ADDENDUM 3.4-A WETLANDS DELINEATION

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JURISDICTIONAL WETLANDS DELINEATION FOR THE PROPOSED ROSS ISR PROJECT, OSHOTO, WYOMING

ABSTRACT

Projects that discharge dredge or fill material into Waters of the U.S., including special aquatic sites and jurisdictional wetlands, require accurate identification of wetland boundaries for the Section 404 (Clean Water Act) permitting process. To determine the occurrence and distribution of potential wetland areas within the Ross *in situ* recovery (ISR) project area, 29 sites were examined during June 22 and 28 and July 8 and 21, 2010 on-site visits (Exhibit 1). Following data evaluation, nine representative sites were selected to be included in this discussion because they appeared to represent wetland types throughout the Ross Project area based on soils, hydrology, and vegetation. Seven of the nine sites occurred in areas that appeared to be wetlands. The data were gathered and evaluated according to the 2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (COE 2008). A total of 70 potential wetland areas were identified during the on-site visits. Many of these areas were relatively small (<0.1 acre) depressions along drainages (Exhibit 1). Wetland determination forms were not completed for each of the 70 areas due to similarities in soils, hydrology, and vegetation.

INTRODUCTION

Peninsula Minerals Ltd, dba Strata Energy Inc. (Strata) is proposing an ISR project (Ross Project) in Crook County, WY (Figure 1). The Ross Project may affect Waters of the U.S., including special aquatic sites and jurisdictional wetlands associated with the Oshoto Reservoir, the Little Missouri River, and other named and unnamed natural and man-made water features within the permit area. WWC Engineering was hired to investigate and document the wetland characteristics of such areas in the project area. This report summarizes observations and results of June 22 and 28 and July 8 and 21, 2010 site-specific field investigations and is intended to provide the U.S. Army Corps of Engineers (COE) with sufficient information to verify the occurrence and distribution of wetlands within the Ross Project area.

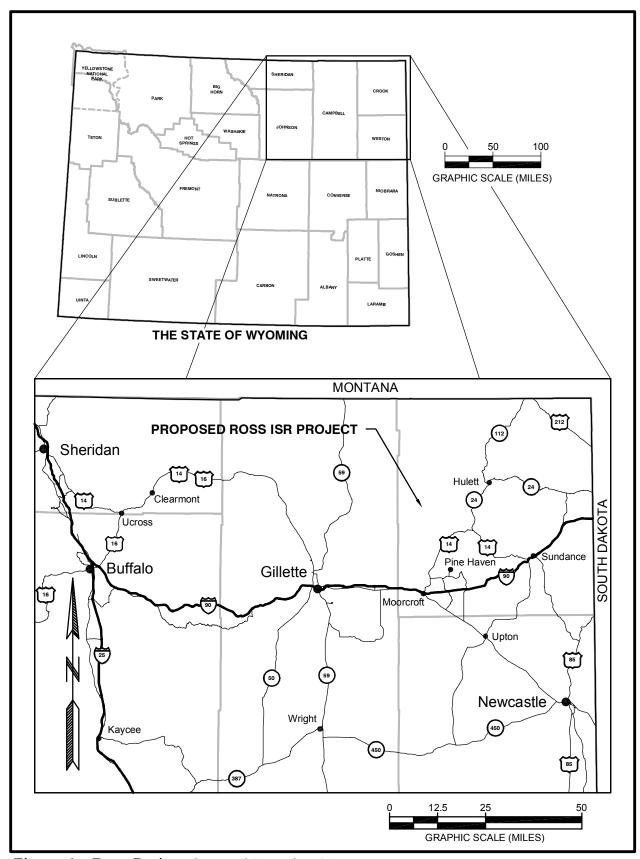


Figure 1. Ross Project General Location Map

METHODS

Background Data Review

The initial step of the project was to obtain and review all pertinent, available environmental information within the project area. Existing data included U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) Web Soil Survey interactive mapping (NRCS 2010), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory mapping (USFWS 2010), and May 2010 aerial photography. All sources of information provided relevant information on the potential occurrence and distribution of wetlands; the information was used to plan the field investigation. Wetland determination sites identified in this initial step were visited during a field investigation to verify if wetland characteristics were present. Findings from these sources have been integrated into the Results section.

Field Reconnaissance

The site-specific field investigation was conducted within the Ross Project on June 22 and 28 and July 8 and 21, 2010 in accordance with the Interim Regional Supplement to the U.S. Army Corps of Engineer's Wetland Delineation Manual: Great Plains Region (COE 2008). Twenty-nine wetland determination sites were examined during June 22 and 28 and July 8 and 21, 2010 on-site visits. The locations of sample sites were determined during on-site visits to obtain the most relevant and optimal information possible. Initial assessments at each sample site began with a vegetative cover inventory. The North American Range Plants Field Guide-Fifth Edition (Stubbendieck et al. 1997) and the Western Wetland Flora Field Office Guide to Plant Species (USDA-NRCS 1988) were used to assist in vegetation species identification. Vegetative species indicator status, with respect to wetland or non-wetland, was recorded along with its percent composition within the sample area. The indicator status was obtained using the National List of Plant Species that Occur In Wetlands: Region 4 (Resource Management Group, Inc. 1994). When possible, soil observation pits were dug to a depth of 20 inches. A Munsell Color Chart (Kollmorgan Corp. 1975) was used to record soil color, texture, and other distinguishing characteristics for each sample site. Wetland

hydrology indicators were assessed. Each sample point was assessed and recorded on a site-specific wetland determination field form.

A Trimble[®] GeoXH global positioning system (GPS) unit was used to delineate the boundaries of the potential wetland areas. This GPS unit has a purported accuracy to within 1 meter or less. Portions of the boundaries of the larger delineated areas were determined by observing distinctions in vegetation and hydrology, although soils were examined at varying intervals along the boundaries to verify the ocular delineations. Due to the similarities between potential wetland areas, it was not considered necessary to complete wetland determinations forms for all areas. Appendix B contains photos of potential wetland areas.

The shallow, open water type was delineated using recent (May 2010) high quality aerial photography to determine areas with no apparent emergent, floating, or submergent vegetation. Other Waters of the U.S. were determined using U.S. Geological Survey (USGS) quadrangle maps. Drainages (dashed lines adjusted to fit the aerial photography) were delineated as Other Waters if not delineated as a wetland type.

RESULTS

The main hydrologic features within the proposed permit area are the Oshoto Reservoir, the Little Missouri River, and other named and unnamed natural and man-made water features within the permit area. The Ross ISR Project is located in the upper reaches of the Little Missouri River Basin (Hydrologic Unit Code 101102), where stream flow only occurs in response to rainfall or snow melt. Oshoto Reservoir is located in the channel of the Little Missouri River and was constructed in the early to mid 1950's by placing a compacted earth fill embankment across that channel. The other area streams are dominated by ephemeral channels which flow in direct response to snowmelt and precipitation.

The gradient of the main channel of the Little Missouri River within the proposed permit area is relatively shallow and the active channel meanders within an often steep-sided,

wider flood plain. This situation generally causes deposition of smaller sediment particles thereby increasing the likelihood of encountering hydric soils along the Little Missouri River. There were also numerous areas within the tributary channels to the Little Missouri River that appeared to be affected by seeps, and many of these areas have characteristics of wetlands. Wetland determination forms were not completed for each of the potential wetland areas due to similarities in soil types, hydrology, and vegetation.

<u>Site-specific Wetland Determination Investigations</u>

The following section is a detailed discussion of the sites evaluated using wetland determination data forms. Twenty-nine sites were originally sampled for vegetation, soils, and hydrology. Once the data were evaluated, it became apparent that many of the sites were similar, based on soils, hydrology, and vegetation. The data were reassessed and nine sites were selected for detailed discussion because they represented the wetland types found throughout the Ross Project area or were unique sites. All of the remaining 20 sites were associated with areas that were delineated as a potential wetland.

Site R1 is located at latitude 44.5640° and longitude -104.9522° (Exhibit 1). This site is associated with a small man made stock pond located on an ephemerally-flowing tributary to the Little Missouri drainage and is within a Fort Collins Loam (6-10% Slope) soil map unit. It appears to be typical of an impoundment situation in that is has a relatively large amount of bare ground (approximately 98 percent) associated with the site. *Equisetum variegatum* dominates the vegetation within the area. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology are associated with the area. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R1 and Appendix B, Photo 12).

Site R2 is located at latitude 44.5674° and longitude -104.9520° (Exhibit 1). This site is within a small depression located on an ephemerally-flowing tributary to the Little Missouri drainage and is within a Fort Collins Loam (6-10% Slope) soil map unit. The

dominant vegetative types include *Marsilea vestiita* and *Equisteum Variegatum*. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology are associated with the area. The site may be receiving water from a groundwater source (seep), which helps maintain saturated conditions longer than the site location (higher on the drainage) would indicate. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R2 and Appendix B, Photo 16).

Site R3 is located at latitude 44.5716° and longitude -104.9601° facility (Exhibit 1). This site is located on an ephemerally-flowing tributary within is an excavated depression that is associated with a decommissioned uranium processing facility and is within an Absted-Bone Complex (0-3% Slope) soil map unit. *Eleocharis palustris* dominates the area. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology are associated with the area. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R3 and Appendix B, Photo 23).

Site R4 is located at latitude 44.5734° and longitude -104.9599°. This site is within a small depression located on an ephemerally-flowing tributary to the Little Missouri drainage and is within an Absted-Bone Complex (0-3% Slope) soil map unit. *Eleocharis palustris* and *Hordeum jubatum* dominate the area. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology were present at the sample point. The site may be receiving water from a groundwater source. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R4 and Appendix B, Photo 25).

Site R5 is located at latitude 44.5815° and longitude -104.9503° (Exhibit 1). This site is associated with the main body of the Oshoto Reservoir and is within a Water/Gullied Land soil map unit. *Typha latifolia* and *Scirpus maritimus* dominate the area. *Carex praegracilis, C. nebrascensis, Eleocharis palustris, Potamogeton richardsonii, Rumex martimus,* and *T. angustifolia* were also noted in the area but not within the vegetation

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plot. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology were present at the sample point. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R5 and Appendix B, Photo 04).

Site R6 is located at latitude 44.5811° and longitude -104.9495° (Exhibit 1). This site is directly below the Oshoto Reservoir and likely receives seepage from the reservoir and also is receiving some water from a groundwater source and is within a Gullied Land soil map unit. *Typha latifolia, T. angustifolia,* and *Carex lanuginosa* dominate the area. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology are associated with the area. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R6 and Appendix B, Photo 07).

Site R7 is located at latitude 44.5675° and longitude -104.9640° (Exhibit 1). This site is within a depression above a road fill that has restricted flow down the drainage and is within a Bidman-Bone Loams (2-6% Slope) soil map unit. *Sporobolis airoides* and *Hordeum jubatum* dominate the area. *Carex praegracilis, C. nebrascensis, Sagittaria cuneata, Potamogeton nodosus*, and *Phleym pretense* were also noted in the area but not within the vegetation plot. Positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology are associated with the area. This area meets all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it appears to be a wetland (Appendix A, Sample Point R7 and Appendix B, Photo 39).

Site R8 is located at latitude 44.5723° and longitude -104.9601° (Exhibit 1). This site is associated with a man made oil well production pit and is within an Absted-Bone Complex (0-3% Slope) soil map unit. *Agropyron smithii* and *Hordeum jubatum* dominate the area. Although positive indicators of wetland hydrology are associated with the area, it does not meet all three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008). It does not appear to be a wetland (Appendix A, Sample Point R8 and Appendix B, Photo 24).

Site R9 is located at latitude 44.5642° and longitude -104.9522° (Exhibit 1). This site is directly below a small stock pond (Site r1) and is within a Fort Collins Loam (6-10% Slope) soil map unit. *Agropyron smithii* and *Poa pratensis* dominate the area. Positive indicators of hydrophytic vegetation, hydric soil, or wetland hydrology are not associated with the area. This area does not meet any of the three diagnostic environmental characteristics of a wetland as defined by the COE (COE 2008) and it does not appear to be a wetland (Appendix A, Sample Point R9 and Appendix B, Photo 64). This site was evaluated since it represented an area that had the potential to be a wetland (possibly receiving seepage from the stock pond) but did not exhibit classic wetland characteristics.

Wetland Delineation Investigations

Seventy potential wetland areas were delineated during the on-site visits (Table 1). Many of these areas were small (<0.1 acre) depressions that were in close proximity to each other but were distinct depressions separated by upland vegetation. A significant number of these small depression areas appeared to be influenced by groundwater, receiving seepage from the Lance Formation, which outcrops in numerous locations within the project area.

Approximately 65.0 acres of potential jurisdictional Waters of the U.S. were delineated during the on-site visits, of which approximately 30.9 acres (48 %) appeared to be a shallow, open water type. There were approximately 22,130 linear feet of Other Waters of the U.S. within the Ross Project area (Exhibit 1).

SUMMARY

Using criteria defined by the COE for special aquatic sites and/or wetlands, 70 areas (65.0 acres) of potential wetlands were delineated within the Ross Project area. There were approximately 22,130 linear feet of Other Waters of the U.S., as determined from U.S. quadrangle maps.

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Table 1. Potential Wetland Areas within the Ross Project Area

Area*	A		ithin the Ross Project Area						
7 0	Acres	Туре	Additional Information						
A1	2.64	Reservoir	Man Made - 0.5 Acres of Open Water						
A2	39.09	Reservoir	Man Made - 30.4 Acres of Open Water						
А3	<0.10	Depression	Associated with Little Missouri River Channel						
A4	7.00	Marshy Area Along Channel	Little Missouri River Channel						
A5	0.12	Depression	Associated with Little Missouri River Channel						
B1	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
B2	<0.10	Stock Pond	Man Made (Dike in Channel)						
В3	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
B4	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
B5	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
В6	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
C1	<0.10	Stock Pond	Man Made (Dike in Channel)						
C2	0.16	Stock Pond	Man Made (Dike in Channel)						
C3	1.59	Stock Pond	Man Made (Dike in Channel)						
C4	1.08	Marshy Area Along Channel	Confined to Channel Bottom						
C5	0.07	Ditched Area	Man Made (Excavated)						
D1	0.34	Reclaimed Industrial Pond	Man Made (Excavated Depression)						
D2	0.26	Reclaimed Industrial Pond	Man Made (Excavated Depression)						
E1	NA	Industrial Pond	Man Made (Active Oil Well Production Pit)						
F1	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F2	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F3	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F4	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F5	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F6	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F7	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F8	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F9	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F10	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F11	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F12	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F13	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F14	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F15	0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F16	0.01	Depression	Isolated Pocket in Ephemeral Flow Channel						
F17	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F18	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F19	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F20	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
F21	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel						
G1	<0.10	Stock Pond	Man Made - Little Missouri River Channel						
	0.11	Stock Pond	Man Made - Little Missouri River Channel						

Table 1. Potential Wetland Areas within the Ross Project Area (Cont.)

Area	Acres	Туре	Additional Information
G3	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G4	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G5	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G6	0.13	Depression	Isolated Pocket in Little Missouri River Channel
G7	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G8	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G9	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G10	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G11	0.10	Depression	Isolated Pocket in Little Missouri River Channel
G12	<0.10	Depression	Isolated Pocket in Little Missouri River Channel
G13	0.73	Depression	Isolated Pocket in Little Missouri River Channel
H1	2.22	Stock Pond	Man Made (Dike in Channel)
H2	2.74	Stock Pond	Man Made (Dike in Channel)
H3	0.59	Ponded/Marshy Area	Man Made (Dike in Channel)
<u>H4</u>	2.06	Ponded/Marshy Area	Man Made (Dike in Channel)
l1	0.19	Marshy Area Along Channel	Extensive Area Along Channel Bottom
12	0.18	Stock Pond	Man Made (Dike in Channel)
13	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
14	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
<u> </u>	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
J1	2.42	Marshy Area Along Channel	Extensive Area Along Channel Bottom
K1	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
K2	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
K3	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
K4	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
K5	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
K6	<0.10	Depression	Isolated Pocket in Ephemeral Flow Channel
L1	0.04	Stock Pond	Man Made (Dike in Ephemeral Flow Channel)
M1	0.31	Stock Pond	Man Made (Dike in Ephemeral Flow Channel)
Total	65.00		30.9 Acres of Open Water

^{*} See Exhibit 1 for Location of Areas

REFERENCES

U.S. Army Corps of Engineers (COE). 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. ERDC/EL TR-08-12.

Kollmorgen Corp. 1975. Munsell Color Chart.

- U.S. Department of Agriculture-Natural Resource Conservation Service (NRCS). 1988. Western Wetland Flora Field Office Guide to Plant Species. Sacramento, CA.
- _____. 2010. Web Soil Survey Interactive Map. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.
- Resource Management Group, Inc. 1994. *National List of Plant Species That Occur in Wetlands. Region 4*. B.J. Sabine, Editor. Grand Haven, MI.
- Stubbendieck, J., K.L. Hatch, B.P. Jansen, C.H. Butterfield. 1997. *North American Range Plants Fifth Edition*. University of Nebraska Press Lincoln.
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Website. 2010. http://www.fws.gov/nwil/.

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APPENDIX A

Wetland Determination Data Forms

Project/Site: Ross	(City/County: Crook		Sampling Date: <u>6/22/10</u>			
Applicant/Owner: Strata/Berger			State:	WY	_ Samp	ling Point:	: <u>R1</u>
Investigator(s): J. Berry	Se	ction, Township, Ra	ange: <u>NWSE 19 T5</u>	3N, R67W			
Landform (hillslope, terrace, etc.): <u>Drainage</u>		Local relief (concav	e, convex, none): <u>(</u>	Concave		Slope (%	o):
Subregion (LRR): LRRG	Lat: <u>44</u>	I.5811	Long:104	.9495		Datum:	WGS8
Soil Map Unit Name: Fort Collins Loam 6-10% slopes	;		1	√WI classifica	ation:	None	
Are climatic / hydrologic conditions on the site typical f							
Are Vegetation, Soil, or Hydrology _	significantly	disturbed?	Are "Normal Circum	stances" pres	sent? Yo	es <u>+</u>	_ No
Are Vegetation, Soil, or Hydrology	naturally prol	olematic? (If	needed, explain an	y answers in	Remark	s.)	
SUMMARY OF FINDINGS - Attach site n	nap showing sa	ampling point I	ocations, trans	sects, imp	ortant	feature	s, etc.
Hydrophytic Vegetation Present? Yes _+	No	la tha Cammia	J A				
	No	Is the Sampled within a Wetla		s_+	No		
	No	within a vvena		' 			
Remarks:							
Upper end of stock pond in drainage (impounded)							
VEGETATION – Use scientific names of	plants.						
Tage Chapture (Diet sing)		Cominant Indicator	Dominance Tes	t worksheet:			
Tree Stratum (Plot size:) 1)		pecies? Status	Number of Domin				
2.			(excluding FAC-		·	0	_ (A)
3.			Total Number of	Dominant			
4			Species Across A	All Strata:		1	_ (B)
Condition (Obserts Obserts on Chief Street	=	Total Cover	Percent of Domir				
Sapling/Shrub Stratum (Plot size:			That Are OBL, FA	ACW, or FAC	;:	0	(A/B)
2.			Prevalence Inde	x workshee	t:		
3.			Total % Cov			iply by:	
4			OBL species				
5			FACW species _		·		
	=	Total Cover	FAC species				_
	400	V	FACU species		x 4 =		_
1. <u>Equisetum variegatum</u>			UPL species Column Totals:				
2 3			Column Totals.	<u> </u>	_ (^)		_ (D)
4.				Index = B/A		2	_
5.			Hydrophytic Ve	_			
6.			Dominance				
7			+ Prevalence I				
8			Morphologic data in Re	ai Adaptatior emarks or on	is (Provi a separa	de suppoi ate sheet)	rting
9			Problematic				
10							
Woody Vine Stratum (Plot size:)	<u>100</u> =	Total Cover	¹ Indicators of hyd be present, unles	Iric soil and was disturbed o	vetland h	ydrology r natic.	nust
1			Hydrophytic				
2			Hydrophytic Vegetation				
% Bare Ground in Herb Stratum98	= -	Total Cover	Present?	Yes <u>+</u>	No	·	
Remarks: No veg around most (see herb stratum ab	oove)		1				
No FAC – neutral done							

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SOIL								Sampling Point: R1
Profile Desc	cription: (Describe	to the depth n	eeded to docu	ment the ir	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix	•		ox Features				,
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 3/4	50 10)YR 4/1	50	D	PL	SCL	
6-12+	10YR 4/3	60 10	YR 4/6	40	C	PL	L	
	oncentration, D=Depl					d Sand Gr		ation: PL=Pore Lining, M=Matrix.
-	Indicators: (Applica	able to all LRI			•			for Problematic Hydric Soils ³ :
Histoso	` '			/ Gleyed Ma				Muck (A9) (LRR I, J)
	Epipedon (A2)		-	Redox (S5				Prairie Redox (A16) (LRR F, G, H)
Black F	en Sulfide (A4)			ed Matrix (S y Mucky Mir	•			Surface (S7) (LRR G) Plains Depressions (F16)
	ed Layers (A5) (LRR I	E)		y Mucky Mil y Gleyed Ma			_	R H outside of MLRA 72 & 73)
	luck (A9) (LRR F, G,			ted Matrix (F			•	ced Vertic (F18)
	ed Below Dark Surfac			k Dark Surfa				arent Material (TF2)
	Oark Surface (A12)		Deple	ted Dark Su	ırface (F7	')	Other	(Explain in Remarks)
	Mucky Mineral (S1)			c Depressio			³ Indicators of	of hydrophytic vegetation and
	Mucky Peat or Peat							hydrology must be present,
	lucky Peat or Peat (S	3) (LRR F)	(MI	LRA 72 & 7	3 of LRR	H)	unless	disturbed or problematic.
_	Layer (if present):							
Type:			_					
Depth (in	ches):		_				Hydric Soil	Present? Yes <u>+</u> No
Remarks:								
HYDROLO	GY							
	drology Indicators:							
	cators (minimum of o	no roquirod: ch	nock all that ann	dv)			Soconda	ry Indicators (minimum of two required)
	-	ne required, ci		•				· · · · · · · · · · · · · · · · · · ·
	e Water (A1)		Salt Crus	(/	- (D40)			face Soil Cracks (B6)
	ater Table (A2)		Aquatic		` '			arsely Vegetated Concave Surface (B8)
+ Saturat			Hydroge			`		ninage Patterns (B10)
Water I	ent Deposits (B2)		Dry-Sea _+ Oxidized					ized Rhizospheres on Living Roots (C3) here tilled)
	eposits (B3)			not tilled)	ies on Liv	ring Roots		yfish Burrows (C8)
<u> </u>	lat or Crust (B4)		NA Presence	,	d Iron (C	4)		uration Visible on Aerial Imagery (C9)
Iron De	` '		Thin Mu			+)		omorphic Position (D2)
	tion Visible on Aerial	Imagony (P7)	·				· <u></u>	C-Neutral Test (D5)
	Stained Leaves (B9)	illiagery (br)	Other (L	xpiaiii iii i\c	iliaiks)			st-Heave Hummocks (D7) (LRR F)
Field Obser						1	110.	Stricave Hummocks (B1) (ERRT)
Surface Wat		ne ≠ No	Depth (in	choc): 6.1	12"			
						_		
Water Table			+ Depth (in					- Duran and O. Maria
Saturation P (includes car		es <u>+</u> No _	Depth (ir	ncnes): <u>0-</u>	12"	Wetia	and Hydrology	Present? Yes <u>+</u> No
	corded Data (stream	gauge, monito	oring well, aerial	photos, pre	vious ins	pections),	if available:	
Remarks: S	tanding water at lowe	er end of impou	unded stock por	nd.				
	-	•	•					

Project/Site: Ross		City/County: Crook					Sampling Date: 6/22/10		
Applicant/Owner: Strata/Strong				State: V	٧Y	Samplin	g Point: R	2	
Investigator(s): <u>J. Berry</u>		Section,	Township, Ra	inge: <u>NWSE 19 T5</u>	3N, R67W				
Landform (hillslope, terrace, etc.): Drainage		Local	relief (concave	e, convex, none): _			_ Slope (%	%):	
Subregion (LRR): <u>LRRG</u>	Lat:	44.5674	4	Long:104	1.9520		Datui	n: WGS	
Soil Map Unit Name: Fort Collins Loam 6-10% slopes				1	NWI classifi	cation:	None		
Are climatic / hydrologic conditions on the site typical for the									
Are Vegetation, Soil, or Hydrology	significar	ntly distui	rbed? A	Are "Normal Circum	stances" pr	esent?	/es_+	No _	
Are Vegetation, Soil, or Hydrology									
SUMMARY OF FINDINGS – Attach site map								s, etc.	
Hydrophytic Vegetation Present? Yes _+	No								
Hydric Soil Present? Yes +		13	the Sampled ithin a Wetlar		s_+	No			
Wetland Hydrology Present? Yes _+	No	W	itiiiii a vvetiai	id: Tes	,	NO			
Remarks:									
Small depression in drainage									
Soil pit done in saturated portion on area									
VEGETATION – Use scientific names of pla	nts.								
			ant Indicator	Dominance Tes	t workshee	t:			
Tree Stratum (Plot size:)			s? Status	Number of Domi					
1				That Are OBL, Factorial (excluding FAC-			2	(A)	
2				,	,			_ ` ′	
4				Total Number of Species Across A			2	_ (B)	
	0			Percent of Domir	nant Snecie	19			
Sapling/Shrub Stratum (Plot size:)				That Are OBL, F			100	(A/B)	
1				Prevalence Inde	x workshe	et:			
2				Total % Cov			Itiply by:		
3				OBL species					
4				FACW species					
5		= Total	Cover	FAC species	1	_ x 3 =_	3	_	
Herb Stratum (Plot size: 20' x 60'		_ 10101	00101	FACU species	1	_ x 4 = _	4		
1. Marsilea vestita	40	Yes	OBL_	UPL species					
2. <u>Equisetum variegatum</u>		Yes		Column Totals:	6	(A) _	13	(B)	
3. <u>Eleocharis palustris</u>		No	OBL_	Prevalence	Index = B	/A = 2.17	7		
4. Rumex maritimus		No_	FACW+	Hydrophytic Ve					
5. Kochia scoparia				+ Dominance	Test is >50°	%			
6. <u>Taraxacum officinale</u>			FACU_	+ Prevalence	ndex is ≤3.	O ¹			
7 8				_ Morphologic					
9.					emarks or o				
10				_ Problematic	нуагорпуцс	; vegetati	on (Expia	in)	
			Cover	¹ Indicators of hyd	dric soil and	l wetland i	hydrology	must	
Woody Vine Stratum (Plot size:)				be present, unles	s disturbed	or proble	ematic.	iidot	
1				Uvdrorb: 4:0					
2				Hydrophytic Vegetation					
% Bare Ground in Herb Stratum0		_= rotal (Jover	Present?	Yes	<u>+</u> N	lo		
Remarks: FAC - Neutral									

SOIL								Sampling Point: R2
Profile Desc	ription: (Describe to	the depth ne	eded to docui	ment the ir	ndicator o	or confirm	the absence	of indicators.)
Depth	 Matrix	•		x Features				•
(inches)	Color (moist)	% C	olor (moist)	%	Type ¹	Loc ²	Texture	Remarks
0.40	4/40)/		'D 5/0			DI	001	
0-12+	4/10Y	<u>80</u> <u>10</u> Y	'R 5/6	20	C	<u>PL</u>	SCL	
-								
	ncentration, D=Deple					d Sand Gra		ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applica	ble to all LRRs	s, unless othe	rwise note	d.)		Indicators	for Problematic Hydric Soils ³ :
Histoso	I (A1)		Sandy	Gleyed Ma	atrix (S4)		1 cm N	Muck (A9) (LRR I, J)
Histic E	pipedon (A2)		Sandy	Redox (S5	j)		Coast	Prairie Redox (A16) (LRR F, G, H)
Black H	istic (A3)		Strippe	ed Matrix (S	86)		Dark S	Surface (S7) (LRR G)
Hydroge	en Sulfide (A4)		Loamy	Mucky Mir	neral (F1)		High F	Plains Depressions (F16)
Stratifie	d Layers (A5) (LRR F	")	+ Loamy	Gleyed Ma	atrix (F2)		(LRI	R H outside of MLRA 72 & 73)
1 cm M	uck (A9) (LRR F, G, H	1)	+ Deplet	ed Matrix (F	=3)		Redu	ced Vertic (F18)
Deplete	d Below Dark Surface	e (A11)	Redox	Dark Surfa	ace (F6)		Red P	arent Material (TF2)
Thick D	ark Surface (A12)		Deplet	ed Dark Su	ırface (F7)	Other	(Explain in Remarks)
Sandy I	Mucky Mineral (S1)		Redox	Depressio	ns (F8)		³ Indicators of	of hydrophytic vegetation and
2.5 cm	Mucky Peat or Peat (62) (LRR G, H)	High P	lains Depre	essions (F	16)	wetland	hydrology must be present,
5 cm M	ucky Peat or Peat (S3) (LRR F)	(ML	RA 72 & 7	3 of LRR	H)	unless	disturbed or problematic.
Restrictive L	ayer (if present):							
Type:								
,, <u> </u>	ches):						Hydric Soil	Present? Yes <u>+</u> No
							Tiyane oon	11030111: 103 <u>.</u> 110
Remarks:								
HYDROLO	GY							
Wetland Hvo	Irology Indicators:							
_	ators (minimum of on	o roquirod: cho	ock all that appl	(v)			Soconda	ry Indicators (minimum of two required)
-	-	e required, crie						• • • • • • • • • • • • • • • • • • • •
<u>+</u> Surface	` '		Salt Crus	` '				face Soil Cracks (B6)
	ater Table (A2)		Aquatic I		, ,			rsely Vegetated Concave Surface (B8)
+ Saturati	on (A3)		Hydroger					inage Patterns (B10)
Water N	/larks (B1)		Dry-Seas	son Water T	Table (C2))	<u>NA</u> Oxid	ized Rhizospheres on Living Roots (C3)
Sedime	nt Deposits (B2)		+ Oxidized	Rhizosphe	res on Liv	ing Roots	(C3) (w l	here tilled)
Drift De	posits (B3)		(where	not tilled)			Cra	yfish Burrows (C8)
,	at or Crust (B4)		NA Presence	of Reduce	d Iron (C4	1)		uration Visible on Aerial Imagery (C9)
Iron De			Thin Muc		•	,		omorphic Position (D2)
	on Visible on Aerial Ir		Other (Ex		` '			C-Neutral Test (D5)
		nagery (b7)	Other (LX)	piaiii iii Nei	iiaiks)			` '
	Stained Leaves (B9)						<u> </u>	st-Heave Hummocks (D7) (LRR F)
Field Observ								
Surface Water	er Present? Ye	s <u>+</u> No	Depth (ind	ches): <u>6"</u>		_		
Water Table	Present? Ye	s No_+	Depth (in	ches):		_		
Saturation Pr	esent? Ye	s <u>+</u> No _	Depth (in	ches): 0-	2"	Wetla	nd Hydrology	Present? Yes + No
(includes cap				/		_	, ,,	
Describe Red	corded Data (stream o	auge, monitori	ng well, aerial	photos, pre	vious insp	pections), i	f available:	
Remarks:								

Project/Site: Ross		City/County: Crook						6/28/10
Applicant/Owner: Strata/State of Wyominng					State: WY		Sampling	Point: R
Investigator(s): <u>J. Berry</u>		Section, To	ownship, Ra	inge: SWSW 18 T	53N, R67W			
Landform (hillslope, terrace, etc.): Excavated Pond		Local re	lief (concav	e, convex, none): _	Concave		_ Slope (%):
Subregion (LRR): LRRG	Lat: _	44.5716		Long:10	04.9601		Datu	ım: WGS
Soil Map Unit Name: Absted-Bone Complex 0-3% slopes	5				NWI class	sificatior	n: <u>PL</u>	JBFx
Are climatic / hydrologic conditions on the site typical for t								
Are Vegetation, Soil, or Hydrology	-						res +	No
Are Vegetation, Soil, or Hydrology								
SUMMARY OF FINDINGS - Attach site ma								es, etc.
Hydrophytic Vegetation Present? Yes _ +	No							
Hydric Soil Present? Yes +			ne Sampled			No		
Wetland Hydrology Present? Yes _+	No	With	in a Wetlar	id? fe	s <u>+</u>	NO		
Remarks:								
Excavated pond								
VEGETATION – Use scientific names of pla	ants.							
		Dominant		Dominance Tes	t worksheet	:		
Tree Stratum (Plot size:)				Number of Domi				
1				That Are OBL, F (excluding FAC-)	1	(A)
2				,				_ (/
3 4				Total Number of Species Across			1	_ (B)
		_ = Total C		Percent of Domi	nant Snacias			
Sapling/Shrub Stratum (Plot size:)		_		That Are OBL, F			100	_ (A/B)
1				Prevalence Inde	ex workshee	ıt·		
2					er of:		Itiply by:	
3				OBL species				
4	_			FACW species	2	x 2 =	4	
5		= Total C	over	FAC species		x 3 =		
Herb Stratum (Plot size: 100' x 100')				FACU species				_
1. Eleocharis palustris		Yes	OBL	UPL species				
2. Alopecurus carolinianus		<u>No</u>	OBL	Column Totals:	4	_ (A) _	6	(B)
3. <u>Hordeum iubatum</u>			_ FACW	Prevalence	e Index = B/A	λ =	1.50	
4. Rumex maritimus				Hydrophytic Ve				<u></u>
5				+ Dominance	Test is >50%)		
6 7				+ Prevalence	Index is ≤3.0	1		
8.				Morphologic	al Adaptation emarks or on	ns¹ (Prov	ide suppo	orting
9.				Problemation				
10				i iobicinatio	riyaropriyao	vegeta	tion (Exp	iaii)
	100	_= Total Co	over	¹ Indicators of hydronic	dric soil and v	wetland	hydrology	must
Woody Vine Stratum (Plot size:)				be present, unle				
1				Hydrophytic				
2		= Total C	over	Vegetation		_		
% Bare Ground in Herb Stratum0		10(a) 0	0461	Present?	Yes <u>+</u>	<u> </u>	lo	-
Remarks:								

	Matrix			x Features			_	_
	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
1-12+ 1	0YR 5/2	95 S	/SG	5	D	PL	L	
dric Soil Indic Histosol (A1 Histic Epipe Black Histic Hydrogen S Stratified La 1 cm Muck Depleted Be Thick Dark S Sandy Muck 2.5 cm Muck	edon (A2) (A3)	ble to all LR F) H) e (A11) S2) (LRR G,	Rs, unless other	Gleyed Ma Redox (S5 ed Matrix (S6 Mucky Min Gleyed Ma ed Matrix (I Dark Surfa ed Dark Su Depressio	atrix (S4) i) S6) heral (F1) atrix (F2) 3) ace (F6) urface (F7) ns (F8) essions (F8)) 	Indicators for 1 cm Mu Coast Pr Dark Sur High Pla (LRR Reduced Red Pare Other (E SIndicators of wetland him.	on: PL=Pore Lining, M=Matrix. r Problematic Hydric Soils³: lock (A9) (LRR I, J) rairie Redox (A16) (LRR F, G, H) rface (S7) (LRR G) ins Depressions (F16) H outside of MLRA 72 & 73) d Vertic (F18) ent Material (TF2) xplain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
_	(p							
I VDe:								
Type:)·		=				Hydric Soil Pr	esent? Yes + No
Depth (inches):		-				Hydric Soil Pr	esent? Yes <u>+</u> No
Depth (inches temarks:			_				Hydric Soil Pr	esent? Yes <u>+</u> No
Depth (inches emarks:	ogy Indicators:		-				Hydric Soil Pr	esent? Yes <u>+</u> No
Depth (inches temarks:	ogy Indicators: 's (minimum of or		•••					esent? Yes + No
Depth (inches demarks: POROLOGY Vetland Hydrology Indicator Surface War	ogy Indicators: s (minimum of or ter (A1)		Salt Crust	t (B11)			Secondary + Surface	Indicators (minimum of two require te Soil Cracks (B6)
Depth (inches temarks: /DROLOGY /etland Hydrology	ogy Indicators: s (minimum of or ter (A1) Table (A2)		Salt Crust	t (B11) overtebrate	` ,		Secondary _+_ Surfac Spars	Indicators (minimum of two require se Soil Cracks (B6) ely Vegetated Concave Surface (B
Depth (inches demarks: /DROLOGY /etland Hydrologinimary Indicator + Surface Water - High Water + Saturation (a	ogy Indicators: s (minimum of or ter (A1) Table (A2)		Salt Crust Aquatic Ir Hydrogen	t (B11) overtebrate Sulfide O	dor (C1)		Secondary + Surfac - Spars - Drain	Indicators (minimum of two require se Soil Cracks (B6) ely Vegetated Concave Surface (B age Patterns (B10)
Depth (inches demarks: /DROLOGY /etland Hydrology /etland Hydrolo	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1)		Salt Crust Aquatic Ir Hydrogen Dry-Seas	t (B11) overtebrate Sulfide O on Water	dor (C1) Fable (C2		Secondary + Surfac - Spars - Drain NA Oxidize	Indicators (minimum of two require te Soil Cracks (B6) ely Vegetated Concave Surface (B age Patterns (B10) ed Rhizospheres on Living Roots (6
Depth (inches temarks: POROLOGY Vetland Hydrology Hydrary Indicator Surface Water High Water High Water Saturation (inches)	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) leposits (B2)		Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized	t (B11) nvertebrate Sulfide O on Water ⁻ Rhizosphe	dor (C1) Fable (C2		Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe	Indicators (minimum of two require ce Soil Cracks (B6) ely Vegetated Concave Surface (B age Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled)
Depth (inches emarks: /DROLOGY /etland Hydrologimary Indicator + Surface War - High Water + Saturation (inches with the content of the conte	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) eeposits (B2) its (B3)		Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled)	dor (C1) Fable (C2 res on Liv	ring Roots	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe	Indicators (minimum of two require ce Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8)
Depth (inches demarks: POROLOGY Vetland Hydrology Primary Indicator - Surface Water High Water - High Water - Saturation (inches demands) - Water Mark - Sediment D - Drift Deposit - Algal Mat or	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) teposits (B2) its (B3)		_ Salt Crust _ Aquatic Ir _ Hydrogen _ Dry-Sease _ Oxidized (where r	t (B11) overtebrate Sulfide O on Water Rhizosphe not tilled) of Reduce	dor (C1) Table (C2 res on Lived Iron (C4	ring Roots	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura	Indicators (minimum of two require ce Soil Cracks (B6) ely Vegetated Concave Surface (B age Patterns (B10) ed Rhizospheres on Living Roots (G re tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9)
Depth (inches emarks: /DROLOGY /etland Hydrological frimary Indicator + Surface Water - High Water + Saturation (inches of the content	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) • Crust (B4) ts (B5)	ne required; c	 Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl 	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface	dor (C1) Table (C2 res on Liv d Iron (C4	ring Roots	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura - Geom	Indicators (minimum of two require ce Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2)
Depth (inches emarks: //DROLOGY //etland Hydrologimary Indicator + Surface War - High Water + Saturation (and water Mark) - Sediment Double Drift Deposite Algal Mat or - Iron Deposite Inundation Notes Water-Stain	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) leposits (B2) its (B3) Crust (B4) ts (B5) /isible on Aerial In led Leaves (B9)	ne required; c	_ Salt Crust _ Aquatic Ir _ Hydrogen _ Dry-Sease _ Oxidized (where r	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface	dor (C1) Table (C2 res on Liv d Iron (C4	ring Roots	Secondary	Indicators (minimum of two require ce Soil Cracks (B6) ely Vegetated Concave Surface (B age Patterns (B10) ed Rhizospheres on Living Roots (G re tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9)
Depth (inches demarks: POROLOGY Vetland Hydrology Primary Indicator Surface War High Water Saturation (a Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (a Water-Stain ield Observation	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) Crust (B4) ts (B5) //isible on Aerial In the Leaves (B9) ons:	ne required; c	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface o	dor (C1) Fable (C2 res on Liv d Iron (C4 (C7) emarks)	ring Roots	Secondary	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Depth (inches demarks: POROLOGY Vetland Hydrology High Water High Water High Water Mark Sediment D Drift Deposit Algal Mat or Iron Deposit Hinundation N Water-Stain Gurface Water Proposit	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) r Crust (B4) ts (B5) //sible on Aerial la ted Leaves (B9) ons: resent?	magery (B7)	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface plain in Re	dor (C1) Fable (C2 res on Liv d Iron (C4 C7) emarks)	ring Roots	Secondary	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Depth (inches Remarks: YDROLOGY Vetland Hydrology + Surface War - High Water + Saturation (inches Water Mark) - Water Mark - Sediment D - Drift Deposit + Algal Mat or - Iron Deposit + Inundation (inches Water Stain Water Stain Water Stain Water Stain Water Table Preserved)	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) leposits (B2) its (B3) Crust (B4) ts (B5) //sible on Aerial In led Leaves (B9) ons: resent? Yesent? Yesent?	magery (B7)	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex Depth (inc.	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface plain in Re thes): 12+	dor (C1) Fable (C2 res on Liv d Iron (C4 (C7) emarks)	ring Roots	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura - Geom NA FAC-I - Frost-	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)
Depth (inches demarks: POROLOGY Vetland Hydrology High Water High Water High Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Hinundation N Water-Stain ield Observation urface Water Presented	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) eposits (B2) its (B3) Crust (B4) ts (B5) //isible on Aerial In ted Leaves (B9) ons: resent? Yesent? Yesent? Yesy fringe)	magery (B7) s _+ No _s No s _+ No	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex Depth (inc	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface plain in Re thes): 12+ hes): 8+	dor (C1) Fable (C2 res on Live d Iron (C4 (C7) emarks)	ring Roots 4) Wetla	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura - Geom NA FAC-I - Frost-	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Depth (inches demarks: POROLOGY Vetland Hydrology High Water High Water High Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Hinundation N Water-Stain ield Observation urface Water Presented	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) leposits (B2) its (B3) Crust (B4) ts (B5) //isible on Aerial In led Leaves (B9) ons: resent? Yesent? Yesent? Yesent? Yesent? Yesent? Yesent?	magery (B7) s _+ No _s No s _+ No	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex Depth (inc	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface plain in Re thes): 12+ hes): 8+	dor (C1) Fable (C2 res on Live d Iron (C4 (C7) emarks)	ring Roots 4) Wetla	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura - Geom NA FAC-I - Frost-	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)
Primary Indicator + Surface War - High Water + Saturation (- Water Mark - Sediment D - Drift Deposi + Algal Mat or - Iron Deposi + Inundation (- Water-Stain ield Observation Gurface Water Present on Present Only P	ogy Indicators: s (minimum of or ter (A1) Table (A2) A3) s (B1) deposits (B2) dits (B3) Crust (B4) ts (B5) //isible on Aerial In ted Leaves (B9) ons: resent? ye sent? ye y fringe) ed Data (stream g	magery (B7) s _+ No _s No s _+ No	Salt Crust Aquatic Ir Hydrogen Dry-Sease Oxidized (where r NA Presence Thin Mucl Other (Ex Depth (inc	t (B11) nvertebrate Sulfide O on Water Rhizosphe not tilled) of Reduce k Surface plain in Re thes): 12+ hes): 8+	dor (C1) Fable (C2 res on Live d Iron (C4 (C7) emarks)	ring Roots 4) Wetla	Secondary + Surfac - Spars - Drain NA Oxidize (C3) (whe - Crayfi + Satura - Geom NA FAC-I - Frost-	Indicators (minimum of two requireste Soil Cracks (B6) ely Vegetated Concave Surface (Bage Patterns (B10) ed Rhizospheres on Living Roots (Gre tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)

Project/Site: Ross		City/County: Crook						Sampling Date: <u>6/28/10</u>		
Applicant/Owner: Strata/State of Wyo	oming						State: WY	Sa	ampling Po	oint: R4
Investigator(s): <u>J. Berry</u>			Section	n, Town	ship, Ra	inge: SWSW	18 T53N, R67W	1		
Landform (hillslope, terrace, etc.): Dr	ainage		_ Loca	al relief	(concave	e, convex, nor	ne): Concave		_ Slope (S	%):
Subregion (LRR): LRRG		Lat: _	44.57	'34		Long:	-104.9599		Datum	n: <u>WGS8</u>
Soil Map Unit Name: Absted - Bore	Complex 0-3% slo	pes					NWI clas	ssification	ı: None	е
Are climatic / hydrologic conditions or										
Are Vegetation, Soil		-					cumstances" pr		∕es +	No
Are Vegetation, Soil							in any answers			
SUMMARY OF FINDINGS -							-			es, etc.
Hydrophytic Vegetation Present?	Yes _ +	_ No								
Hydric Soil Present?		No	'		Sampled a Wetlar		V00 ±	No		
Wetland Hydrology Present?				within	a vvetiar	na ?	Yes <u>+</u>	NO		
Remarks:										
Depression in drainage										
VEGETATION - Use scientif	ic names of p	lants.								
		Absolute	Domii	nant In	dicator	Dominance	Test workshe	et:		
Tree Stratum (Plot size:		% Cover					Dominant Specie			
1						That Are Of (excluding F	BL, FACW, or FAC-)	4C	2	(A)
2						,	•			(//)
3							er of Dominant oss All Strata:		2	(B)
4		0							-	(=)
Sapling/Shrub Stratum (Plot size:)		100	ai Cove	;I		Dominant Specie BL, FACW, or FA		100	(A/B)
1										_
2							Index workshe		ultiply by	
3							Cover of: s 1		ultiply by: 1	
4							ties <u>2</u>			
5							s			
Herb Stratum (Plot size: 5' x 10')	0	_ = Tota	al Cove	er		es			
<u> </u>	,	75	Yes	S	OBL		S			
2. Hordeum jubatum			Yes		ACW		als: <u>3</u>			
3. Rumex maritimus		5	No	<u> </u>	ACW+				4.07	
4							ence Index = B			
5							ance Test is >50		•	
6							ence Index is ≤3			
7							ological Adaptat		ovide supp	ortina
8							in Remarks or			
9						Proble	ematic Hydrophy	ytic Veget	tation¹ (Exp	plain)
10										
Woody Vine Stratum (Plot size:		100 =					of hydric soil and unless disturbed			must
1						Uvdranh: 4	•			
2		_				Hydrophyti Vegetation				
% Bare Ground in Herb Stratum	0	0	= I ota	al Cove	er	Present?		+	No	-
Remarks:						L				

SOIL Sampling Point: R4

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

Depth	Matrix		Redo	x Features	3		<u> </u>	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 3/2	80	10YR 4/6	20	C	PL	LL	
3-4	10YR 3/2	100	10YR 4/6	10	C	PL	LL	
4-12+	10YR 4/3	90						
<u> </u>	1011(4/0					-		
						-		
	-							
¹ Type: C=Co	oncentration D=De	nletion RM=	Reduced Matrix, C	S=Covered	or Coate	ed Sand	Grains ² Loca	tion: PL=Pore Lining, M=Matrix.
			RRs, unless othe					or Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleved Ma	atrix (S4)		1 cm M	uck (A9) (LRR I, J)
	pipedon (A2)		Sandy	-				Prairie Redox (A16) (LRR F, G, H)
Black H	listic (A3)		Strippe	ed Matrix (S6)		Dark Sι	urface (S7) (LRR G)
Hydrog	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)	High Pla	ains Depressions (F16)
+ Stratifie	d Layers (A5) (LRF	R F)	Loamy	Gleyed M	atrix (F2)		(LRR	H outside of MLRA 72 & 73)
·	uck (A9) (LRR F, G		Deplet	ed Matrix ((F3)		Reduce	d Vertic (F18)
	ed Below Dark Surf	ace (A11)	<u>+</u> Redox		` ,			rent Material (TF2)
	ark Surface (A12)			ed Dark Su	•	7)		Explain in Remarks)
	Mucky Mineral (S1)			Depressio	, ,			f hydrophytic vegetation and
·	Mucky Peat or Pea		· · · —	lains Depre				hydrology must be present,
	ucky Peat or Peat	(53) (LRR F)	(IVIL	.RA 72 & 7	3 OT LRR	(H)	uniess d	listurbed or problematic.
_	_ayer (if present):							
Type:			<u></u>					
	ches):						Hydric Soil P	resent? Yes + No
Remarks:								
HYDROLO	GY							
	drology Indicators	·						
			check all that appl	v)			Secondary	/ Indicators (minimum of two required)
	Water (A1)	ono roquirou	Salt Crus	•				ace Soil Cracks (B6)
	ater Table (A2)		Aquatic I	. ,	e (R13)			sely Vegetated Concave Surface (B8)
Saturat			Hydroger		, ,			age Patterns (B10)
– Water N	` ,			on Water		٥١		zed Rhizospheres on Living Roots (C3)
I	nt Deposits (B2)		+ Oxidized		,		·	ere tilled)
	eposits (B3)			not tilled)	cies on L	iving ixoc		fish Burrows (C8)
	at or Crust (B4)		NA Presence	,	od Iron (C	24)		ration Visible on Aerial Imagery (C9)
_	posits (B5)		Thin Muc			J 4)	·	morphic Position (D2)
	. ,	al Imagon, (P	7) — Other (E)					-Neutral Test (D5)
	Stained Leaves (B9	0 , .		Kpiaiii iii Ki	emarks)			t-Heave Hummocks (D7) (LRR F)
Field Obser	·)					1108	(-i leave Hullilliocks (DT) (LKK F)
		V N	Donth (in	-h\. 0	0			
Surface Water		· · · · · · · · · · · · · · · · · · ·	o Depth (ind					
Water Table			Depth (inc					
Saturation P		Yes N	Depth (inc	ches):		We	etland Hydrology	Present? Yes <u>+</u> No
		m gauge, mo	nitoring well, aerial	photos, pre	evious ins	spections	s), if available:	
	`	0 0 7	,			•	,,	
Remarks: D	epression in draina	ae						
l comanion b	-p. 000.0.7 III GIGIIIG	J-						

Project/Site: Ross			_ City/Cou	unty: Crook			_ Samplir	ng Date: <u>6</u>	/28/10
Applicant/Owner: Strata/Berger					Sta	te: WY	_ Samplii	ng Point: <u>F</u>	₹5
Investigator(s): <u>J. Berry</u>			Section, T	ownship, Ra	ange: <u>SWNE</u>	18 T53N, R67W			
Landform (hillslope, terrace, etc.): D	rainage		_ Local re	elief (concave	e, convex, nor	ne): <u>Concave</u>		_ Slope (%	6): <u> </u>
Subregion (LRR): LRRG		Lat:	44.5815		Long: _	-104.9502		Datum:	: WGS
Soil Map Unit Name: Water/Gullied	Land					NWI clas	ssification	: <u>PAB</u>	Fh
Are climatic / hydrologic conditions o	n the site typical for	this time of year	ar? Yes	+ No	(If no	, explain in Rem	narks.)		
Are Vegetation, Soil		_				rcumstances" p		Yes +	No
Are Vegetation, Soil						in any answers			
SUMMARY OF FINDINGS -						-			s, etc.
Hydrophytic Vegetation Present?	Yes <u>+</u>	No			· .	·			
Hydric Soil Present?		No	13 (he Sampled					
Wetland Hydrology Present?			wit	hin a Wetlar	nd?	Yes <u>+</u>	. No		
Remarks:			ı						
Relatively large impounded reserve	oir								
VECETATION Has assert	f: f								
VEGETATION – Use scienti	tic names of pi								
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>		t Indicator Status		Test workshe			
1				-		Dominant Specions of FACW, or			
2					(excluding F	FAC-):		2	_ (A)
3					Total Numb	er of Dominant			
4					Species Acı	ross All Strata:		2	_ (B)
Openition (Observe Observe (Distriction	,	0	_ = Total C	Cover		Dominant Specie			
Sapling/Shrub Stratum (Plot size:					That Are Of	BL, FACW, or FA	4C:	100	(A/B)
1 2					Prevalence	Index worksh	eet:		
3					Total %	Cover of:	Mu	ıltiply by:	
4.					OBL specie	s <u>3</u>	x 1 =_	3	
5.						cies			
			= Total C	Cover	-	s			
Herb Stratum (Plot size: 10' x 10	0')					ies			
			Yes	OBL_	-	s			
2. Scirpus maritimus			Yes		Column 1 ot	als: <u>3</u>	(A) _	3	(B)
		10	No	OBL	Preva	lence Index = E	3/A =	1.00	
4. Other Species Present in Area					Hydrophyti	c Vegetation Ir	ndicators:	:	
					+ Domina	ance Test is >50	1%		
					+ Prevale	ence Index is ≤3	.0 ¹		
						ological Adaptati in Remarks or			
5						natic Hydrophyt	•	,	,
40 0					1 100161	natic riyuropriyt	ic vegetal	tion (Expir	, iiii
		100	= Total Co	over	¹ Indicators of	of hydric soil and	d wetland	hvdrology	must
Woody Vine Stratum (Plot size:						unless disturbe			
1					Lludrophuti				
2					Hydrophyti Vegetation				
% Bare Ground in Herb Stratum	0	0	_= Total C	over	Present?	Yes	+ N	No	
Remarks: Relatively large reservoi		nt plan species	along shor	eline.	1				
	-	•							

Ross ISR Project 21 ER Addendum 3.4-A

SOIL								Sampling Point: <u>R5</u>				
Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix		Redox	Feature	S							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks				

1		2
¹ Type: C=Concentration, D=Depletion, RM=Redu		
Hydric Soil Indicators: (Applicable to all LRRs	•	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	1 cm Muck (A9) (LRR I, J)
Histic Epipedon (A2)	Sandy Redox (S5)	Coast Prairie Redox (A16) (LRR F, G, H)
Black Histic (A3)	Stripped Matrix (S6)	Dark Surface (S7) (LRR G)
Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F)	Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2)	High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
1 cm Muck (A9) (LRR F, G, H)	Depleted Matrix (F3)	Reduced Vertic (F18)
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	Red Parent Material (TF2)
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and
2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	High Plains Depressions (F16)	wetland hydrology must be present,
5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	unless disturbed or problematic.
Restrictive Layer (if present):		
Type:		
Depth (inches):		Hydric Soil Present? Yes + No
Remarks:		
Remarks.		
HYDROLOGY		
Wetland Hydrology Indicators:		
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; chec	ck all that apply)	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one required; chec	ck all that apply) + Salt Crust (B11)	
Primary Indicators (minimum of one required; chec + Surface Water (A1)	+ Salt Crust (B11)	Surface Soil Cracks (B6)
Primary Indicators (minimum of one required; chec + Surface Water (A1) High Water Table (A2)	+ Salt Crust (B11) + Aquatic Invertebrates (B13)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
Primary Indicators (minimum of one required; chec + Surface Water (A1) High Water Table (A2) + Saturation (A3)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)
Primary Indicators (minimum of one required; chec + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) 	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) - Drift Deposits (B3)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Room (where not tilled) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8)
Primary Indicators (minimum of one required; check + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Primary Indicators (minimum of one required; check + 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)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Primary Indicators (minimum of one required; check + 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)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; check + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9)	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Primary Indicators (minimum of one required; check + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations:	 + Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes _ + No	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; check + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Saturation Present? Yes + No Saturation Present? Yes + No	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Saturation Present? Yes + No (includes capillary fringe)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Saturation Present? Yes + No Saturation Present? Yes + No	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No Saturation Present? Yes + No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Saturation Present? Yes + No (includes capillary fringe)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No Saturation Present? Yes + No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No Saturation Present? Yes + No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No Saturation Present? Yes + No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Primary Indicators (minimum of one required; chect + Surface Water (A1) High Water Table (A2) + Saturation (A3) + Water Marks (B1) Sediment Deposits (B2) + Drift Deposits (B3) + Algal Mat or Crust (B4) - Iron Deposits (B5) + Inundation Visible on Aerial Imagery (B7) + Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes + No Water Table Present? Yes + No Saturation Present? Yes + No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	+ Salt Crust (B11) + Aquatic Invertebrates (B13) - Hydrogen Sulfide Odor (C1) - Dry-Season Water Table (C2) - Oxidized Rhizospheres on Living Roc (where not tilled) - Presence of Reduced Iron (C4) - Thin Muck Surface (C7) - Other (Explain in Remarks) - Depth (inches): Depth (inches): Depth (inches):	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)

Project/Site: Ross		_ City/Coun	ty: Crook			Samplin	ng Date: <u>6</u>	/28/10
Applicant/Owner: Strata/Berger				State: _\	NY	Samplin	g Point: <u>R</u>	6
Investigator(s): J. Berry		Section, Tov	vnship, Ra	inge: SWNE 18 T	53N, R67W			
Landform (hillslope, terrace, etc.): <u>Drainage</u>		_ Local relie	f (concave	e, convex, none): <u>(</u>	Concave		Slope (%):
Subregion (LRR): LRRG	Lat: _	44.5811		Long: <u>-10</u>	1.9495		Datum	: <u>WGS</u>
Soil Map Unit Name: Gullied Land					NWI clas	sification:	: PABFh	l
Are climatic / hydrologic conditions on the site typical								
Are Vegetation, Soil, or Hydrology _	-			Are "Normal Circum			'es +	No
Are Vegetation, Soil, or Hydrology _				needed, explain a				
SUMMARY OF FINDINGS – Attach site r								s, etc.
				<u> </u>		•		
	No	15 1110	Sampled					
Wetland Hydrology Present? Yes _ +		withi	n a Wetlar	nd? Ye	s <u>+</u>	No		
Remarks:	<u></u>							
Below Oshoto Reservoir								
VEGETATION . He are in a difference of								
VEGETATION – Use scientific names of								
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>	Dominant Species?		Dominance Tes				
1				Number of Domi That Are OBL, F				
2.				(excluding FAC-			3	_ (A)
3				Total Number of	Dominant			
4				Species Across	All Strata:		3	(B)
	0	_ = Total Co	ver	Percent of Domi	nant Species	8		
Sapling/Shrub Stratum (Plot size:				That Are OBL, F	ACW, or FA	C:	100	(A/B)
1				Prevalence Ind	ex workshe	et:		
2				Total % Cov	er of:	Mu	Itiply by:	_
3 4				OBL species	3	_ x 1 = _	3	
5				FACW species	1	_ x 2 = _	2	
		= Total Co	ver	FAC species				
Herb Stratum (Plot size: 20' x 20'		_		FACU species				
1. Typha latifolia	40	<u>Yes</u>	OBL	UPL species				
2. Typha angustifolia		Yes	OBL	Column Totals:	5	_ (A) _	8	(B)
3. <u>Carex lanuginosa</u>			OBL	Prevalence	e Index = B/	A =	1.60	
4. <u>Sporobolus airoides</u>	_		FAC	Hydrophytic Ve	getation Inc	dicators:		
5. <u>Hordeum jubatum</u>			FACW	+ Dominance	Test is >50	%		
6				+ Prevalence	Index is ≤3.	O ¹		
7 8				Morpholog				
9.					Remarks or o	•		
10				Problemat	ic Hydropnyi	tic Vegeta	ation (Exp	iain)
		= Total Cove	r	¹ Indicators of hy	dria goil and	wotland b	ovdrology r	muet
Woody Vine Stratum (Plot size:)				be present, unle				iiust
1				-				
2				Hydrophytic Vegetation				
% Bare Ground in Herb Stratum0	0	_= Total Co	ver	Present?	Yes	<u>+</u> N	lo	
Remarks:				1				

SOIL								Samp	oling Point:	R6	
Profile Desc	cription: (Describe	to the depth n	eeded to docum	ent the i	ndicator	or confirm	n the absence of	indicators.)		
Depth	Matrix			Features							
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Remarks		
0-6	5/10G	80 2	5/5BG	20	<u>D</u>	M	L				
6-12+	10YR 4/2	100									
	-										
¹Tvpe: C=C	oncentration, D=Dep	letion. RM=Re	duced Matrix. CS	 =Covered	or Coate	 d Sand G	rains. ² Locati	on: PL=Por	e Linina. M:	=Matrix.	
	Indicators: (Applic						Indicators fo				
Histoso	ol (A1)		Sandy (Gleyed Ma	atrix (S4)		1 cm Mu	ck (A9) (LR	R I, J)		
Histic E	Epipedon (A2)		Sandy F	Redox (S5	5)		Coast P	rairie Redox	(A16) (LRR	R F, G, H)	
Black H	Histic (A3)		Stripped	d Matrix (S	36)		Dark Su	rface (S7) (I	LRR G)		
Hydrog	en Sulfide (A4)		<u>+</u> Loamy I	Mucky Mir	neral (F1)		High Pla	ins Depress	ions (F16)		
Stratifie	ed Layers (A5) (LRR	(F)	Loamy	Gleyed M	atrix (F2)		(LRR	H outside o	f MLRA 72	& 73)	
1 cm M	luck (A9) (LRR F, G	, H)	+ Deplete	d Matrix (I	F3)		Reduced	d Vertic (F18	5)		
Deplete	ed Below Dark Surfa	ce (A11)	Redox I	Dark Surfa	ace (F6)		Red Par	ent Material	(TF2)		
Thick D	ark Surface (A12)		Deplete	d Dark Su	ırface (F7)	Other (E	•	,		
Sandy	Mucky Mineral (S1)		Redox I	Depressio	ns (F8)		³ Indicators of	hydrophytic	vegetation a	and	
2.5 cm	Mucky Peat or Peat	(S2) (LRR G, I	i) <u>–</u> High Pla	ains Depr	essions (F	16)	wetland hydrology must be present,				
	lucky Peat or Peat (S3) (LRR F)	(MLF	RA 72 & 7	3 of LRR	H)	unless dis	sturbed or pr	oblematic.		
Restrictive	Layer (if present):										
Type:			_								
Depth (in	ches):		=				Hydric Soil Pr	esent? Y	es <u>+</u>	No	
Remarks:											
HYDROLO	GY										
Wetland Hy	drology Indicators:										
Primary Indicators (minimum of one required; check all that apply)							Secondary	Indicators (r	ninimum of	two required)	
+ Surface	e Water (A1)	Salt Crust	Salt Crust (B11)				Surface Soil Cracks (B6)				
High Water Table (A2) Aquatic Invertebrates (B13)							Surface Soil Clacks (Bb)Sparsely Vegetated Concave Surface (B8)				

Wetland Hydrology Indicators:			
Primary Indicators (minimum of c	one required; che	eck all that apply)	Secondary Indicators (minimum of two required)
+ Surface Water (A1)		Salt Crust (B11)	Surface Soil Cracks (B6)
High Water Table (A2)		Aquatic Invertebrates (B13)	 Sparsely Vegetated Concave Surface (B8)
+ Saturation (A3)		Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Water Marks (B1)		Dry-Season Water Table (C2)	NA Oxidized Rhizospheres on Living Roots (C3)
Sediment Deposits (B2)		Oxidized Rhizospheres on Living	Roots (C3) (where tilled)
Drift Deposits (B3)		(where not tilled)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)		_+_ Saturation Visible on Aerial Imagery (C9)	
Iron Deposits (B5)		Geomorphic Position (D2)	
+ Inundation Visible on Aerial	Imagery (B7)	Other (Explain in Remarks)	NA FAC-Neutral Test (D5)
Water-Stained Leaves (B9)			Frost-Heave Hummocks (D7) (LRR F)
Field Observations:			
Surface Water Present? Y	'es <u>+</u> No _	Depth (inches): <u>0-12</u>	
Water Table Present? Y	'es No	Depth (inches):	
Saturation Present? Y	'es <u>+</u> No _	Depth (inches): <u>0-12+</u>	Wetland Hydrology Present? Yes _ + _ No
(includes capillary fringe)	.,		
Describe Recorded Data (stream	i gauge, monitor	ing well, aerial photos, previous inspec	tions), if available:
Remarks: Excavated pond			

Subregion (LRR): LRRG Lat: _44.5675 Long:104.9640 Datum: WGS84 Soil Map Unit Name: Bidman – Bone Loams 2-6% slopes NWI classification: None Are climatic / hydrologic conditions on the site typical for this time of year? Yes _+ No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _+ No Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)	Project/Site: Ross		_ City/C	County: Crook			_ Samplir	ng Date: <u>7</u>	/8/10
Local retief (concave, convex, none):	Applicant/Owner: Strata/Swanda				State: <u>\</u>	VY	Samplin	g Point: R	7
Subtregion (LRR): LRRG	Investigator(s): <u>J. Berry</u>		Section	, Township, Ra	ange: <u>NENE 24 T</u>	3N, R68W			
Soil Map Unit Name: Bidman — Bone Loams 2-6% slopes Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transacts, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Hydric Soil Present? Yes No Is the Sampled Area within a Wetland? Yes No VEGETATION — Use scientific names of plants. Tee Stratum (Plot size: 40' x 120' Seques	Landform (hillslope, terrace, etc.): Drainage		_ Loca	l relief (concav	e, convex, none):	Concave		_ Slope (%	%):
Soil Map Unit Name: Bidman — Bone Loams 2-6% slopes Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transacts, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Hydric Soil Present? Yes No Is the Sampled Area within a Wetland? Yes No VEGETATION — Use scientific names of plants. Tee Stratum (Plot size: 40' x 120' Seques									
Are dimatic / hydrologic conditions on the site typical for this time of year? Yes No									
Are Vegetation Soil or Hydrology significantly disturbed?									-
Are Vegetation, Soil or Hydrology naturally problematic? ((if needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present?		-						'es +	No
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes + No within a Wetland? Yes + No within									
Hydrophytic Vegetation Present?									s, etc.
Hydric Soil Present? Yes + No Wetland Pydrology Present? Yes + No Within a Wetland? Yes + No Yes + No Wetland Pydrology Present? Yes + No Wetland Pydrology Present? Yes + No Wetland? Yes + No									
VEGETATION - Use scientific names of plants. Dominant Indicator			ls	s the Sampled	d Area				
Remarks: Drainage - depression caused by county road fill			v	vithin a Wetla	nd? Ye	s_+	No		
VEGETATION – Use scientific names of plants. Tree Stratum (Plot size: 40' x 120') Absolute % Cover Species? Status Status Species? Status Number of Dominant Species That Are OBL AROW or FAC (excluding FAC);									
Dominant Indicator	Drainage - depression caused by county road fill								
Dominant Indicator									
Dominant Indicator									
Tree Stratum (Plot size: 40' x 120')	VEGETATION – Use scientific names of plar								
1. Salix amyqdoloides 2.	Tree Stratum (Plot size: 40' v 120'								
2									
3.								3	(A)
Species Across All Strata: 3 (B)					Total Number of	Dominant			
Sapling/Shrub Stratum (Plot size:								3	_ (B)
That Are OBL, FACW, or FAC: 100 (A/B)					Percent of Dom	nant Specie	es		
2. Prevalence Index worksheet: Total % Cover of:								100	(A/B)
3.					Prevalence Ind	ex worksh	eet:		
4.					Total % Co	er of:	Mu	Itiply by:	
FACW species 3					OBL species		_ x 1 =		
Herb Stratum (Plot size: 40' x 120' 1. Sporobolus airoides 50 Yes FAC FAC PRC species 1 x 4 = 4 1. Sporobolus airoides 50 Yes FAC UPL species 1 x 4 = 4 2. Hordeum jubatum 20 Yes FAC UPL species x 5 = Column Totals: 5 (A) 13 (B) 3. Poa pratensis 15 No FACU 4. Rumex maritimus 15 No FACU 5. Other species in area (nearby inundated area)					FACW species	3	_ x 2 =	6	
Herb Stratum (Plot size: 40' x 120') 1. Sporobolus airoides 50	- S		= Tota	l Cover			_ x 3 =	3	
2. Hordeum jubatum 2. Yes FACW 3. Poa pratensis 4. Rumex maritimus 5. Other species in area (nearby inundated area) 6. Sagittaria cuneata 7. Carex praegracilis 8. Potamogeton nodosus 9. Carex nebrascensis 10. Phleym pratense Woody Vine Stratum (Plot size:) 1 Wes FACW Prevalence Index = B/A =2.6 Hydrophytic Vegetation Indicators: + Dominance Test is >50% + Prevalence Index is ≤ 3.0¹ - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) - Problematic Hydrophytic Vegetation¹ (Explain) 1 Woody Vine Stratum (Plot size:) 1 Bare Ground in Herb Stratum30 Yes No Hydrophytic Vegetation Present? Yes No	Herb Stratum (Plot size: 40' x 120'			0010.	FACU species	1	_ x 4 =	4	
3. Poa pratensis 4. Rumex maritimus 5. Other species in area (nearby inundated area) 6. Sagittaria cuneata 7. Carex praegracilis 8. Potamogeton nodosus 9. Carex nebrascensis 10. Phleym pratense Woody Vine Stratum Prevalence Index = B/A = 2.6 Hydrophytic Vegetation Indicators: + Dominance Test is >50% + Prevalence Index is ≤3.0¹ - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) - Problematic Hydrophytic Vegetation¹ (Explain) 10. Phleym pratense Woody Vine Stratum Prevalence Index = B/A = 2.6 Hydrophytic Vegetation Indicators: - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) - Problematic Hydrophytic Vegetation¹ (Explain) 11.	Sporobolus airoides	50	Yes	s FAC		-			
4. Rumex maritimus 5. Other species in area (nearby inundated area) 6. Sagittaria cuneata 7. Carex praegracilis 8. Potamogeton nodosus 9. Carex nebrascensis 10. Phleym pratense Woody Vine Stratum (Plot size:) 1 8. Bare Ground in Herb Stratum30 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)	2. <u>Hordeum jubatum</u>	20	Yes		Column Totals:	5	(A)	13	(B)
15 No FACW Hydrophytic Vegetation Indicators: 2	3. <u>Poa pratensis</u>	15	No		Prevalenc	e Index = F	3/A =	26	
5. Other species in area (nearby inundated area) 6. Sagittaria cuneata + Dominance Test is >50% 7. Carex praegracilis + Prevalence Index is ≤3.0¹ 8. Potamogeton nodosus - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 9. Carex nebrascensis - Problematic Hydrophytic Vegetation¹ (Explain) 100	·								_
7. Carex praegracilis 8. Potamogeton nodosus 9. Carex nebrascensis 10. Phleym pratense Woody Vine Stratum (Plot size:) 1 8. Bare Ground in Herb Stratum30					' ' '	•			
8. Potamogeton nodosus 9. Carex nebrascensis 10. Phleym pratense Woody Vine Stratum (Plot size:) 1 2 We Bare Ground in Herb Stratum30	"				+ Prevalence	Index is ≤3	3.0 ¹		
9. <u>Carex nebrascensis</u> 10. <u>Phleym pratense</u> Woody Vine Stratum (Plot size:) 1 2 Bare Ground in Herb Stratum30									
10. Phleym pratense Woody Vine Stratum (Plot size:) 1 2 Bare Ground in Herb Stratum30							•		'
Woody Vine Stratum (Plot size:) 1		_	-		Problemation	: Hydrophyt	ic Vegeta	tion' (Expla	ain)
Woody Vine Stratum (Plot size:) 1 2 % Bare Ground in Herb Stratum30 Woody Vine Stratum (Plot size:) =	10. <u>I moyin praterio</u>	100 =	= Total (Cover	1 maliantana at hu	عداد حداد			
1	Woody Vine Stratum (Plot size:)		· otal (must
% Bare Ground in Herb Stratum 30 Vegetation Present? Yes + No	1				, .		· ·		
% Bare Ground in Herb Stratum 30 Present? Yes + No	2								
<u></u>	% Bare Ground in Herb Stratum 30	0	_= Tota	l Cover		Yes	<u>+</u> N	lo	•
					1				

SOIL Sampling Point: R7

Profile Desc	ription: (Describe t	o the depti	needed to docum	nent the i	ndicator	or confirm	the absence of in	dicators.)			
Depth Matrix Redox Feature											
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-6	10YR 2/1	100					SCL				
6-12+	10YR 4/1	70	10YR 4/2	50	<u>C</u>	M	Sand				
				· ——				_			
1Type: C=C	oncentration, D=Depl	etion RM=	Reduced Matrix CS	=Covered		d Sand Gr	ains ² l ocation	: PL=Pore Lining, M=Matrix.			
	Indicators: (Applica					u Sanu Or		Problematic Hydric Soils ³ :			
Histoso	l (A1)		+ Sandy	Gleyed M	atrix (S4)		1 cm Muck	(A9) (LRR I, J)			
+ Histic E	pipedon (A2)		Sandy					rie Redox (A16) (LRR F, G, H)			
Black H	listic (A3)		Strippe	d Matrix (S6)		Dark Surfa	ce (S7) (LRR G)			
Hydrog	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		High Plains	s Depressions (F16)			
Stratifie	ed Layers (A5) (LRR I	F)	Loamy	Gleyed M	atrix (F2)		(LRR H	outside of MLRA 72 & 73)			
1 cm M	uck (A9) (LRR F, G ,	H)	Deplete	ed Matrix ((F3)		Reduced V	/ertic (F18)			
+ Deplete	ed Below Dark Surfac	e (A11)	Redox	Dark Surfa	ace (F6)		Red Paren	t Material (TF2)			
+ Thick D	Oark Surface (A12)		Deplete	ed Dark Si	urface (F7)		lain in Remarks)			
Sandy I	Mucky Mineral (S1)		Redox	Depression	ns (F8)		³ Indicators of hy	drophytic vegetation and			
2.5 cm	Mucky Peat or Peat ((S2) (LRR 0	i, H) <u>–</u> High F	lains Dep	ressions (F16)	wetland hyd	rology must be present,			
	ucky Peat or Peat (S	3) (LRR F)	(ML	RA 72 & 7	3 of LRR	H)	unless distu	rbed or problematic.			
Restrictive I	_ayer (if present):										
Type:											
Depth (inc	ches):						Hydric Soil Pres	ent? Yes <u>+</u> No			
Remarks:											
HYDROLO	GY										
Wetland Hyd	drology Indicators:										
Primary Indic	cators (minimum of or	ne required;	check all that apply	y)			Secondary Inc	dicators (minimum of two required)			
Surface	e Water (A1)		Salt Crust	t (B11)			Surface	Soil Cracks (B6)			
High W	ater Table (A2)		Aquatic Ir	vertebrate	es (B13)		Sparsely Vegetated Concave Surface (B8)				
+ Saturati	ion (A3)		_ Hydrogen	Sulfide O	dor (C1)		Drainage	e Patterns (B10)			
Water N	, ,		Dry-Seas		, ,)		Rhizospheres on Living Roots (C3)			
	ent Deposits (B2)		 ,		•	, ving Roots	<u></u>				

Remarks: Depression in drainage

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

Yes ____ No ___ Depth (inches): _

Yes ____ No __ Depth (inches): _

Yes <u>+</u> No ____ Depth (inches): _

__ Inundation Visible on Aerial Imagery (B7) __ Other (Explain in Remarks)

(where not tilled)

__ Thin Muck Surface (C7)

NA Presence of Reduced Iron (C4)

__ Crayfish Burrows (C8)

__ FAC-Neutral Test (D5)

— Geomorphic Position (D2)

Wetland Hydrology Present? Yes _ + No ___

Saturation Visible on Aerial Imagery (C9)

__ Frost-Heave Hummocks (D7) (LRR F)

Drift Deposits (B3)

_ Iron Deposits (B5)

Field Observations:
Surface Water Present?

Water Table Present?

(includes capillary fringe)

Saturation Present?

Algal Mat or Crust (B4)

— Water-Stained Leaves (B9)

Project/Site: Ross		_ City/	/Count	y: Crook		;	Sampling	g Date: <u>6</u>	3/28/10
Applicant/Owner: Strata/State of Wyoming					State: WY	s	ampling	Point: R	18
Investigator(s): J. Berry	:	Section	n, Tow	nship, Ra	nge: <u>SWSW 18 T53N</u> ,	R67W			
Landform (hillslope, terrace, etc.): Diked Pond (built up)		_ Loca	al relie	f (concave	e, convex, none): Cond	cave		Slope (%	%):
Subregion (LRR): <u>LRRG</u>	Lat: _	44.57	723		Long: <u>-104.960</u>	1		Datum:	WGS84
Soil Map Unit Name: <u>Absted – Bone Complex 0-3% Slopes</u>									
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation _+, Soil _+, or Hydrology _+	-							s +	No
Are Vegetation, Soil, or Hydrology		-			needed, explain any ar				
SUMMARY OF FINDINGS - Attach site map					•			,	es, etc.
Hydrophytic Vegetation Present? Yes N	No +		la 4ha	Camandad	A				
Hydric Soil Present? Yes ? N				Sampled a Wetlar		N	o +		
Wetland Hydrology Present? Yes _+ N	lo		WILIIII	i a vvetiai	iu: 165		<u> </u>		
Remarks:									
Steep sided retention pond – oil from nearby well on surfa	ce and has	crusted	d top la	ayer above	e waterline. Very little	/egetatior	n growing	g at water	rline.
VEGETATION – Use scientific names of plan	ts.								
	Absolute				Dominance Test wo	rksheet:			
Tree Stratum (Plot size: 40' x 120'	% Cover				Number of Dominant				
1					That Are OBL, FACV (excluding FAC-):	√, or FAC		0	(A)
2					Total Number of Don	ninant			_ ` ,
4					Species Across All S			1	_ (B)
	0				Percent of Dominant	Species			
Sapling/Shrub Stratum (Plot size:)					That Are OBL, FACV		: <u> </u>	0	(A/B)
1					Prevalence Index w	orksheet	:		
2					Total % Cover o			iply by:	
3					OBL species		x 1 =		
4. 5.					FACW species		x 2 =		
		= Tot	tal Cov	/er	FAC species				
Herb Stratum (Plot size: 40' x 120'		_			FACU species 2				
1. <u>Agropyron smithii</u>			es	FACU	UPL species				
2. <u>Bromus japonicus</u>				FACU	Column Totals:2	2	(A) _	8	(B)
3					Prevalence Ind	ex = B/A	=	4	
4					Hydrophytic Vegeta	tion Indi	cators:		
5 6					Dominance Tes	st is >50%)		
7.					Prevalence Inde				
8.					Morphological A data in Rema				
9.					Problematic Hyd		•		
10					r robicinatio riy	aropriyao	vogetati	on (Expi	ani)
	100=			r	¹ Indicators of hydric	soil and w	etland h	ydrology	must
Woody Vine Stratum (Plot size:) 1					be present, unless di	sturbed o	r probler	natic.	
2.					Hydrophytic				
	0			/er	Vegetation	Yes	No	_	
% Bare Ground in Herb Stratum98					rieseilt!	169	NO		
Remarks:									

SOIL Sampling Point: R8

Profile Desc	cription: (Describe	e to the depth	needed to docu	ment the i	ndicator	or confirr	n the absence of i	ndicators.)
Depth	Matrix			ox Features				
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
	oncentration, D=De Indicators: (Appli					d Sand G		n: PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :
Histoso		045.0 to 4 2	Sandy		•			(A9) (LRR I, J)
	Epipedon (A2)		-	Redox (S5				irie Redox (A16) (LRR F, G, H)
	Histic (A3)			ed Matrix (S				ace (S7) (LRR G)
	gen Sulfide (A4)			/ Mucky Mi			·	s Depressions (F16)
	ed Layers (A5) (LRF	? F)		Gleyed M			-	outside of MLRA 72 & 73)
	luck (A9) (LRR F, G	•		ed Matrix (`	Vertic (F18)
	ed Below Dark Surfa			Dark Surfa	,			nt Material (TF2)
	Dark Surface (A12)	200 (1111)		ed Dark Su	, ,)		plain in Remarks)
	Mucky Mineral (S1)			Depressio	•	,		ydrophytic vegetation and
-	Mucky Peat or Pea					- 16)		drology must be present,
·	lucky Peat or Peat (. , .		.RA 72 & 7			-	urbed or problematic.
Restrictive	Layer (if present):							
Type:								
Depth (in	nches):						Hydric Soil Pre	sent? Yes ? No ?
Remarks:	,							
	soil surface around	odgo No soil r	sit dua					
Oli Ciusii oli	son surface around	euge. No son p	nt dug					
HYDROLO	OGY							
Wetland Hy	drology Indicators	<u> </u>						
_	cators (minimum of		heck all that app	lv)			Secondary Ir	ndicators (minimum of two required)
	e Water (A1)	ono roquirou, o	Salt Crus					e Soil Cracks (B6)
	Vater Table (A2)		Aquatic I	, ,	oc (B13)			ly Vegetated Concave Surface (B8)
								ge Patterns (B10)
ND Satura			Hydroge					, ,
Water	` '		Dry-Seas				·	d Rhizospheres on Living Roots (C3)
	ent Deposits (B2)		Oxidized	•	eres on L	iving Root	` ,	e tilled)
	eposits (B3)		•	not tilled)				h Burrows (C8)
_	Mat or Crust (B4)		NA Presenc			(4)		on Visible on Aerial Imagery (C9)
	eposits (B5)		Thin Mud				· · · · · · · · · · · · · · · · · · ·	rphic Position (D2)
	tion Visible on Aeria	3 , (,	Other (E	xplain in Re	emarks)			eutral Test (D5)
	Stained Leaves (B9))					Frost-H	eave Hummocks (D7) (LRR F)
Field Obser	rvations:							
Surface Wat	ter Present?	Yes <u>+</u> No	Depth (inc	ches):	24+			
Water Table	Present?	Yes No	+ Depth (inc	ches):				
Saturation P			Depth (inc				land Hydrology Pr	esent? Yes <u>+</u> No
(includes ca	pillary fringe)							
Describe Re	ecorded Data (stream	m gau <mark>ge, monit</mark>	oring well, aerial	photos, pre	evious ins	pections),	if available:	
Remarks: S	Soil saturation not de	etermined since	soil pit not dug.					
			-					

Project/Site: Ross		_ City/Cour	nty: <u>Crook</u>			Sampling	g Date: <u>6</u>	/22/10
Applicant/Owner: Strata/Berger				State: W	/Y	Sampling	Point: <u>F</u>	89
Investigator(s): J. Berry		Section, To	wnship, Ra	nge: <u>NWSE 19 T5</u>	3N, R67W			
Landform (hillslope, terrace, etc.): Drainage		Local reli	ef (concave	e, convex, none): C	Concave		Slope (%	6) :
Subregion (LRR): LRRG								
Soil Map Unit Name: Fort Collins Loam 6-10% Slop								
Are climatic / hydrologic conditions on the site typica							1401	
	-							No
Are Vegetation, Soil, or Hydrology				e "Normal Circumst				NO
Are Vegetation _—, Soil _—, or Hydrology	naturally p	roblematic'	' (If	needed, explain an	y answers	ın Remark	S.)	
SUMMARY OF FINDINGS – Attach site	map showing	samplin	g point l	ocations, trans	ects, im	portant	feature	s, etc.
Hydrophytic Vegetation Present? Yes	No +							
	No +		e Sampled					
	No +	with	in a Wetlar	nd? Yes		No <u>+</u>		
Remarks:		<u> </u>						
Small depression below impounded stock pond.								
VEGETATION – Use scientific names o	<u> </u>			1 -				
Tree Stratum (Plot size: 40' x 120')		Dominant Species?		Dominance Test				
1				Number of Domir That Are OBL, FA				
2				(excluding FAC-)			0	(A)
3				Total Number of I	Dominant			
4.				Species Across A			3	(B)
	0	= Total Co		Percent of Domin	ant Specie	s		
Sapling/Shrub Stratum (Plot size:				That Are OBL, FA			0	(A/B)
1				Prevalence Inde	x workshe	et:		
2				Total % Cove			tiply by:	
3				OBL species _				
4			-	FACW species				
5		= Total Co		FAC species				
Herb Stratum (Plot size: 40' x 120')	_ = 10tal Ct	ovei	FACU species _	5	_ x 4 = _	20	
1. Agropyron smithii	50%	Yes	FACU	UPL species	0	_ x 5 = _		
2. Poa protensis	30%	Yes	FACU	Column Totals:	5	_ (A) _	20	(B)
3. Achillea millifolium	15%	No	FACU	Description	ledev – Di	/A —	4	
4. Taraxgcum officinale	5%	No	FACU	Prevalence Hydrophytic Veg			4	_
5				Dominance				
6				Prevalence				
7				Morphologic			ide sunna	rtina
8					emarks or o			
9				Problematic	Hydrophyt	ic Vegetat	ion ¹ (Exp	ain)
10								
Woody Vine Stratum (Plot size:)		Total Cov	er	¹ Indicators of hyd				must
1				be present, unles	s disturbed	or problei	matic.	
2				Hydrophytic				
		= Total Co	over	Vegetation Present?	Vee	No	+	
% Bare Ground in Herb Stratum20				r resent!	169	NO	т	
Remarks:								

SOIL Sampling Point: R9

Profile Desc	cription: (Describe	to the depth n	eeded to docur	nent the in	ndicator	or confir	n the absence of in	dicators.)
Depth	Matrix			x Features				_
(inches)	Color (moist)	(Color (moist)	<u> </u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-8	10YR 3/4	100					L	
8-12+	10YR 4/3	100					L	
				· ——				
							· -	
	oncentration, D=De					d Sand G		: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	cable to all LRF	Rs, unless othe	rwise note	ed.)		Indicators for F	Problematic Hydric Soils ³ :
Histoso	ol (A1)		Sandy	Gleyed Ma	atrix (S4)			(A9) (LRR I, J)
	Epipedon (A2)		Sandy					rie Redox (A16) (LRR F, G, H)
	Histic (A3)		Strippe	•	,		·	ce (S7) (LRR G)
	en Sulfide (A4)		Loamy	•	, ,)		s Depressions (F16)
	ed Layers (A5) (LRR		Loamy	-	. ,		`	outside of MLRA 72 & 73)
	luck (A9) (LRR F, G			ed Matrix (•		Reduced VRed Paren	• •
	ed Below Dark Surfa Dark Surface (A12)	ice (ATT)		Dark Surfa ed Dark Su	, ,	' \		it Material (1F2) Ilain in Remarks)
	Mucky Mineral (S1)		Depleton		,	,		drophytic vegetation and
-	Mucky Peat or Peat					- 16)	•	rology must be present,
	lucky Peat or Peat (RA 72 & 7			•	rbed or problematic.
	Layer (if present):		· · · · · · · · · · · · · · · · · · ·			,		·
Type:								
, <u> </u>	ches):						Hydric Soil Pres	ent? Yes No +
Remarks:			_				, , , , , ,	
rtomanto.								
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
_	cators (minimum of		eck all that appl	v)			Secondary In	dicators (minimum of two required)
	e Water (A1)		Salt Crus			_	·	Soil Cracks (B6)
	ater Table (A2)		Aquatic II	` ,	e (B13)			Vegetated Concave Surface (B8)
Saturat	, ,		Hydroger					e Patterns (B10)
Water I	` '		Dry-Seas		` '	1		Rhizospheres on Living Roots (C3)
	ent Deposits (B2)		Oxidized		•	,	<u></u>	
Drift De				not tilled)	JICS OII E	iving recoi		Burrows (C8)
	lat or Crust (B4)		NA Presence	,	ad Iron (C	١٨)		on Visible on Aerial Imagery (C9)
Algai iv Iron De	, ,		Thin Muc			,4)	· · · · · · · · · · · · · · · · · · ·	phic Position (D2)
		I Imagany (P7)						eutral Test (D5)
	tion Visible on Aeria Stained Leaves (B9)			piairi iri Ke	illaiks)			` '
Field Obser)					<u> </u>	eave Hummocks (D7) (LRR F)
		/oo No	. Donth (inch					
Surface Wat			+ Depth (inch					
Water Table			+ Depth (inch					
Saturation P		/es No _	+ Depth (inch	ies):		Wet	land Hydrology Pre	sent? Yes No <u>+</u>
(includes car Describe Re	corded Data (strean	n gauge, monito	ring well, aerial	ohotos, pre	vious ins	pections).	, if available:	
	(33-,	3 - ,	, [, ,		
Remarks: D	epression in drainag	ne .						
. Containe. D	Spreadion in diama							

APPENDIX B

Photos



Photo 01. A1 (Lower Portion)



Photo 02. A1 (Middle Portion)



Photo 03. A1 (Upper Portion)



Photo 04. A2 (Lower Portion) Site R5



Photo 05. A2 (Upper Portion)



Photo 06. A3



Photo 07. A4 (Upper Portion) Site R6



Photo 08. A4 (Middle Portion)



Photo 09. A4 (Lower Portion)



Photo 10. A5



Photo 11. B1



Photo 12. B2 (Site R1)



Photo 13. B3



Photo 14. B4



Photo 15. B5



Photo 16. B6 (Site R2)



Photo 17. C1





Photo 19. C3



Photo 20. C4



Photo 21. C5



Photo 22. D1



Photo 23. D2 (Site R3)



Photo 24. E1 (Site R8)



Photo 25. F1 (Site R4)



Photo 26. F2



Photo 27. F3



Photo 28. F4

No Photos for F5 thought F11, F13, & F14 -Areas Were Very Similar to F1-



Photo 29. F12



Photo 30. F15

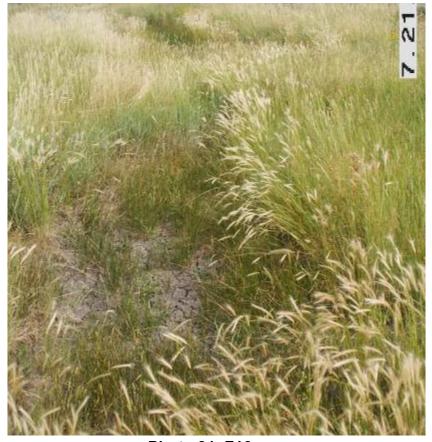


Photo 31. F16



Photo 32. F17



Photo 33. F18



Photo 34. F19



Photo 35. F20



Photo 36. F21



Photo 37. F22



Photo 38. G1



Photo 39. G2 Lower Portion (Site R7)



Photo 40. G2 Upper Portion



Photo 41. G3



Photo 42. G4



Photo 43. G5



Photo 44. G6



Photo 45. G7



Photo 46. G8



Photo 47. G9



Photo 48. G10

No Photo of G11 (Similar to G10)



Photo 49. G12



Photo 50. G13



Photo 51. H1



Photo 52. H2



Photo 53. H3

No Photo for H4 (Similar to H3)



Photo 54. I1



Photo 55. I2



Photo 56. I4

No Photos for I3 & I5 (Similar to I4)



Photo 57. J1 (Downstream)



Photo 58. J1 (Upstream)



Photo 59. K1



Photo 60. K2



Photo 61. K3

K4 Not Photographed



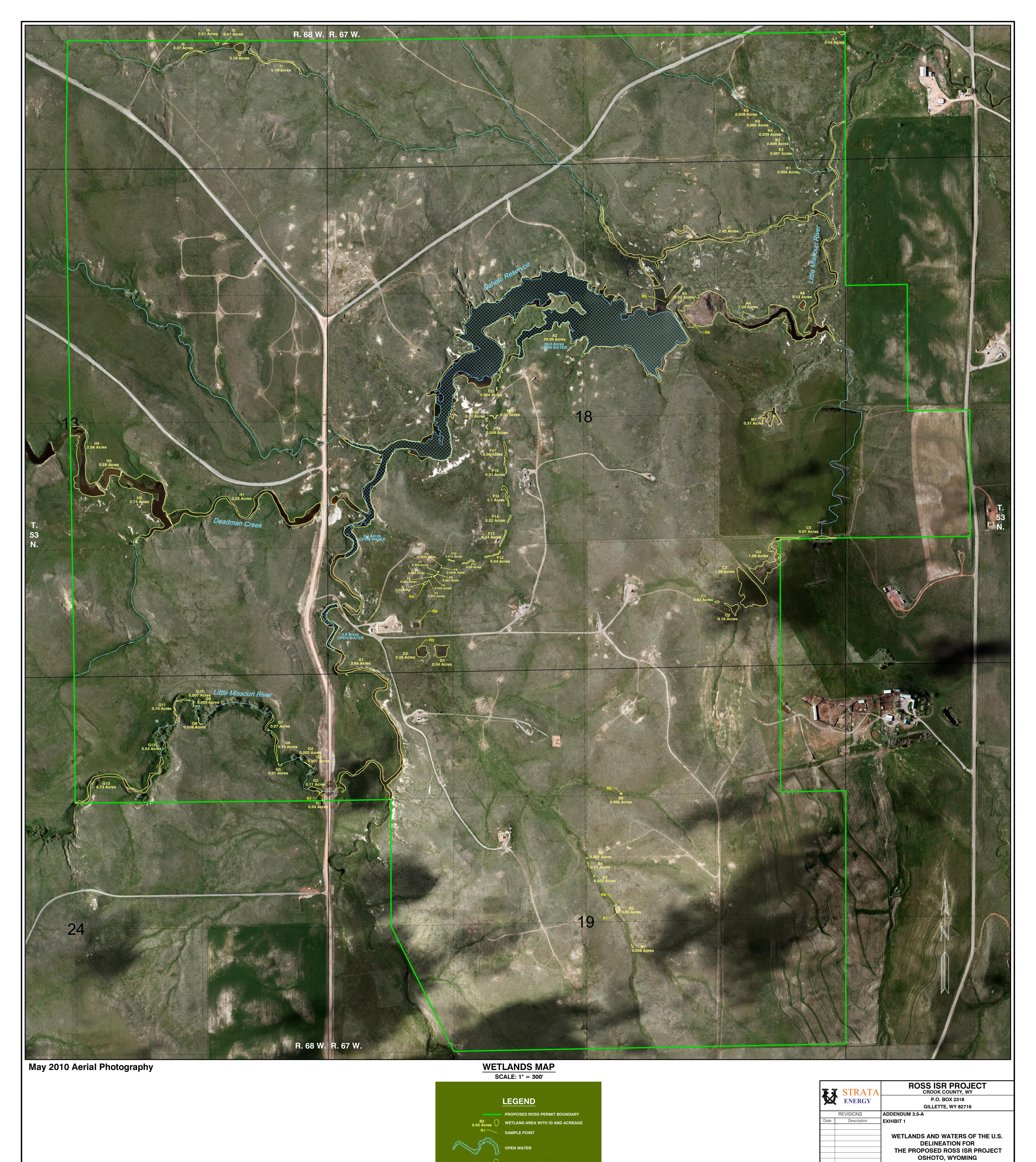
Photo 62. K5



Photo 63. K6



Photo 64. Site R9



Ross ISR Project 67

WATERS OF THE U.S.

Drawn By: MBM
Checked By: JDB

Date: 8/23/10

FILE: ROSS COE WETLANDS

WWC ENGINEERING
www.wwcengineering.com

ADDENDUM 3.4-B WETLANDS CORRESPONDENCE



September 9, 2010

Mr. Matt Bilodeau US Army Corps of Engineers Wyoming Regulatory Office 2232 Del Range Blvd., Suite 210 Cheyenne, WY 82009

RE: REVISED JURISDICTIONAL WETLANDS DELINEATION FOR THE PROPOSED ROSS ISR PROJECT, OSHOTO, WYOMING

Mr. Bilodeau:

Attached please find one copy of a report titled *Revised Jurisdictional Wetlands Delineation for the Proposed Ross ISR Project, Oshoto, Wyoming.* Please use this version for verification of the wetlands for the Ross Project at Oshoto, Wyoming. Several sites were not included in the original evaluation and I corrected errors found in that report. I am submitting this report on behalf of Strata Energy, Inc. for U.S. Army Corps of Engineers verification purposes.

I hope this won't inconvenience you and please call if you have questions or comments regarding the submission of this revised information.

Sincerely,

John Berry, CWB

Jdb/

Encl: as noted