precipitation and temperature above normal. Small basin in soybean field.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8) X
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	2

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP4W

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	10	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		10	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	2	5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column totals	10 (A)		50 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation*
- X (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

Soybeans planted thru basin - at boundary, beans are stressed and stunted. In deepest part, no vegetation growing.

SOIL

Sampling Point: SP4W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1						loamy sand	
6-20	10YR 7/1	90	10YR 5/8	10	C	M	sand	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP5U
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): none
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Dawson peat NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	N	**Is the sampled area within a wetland?**	N
Hydric soil present?	N		
Wetland hydrology present?	N	If yes, optional wetland site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precip above normal. Agricultural field, planted with soybeans.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP5U

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	60	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		60	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	12	30
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

SOIL

Sampling Point: SP5U

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	7.5YR 2.5/2						loamy sand	
16-24	10YR 7/1						sand	

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

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hi-Crush Wyeville Site City/County: Byron, Monroe Co Sampling Date: 8-11-2011
Applicant/Owner: Hi-Crush Proppants State: WI Sampling Point: SP5W
Investigator(s): Natalie White, Shanna Skallet Section, Township, Range: S17,T18N,R01E
Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave
Slope (%): 1 Lat.: Long.: Datum:
Soil Map Unit Name Dawson peat NWI Classification:
Are climatic/hydrologic conditions of the site typical for this time of the year? N (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y	**Is the sampled area within a wetland?**	Y
Hydric soil present?	Y		
Wetland hydrology present?	Y	If yes, optional wetland site ID:	Wetland 5

Remarks: (Explain alternative procedures here or in a separate report.)

Temperature and precipitation above normal. Very similar to wetland 4 - small basin in soybean field.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):	
Water table present?	Yes		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches):	2

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: SP5W

Tree Stratum	Plot Size (30ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shurb Stratum	Plot Size (15ft)	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5ft)	Absolute % Cover	Dominant Species	Indicator Staus
1	*Glycine max*	10	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		10	= Total Cover	

Woody Vine Stratum	Plot Size ( )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	2	5
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column totals	10 (A)		50 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation*
- X (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

Soybeans planted thru basin - at boundary, beans are stressed and stunted. In deepest part, no vegetation growing.

SOIL

Sampling Point: SP5W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1						loamy sand	
6-20	10YR 7/1	90	10YR 5/8	10	C	M	sand	

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- _X_ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

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

Hydric soil present? Y

Remarks:

Appendix C

Site Photographs

Photo 1 Wetland 1. Floodplain forest with secondary channel of Lemonweir River visible in bottom of frame.

Photo 2 Upland west of Wetland 1.

Photo 3 Wetland 2 – Fresh (wet) Meadow

Photo 4 Upland south of Wetland 2. Wetland boundary visible on left side of frame, upland to the right. Facing east towards Lemonweir River.

Photo 5 Wetland 3 – Facing northwest from sample point. Deep marsh portion visible in center of photograph.

Photo 6 Upland south of Wetland 3. Contiguous with upland soybean field surrounding Wetlands 5 and 6 as well.

Photo 7 Wetland 5. Farmed basin.

Photo 8 Wetland 6. Farmed Basin

Appendix D

Climate Summary Data

Select Other Date

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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CXUS53 KMPX 011528
CLMEAU

CLIMATE REPORT
NATIONAL WEATHER SERVICE CHANHASSEN MN
1025 AM CDT THU SEP 01 2011

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...THE EAU CLAIRE WI CLIMATE SUMMARY FOR THE MONTH OF AUGUST 2011...

               CLIMATE   NORMAL    PERIOD    1971 TO 2000
               CLIMATE   RECORD    PERIOD    1900 TO 2011

WEATHER ITEM    OBSERVED          NORMAL  DEPART  LAST YEAR
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
MONTHLY          REPORT     AUGUST     2011      EAU     AIRPORT

TEMPS                       ACTUAL    NORMAL    DEPART           RANK
AVG              MAX         80.7      80.3      0.4      WARMER  NEAR NORM
AVG              MIN         58.4      58.3      0.1      WARMER  NEAR NORM
MONTH            MEAN        69.6      69.3      0.3      WARMER  NEAR NORM

DAILY            MAX          86 AUG-02-2011
DAILY            MIN          50 AUG-10-2011
RECORD           HIGHS        0
RECORD           LOWS         0

HDD                         ACTUAL    NORMAL    DEPART           RANK
TOTAL            MONTH        3         28       -25      WARMER   13  WARM
TOTAL            SEASON       4         39       -35      WARMER    5  WARM

CDD                         ACTUAL    NORMAL    DEPART           RANK
TOTAL            MONTH       150       161       -11      COOLER   50  NORM
TOTAL            ANNUAL      587       527        60      WARMER  NEAR NORM

PCP                         ACTUAL    NORMAL    DEPART           RANK
MONTH            TOTAL        2.34      4.47     -2.13     DRIER    29  DRY
ANNUAL           TOTAL       27.51     22.12      5.39     WETTER   12  WET
DAILY            MAX          0.85 AUG-16-2011
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RECORD	PCP	0				

SNOW		ACTUAL	AVG	DEPART		RANK
MONTH	TOTAL	0.0	0.0	0.0	NORMAL	N/A
SEASON	TOTAL	0.0	0.0	0.0	NORMAL	N/A
DAILY	MAX	0.0	AUG-01-2011			
MAX	DEPTH	0	AUG-01-2011			
RECORD	SNOW	0				

AUGUST	EXTREMES	WARMEST/COLDEST/WETTEST ON RECORD		FOR COMPARISON		
EXTREME	AUGUST	EXTREME	YEAR	DEPART		RANK
AUGUST	MAX	92.0	2007	11.7	WARMEST	1 WARM
AUGUST	MAX	74.3	1903	-6.0	COLDEST	1 COLD
AUGUST	MIN	65.9	1947	7.6	WARMEST	1 WARM
AUGUST	MIN	52.1	1950	-6.2	COLDEST	1 COLD
AUGUST	MEAN	78.2	1947	8.9	WARMEST	1 WARM
AUGUST	MEAN	63.8	2004	-5.5	COLDEST	1 COLD
AUGUST	HDD	0	1998	-28	WARMEST	1 WARM
AUGUST	HDD	104	2004	76	COLDEST	1 COLD
AUGUST	CDD	415	1947	254	WARMEST	1 WARM
AUGUST	CDD	57	1927	-104	COLDEST	1 COLD
AUGUST	PCP	11.64	1980	7.17	WETTEST	1 WET
AUGUST	PCP	0.23	1898	-4.24	DRIEST	1 DRY
AUGUST	SNOW	0.0	NONE	RECORDED	WETTEST	1 WET
AUGUST	SNOW	0.0	NONE	RECORDED	DRIEST	1 DRY

WIND	MPH	ACTUAL	NORMAL	DEPART
MONTH	AVERAGE	4.9	9.5	-4.6

PEAK WIND GUST	40 MPH	WEST	AUG-24-2011
FASTEST 2-MINUTE	28 MPH	NORTHWEST	AUG-24-2011

SUNSHINE ANNUAL	MIN-GAIN	MIN-LOSS	HOUR-GAIN	HOUR-LOSS	PCT-GAIN	PCT-LOSS
JAN-AUG	413	-138	6.9	-2.3	100	-33

SUNSHINE MONTHLY	MIN-GAIN	MIN-LOSS	HOUR-GAIN	HOUR-LOSS	PCT-GAIN	PCT-LOSS
AUG	0	-85	0.0	-1.4	0	-21

WEATHER TYPE	NCDC	ACTUAL COUNT
1=FOG/MIST		23
2=FOG DENSE	0.5	10
3=THUNDER	6.4	5
4=IP/SLEET		0
5=HAIL		0
6=FRZ RAIN		0
7=BLWG DUST		0
8=HAZE/SMK		2
9=BLWG SNW		0

TEMP MAXIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART

<=32	0	0	0	NORMAL
>=50	31	31	0	NORMAL
>=60	31	31	0	WARMER
>=70	30	29	1	WARMER
>=80	22	18	4	WARMER
>=90	0	3	-3	COOLER

TEMP MINIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
<= 32	0	0	0	NORMAL
<= 20	0	0	0	NORMAL
<= 10	0	0	0	NORMAL
<= 0	0	0	0	NORMAL
<= -10	0	0	0	NORMAL
>= 50	31	28	3	WARMER

PCP PCP	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	1	3	-2	DRIER
>= 0.01	13	10	3	WETTER
>= 0.10	6	7	-1	DRIER
>= 0.25	4	5	-1	DRIER
>= 0.50	1	3	-2	DRIER
>= 1.00	0	1	-1	DRIER

SNOW SNOW	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	0	0	0	NORMAL
>= 0.1	0	0	0	NORMAL
>= 1.0	0	0	0	NORMAL
>= 1.5	0	0	0	NORMAL
>= 2.0	0	0	0	NORMAL
>= 3.0	0	0	0	NORMAL

NEW DAILY RECORDS NEW DAILY SET/TIE NO NEW RECORD DAILY	AMOUNT EXTREMES	LISTING DATE	YEAR	PREVIOUS SET/TIE	OLD YEAR

3-MONTH JJA	DATA 2011	JUNE ACTUAL	JULY NORMAL	AUGUST DEPART	(JJA)	RANK	
JJA-11	MAX	81.3	80.6	0.7	WARMER	NEAR	NORM
JJA-11	MIN	59.0	57.9	1.1	WARMER	36	WARM
JJA-11	MEAN	70.2	69.3	0.9	WARMER	39	WARM
JJA-11	HDD	73	101	-28	WARMER	49	WARM
JJA-11	CDD	571	495	76	WARMER	43	WARM
JJA-11	PRECIP	17.00	12.48	4.52	WETTER	9	WET
JJA-11	SNOW	0.0	0.0	0.0	NORMAL	N/A	

3-MONTH EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

EXTREME	JJA	EXTREME	YEAR	DEPART		RANK	
JUN-JUL-AUG	MAX	87.2	1988	6.6	WARMEST	1	WARM
JUN-JUL-AUG	MAX	75.0	1915	-5.6	COLDEST	1	COLD
JUN-JUL-AUG	MIN	62.5	1949	4.6	WARMEST	1	WARM
JUN-JUL-AUG	MIN	62.5	1949	4.6	COLDEST	1	COLD

JUN-JUL-AUG	MEAN	74.6	1949	5.3	WARMEST	1	WARM
JUN-JUL-AUG	MEAN	64.5	1915	-4.8	COLDEST	1	COLD
JUN-JUL-AUG	HDD	6	1932	-95	WARMEST	1	WARM
JUN-JUL-AUG	HDD	250	1915	149	COLDEST	1	COLD
JUN-JUL-AUG	CDD	929	1949	434	WARMEST	1	WARM
JUN-JUL-AUG	CDD	228	1915	-267	COLDEST	1	COLD
JUN-JUL-AUG	PRECIP	22.97	1989	10.49	SNOWIEST	1	WET
JUN-JUL-AUG	PRECIP	3.00	1897	-9.48	DRIEST	1	DRY
JUN-JUL-AUG	SNOW	0.0	NONE	RECORDED	WETTER	1	WET
JUN-JUL-AUG	SNOW	0.0	NONE	RECORDED	WETTER	1	DRY

ANNUAL	DATA						
JAN-AUG	2011	ACTUAL	NORMAL	DEPART		RANK	
JAN-AUG-11	MAX	55.8	57.8	-2.0	COOLER	29	COLD
JAN-AUG-11	MIN	35.5	36.3	-0.8	COOLER	NEAR	NORM
JAN-AUG-11	MEAN	45.7	47.1	-1.4	COOLER	48	COLD
JAN-AUG-11	HDD-ANN	5161	4822	339	COOLER	44	COLD
JUL-AUG-11	HDD-SEA	4	39	-35	WARMER	5	WARM
JAN-AUG-11	CDD	587	527	60	WARMER	NEAR	NORM
JAN-AUG-11	PRECIP	27.51	22.12	5.39	WETTER	12	WET
JAN-AUG-11	SNOW-ANN	39.2	31.2	8.0	SNOWIER	31	WET
JUL-AUG-11	SNOW-SEA	0.0	NONE	RECORDED		N/A	

ANNUAL EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

JAN-AUG		EXTREME	YEAR	DEPART		RANK	
JAN-AUG	MAX	63.6	1931	5.8	WARMEST	1	WARM
JAN-AUG	MAX	52.0	1979	-5.8	COLDEST	1	COLD
JAN-AUG	MIN	41.1	1921	4.8	WARMEST	1	WARM
JAN-AUG	MIN	30.2	1950	-6.1	COLDEST	1	COLD
JAN-AUG	MEAN	52.3	1931	5.2	WARMEST	1	WARM
JAN-AUG	MEAN	41.25	1950	-5.9	COLDEST	1	COLD
JAN-AUG	HDD-ANN	3874	1931	-948	WARMEST	1	WARM
JAN-AUG	HDD-ANN	5981	1950	1159	COLDEST	1	COLD
JUL-AUG	HDD-SEA	0	1998	-39	WARMEST	1	WARM
JUL-AUG	HDD-SEA	122	1950	83	COLDEST	1	COLD
JAN-AUG	CDD	1051	1934	524	WARMEST	1	WARM
JAN-AUG	CDD	276	1915	-251	COLDEST	1	COLD
JAN-AUG	PRECIP	39.79	1938	17.67	WETTER	1	WET
JAN-AUG	PRECIP	11.64	1910	-10.48	DRIER	1	DRY
JAN-AUG	SNOW-ANN	80	1929	48.8	SNOWIEST	1	WET
JAN-AUG	SNOW-ANN	8.7	1921	-22.5	DRIEST	1	DRY
JUL-AUG	SNOW-SEA	0.0	NONE	RECORDED	SNOWIEST	1	WET
JUL-AUG	SNOW-SEA	0.0	NONE	RECORDED	DRIEST	1	DRY

CARLYON

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Climatological Report (Monthly)

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CXUS53 KMPX 010832
CLMEAU

CLIMATE REPORT
NATIONAL WEATHER SERVICE CHANHASSEN MN
330 AM CDT MON AUG 01 2011

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...THE EAU CLAIRE WI CLIMATE SUMMARY FOR THE MONTH OF JULY 2011...

                 CLIMATE   NORMAL    PERIOD    1971 TO 2000
                 CLIMATE   RECORD    PERIOD    1900 TO 2011

WEATHER         OBSERVED           NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)   VALUE   FROM    VALUE  DATE(S)
                                           NORMAL
.............................................................
MONTHLY            REPORT      JULY      2011      EAU     AIRPORT

TEMPS                         ACTUAL    NORMAL    DEPART           RANK
AVG               MAX          85.3      82.6      2.7      WARMER   37  WARM
AVG               MIN          63.9      60.2      3.7      WARMER   10  WARM
MONTH             MEAN         74.6      71.4      3.2      WARMER   22  WARM

DAILY             MAX           96 JUL-01-2011
DAILY             MIN           52 JUL-13-2011
RECORD            HIGHS         0
RECORD            LOWS          0

HDD                           ACTUAL    NORMAL    DEPART           RANK
TOTAL             MONTH          1         16       -15      WARMER   24  WARM
TOTAL             SEASON         1         16       -15      WARMER   24  WARM

CDD                           ACTUAL    NORMAL    DEPART           RANK
TOTAL             MONTH        306       214        92      WARMER   22  WARM
TOTAL             ANNUAL       437       370        67      WARMER   37  WARM

PCP                           ACTUAL    NORMAL    DEPART           RANK
MONTH             TOTAL         7.43      3.94         3.49  WETTER    6  WET
ANNUAL            TOTAL        25.17     18.51         6.66  WETTER    4  WET
DAILY             MAX           1.44 JUL-10-2011
RECORD            PCP            1

SNOW                          ACTUAL     AVG      DEPART           RANK
MONTH             TOTAL         0.0       0.0       0.0      NORMAL   N/A
SEASON            TOTAL         0.0       0.0       0.0      NORMAL   N/A
```

DAILY	MAX	0.0	JUL-01-2011
MAX	DEPTH	0	JUL-01-2011
RECORD	SNOW	0	

JULY EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

EXTREME	JULY	EXTREME	YEAR	DEPART		RANK	
JULY	MAX	95.1	1936	12.5	WARMEST	1	WARM
JULY	MAX	75.0	1992	-7.6	COLDEST	1	COLD
JULY	MIN	67.8	1935	7.6	WARMEST	1	WARM
JULY	MIN	53.8	2009	-6.4	COLDEST	1	COLD
JULY	MEAN	80.4	1936	9	WARMEST	1	WARM
JULY	MEAN	65.5	1992	-5.9	COLDEST	1	COLD
JULY	HDD	0	2010	-16	WARMEST	1	WARM
JULY	HDD	42	1972	26	COLDEST	1	COLD
JULY	CDD	487	1936	273	WARMEST	1	WARM
JULY	CDD	60	2009	-154	COLDEST	1	COLD
JULY	PCP	8.88	1900	4.94	WETTEST	1	WET
JULY	PCP	0.12	1936	-3.82	DRIEST	1	DRY
JULY	SNOW	0.0	NONE	RECORDED	WETTEST	1	WET
JULY	SNOW	0.0	NONE	RECORDED	DRIEST	1	DRY

WIND	MPH	ACTUAL	NORMAL	DEPART
MONTH	AVERAGE	5.5	9.6	-4.1

PEAK WIND GUST	49 MPH	NORTHWEST	JUL-10-2011
FASTEST 2-MINUTE	35 MPH	NORTHWEST	JUL-23-2011

SUNSHINE

ANNUAL	MIN-GN	MIN-LS	HR-GN	HR-LS	PCNT GN	PCNT LS
JAN-AUG	413	-53	6.9	-0.88	-100	-13
MONTHLY	MIN-GN	MIN-LS	HR-GN	HR-LS	PCNT GN	PCNT LS
JUL	0	-50	0.00	-0.83	0	-12

WEATHER

TYPE	COUNT
1=FOG/MIST	0
2=FOG DENSE	0
3=THUNDER	0
4=IP/SLEET	0
5=HAIL	0
6=FRZ RAIN	0
7=BLWG DUST	0

TEMP MAXIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
<=32	0	0	0	NORMAL
>=50	31	31	0	NORMAL
>=60	31	31	0	NORMAL
>=70	31	30	1	WARMER
>=80	26	22	4	WARMER
>=90	6	5	1	WARMER

TEMP MINIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
<= 32	0	0	0	NORMAL
<= 20	0	0	0	NORMAL

<= 10	0	0	0	NORMAL
<= 0	0	0	0	NORMAL
<= -10	0	0	0	NORMAL
>= 50	31	30	1	WARMER

PCP	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	3	3	0	WETTER
>= 0.01	14	11	3	WETTER
>= 0.10	11	7	4	WETTER
>= 0.25	10	5	5	WETTER
>= 0.50	6	3	3	WETTER
>= 1.00	3	1	2	WETTER

SNOW	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	0	0	0	NORMAL
>= 0.1	0	0	0	NORMAL
>= 1.0	0	0	0	NORMAL
>= 1.5	0	0	0	NORMAL
>= 2.0	0	0	0	NORMAL
>= 3.0	0	0	0	NORMAL

NEW DAILY	RECORDS	LISTING		PREVIOUS	
NEW DAILY	SET/TIE	AMOUNT	DATE	YEAR	SET/TIE	OLD YEAR
WARM LOW	TIE->	76	JUL-19-2011		TIES->	76 1942
PRECIP	NEW->	1.40	JUL-23-2011		OLD->	0.81 1987

3-MONTH MJJ	DATA 2011	MAY ACTUAL	JUNE NORMAL	JULY DEPART	(MJJ)	RANK	
MJJ-11	MAX	76.7	53.7	23.0	WARMER	NEAR	NORM
MJJ-11	MIN	54.6	38.4	16.2	WARMER	38	WARM
MJJ-11	MEAN	65.7	46.1	19.6	WARMER	47	WARM
MJJ-11	HDD	354	337	17	COOLER	46	COLD
MJJ-11	CDD	421	325	96	WARMER	44	WARM
MJJ-11	PRECIP	14.66	8.21	6.45	WETTER	17	WET
MJJ-11	SNOW	0.0	0.0	0.0	NORMAL	N/A	

3-MONTH EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

EXTREME	MJJ	EXTREME	YEAR	DEPART		RANK	
MAY-JUN-JUL	MAX	85.9	1934	32.2	WARMEST	1	WARM
MAY-JUN-JUL	MAX	70.7	1915	17.0	COLDEST	1	COLD
MAY-JUN-JUL	MIN	59.0	1934	20.6	WARMEST	1	WARM
MAY-JUN-JUL	MIN	49.4	1924	11.0	COLDEST	1	COLD
MAY-JUN-JUL	MEAN	72.5	1934	26.4	WARMEST	1	WARM
MAY-JUN-JUL	MEAN	60.7	1915	14.6	COLDEST	1	COLD
MAY-JUN-JUL	HDD	113	1934	-224	WARMEST	1	WARM
MAY-JUN-JUL	HDD	543	1924	206	COLDEST	1	COLD
MAY-JUN-JUL	CDD	815	1934	490	WARMEST	1	WARM
MAY-JUN-JUL	CDD	163	1915	-162	COLDEST	1	COLD
MAY-JUN-JUL	PCP	23.03	1938	14.82	SNOWIEST	1	WET
MAY-JUN-JUL	PCP	4.11	1936	-4.10	DRIEST	1	DRY
MAY-JUN-JUL	SNOW	3.3	2001	3.3	WETTER	1	WET
MAY-JUN-JUL	SNOW	0.0	2010	-T	WETTER	1	DRY

ANNUAL	DATA						
JAN-JUL	2011	ACTUAL	NORMAL	DEPART		RANK	
JAN-JUL-11	MAX	52.2	54.0	-1.8	COOLER	27	COLD
JAN-JUL-11	MIN	32.2	32.3	-0.1	COOLER	NEAR	NORM
JAN-JUL-11	MEAN	42.2	43.2	-1.0	COOLER	46	COLD
JAN-JUL-11	HDD-ANN	5158	4950	208	COOLER	42	COLD
JUL-JUL-11	HDD-SEA	1	16	-15	WARMER	24	WARM
JAN-JUL-11	CDD	437	370	67	WARMER	37	WARM
JAN-JUL-11	PRECIP	25.17	18.51	6.66	WETTER	4	WET
JAN-JUL-11	SNOW-ANN	39.2	33.4	5.8	SNOWIER	31	WET
JUL-JUL-11	SNOW-SEA	0.0	NONE	RECORDED			

ANNUAL EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

JAN-JUL		EXTREME	YEAR	DEPART		RANK	
JAN-JUL	MAX	60.8	1931	6.8	WARMEST	1	WARM
JAN-JUL	MAX	48.5	1979	-5.5	COLDEST	1	COLD
JAN-JUL	MIN	38.7	1931	6.4	WARMEST	1	WARM
JAN-JUL	MIN	27	1950	-5.3	COLDEST	1	COLD
JAN-JUL	MEAN	49.8	1931	6.6	WARMEST	1	WARM
JAN-JUL	MEAN	37.95	1950	-5.3	COLDEST	1	COLD
JAN-JUL	HDD-ANN	3844	1931	-1106	WARMEST	1	WARM
JAN-JUL	HDD-ANN	5883	1950	933	COLDEST	1	COLD
JULY	HDD-SEA	0	2010	-16	WARMEST	1	WARM
JULY	HDD-SEA	42	1972	26	COLDEST	1	COLD
JAN-JUL	CDD	827	1934	457	WARMEST	1	WARM
JAN-JUL	CDD	174	1904	-196	COLDEST	1	COLD
JAN-JUL	PRECIP	34.72	1938	16.21	WETTER	1	WET
JAN-JUL	PRECIP	8.84	1910	-9.67	DRIER	1	DRY
JAN-JUL	SNOW-ANN	80	1929	46.6	SNOWIEST	1	WET
JAN-JUL	SNOW-ANN	8.7	1921	-24.7	DRIEST	1	DRY
JULY	SNOW-SEA	0	NONE	RECORDED	SNOWIEST	1	WET
JULY	SNOW-SEA	0	NONE	RECORDED	DRIEST	1	DRY

CARLYON

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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CXUS53 KMPX 050148
CLMEAU

CLIMATE REPORT
NATIONAL WEATHER SERVICE CHANHASSEN MN
845 PM CDT MON JUL 04 2011

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...THE EAU CLAIRE WI CLIMATE SUMMARY FOR THE MONTH OF JUNE 2011...

                 CLIMATE   NORMAL    PERIOD    1971 TO 2000
                 CLIMATE   RECORD    PERIOD    1900 TO 2011

WEATHER         OBSERVED           NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)   VALUE   FROM    VALUE  DATE(S)
                                           NORMAL
.............................................................
MONTHLY             REPORT     JUNE      2011      EAU     AIRPORT

TEMPS                         ACTUAL    NORMAL    DEPART            RANK
AVERAGE          MAX           77.8      78.5      -0.7     COOLER   NEAR NORM
AVERAGE          MIN           54.6      55.0      -0.4     COOLER    48  COLD
MONTH            MEAN          66.2      66.8      -0.6     COOLER    49  COLD

DAILY            MAX           100 JUN-07-2011
DAILY            MIN            37 JUN-12-2011
RECORD           HIGHS          1
RECORD           LOWS           0

HDD                           ACTUAL    NORMAL    DEPART            RANK
TOTAL            MONTH          72        58        14      COOLER    40  COLD
TOTAL            SEASON       8295      8196        99      COOLER    43  COLD

CDD                           ACTUAL    NORMAL    DEPART            RANK
TOTAL            MONTH         115       111         4      WARMER   NEAR NORM
TOTAL            ANNUAL        131       156       -25      COOLER    45  COLD

PCP                           ACTUAL    NORMAL    DEPART            RANK
MONTH            TOTAL        7.23      4.27      2.96     WETTER    12  WET
ANNUAL           TOTAL       17.74     14.57      3.17     WETTER    28  WET
DAILY            MAX           4.74 JUN-18-2011
RECORD           PCP            1

SNOW                          ACTUAL     AVG      DEPART            RANK
MONTH            TOTAL         0.0       0.0       0.0      NORMAL   N/A
SEASON           TOTAL        71.5      50.4      21.1     WETTER    6   WET
DAILY            MAX            0   JUN-01-2011
MAX              DEPTH          0   JUN-01-2011
RECORD           SNOW           0

JUNE             EXTREMES WARMEST/COLDEST/WETTEST ON RECORD  FOR COMPARISON
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EXTREME	JUNE	EXTREME	YEAR	DEPART		RANK	
JUNE	MAX	90.1	1933	11.6	WARMEST	1	WARM
JUNE	MAX	68.3	1969	-10.2	COLDEST	1	COLD
JUNE	MIN	64.4	1933	9.4	WARMEST	1	WARM
JUNE	MIN	49.3	1969	-5.7	COLDEST	1	COLD
JUNE	MEAN	77.3	1933	10.5	WARMEST	1	WARM
JUNE	MEAN	58.8	1969	-8	COLDEST	1	COLD
JUNE	HDD	1	1932	-57	WARMEST	1	WARM
JUNE	HDD	196	1969	138	COLDEST	1	COLD
JUNE	CDD	386	1933	275	WARMEST	1	WARM
JUNE	CDD	13	1928	-98	COLDEST	1	COLD
JUNE	PCP	10.42	1990	6.15	WETTEST	1	WET
JUNE	PCP	0.59	1910	-3.68	DRIEST	1	DRY
JUNE	SNOW	0.0	NONE	RECORDED	WETTEST	1	WET
JUNE	SNOW	0.0	NONE	RECORDED	DRIEST	1	DRY

WIND	MPH	ACTUAL	NORMAL	DEPART
MONTH	AVERAGE	8.1	10.0	-1.9

PEAK WIND GUST	51 MPH	NORTH	JUN-18-2011
FASTEST 2-MINUTE	38 MPH	NORTHWEST	JUN-18-2011

SUNSHINE	MONTHLY	MON-PCT	TOTAL	ANNUAL	ANN-PCT
MIN / HOURS	MINUTES	ANN-TOT	ANNUAL	HOURS	POSSIBLE
GAINED	16	4	413	6.9	100
LOST	-3	-1	-3	-0.1	-1

TYPE	COUNT
1=FOG/MIST	18
2=FOG DENSE	4
3=THUNDER	5
4=IP/SLEET	0
5=HAIL	0
6=FRZ RAIN	0
7=BLWG DUST	0
8=HAZE/SMK	3
9=BLWG SNOW	0

TEMP	COUNT	NUMBER	OF DAYS	
MAXIMUM	ACTUAL	AVERAGE	DEPART	
<=32	0	0	0	NORMAL
>=50	30	30	0	NORMAL
>=60	28	29	-1	COOLER
>=70	24	26	-2	COOLER
>=80	12	14	-2	COOLER
>=90	4	3	1	WARMER

TEMP	COUNT	NUMBER	OF DAYS	
MINIMUM	ACTUAL	AVERAGE	DEPART	
<= 32	0	0	0	NORMAL
<= 20	0	0	0	NORMAL
<= 10	0	0	0	NORMAL
<= 0	0	0	0	NORMAL
<= -10	0	0	0	NORMAL
>= 50	25	24	1	WARMER

PCP	COUNT	NUMBER	OF DAYS	
PCP	ACTUAL	AVERAGE	DEPART	
T (ONLY)	4	3	1	WETTER
>= 0.01	9	12	-3	DRIER
>= 0.10	7	8	-1	DRIER
>= 0.25	6	5	1	WETTER

>= 0.50	2	3	-1	DRIER
>= 1.00	1	1	0	WETTER

SNOW	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	0	0	0	NORMAL
>= 0.1	0	0	0	NORMAL
>= 1.0	0	0	0	NORMAL
>= 1.5	0	0	0	NORMAL
>= 2.0	0	0	0	NORMAL
>= 3.0	0	0	0	NORMAL

NEW DAILY	RECORDS SET/TIE	LISTING AMOUNT	DATE	YEAR	PREVIOUS SET/TIE	OLD	YEAR
MAX	NEW->	100	JUN-07-2011		OLD->	95	1987
PRECIP	NEW->	4.74	JUN-18-2011		OLD->	1.94	1954
PRECIP MONTH	NEW->	4.74	JUNE -2011		OLD->	3.96	JUN-19-1931
COLD MAX	NEW->	60	JUN-23-2011		OLD->	61	1974

3-MONTH AMJ	DATA 2011	APRIL ACTUAL	MAY NORMAL	JUNE DEPART	(AMJ)	RANK	
AMJ-11	MAX	66.0	68.4	-2.4	COOLER	24	COLD
AMJ-11	MIN	44.5	44.7	-0.2	COOLER	49	COLD
AMJ-11	MEAN	55.3	56.6	-1.3	COOLER	38	COLD
AMJ-11	HDD	992	922	70	COOLER	35	COLD
AMJ-11	CDD	131	156	-25	COOLER	45	COLD
AMJ-11	PRECIP	13.31	10.87	2.44	WETTER	24	WET
AMJ-11	SNOW	1.9	2.5	-0.6	DRIER	NEAR	NORM

3-MONTH EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

EXTREME	AMJ	EXTREME	YEAR	DEPART		RANK	
APR-MAY-JUN	MAX	75.0	1934	6.6	WARMEST	1	WARM
APR-MAY-JUN	MAX	62.7	1950	-5.7	COLDEST	1	COLD
APR-MAY-JUN	MIN	50.2	1934	5.5	WARMEST	1	WARM
APR-MAY-JUN	MIN	39.8	1961	-4.9	COLDEST	1	COLD
APR-MAY-JUN	MEAN	62.6	1934	6.0	WARMEST	1	WARM
APR-MAY-JUN	MEAN	51.8	1907	-4.8	COLDEST	1	COLD
APR-MAY-JUN	HDD	527	1977	-395	WARMEST	1	WARM
APR-MAY-JUN	HDD	1307	1907	385	COLDEST	1	COLD
APR-MAY-JUN	CDD	484	1934	328	WARMEST	1	WARM
APR-MAY-JUN	CDD	35	1928	-121	COLDEST	1	COLD
APR-MAY-JUN	PRECIP	23.72	1938	12.85	SNOWIEST	1	WET
APR-MAY-JUN	PRECIP	4.79	1985	-6.08	DRIEST	1	DRY
APR-MAY-JUN	SNOW	31.1	1928	28.6	WETTER	1	WET
APR-MAY-JUN	SNOW	0	2006	-2.5	DRIER	1	DRY

ANNUAL JAN-JUN	DATA 2011	ACTUAL	NORMAL	DEPART		RANK	
JAN-JUN-11	MAX	46.7	49.2	-2.5	COOLER	23	COLD
JAN-JUN-11	MIN	27.0	27.7	-0.7	COOLER	NEAR	NORM
JAN-JUN-11	MEAN	36.8	38.5	-1.7	COOLER	40	COLD
JAN-JUN-11	HDD-ANN	5160	4934	226	COOLER	40	COLD
JUL-JUN-11	HDD-SEA	8295	8196	99	COOLER	43	COLD
JAN-JUN-11	CDD	131	156	-25	COOLER	45	COLD
JAN-JUN-11	PRECIP	17.74	14.57	3.17	WETTER	28	WET
JAN-JUN-11	SNOW-ANN	39.2	33.4	5.8	SNOWIER	31	WET
JUL-JUN-11	SNOW-SEA	71.5	50.4	21.1	SNOWIER	6	WET

ANNUAL EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

JAN-JUN	EXTREME	YEAR	DEPART		RANK	
JAN-JUN MAX	56.2	1987	7.0	WARMEST	1	WARM

JAN-JUN	MAX	42.9	1979	-6.3	COLDEST	1	COLD
JAN-JUN	MIN	34.6	1931	6.9	WARMEST	1	WARM
JAN-JUN	MIN	22.1	1950	-5.6	COLDEST	1	COLD
JAN-JUN	MEAN	45.3	1931	6.8	WARMEST	1	WARM
JAN-JUN	MEAN	32.85	1979	-5.7	COLDEST	1	COLD
JAN-JUN	HDD-ANN	3844	1931	-1090	WARMEST	1	WARM
JAN-JUN	HDD-ANN	5859	1950	925	COLDEST	1	COLD
JUL-JUN	HDD-SEA	6722	1922	-1474	WARMEST	1	WARM
JUL-JUN	HDD-SEA	9196	1980	1000	COLDEST	1	COLD
JAN-JUN	CDD	484	1934	328	WARMEST	1	WARM
JAN-JUN	CDD	35	1928	-121	COLDEST	1	COLD
JAN-JUN	PRECIP	29.94	1938	15.37	WETTER	1	WET
JAN-JUN	PRECIP	6.37	1910	-8.20	DRIER	1	DRY
JAN-JUN	SNOW-ANN	80.0	1929	46.6	SNOWIEST	1	WET
JAN-JUN	SNOW-ANN	8.7	1921	-24.7	DRIEST	1	DRY
JUL-JUN	SNOW-SEA	89.5	1997	39.1	SNOWIEST	1	WET
JUL-JUN	SNOW-SEA	15.1	1968	-35.3	DRIEST	1	DRY

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Climatological Report (Monthly)

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CLMEAU

CLIMATE REPORT...CORRECTED HDD VALUES...
NATIONAL WEATHER SERVICE CHANHASSEN MN
100 AM CDT SAT JUN 04 2011

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...THE EAU CLAIRE WI CLIMATE SUMMARY FOR THE MONTH OF MAY 2011...

                 CLIMATE   NORMAL    PERIOD    1971 TO 2000
                 CLIMATE   RECORD    PERIOD    1900 TO 2011

WEATHER         OBSERVED           NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)   VALUE   FROM    VALUE  DATE(S)
                                           NORMAL
.............................................................
MONTHLY             REPORT     MAY       2011      EAU     AIRPORT

TEMPS                         ACTUAL    NORMAL    DEPART           RANK
AVG                  MAX       66.8      70.2      -3.4     COOLER   30  COLD
AVG                  MIN       45.4      45.7      -0.3     COOLER  NEAR NORM
MONTH                MEAN      56.1      58.0      -1.9     COOLER   42  COLD

DAILY                MAX         86 MAY-30-2011
DAILY                MIN         26 MAY-04-2011
RECORD              HIGHS        0
RECORD               LOWS        0

HDD                           ACTUAL    NORMAL    DEPART           RANK
TOTAL               MONTH      284       263         21     COOLER   46  COLD
TOTAL               SEASON     8223      8138        85     COOLER   44  COLD

CDD                           ACTUAL    NORMAL    DEPART           RANK
TOTAL               MONTH        16        44       -28     COOLER   42  COLD
TOTAL               ANNUAL       16        45       -29     COOLER   36  COLD

PCP                           ACTUAL    NORMAL    DEPART           RANK
MONTH               TOTAL      3.28      3.69     -0.41     DRIER   NEAR NORM
ANNUAL              TOTAL     10.51      10.3      0.21     WETTER  NEAR NORM
DAILY                MAX       1.12 MAY-09-2011
RECORD               PCP         0

SNOW                          ACTUAL     AVG      DEPART           RANK
MONTH               TOTAL        T         T         0       NORMAL  NEAR NORM
SEASON              TOTAL      71.5      50.4      21.1    SNOWIER    6  WET
```

DAILY	MAX	T	MAY-02-2011
MAX	DEPTH	0	MAY-01-2011
RECORD	SNOW	0	

MAY EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

EXTREME	MAY	EXTREME	YEAR	DEPART		RANK	
MAY	MAX	82.7	1934	12.5	WARMEST	1	WARM
MAY	MAX	60.9	1896	-9.3	COLDEST	1	COLD
MAY	MIN	54	1934	8.3	WARMEST	1	WARM
MAY	MIN	37.2	1907	-8.5	COLDEST	1	COLD
MAY	MEAN	68.4	1934	10.4	WARMEST	1	WARM
MAY	MEAN	49.8	1907	-8.2	COLDEST	1	COLD
MAY	HDD	83	1977	-180	WARMEST	1	WARM
MAY	HDD	467	1907	204	COLDEST	1	COLD
MAY	CDD	204	1934	160	WARMEST	1	WARM
MAY	CDD	0	2008	-44	COLDEST	1	COLD
MAY	PCP	10.54	1938	6.85	WETTEST	1	WET
MAY	PCP	0.75	1900	-2.94	DRIEST	1	DRY
MAY	SNOW	3.3	2001	3.3	WETTEST	1	WET
MAY	SNOW	0.0	2009	-T	DRIEST	1	DRY

WIND	MPH	ACTUAL	NORMAL	DEPART
MONTH	AVERAGE	8.8	10.8	-2.0

PEAK WIND GUST	53 MPH	EAST	MAY-09-2011
FASTEST 2-MINUTE	40 MPH	SOUTHEAST	MAY-09-2011

SUNSHINE MIN / HOURS	MONTHLY MINUTES	MON-PCT ANN-TOT	TOTAL ANNUAL	ANNUAL HOURS	ANN-PCT POSSIBLE
GAINED	68	16	397	6.6	96
LOST	0	0	0	0	0

TYPE	COUNT
1=FOG/MIST	0
2=FOG DENSE	0
3=THUNDER	0
4=IP/SLEET	0
5=HAIL	0
6=FRZ RAIN	0
7=BLWG DUST	0
8=HAZE/SMK	0
9=BLWG SNOW	0

TEMP MAXIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
<=32	0	0	0	NORMAL
>=50	28	31	-3	COOLER
>=60	24	26	-2	COOLER
>=70	14	16	-2	COOLER
>=80	3	6	-3	COOLER
>=90	0	1	-1	COOLER

TEMP MINIMUM	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
<= 32	3	2	1	COOLER
<= 20	0	0	0	NORMAL

<= 10	0	0	0	NORMAL
<= 0	0	0	0	NORMAL
<= -10	0	0	0	NORMAL
>= 50	12	10	2	WARMER

PCP	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	8	4	5	WETTER
>= 0.01	10	12	-2	DRIER
>= 0.10	7	7	0	DRIER
>= 0.25	4	4	0	DRIER
>= 0.50	3	2	1	WETTER
>= 1.00	1	1	0	WETTER

SNOW	COUNT ACTUAL	NUMBER OF DAYS AVERAGE	DEPART	
T (ONLY)	1	0	0.8	SNOWIER
>= 0.1	0	0	-0.1	DRIER
>= 1.0	0	0	0	NORMAL
>= 1.5	0	0	0	NORMAL
>= 2.0	0	0	0	NORMAL
>= 3.0	0	0	0	NORMAL

NEW DAILY RECORDS	SET/TIE	AMOUNT	LISTING DATE	YEAR	PREVIOUS SET/TIE	OLD YEAR
COLD MAX	TIE->	39	MAY-02-2011		TIES->	39 2005

3-MONTH DATA MARCH...APRIL...MAY (MAM)							
MAM	2011	ACTUAL	NORMAL	DEPART		RANK	
MAM-11	MAX	52.4	55.7	-3.3	COOLER	24	COLD
MAM-11	MIN	32.2	33.3	-1.1	COOLER	46	COLD
MAM-11	MEAN	42.3	44.6	-2.3	COOLER	33	COLD
MAM-11	HDD	2076	1928	148	COOLER	35	COLD
MAM-11	CDD	16	45	-29	COOLER	36	COLD
MAM-11	PRECIP	8.65	8.46	0.19	WETTER	NEAR	NORM
MAM-11	SNOW	10.4	11.7	-1.3	DRIER	NEAR	NORM

3-MONTH EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON							
EXTREME	MAM	EXTREME	YEAR	DEPART		RANK	
MAR-APR-MAY	MAX	64.0	1910	8.3	WARMEST	1	WARM
MAR-APR-MAY	MAX	46.8	1950	-8.9	COLDEST	1	COLD
MAR-APR-MAY	MIN	40.3	1977	7.0	WARMEST	1	WARM
MAR-APR-MAY	MIN	27.3	1956	-6.0	COLDEST	1	COLD
MAR-APR-MAY	MEAN	51.6	1977	7.0	WARMEST	1	WARM
MAR-APR-MAY	MEAN	37.3	1950	-7.3	COLDEST	1	COLD
MAR-APR-MAY	HDD	1350	1977	-578	WARMEST	1	WARM
MAR-APR-MAY	HDD	2542	1950	614	COLDEST	1	COLD
MAR-APR-MAY	CDD	216	1934	171	WARMEST	1	WARM
MAR-APR-MAY	CDD	0	2008	-45	COLDEST	1	COLD
MAR-APR-MAY	PRECIP	19.50	1938	11.04	SNOWIEST	1	WET
MAR-APR-MAY	PRECIP	3.06	1895	-5.40	DRIEST	1	DRY
MAR-APR-MAY	SNOW	37.6	1928	25.9	WETTER	1	WET
MAR-APR-MAY	SNOW	0	1981	-11.7	DRIER	1	DRY

ANNUAL DATA

JAN-MAY	2011	ACTUAL	NORMAL	DEPART		RANK	
JAN-MAY-11	MAX	40.4	43.4	-3.0	COOLER	22	COLD
JAN-MAY-11	MIN	21.4	22.2	-0.8	COOLER	NEAR	NORM
JAN-MAY-11	MEAN	31.0	32.8	-1.8	COOLER	37	COLD
JAN-MAY-11	HDD-ANN	5088	4876	212	COOLER	39	COLD
JUL-MAY-11	HDD-SEA	8223	8138	85	COOLER	44	COLD
JAN-MAY-11	CDD	16	45	-29	COOLER	36	COLD
JAN-MAY-11	PRECIP	10.51	10.30	0.21	WETTER	NEAR	NORM
JAN-MAY-11	SNOW-ANN	39.2	33.4	5.8	SNOWIER	31	WET
JUL-MAY-11	SNOW-SEA	71.5	50.4	21.1	SNOWIER	6	WET

ANNUAL EXTREMES WARMEST/COLDEST/WETTEST ON RECORD FOR COMPARISON

JAN-MAY		EXTREME	YEAR	DEPART		RANK	
JAN-MAY	MAX	50.9	1987	7.5	WARMEST	1	WARM
JAN-MAY	MAX	35.4	1893	-8.0	COLDEST	1	COLD
JAN-MAY	MIN	29.6	1931	7.4	WARMEST	1	WARM
JAN-MAY	MIN	15.7	1950	-6.5	COLDEST	1	COLD
JAN-MAY	MEAN	39.7	1998	6.9	WARMEST	1	WARM
JAN-MAY	MEAN	25.8	1893	-7.0	COLDEST	1	COLD
JAN-MAY	HDD-ANN	3824	1931	-1085	WARMEST	1	WARM
JAN-MAY	HDD-ANN	5842	1893	933	COLDEST	1	COLD
JUL-MAY	HDD-SEA	6689	1922	-1482	WARMEST	1	WARM
JUL-MAY	HDD-SEA	9135	1980	964	COLDEST	1	COLD
JAN-MAY	CDD	216	1934	171	WARMEST	1	WARM
JAN-MAY	CDD	0	2008	-45	COLDEST	1	COLD
JAN-MAY	PRECIP	22.23	1938	11.93	WETTER	1	WET
JAN-MAY	PRECIP	4.48	1895	-5.82	DRIER	1	DRY
JAN-MAY	SNOW-ANN	80.0	1929	56.1	SNOWIEST	1	WET
JAN-MAY	SNOW-ANN	8.7	1921	-24.7	DRIEST	1	DRY
JUL-MAY	SNOW-SEA	89.5	1997	39.1	SNOWIEST	1	WET
JUL-MAY	SNOW-SEA	15.1	1968	-35.3	DRIEST	1	DRY

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E-3 – SEH Technical Memorandum, Wetland Delineation Update, October 13, 2011

TECHNICAL MEMORANDUM
WETLAND DELINEATION UPDATE

TO: Mr. Bruce Norton, U. S. Army Corps of Engineers
Mr. Dan Helsel, Wisconsin Department of Natural Resources

FROM: Shanna Skallet, SEH
Biologist

DATE: October 13, 2011

RE: Hi-Crush Proppants LLC Wyeville Site Wetland Delineation Update
SEH No. REDOG 114987

Introduction

As requested during the September 22, 2011 agency site review for the wetland delineation at the Wyeville Site located in the Town of Byron, Monroe County, Wisconsin, Short Elliott Hendrickson Inc. (SEH) is providing this Technical Memorandum Wetland Delineation Update as an update to the "Wetland Delineation Report, Wyeville Site, Town of Byron, Wisconsin, September 2011". During the September site visit and subsequent conversations, additional review of farmed wetland areas was requested by the U.S. Army Corps of Engineers (USACE) and the Wisconsin Department of Natural Resources (WDNR).

Site Description

The project site is located in the SE ¼ of Section 08 and the NE ¼ of Section 17 in Township 18 North, Range 01 East in the Town of Byron, Monroe County, Wisconsin. The approximately 190-acre site is bounded on the north by a constructed cranberry bed, on the east by the Lemonweir River, and on the southwest by railroad tracks.

Wetland Definition

Wetlands are defined in federal Executive Order 11990 as follows:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

According to *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2009) one positive indicator (except in certain situations) from each of three elements must be present in order to make a positive wetland determination, which are as follows:

- Greater than 50 percent dominance of hydrophytic plant species.
- Presence of hydric soil.
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

Wetland Delineation Results

On September 30, 2011, several areas of crop stress within the agricultural field at the Wyeville Site were further investigated for evidence of wetland parameters. Several wetland depressions were identified, delineated, and classified (**Figure 5**). Data sheets for one representative transect are included as **Appendix A**. Relevant photographs of the site are included in **Appendix B**.

Farmed Wetland Areas – Seasonally Flooded Basin (Type 1/PEMAf/E4Kf)

The wetland areas delineated within the agricultural field between the railroad tracks and Wetland 1 are small farmed wetland basins surrounded by upland agricultural field (**Figure 5**). The total area of the farmed wetland basins is 1.66 acres and the wetlands are classified as seasonally flooded basins (Type 1/PEMAf/E4Kf). While soybeans (*Glycine max* – UPL) were the dominant vegetation in the wetland basins, the plants were stressed and stunted within the wetland boundary and absent entirely from the lowest part of the basins.

A typical soil profile in the wetland areas consists of 16 inches of dark loam (10YR 2/1) underlain by 4 inches of loamy sand (10YR 3/1) and at least 10 inches of sand with a depleted matrix (10YR 5/2) with redoximorphic features as iron concentrations (10YR 3/6) over 5 percent of the soil matrix. The soil meets technical criteria for hydric soil indicator A12 – Thick Dark Surface. All wetland sample points were within a cropped agricultural field and soil was disturbed.

The typical hydrology observed in the wetland areas included two primary hydrology indicators, algal mat or crust (B4) and sparsely vegetated concave surface (B8), and four secondary hydrology indicators, surface soil cracks (B6), dry-season water table (C2), stunted or stressed plants (D1), and geomorphic position (D2). The typical hydrology in the wetland areas included saturation present at approximately 16 inches below ground surface and the water table, as free water in the soil pit, at approximately 20 inches below ground surface. The hydrology within the wetland areas is seasonal with flooding occurring during the spring and during periods of heavy precipitation.

The upland areas adjacent to the farmed wetland areas include cropped agricultural field dominated by soybeans. Upland soil consists of 12 inches of dark loam (10YR 2/1) underlain by 3 inches of sandy loam (10YR 3/1), 5 inches of sand (2.5Y 4/1), 4 inches of dark sandy loam (7.5YR 2.5/2), and at least 6 inches of sand (10YR 5/3). The soil does not meet the technical criteria for hydric soil indicators. All upland sample points were within a cropped agricultural field and soil was disturbed. No primary or secondary hydrology indicators were observed in the upland sample points. Typical soil saturation was observed at approximately 30 inches below ground surface and the water table, as free water in the soil pit, was encountered at approximately 30 inches below ground surface.

Supporting documentation of field observations are found in Attachment 2 on data sheets labeled SP6W (wetland sample points) and SP6U (upland sample points).

Contacts

Questions or comments regarding this Technical Memorandum may be directed to Shanna Skallet at 715.720.6263 or via e-mail at sskallet@sehinc.com.

SLS
Attachments
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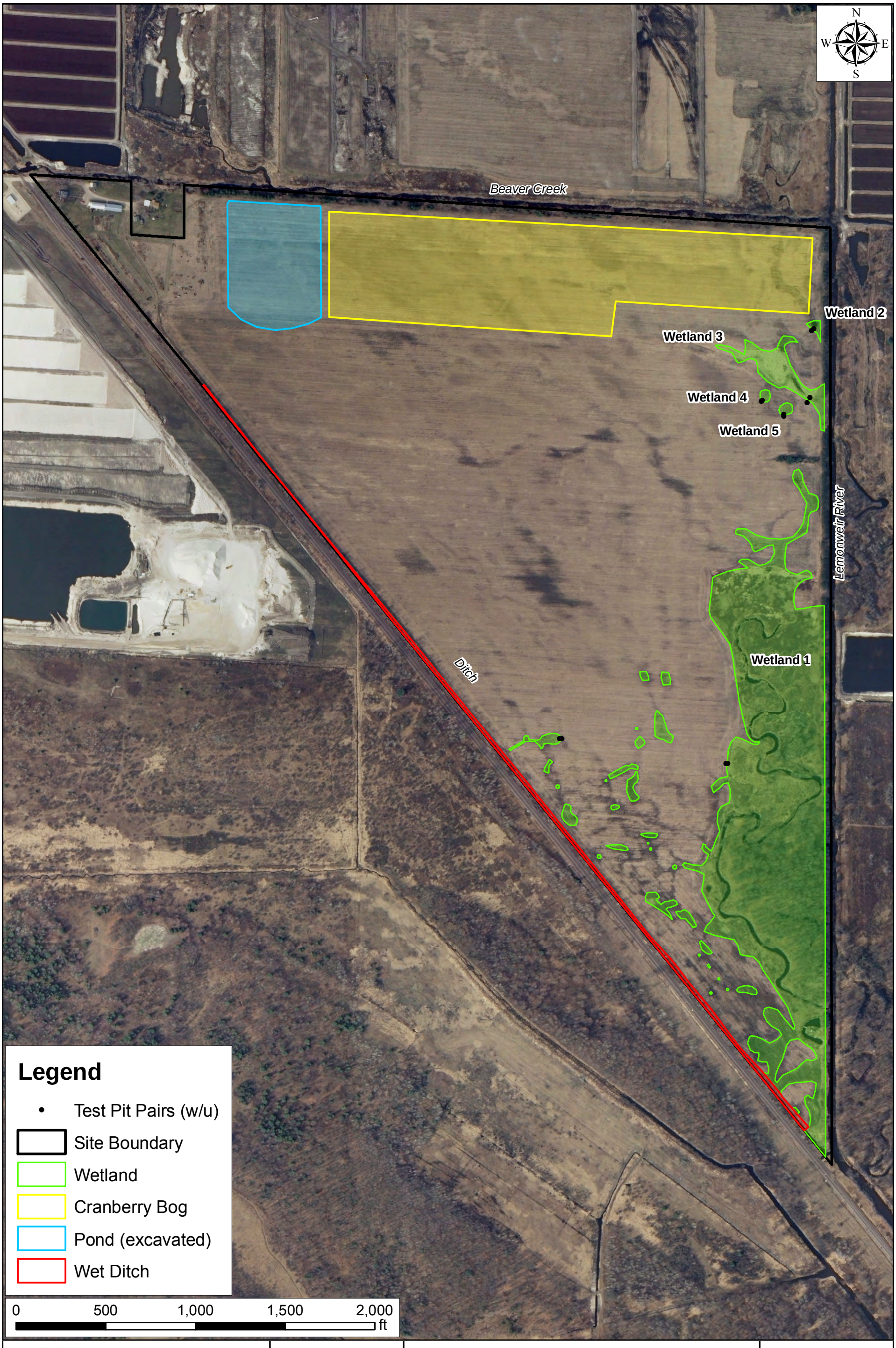
Mr. Tyler Deines, Hi-Crush
Mr. Jay Alston, Hi-Crush

Figures



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Print Date: 10/13/2011

Map by: bpt
Projection: WI Monroe County (ft)
Source: WROC, SEHInc, HCP
Background: 2010 WROC

WETLAND DELINEATION RESULTS

Hi-Crush Proppants - Wyeville Site
WYEVILLE, WISCONSIN

Figure 5

Attachment A

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Wyeville Site City/County: Town of Byron/ Monroe County Sampling Date: 9/30/2011
Applicant/Owner: Hi-Crush Proppants LLC State: Sampling Point: SP6W
Investigator(s): Shanna Skallet Section, Township, Range: Section 17, T18N, R1E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
Slope (%): 0-1% Lat.: Long.: Datum:
Soil Map Unit Name: Lows sandy loam NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation X, soil X, or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology X naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Y	**Is the sampled area within a wetland?** Y
Hydric soil present? Y	
Wetland hydrology present? Y	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland is within a cropped agricultural field. Wetland hydrology is seasonal.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)
- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- X Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No	X	Depth (inches):
Water table present?	Yes	X	No		Depth (inches): 20
Saturation present? (includes capillary fringe)	Yes	X	No		Depth (inches): 16

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland is a depression within a cropped agricultural field. Hydrology is seasonal.

VEGETATION - Use scientific names of plants

Sampling Point: SP6W

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	*Glycine max*	5	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		5	= Total Cover	

Woody Vine Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	1	3
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column totals	5 (A)		25 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation*
- X (explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

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

Depression wetland has very little vegetation. Soybeans within wetland are highly stressed and stunted.

SOIL **Sampling Point:** SP6W

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10YR 2/1	100					Loam	
16-20	10YR 3/1	100					Loamy sand	
20-30	10YR 5/2	95	10YR 3/6	5	C	M	Sand	Prominent Concentrations

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

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):
Type: NA
Depth (inches): _____

Hydric soil present? Y

Remarks:
Soil meets technical criteria for hydric soil indicator. Sample point is within a cropped agricultural field and soil is disturbed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Wyeville Site City/County: Town of Byron/ Monroe County Sampling Date: 9/30/2011
Applicant/Owner: Hi-Crush Proppants LLC State: Sampling Point: SP6U
Investigator(s): Shanna Skallet Section, Township, Range: Section 17, T18N, R1E
Landform (hillslope, terrace, etc.): Nearly flat surface Local relief (concave, convex, none): None
Slope (%): 0-1% Lat.: Long.: Datum:
Soil Map Unit Name: Lows sandy loam NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation X, soil X, or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? N	**Is the sampled area within a wetland?** N
Hydric soil present? N	
Wetland hydrology present? N	If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Sample location is within a cropped agricultural field.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)
- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)
- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

Surface water present?	Yes		No X	Depth (inches):	
Water table present?	Yes X		No	Depth (inches):	28
Saturation present? (includes capillary fringe)	Yes X		No	Depth (inches):	30

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No primary or secondary hydrology indicators observed at the upland sample points.

VEGETATION - Use scientific names of plants

Sampling Point: SP6U

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	*Glycine max*	80	Y	UPL
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		80	= Total Cover	

Woody Vine Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	16	40
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	80	x 5 =	400
Column totals	80 (A)		400 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Vegetation Strata:

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

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Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

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

Upland areas are cropped with soybeans.