































Appendix E Gridded Database Precipitation Worksheet

# Minnesota Climatology Working Group 🌞

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

home current conditions journal past data summaries agriculture other sites contact us search



# **Precipitation Worksheet Using Gridded Database**

#### Precipitation data for target wetland location:

county: Yellow Medicinetownship number: 114Ntownship name: Fortierrange number: 46Wnearest community: Burrsection number: 20

Aerial photograph or site visit date: Sunday, September 25, 2016

#### Score using 1981-2010 normal period

values are in inches	first prior month:	second prior month:	third prior month:
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	August	July	June
derived nom radal-based estimates.	2016	2016	2016
estimated precipitation total for this location:	5.97R	4.34	1.60
there is a 30% chance this location will have less than:	1.98	2.33	2.93
there is a 30% chance this location will have more than:	3.76	4.34	4.85
type of month: dry normal wet	wet	wet	dry
monthly score	3 * <mark>3</mark> = 9	2 * <mark>3</mark> = 6	1 * <mark>1</mark> = 1
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)		16 (Wet)	

#### **Other Resources:**

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- Evaluating Antecedent Precipitation Conditions (BWSR)

# Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

home current conditions journal past data summaries agriculture other sites about us

# **Precipitation Worksheet Using Gridded Database**

## Precipitation data for target wetland location:

county: Yellow Medicinetownship number: 114Ntownship name: Fortierrange number: 46Wnearest community: Burrsection number: 20

#### Aerial photograph or site visit date: Monday, October 23, 2017

#### Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month: September 2017	second prior month: August 2017	third prior month: July 2017
estimated precipitation total for this location:	3.97R	8.66R	2.62R
there is a 30% chance this location will have less than:	2.45	1.98	2.33
there is a 30% chance this location will have more than:	3.28	3.76	4.34
type of month: dry normal wet	wet	wet	normal
monthly score	3 * <mark>3</mark> = 9	2 * <mark>3</mark> = 6	1 * 2 = 2
multi-month score:           6 to 9 (dry)         10 to 14 (normal)         15 to 18 (wet)	1	17 (Wet)	

# Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- Evaluating Antecedent Precipitation Conditions (BWSR)

Appendix F

**USACE Wetland Determination Data Forms** 

Project/Site Bitter Root Wind Farm Project	City/(	County:	Yellow Med	icine Sampling Da	ate: 10/17/2017
Applicant/Owner: RES Americas		State:	MN		
Investigator(s): JLK/KD		Secti	on, Township	o, Range: T11	4n R46w Section 8
Landform (hillslope, terrace, etc.): Flat	1	Local r	elief (concav	e, convex, none):	Linear
Slope (%): 1-6 Lat: 44.699297		Long:	-96.4364	11 Datum:	NAD83
Soil Map Unit Name Barnes-Buse-Svea complex, 1 to 6	percent s		NWI C	Classification:	Upland
Are climatic/hydrologic conditions of the site typical for the	his time of	f the year?	Y (l	f no, explain in remarks	3)
Are vegetation, soil, or hydrolog	ју	significantly	y disturbed?	Are "normal	circumstances"
Are vegetation, soil, or hydrolog	ју	naturally pr	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain a	ny answers in remarks.)
Hydrophytic vegetation present? N	_				
Hydric soil present? Y		Is the s	ampled area	a within a wetland?	<u>N</u>
Indicators of wetland hydrology present? N		f yes, op	otional wetlan	id site ID:	
Remarks: (Explain alternative procedures here or in a se	eparate re	eport.)			
Rainfall for previous three months is 37% wetter	r than no	ormal.			
VEGETATION Use scientific names of plants.					
	Absolute	Dominan	Indicator	Dominance Test Wo	orksheet
Tree Stratum (Plot size:)	% Cover	t Species	Staus	Number of Dominant S	
1				that are OBL, FACW, o	or FAC: 0 (A)
2				Total Number of Do	
3				Species Across all	
4				Percent of Dominant S that are OBL, FACW, o	•
	0 =	= Total Cove	r	liucuio obe,	
Sapling/Shrub stratum (Plot size:)				Prevalence Index W	/orksheet
1				Total % Cover of:	
2				OBL species 0	
				FACW species 0	
4 5				FAC species 0 FACU species 0	
	0 =	= Total Cove		UPL species 0	
				Column totals 0	
1 Glycine max	100	Y	NI	Prevalence Index = E	
2					
3				Hydrophytic Vegeta	
4					drophytic vegetation
5				Dominance test i	
6				Prevalence index	
8					ptations* (provide n Remarks or on a
9				separate sheet)	II Remains of on a
10					ophytic vegetation*
	100 =	= Total Cove	r	(explain)	
Woody vine stratum (Plot size:)				*Indicators of hydric soil	and wetland hydrology must be
1				present, unless	disturbed or problematic
2		<u> </u>		Hydrophytic	
	0 =	= Total Cove	r	vegetation present?	Y
Remarks: (Include photo numbers here or on a separate	c sheet)				
Location is a mudflat that was flooded in spri	-	now domin	eted hy un	land weeds	
	ing and i		atoa by ap		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abser	ice of indicators.)
Depth	Matrix			lox Feat				,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10 YR 2/1	100	,					Silty Clay
-								
7-16	10 YR 2/1	90	10 YR 4/1	10	С	М		Silty Clay
*Type: C = (	Concentration, D	= Denleti	on RM = Reduce	d Matrix	/ MS = N	lasked S	and Grains **Locati	on: PL = Pore Lining, M = Matrix
	bil Indicators:	- Depier			(, 1010 – IX			lematic Hydric Soils:
-			Com		ad Matrix	(04)		-
	tisol (A1)				ed Matrix	(54)		edox (A16) ( <b>LRR K, L, R)</b>
	tic Epipedon (A2)			dy Redo			Dark Surface (S	
	ck Histic (A3)			•	trix (S6)			e Masses (F12) ( <b>LRR K, L, R)</b>
	lrogen Sulfide (A	,		•	ky Minera	. ,		ark Surface (TF12)
Stra	atified Layers (A5	)			ed Matrix		Other (explain in	n remarks)
	m Muck (A10)				atrix (F3)			
X Dep	oleted Below Dark	Surface	e (A11) X Rec	lox Dark	Surface	(F6)		
Thie	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hyd	rophytic vegetation and weltand
Sar	ndy Mucky Minera	l (S1)	Rec	lox Depr	essions	(F8)	hydrology must	be present, unless disturbed or
5 ci	n Mucky Peat or	Peat (S3	)					problematic
	Layer (if observ					1		-
	Layer (II Observe	eu).					Hudria agil proce	nt2 V
Type:					-		Hydric soil prese	
Depth (inche	es):				-			
Remarks:								
HYDROLO								
-	drology Indicate							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Secondary In	dicators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surface	Soil Cracks (B6)
High Wa	iter Table (A2)			True Aq	uatic Plar	nts (B14)	Drainag	e Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) Dry-Sea	ason Water Table (C2)
Water N	larks (B1)			Oxidized	d Rhizosp	heres on	Living Roots Crayfish	n Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			Saturati	on Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	Iron Redu	ction in T	illed Soils Geomo	rphic Position (D2)
Iron Dep	osits (B5)			(C6)			FAC-Ne	eutral Test (D5)
Inundati	on Visible on Aeria	I Imager	/ (B7)	Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)	· · ·	Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat		Yes	No	х	Depth (i	nches).		
Water table	•	Yes	No	X	Depth (i		In	dicators of wetland
Saturation p		Yes	No		Depth (i			ydrology present? N
	pillary fringe)				(1		————	
-		masur	monitoring	ocrial -	botoc -	rovious :	nonoctions) if availables	
Describe red	corded data (strea	am gauge	e, monitoring weil	, aenai p	photos, p	revious i	nspections), if available:	
Domerica								
Remarks:								

Project/Site Bitter Root Wind Farm Project		City/County:	Yellow Med	dicine Sam	pling Date:	10/17/2017
Applicant/Owner: RES Americas		State	: MN	l Sam	pling Point:	w-114n46w8-u03
Investigator(s): JLK/KD		See	ction, Townshi	ip, Range:	T114n R4	16w Section 8
Landform (hillslope, terrace, etc.):	Flat	Loca	l relief (conca	ve, convex, nor	ne):	Linear
Slope (%): 0-3 Lat: 44.6	98407	Long:	-96.4355	i65 Dati	um:	NAD83
Soil Map Unit Name Lakepark-Roliss-Parnell, de	pressional, o			Classification:		Upland
Are climatic/hydrologic conditions of the site typ	ical for this ti	me of the year?	<u>Р Ү (</u>	lf no, explain in	remarks)	
Are vegetation , soil , or	hydrology	significar	ntly disturbed?	Are	"normal circu	nstances"
	hydrology		problematic?	7		present? Yes
SUMMARY OF FINDINGS				(If needed, e	explain any an	swers in remarks.)
Hydrophytic vegetation present?	Ν					
Hydric soil present?	Y	Is the	sampled are	a within a wet	land?	Ν
Indicators of wetland hydrology present?	N	f yes,	optional wetla	nd site ID:		
		ata report )	•			
Remarks: (Explain alternative procedures here	or in a separa	ate report.)				
Rainfall for previous three months is 37%	wetter the	an normal.				
VEGETATION Use scientific names of	-					
Tree Stratum (Plot size:	Abso	lute Dominan			Test Worksh	
Tree Stratum (Plot size:	_) % CC	i Species	Slaus		ominant Specie FACW, or FA	
2					ber of Domina	
3					Across all Strat	
4				-	ominant Specie	
5					FACW, or FA	
	0	= Total Cov	ver			
Sapling/Shrub stratum (Plot size:	)				Index Works	heet
1				Total % Cov		4
2				OBL species		1 = 0 2 = 0
3				FACW species		2 = 0 3 = 0
5				FACU specie		4 = 0
	0	= Total Cov	ver	UPL species		5 = 0
Herb stratum (Plot size:	)			Column tota		A) 0 (B)
1 Glycine max	10	0 Y	NI	Prevalence	Index = B/A =	
2						
3					c Vegetation	
4						nytic vegetation
5					nce test is >50	
6				— —	nce index is ≤	
8					gical adaptatio	
9				supporti	-	marks or on a
10					-	tic vegetation*
	10	0 = Total Cov	ver	(explain		ao regetation
Woody vine stratum (Plot size:	)			*Indicators of	hvdric soil and w	vetland hydrology must be
1					•	bed or problematic
2				Hydrop	-	
	0	= Total Cov	ver	vegetat present		
		4)		present	·	
Remarks: (Include photo numbers here or on a	•	,	incted by			
Location is a mudflat that was flooded	a in spring a		mateu by up	nanu weeds.		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abser	ice of indicators.)
Depth	Matrix		-	lox Feat				,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-11	10 YR 2/1	100	, ,					Silty Clay
-								
11-16	10 YR 2/1	90	10 YR 5/8	5	С	М		Silty Clay
			10 YR 5/1	5	С	М		
*Type: C = (	Concentration D	– Doploti	ion, RM = Reduce	ad Matrix	/ MS - N	laskod S	and Grains **Locati	on: PL = Pore Lining, M = Matrix
	bil Indicators:	- Depiet			(, 1010 – IX			lematic Hydric Soils:
-			Com	du Clave	ad Matrix	(04)		-
	tisol (A1)				ed Matrix	(54)		edox (A16) ( <b>LRR K, L, R)</b>
	tic Epipedon (A2)			dy Redo			Dark Surface (S	
	ck Histic (A3)		'		trix (S6)			e Masses (F12) ( <b>LRR K, L, R)</b>
	lrogen Sulfide (A			•	ky Minera	. ,		ark Surface (TF12)
	atified Layers (A5	)			ed Matrix		Other (explain i	n remarks)
	m Muck (A10)			leted Ma	atrix (F3)			
Dep	pleted Below Dark	Surface	e (A11) Red	lox Dark	Surface	(F6)		
X Thie	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of hyc	rophytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)	Red	lox Depr	essions	(F8)	hydrology must	be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	() <u> </u>	-				problematic
	Layer (if observ	-				1		
	Layer (II Observe	eu):					Uudria aail praaa	nt2 V
Type:					-		Hydric soil prese	
Depth (inche	es):				-			
Remarks:								
HYDROLO								
-	drology Indicate							
Primary Indi	cators (minimum	of one is	required; check a				<u>Secondary In</u>	dicators (minimum of two required)
Surface	Water (A1)				Fauna (B		Surface	Soil Cracks (B6)
High Wa	iter Table (A2)				uatic Plar			e Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) Dry-Sea	ason Water Table (C2)
Water M	larks (B1)			Oxidized	d Rhizosp	heres on		n Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			Saturat	on Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stunted	or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	Iron Redu	iction in T	illed Soils Geomo	rphic Position (D2)
Iron Dep	osits (B5)			(C6)			FAC-Ne	eutral Test (D5)
Inundati	on Visible on Aeria	al Imager	y (B7)	Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge of	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat		Yes	No	х	Depth (i	nches):		
Water table	•	Yes	No	X	Depth (i		In	dicators of wetland
Saturation p		Yes	No	X	Depth (i			ydrology present? N
	pillary fringe)						'	
-			o monitoring wall	o o ri o l r	hataa n	revieve i	nonactiona) if availables	
Describe rec	corded data (strea	am gaug	e, monitoring weil	, aenai p	photos, p	revious i	nspections), if available:	
Domester								
Remarks:								

Project/Site Bitter Root Wind Farm Project		City/	County:	Yellow Med	licine San	npling Date:	10/17/2017
Applicant/Owner: RES Americas			State:	MN	l Sam	pling Point:	w-114n46w8-w02
Investigator(s): JLK/KD			Secti	ion, Townshi	p, Range:	T114n R4	6w Section 8
Landform (hillslope, terrace, etc.):	Depres	son	Localı	relief (concav	ve, convex, noi	ne):	Concave
Slope (%): 1-6 Lat: 44.6	99318		Long:	-96.4363	04 Dati	um:	NAD83
Soil Map Unit Name Barnes-Buse-Svea complex	(, 1 to (	6 percent s	lopes	NWI	Classification:		PSS
Are climatic/hydrologic conditions of the site typi	cal for	this time o	f the year?	Y (	lf no, explain ir	n remarks)	
Are vegetation , soil , or l	nydrolo	ogy	significantl	y disturbed?	Are	"normal circur	nstances"
Are vegetation , soil , or l	nydrolo		naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS					(If needed, e	explain any an	swers in remarks.)
Hydrophytic vegetation present?	Y						
Hydric soil present?	Y		Is the s	ampled are	a within a wet	tland?	Y
Indicators of wetland hydrology present?	Y		f yes, op	otional wetlar	nd site ID:	_	
Pomarka: (Explain alternative presedures here a	n in a	concrete r	port )				
Remarks: (Explain alternative procedures here o	лпа	separate re	eport.)				
Rainfall for previous three months is 37%	wette	er than no	ormal.				
VEGETATION Use scientific names of	plant						
Tree Stratum (Plot size:	`	Absolute % Cover	Dominan t Species	Indicator Staus		Test Worksh	
<u>Tree Stratum</u> (Plot size: 1 <i>Fraxinus pennsylvanica</i>	_)	25	r Species Y	FACW		ominant Specie , FACW, or FA0	
2 Salix fragilis		10		FAC		ber of Domina	( )
3						Across all Strata	
4					-	ominant Specie	
5						•	C: 100.00% (A/B)
		35	= Total Cove	r			
Sapling/Shrub stratum (Plot size:	)				Prevalence	Index Works	heet
1 Cornus alba		5	Y	FACW	Total % Cov		
2					OBL species		1 = 5
3					FACW spec		
5					FAC species FACU speci		3 = 30 4 = 20
		5	= Total Cove		UPL species		5 = 0
Herb stratum (Plot size:	)	0			Column tota		
1 Phalaris arundinacea	/	100	Y	FACW		Index = $B/A =$	2.09
2 Phragmites australis		10	N	FACW			
3 Urtica dioica		5	Ν	FACW	Hydrophyti	c Vegetation	Indicators:
4 Asclepias incarnata		5	Ν	OBL	Rapid te	est for hydroph	ytic vegetation
5 Solidago canadensis		5	Ν	FACU		nce test is >50	
6 Echinocystis lobata		5	N	FACW	X Prevale	nce index is ≤3	3.0*
7						gical adaptatio	
8						ing data in Rer	narks or on a
9 10					separate	,	tie vegetation*
		130	= Total Cove		(explain		tic vegetation*
Woody vine stratum (Plot size:	)		101010000	•			etland hydrology must be
1							ed or problematic
2					Hydrop	hytic	
		0	= Total Cove	er	vegetat		
					present	!? <u>Y</u>	_
Remarks: (Include photo numbers here or on a	-	-					
Location is a mudflat that was floodec	l in sp	ring and	now domir	nated by up	pland weeds.		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of indicators.)	
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Rema	rks
0-7	10 YR 2/1	100						Silty Clay	
7-16	10 YR 2/1	90	10 YR 4/1	10	С	М			
7-10	10 11( 2/1	90	10 11( 4/1	10	0	IVI		Silty Clay	
***								**	
	Concentration, D	= Deplet	on, RM = Reduc	ed Matrix	(, MS = N	lasked S		*Location: PL = Pore Linin	
-	il Indicators:		0			(04)		or Problematic Hydric Sol	
	isol (A1)				ed Matrix	(54)		airie Redox (A16) ( <b>LRR K,</b>	L, K)
	ic Epipedon (A2)			ndy Redo	. ,			face (S7) ( <b>LRR K, L)</b> ganese Masses (F12) ( <b>LR</b>	DKID)
	ck Histic (A3) Irogen Sulfide (A4	1)		•••	itrix (S6) ky Minera			allow Dark Surface (TF12)	η <b>η, μ, η</b> )
	itified Layers (A5	,		•	ed Matrix	. ,		(plain in remarks)	
	n Muck (A10)	)			atrix (F3)	. ,		(plain in remarks)	
	eted Below Dark	Surface			Surface				Í
· · ·	ck Dark Surface (				ark Surfa	. ,	*Indiaator	of budrophytic vocatation	and waltand
	idy Mucky Minera	,			essions (	. ,		<pre>of hydrophytic vegetation / must be present, unless of</pre>	
	n Mucky Peat or	. ,		iox Debi	63310113 (	(10)	nyurolog	problematic	
	-		7					problematic	
	Layer (if observe	ed):							
Type:					-		Hydric soi	present? Y	
Depth (inche	es):				-				
Remarks:									
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
-	cators (minimum		required: check	all that a	(vlaa		Secon	dary Indicators (minimum o	of two required)
	Water (A1)				Fauna (B	13)		Surface Soil Cracks (B6)	or two required)
	ter Table (A2)				uatic Plar			Drainage Patterns (B10)	
Saturatio	. ,				en Sulfide			Dry-Season Water Table (C	2)
	arks (B1)						· · · · · · · · · · · · · · · · · · ·	Crayfish Burrows (C8)	,
Sedimer	nt Deposits (B2)			(C3)				Saturation Visible on Aerial I	magery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron		Stunted or Stressed Plants (	D1)
	it or Crust (B4)				Iron Redu	iction in T		Geomorphic Position (D2)	
	osits (B5)			(C6)				FAC-Neutral Test (D5)	
	on Visible on Aeria			-	ck Surfac	· · ·			
	Vegetated Conca		ce (B8)	-	or Well Da		<b>`</b>		
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser			<u>_</u>						
Surface wat		Yes	No	X	Depth (i			la dia stana af matlan	al
Water table		Yes	X No		Depth (i		0	Indicators of wetlan	
Saturation p	resent? pillary fringe)	Yes	X No		Depth (i	nches):	0	hydrology present?	<u>Y</u>
-					- h - t			1-bl	
Describe rec	corded data (strea	am gaug	e, monitoring wel	i, aerial p	onotos, p	revious ii	nspections), if ava	liadie:	
Remarks:									
i tomanto.									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	licine Samplir	ng Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Samplin	ig Point:	w-114n46w8-w03
Investigator(s): JLK/KD		Secti	on, Townshi	p, Range:	T114n R4	6w Section 8
Landform (hillslope, terrace, etc.): Depres	ssion	Local r	relief (conca	ve, convex, none):		Concave
Slope (%): 0-3 Lat: 44.698391		Long:	-96.4356	68 Datum:		NAD83
Soil Map Unit Name Lakepark-Roliss-Parnell, depressi	ional, comp	olex, 0 to 3 pe	ercent s\WI (	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	this time o	of the year?	Y (I	f no, explain in rer	marks)	
Are vegetation , soil , or hydrold	ogy	significantly	y disturbed?	Are "no	rmal circur	nstances"
Are vegetation , soil , or hydrold	ogy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, expl	ain any an	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	ampled are	a within a wetlan	d?	Y
Indicators of wetland hydrology present? Y		f yes, op	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
	oopanato r					
Rainfall for previous three months is 37% wette	er than no	ormal.				
VEGETATION Use scientific names of plant	· c					
	Absolute	Dominan	Indicator	Dominance Te	st Worksh	eet
Tree Stratum (Plot size: )		t Species	Staus	Number of Domin		
1, , , , , , , , , , , , , , , , , , ,				that are OBL, FA		
2				Total Number	of Domina	nt
3				Species Acro	ss all Strata	a: <u>2</u> (B)
4				Percent of Domin	•	
5		TILO		that are OBL, FA	CW, or FAC	C: <u>100.00%</u> (A/B)
Sapling/Shrub stratum (Plot size: )	0	= Total Cove	r	Prevalence Ind	lox Works	hoot
				Total % Cover of		lieet
2				OBL species	50 x	1 = 50
3				FACW species	15 x	2 = 30
4				FAC species	10 x	3 = 30
5				FACU species		4 = 0
	0	= Total Cove	r	UPL species		5 = 0
Herb stratum (Plot size:)				Column totals	(A	· · · ·
1 Typha X glauca	50	<u>Y</u>	OBL	Prevalence Inde	ex = B/A =	1.47
2 Urtica dioica 3 Equisetum arvense	15 10	<u> </u>	FACW FAC	Hydrophytic Ve	actation	Indicators
4	10				-	ytic vegetation
5				X Dominance		
6				X Prevalence	index is ≤3	8.0*
7				Morphogica	l adaptatio	ns* (provide
8						narks or on a
9				separate sh		
10	75	= Total Cove			hydrophy	tic vegetation*
Woody vine stratum (Plot size: )	75	= Total Cove	1	(explain)		
1 (Fibt 5/20)				-		etland hydrology must be ed or problematic
2				Hydrophyti		
	0	= Total Cove	r	vegetation		
				present?	Y	_
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm th	e absence of	f indicators.)
Depth	Matrix			dox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-15	N 2/0	100						M	uck
L									
*Type: C = 0	Concentration, D :	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	/lasked S	Sand Grains.	**Location: P	L = Pore Lining, M = Matrix
Hydric So	oil Indicators:						Indicators f	or Problema	tic Hydric Soils:
His	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast P	rairie Redox (	(A16) ( <b>LRR K, L, R)</b>
His	tic Epipedon (A2)			idy Redo				rface (S7) ( <b>Ll</b>	
	ck Histic (A3)			pped Ma	• •			. , .	ses (F12) ( <b>LRR K, L, R)</b>
	lrogen Sulfide (A4	4)			ky Minera	al (F1)		-	urface (TF12)
	atified Layers (A5)	,		-	ed Matrix			explain in rem	
	m Muck (A10)	•			atrix (F3)				,
	pleted Below Dark	Surface			Surface				
	ck Dark Surface (		· · ·		ark Surfa	· · /	*Indicator	s of hydrophy	/tic vegetation and weltand
	ndy Mucky Minera	,			essions	• •			esent, unless disturbed or
	n Mucky Peat or I	· · ·		ion Bopi	coolone	(10)	nyarolog		plematic
	-	-	/					proc	Jonado
	Layer (if observe	ed):							
Туре:					-		Hydric so	il present?	Ŷ
Depth (inche	es):				-				
Remarks:									
HYDROLO	JGY								
-	drology Indicato	vre :							
-									
	cators (minimum	of one is	required; check			(0)	Secor		ors (minimum of two required
	Water (A1)				Fauna (B			Surface Soil (	
-	iter Table (A2)				uatic Plar			Drainage Pat	. ,
X Saturation	( )					Odor (C			Vater Table (C2)
	larks (B1)				l Rhizosp	heres on	Living Roots	Crayfish Burr	
	nt Deposits (B2)			(C3)			(OI)		sible on Aerial Imagery (C9)
· · · · ·	posits (B3)					uced Iron			ressed Plants (D1)
-	at or Crust (B4)				ron Reau	iction in 1		Geomorphic I	
	oosits (B5)	Imagan	(DZ)	(C6)	ale Cruefa a	(C7)	<u></u>	FAC-Neutral	Test (D5)
	on Visible on Aeria				ck Surfac	. ,			
	/ Vegetated Conca		се (во)	-	or Well Da	Remarks	٠		
	tained Leaves (B9	1			лріант п	Temarks	1		
Field Obser		X			D				
Surface wat		Yes	No No	X	Depth (i			les all a - 4	
Water table		Yes	X No		Depth (i		2		ors of wetland
Saturation p		Yes	X No		Depth (i	ncnes):	0	nyaro	logy present? N
-	pillary fringe)								
Describe rea	corded data (strea	am gauge	e, monitoring wel	, aerial p	photos, p	revious i	nspections), if ava	ailable:	
Demos									
Remarks:									
I									

Project/Site Bitter Root Wind Farm Project	City	/County:	Yellow Med	icine Sampli	ng Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sampli	ng Point:	w-114n46w11-u01
Investigator(s): JLK/KD		Sect	ion, Township	p, Range:	T114N R	46W Sec. 11
Landform (hillslope, terrace, etc.):	Flat	Local	relief (concav	e, convex, none)	:	linear
Slope (%): 1-6 Lat: 44.69	7227	Long:	-96.37776	61 Datum:		NAD83
Soil Map Unit Name Barnes-Buse-Svea complex,	1 to 6 percent	slopes	NMI C	Classification:		Upland
Are climatic/hydrologic conditions of the site typic	al for this time	of the year?	Y (l	f no, explain in re	marks)	
Are vegetation, soil, or hy	ydrology	significantl	ly disturbed?	Are "no	ormal circun	nstances"
Are vegetation, soil, or hy	ydrology	naturally pr	roblematic?			present? Yes
SUMMARY OF FINDINGS		• 		(If needed, exp	lain <u>any</u> an	swers in remarks.)
Hydrophytic vegetation present?	Ν					
Hydric soil present?	Υ	Is the s	sampled area	a within a wetlan	id?	N
Indicators of wetland hydrology present?	Ν	f yes, op	ptional wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or	r in a separate r	report.)				
	-					
Rainfall for previous three months is 37%	wetter than n	ormal.				
VEGETATION Use scientific names of p	olants.					
[	Absolute	Dominan	Indicator	Dominance Te	st Worksh	eet
Tree Stratum (Plot size:		t Species	Staus	Number of Domi		
1				that are OBL, FA		
2				Total Number		
3				Species Acro		
4				Percent of Domi	•	
5	0	= Total Cove		that are OBL, FA	CVV, OF FAU	C: 0.00% (A/B)
Sapling/Shrub stratur (Plot size:	)	- 10tai 00ve	я	Prevalence Inc	lex Works	heet
1	/			Total % Cover		
2				OBL species	0 x	1 = 0
3				FACW species	0 x	2 = 0
4				FAC species		3 = 0
5				FACU species		4 = 0
	0	= Total Cove	r	UPL species		5 = 0
Herb stratum (Plot size:	)			Column totals	0 (A	(B) <u>0</u>
1 Glycine max	100	Y	NI	Prevalence Ind	ex = B/A =	
2				Hydrophytic V	agotation	Indicatore
Δ					-	ytic vegetation
5				Dominance		
6				Prevalence	index is ≤3	8.0*
7				Morphogica	al adaptatio	ns* (provide
8		• <u> </u>		supporting	data in Rer	narks or on a
9				separate st	-	
10		<u> </u>			c hydrophyt	tic vegetation*
Meady vine stratum (Dist size)	, 100	= Total Cove	۶r	(explain)		
Woody vine stratum (Plot size:	/					etland hydrology must be ed or problematic
2				Hydrophyt		
L	0	= Total Cove	er	vegetation		
				present?	N	_
Remarks: (Include photo numbers here or on a se	eparate sheet)		. <u></u> .			
Location is a mudflat that was flooded	in spring and	now domir	nated by up	land weeds.		

Depth	Matrix		e depth needed Re	dox Feat						
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	re	Remarks	
0-12	10 YR 3/1	55	10 YR 4/1	40	D	М			Silty Clay	
012	10 11(0/1	00	7.5 YR 4/6	5	C	M				
			7.5 TK 4/0	5	U	IVI				
Type: $C = C$	Concentration D	I = Denleti	ion, RM = Reduc	ed Matrix	MS = N	lasked S	and Grains	**Locatio	n: PL = Pore Lining, M	= Matrix
	bil Indicators:	- Depiet			κ, iniο – i	nasiteu e			lematic Hydric Soils:	
-	isol (A1)		Sar	ndv Glev	ed Matrix	(S4)			dox (A16) ( <b>LRR K, L, F</b>	<b>z</b> )
	ic Epipedon (A2)	1		ndy Redo		(01)			7) ( <b>LRR K, L)</b>	-,
	ck Histic (A3)				trix (S6)			•	Masses (F12) ( <b>LRR K,</b>	L. R)
	lrogen Sulfide (A	4)		••	ky Minera	al (F1)			ark Surface (TF12)	_, ,
	tified Layers (A5			-	ed Matrix			(explain in		
	n Muck (A10)	,			atrix (F3)			(	, , , , ,	
	leted Below Dar	k Surface			Surface					
	ck Dark Surface (				ark Surfa	, ,	*Indicate	ors of hvdr	rophytic vegetation and	weltand
	dy Mucky Minera				ressions	. ,			present, unless distu	
	n Mucky Peat or	• •		•			,	0,	problematic	
Rostrictivo	Layer (if observ	ed).				1				
Туре:	Edyci (ii observ	cu).					Hydric s	oil preser	nt? Y	
							i iyano o	011 010001		
	es).				-					
Depth (inche	es):				-					
Depth (inche	es):				-					
Depth (inche Remarks: <b>HYDROLC</b>	DGY				-					
Depth (inche Remarks: <b>HYDROLC</b>		ors:			- - 					
Depth (inche Remarks: HYDROLC Wetland Hy	DGY drology Indicate		required; check	all that a	- - - -		Sec	ondary Inc	dicators (minimum of tw	o require
Depth (inche Remarks: HYDROLC Wetland Hy Primary India	DGY drology Indicate		required; check		<u>pply)</u> Fauna (B	13)	Sec	-	<u>dicators (minimum of tw</u> Soil Cracks (B6)	o require
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface	DGY drology Indicate cators (minimum		required; check	Aquatic True Aq	Fauna (B uatic Plar	nts (B14)		Surface	Soil Cracks (B6) e Patterns (B10)	o require
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3)		required; check	Aquatic True Aq Hydroge	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C	1)	Surface Drainage Dry-Sea	Soil Cracks (B6) e Patterns (B10) son Water Table (C2)	o require
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatic Water M	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1)		required; check	Aquatic True Aq Hydroge Oxidized	Fauna (B uatic Plar en Sulfide	nts (B14) Odor (C		Surface Drainage Dry-Sea Crayfish	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8)	-
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2)		required; check	Aquatic True Aq Hydroge Oxidized (C3)	Fauna (B uatic Plar en Sulfide d Rhizosp	nts (B14) Odor (C pheres on	1) Living Roots	Surface Drainage Dry-Sea Crayfish Saturatio	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag	-
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) tt Deposits (B2) posits (B3)		required; check	Aquatic True Aq Hydroge Oxidized (C3) Presenc	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu	nts (B14) Odor (C pheres on uced Iron	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1)	-
Pepth (inche Remarks: HYDROLC Vetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) at Deposits (B2) posits (B3) t or Crust (B4)		required; check	Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu	nts (B14) Odor (C pheres on uced Iron	1) Living Roots	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2)	-
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B1) to Deposits (B2) posits (B3) to r Crust (B4) posits (B5)	<u>of one is</u>		Aquatic True Aq Hydroge Oxidized (C3) Presenc Recent (C6)	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu	nts (B14) Odor (C oheres on uced Iron uction in T	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1)	-
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) th Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	<u>of one is</u> al Imager	y (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presence Recent (C6) Thin Mu	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu ck Surfac	ots (B14) Odor (C oheres on uced Iron uction in T ce (C7)	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2)	-
Pepth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria vegetated Conca	of one is al Imager	y (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da	nts (B14) Odor (C wheres on ucced Iron uction in T ce (C7) ata (D9)	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2)	-
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B5)	of one is al Imager	y (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu ck Surfac	nts (B14) Odor (C wheres on ucced Iron uction in T ce (C7) ata (D9)	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2)	
Depth (inche Remarks: HYDROLO Wetland Hy Primary Indio Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si Field Obser	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) tt or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B5) vations:	of one is al Imagery ave Surfa I)	y (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o Other (E	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu ck Surfac or Well Da Explain in	nts (B14) Odor (C oheres on uced Iron uction in T ce (C7) ata (D9) Remarks	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2)	
Depth (inche Remarks: HYDROLO Wetland Hy Primary Indio Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si Field Obser Surface wate	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) tt Deposits (B2) posits (B3) it or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B5) vations: er present?	of one is al Imagery ave Surfa )) Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o Other (E	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu ck Surfac or Well Da Explain in	nts (B14) Odor (C oheres on uced Iron uction in 7 ce (C7) ata (D9) Remarks inches):	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	
Depth (inche Remarks: HYDROLO Wetland Hy Primary Indio Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Water-Si Field Obser Surface wate Water table	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B5) vations: er present? present?	of one is al Imagery ave Surfa I)	y (B7)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o Other (E	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in T æ (C7) ata (D9) Remarks nches): nches):	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	
Depth (inche Remarks: Remarks: HYDROLO Wetland Hy Primary Indiu Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatid Sparsely Water-St Field Obser Surface wate Water table Saturation p	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) it Deposits (B2) posits (B3) it or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca tained Leaves (B5) vations: er present? present?	of one is al Imagery ave Surfa )) Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge o Other (E	Fauna (B uatic Plar en Sulfide d Rhizosp e of Redu Iron Redu ck Surfac or Well Da Explain in	nts (B14) Odor (C oheres on uced Iron uction in T æ (C7) ata (D9) Remarks nches): nches):	1) Living Roots (C4)	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Water table Saturation p (includes ca	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Water table Saturation p (includes ca	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Water table Saturation p (includes ca	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Water table Saturation p (includes ca	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Vater M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Water table Saturation p (includes ca Describe rec	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)
Depth (inche Remarks: HYDROLC Wetland Hy Primary India Surface High Wa Saturatio Vater M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Water-St Field Obser Surface wate Vater table Saturation p (includes ca Describe rec	DGY drology Indicate cators (minimum Water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) arks (B3) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria Vegetated Conca tained Leaves (B5) vations: er present? present? present? pillary fringe)	of one is al Imager ave Surfa )) Yes Yes Yes	y (B7) ce (B8)	Aquatic True Aq Hydroge Oxidized (C3) Presend (C6) Thin Mu Gauge c Other (E X X	Fauna (B uatic Plar en Sulfide d Rhizosp ee of Redu Iron Redu ck Surfac or Well Da Explain in Depth (i Depth (i	nts (B14) Odor (C oheres on uced Iron uction in 1 ee (C7) ata (D9) Remarks inches): nches): nches):	1) Living Roots (C4) 'illed Soils	Surface Drainage Dry-Sea Crayfish Saturatio Stunted Geomor FAC-Net	Soil Cracks (B6) e Patterns (B10) son Water Table (C2) Burrows (C8) on Visible on Aerial Imag or Stressed Plants (D1) phic Position (D2) utral Test (D5)	ery (C9)

Project/Site Bitter Root Wind Farm Project		City/Cour	nty:	Yellow Medi	icine	Sampling D	Date:	10/17/2017
Applicant/Owner: RES Americas			State:	MN		Sampling P	oint: v	v-114n46w11-u02
Investigator(s): JLK/KD			Sectio	on, Township	o, Range:	T1	14N R46	6W Sec. 11
Landform (hillslope, terrace, etc.):	Flat		Local re	elief (concav	e, convex	k, none):		linear
Slope (%): 0-3 Lat: 44.69	96295	Lo	ong:	-96.37735	58	Datum:		NAD83
Soil Map Unit Name Lakepark-Roliss-Parnell, de	pressional,	complex,	0 to 3 pe	rcent sVWI C	Classificat	tion:	U	pland
Are climatic/hydrologic conditions of the site typi	cal for this ti	ime of the	e year?	Y (li	f no, expl	ain in remarl	ks)	
Are vegetation, soil, or I	hydrology	sig	gnificantly	disturbed?		Are "norma	l circums	stances"
	hydrology	nat	turally pro	oblematic?			•	oresent? Yes
SUMMARY OF FINDINGS					(If need	led, explain	any ansv	vers in remarks.)
Hydrophytic vegetation present?	N							
Hydric soil present?	Y			ampled area				N
Indicators of wetland hydrology present?	N		f yes, opt	tional wetlan	id site ID:			
Remarks: (Explain alternative procedures here o	or in a separ	ate report	t.)					
Deinfall for provinue three months is 27%	wetter the	an norm	~I					
Rainfall for previous three months is 37%	Weller Ind	an nonna	aı.					
VEGETATION Use scientific names of	plants.	1						
	Abso	olute Do	ominan	Indicator	Domina	ance Test V	Vorkshe	et
Tree Stratum (Plot size:	_) % Co	over t S	pecies	Staus		of Dominant	•	
1						OBL, FACW,		0 (A)
2						Number of E		
3						cies Across a		<u>1</u> (B)
5						of Dominant OBL, FACW,	•	0.00% (A/B)
	0	) = Toʻ	tal Cover					、
Sapling/Shrub stratum (Plot size:	)				Prevale	ence Index	Workshe	et
1						Cover of:		-
2					OBL sp		$\frac{0}{0}$ x 1	-
3					FACW FAC sp	·	0 x 2 0 x 3	
5					FAC Sp FACU S		$\frac{0}{0}$ x 3	
	0	) = To'	tal Cover		UPL sp	-	0 x 5	
Herb stratum (Plot size:	)				Column		0 (A)	0 (B)
1 Glycine max	10	)0	Y	NI	Prevale	ence Index =	: B/A =	
2								
3						ohytic Vege		
4								ic vegetation
5						minance test		
6 7						valence inde		
8						rphogical ad		
9						porting data		
10						-	-	vegetation*
	10	)0 = Tof	otal Cover			plain)	-	-
Woody vine stratum (Plot size:	)							and hydrology must be
1							s disturbed	or problematic
2					-	drophytic getation		
	0	) = 101	otal Cover			sent?	Ν	
Remarks: (Include photo numbers here or on a s	separate sh	eet)						
Location is a mudflat that was flooded	-	-	v domina	ated by up	land we	eds.		
	1 0			, ,				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of indicators.)	
Depth	 Matrix			dox Feat				,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-12	10 YR 3/1	55	10 YR 4/1	40	D	М		Silty Clay	
0-12	10 11 3/1	55		-				Silty Clay	
			7.5 YR 4/6	5	С	М			
*Type: C = (	Concentration, D :	- Donloti	on RM = Reduce	L ad Matriv		lasked S	and Grains *	*Location: PL = Pore Lining, M	= Matrix
	bil Indicators:	- Depieti			(, 1VIO – IV	viaskeu C		or Problematic Hydric Soils:	
-			Com		ad Matrix	(04)		-	2)
	tisol (A1)				ed Matrix	(54)		airie Redox (A16) ( <b>LRR K, L, F</b>	<b>N</b> )
	tic Epipedon (A2)			ndy Redo	• •			face (S7) ( <b>LRR K, L)</b>	L D)
	ck Histic (A3)			pped Ma	. ,			iganese Masses (F12) ( <b>LRR K</b>	, L, K)
	Irogen Sulfide (A4			•	ky Minera	. ,		allow Dark Surface (TF12)	
	atified Layers (A5)	)			ed Matrix		Other (e:	kplain in remarks)	
	m Muck (A10)				atrix (F3)				
· · ·	oleted Below Dark				Surface	. ,			
	ck Dark Surface (	,			ark Surfa	. ,		s of hydrophytic vegetation and	
	ndy Mucky Minera	. ,		lox Depr	essions	(F8)	hydrolog	/ must be present, unless distu	rbed or
5 ci	m Mucky Peat or	Peat (S3	)					problematic	
Restrictive	Layer (if observe	ed):				1			
Туре:		54,1					Hydric soi	present? Y	
Depth (inche	<i>be)</i> .				-		inguite con		
Deptil (ment					-				
Remarks:									
HYDROLO	JGY								
	drology Indicato								
-	••						-		
	cators (minimum	of one is	required; check					dary Indicators (minimum of tw	o required
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)	
	iter Table (A2)				uatic Plar			Drainage Patterns (B10)	
Saturatio						Odor (C		Dry-Season Water Table (C2)	
	larks (B1)				d Rhizosp	heres on		Crayfish Burrows (C8)	
	nt Deposits (B2)			(C3)				Saturation Visible on Aerial Imag	ery (C9)
	posits (B3)					uced Iron		Stunted or Stressed Plants (D1)	
	at or Crust (B4)				ron Redu	uction in T		Geomorphic Position (D2)	
·	oosits (B5)			(C6)				FAC-Neutral Test (D5)	
	on Visible on Aeria			-	ck Surfac	( )			
	/ Vegetated Conca		ce (B8)	-	or Well Da				
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:								
Surface wat	er present?	Yes	No	Х	Depth (i	inches):			
Water table	present?	Yes	No	Х	Depth (i			Indicators of wetland	
Saturation p		Yes	No	Х	Depth (i	inches):		hydrology present?	Ν
(includes ca	pillary fringe)								
Describe red	corded data (strea	m gauge	e, monitoring well	l, aerial p	photos, p	revious i	nspections), if ava	ilable:	
			-				. ,		
Remarks:									

WETLAND DETERMINATION DATA FORM - Midwest Region
--

Project/Site Bitter Root Wind Farm Project		Citv/C	County:	Yellow Medi	cine S	ampling Date:	10/17/2017
Applicant/Owner: RES Americas		0	State:	MN		ampling Point:	w-114n46w11-w01
Investigator(s): JLK/KD				on, Township			246W Sec. 11
	Depresson			elief (concave		none):	Concave
· · · · · · · · · · · · · · · · · · ·	97282		Long:	-96.37776		atum:	NAD83
Soil Map Unit Name Barnes-Buse-Svea complex	, 1 to 6 per	rcent sl	_	NWI C	lassificatior	n:	PEM
Are climatic/hydrologic conditions of the site typi	cal for this	time of	the year?	Y (If	no, explain	n in remarks)	
Are vegetation, soil, or h	hydrology		significantly	disturbed?	A	re "normal circu	mstances"
Are vegetation, soil, or h	hydrology		naturally pro	oblematic?			present? Yes
SUMMARY OF FINDINGS					(If needed	l, explain any ar	nswers in remarks.)
Hydrophytic vegetation present?	Y						
Hydric soil present?	Y		Is the sa	ampled area	within a w	vetland?	Y
Indicators of wetland hydrology present?	Y		f yes, opt	tional wetland	d site ID:		
Remarks: (Explain alternative procedures here of	or in a sepa	irate re	port.)				
Rainfall for previous three months is 37%	wetter th	an no	rmal.				
VEGETATION Use scientific names of	plants.						
		olute	Dominan	Indicator	Dominan	ce Test Worksl	neet
Tree Stratum (Plot size:	_) % C	Cover	t Species	Staus	Number of	Dominant Speci	es
1	·		,		that are OE	BL, FACW, or FA	C: 0 (A)
2						umber of Domina	
3			<u> </u>		•	s Across all Strat	. ,
4 5			·	——		Dominant Species Dominant Species BL, FACW, or FA	
· · · · · · · · · · · · · · · · · · ·		0 =	Total Cover			JE, 17, 011, 011.	<u> </u>
Sapling/Shrub stratum (Plot size:	)			ſ	Prevalen	ce Index Works	heet
1			,		Total % C		
2					OBL spec		1 = 0
3					FACW sp		2 = 10
4 5			<u> </u>		FAC spec FACU spe		3 = 0 4 = 200
5		0 =	Total Cover		UPL spec		4 = 200 5 = 0
Herb stratum (Plot size:	)	<u> </u>			Column to		A) 210 (B)
1 Amaranthus retroflexus	´ Ę	50	Y	FACU	Prevalenc	e Index = B/A =	
2 Urtica dioica		5	N	FACW			
3					Hydrophy	ytic Vegetation	Indicators:
4						I test for hydroph	
5						nance test is >50	
6			·			llence index is ≤	
8						nogical adaptatio	
9				—— I		orting data in Re ate sheet)	marks or on a
10						ematic hydrophy	rtic vegetation*
	5	55 =	Total Cover		X (expla		
Woody vine stratum (Plot size:	)				*Indicators	s of hydric soil and v	vetland hydrology must be
1			,			esent, unless disturt	ed or problematic
2					Hydro veget	ophytic	
	(	0 =	Total Cover		prese		
Remarks: (Include photo numbers here or on a s	separate st	voot)					
Location is a mudflat that was flooded	-		now domin	ated by unl	and weed	le	
	in opinig	anan		atou by up			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix		Ree	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-12	10 YR 3/1	55	10 YR 4/1	40	D	М			Silty Clay
			7.5 YR 4/6	5	C	M			
			7.5 TK 4/0	5	C	IVI			
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	k, MS = N	Aasked S	Sand Grains.	**Location:	PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators f	for Problem	natic Hydric Soils:
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coast P	Prairie Redo	x (A16) ( <b>LRR K, L, R)</b>
Hist	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark Su	urface (S7) (	LRR K, L)
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Ma	inganese Ma	asses (F12) ( <b>LRR K, L, R)</b>
	Irogen Sulfide (A4	4)	Loa	my Mucl	ky Minera	al (F1)		-	Surface (TF12)
	atified Layers (A5)			•	ed Matrix	. ,		explain in re	
	m Muck (A10)	,			atrix (F3)		(		,
	leted Below Dark	<pre>     Surface </pre>			Surface				
	ck Dark Surface (				ark Surfa	. ,	*Indicator	rs of hydrop	hytic vegetation and weltand
	dy Mucky Minera	,			ressions	. ,			present, unless disturbed or
	n Mucky Peat or	· · /				( - )			oblematic
	3	,	,			<u> </u>		•	
	Layer (if observ	eu).					Uudria aa	il procent?	Y
Type: Depth (inche					-		Hyunc so	il present?	<u>Y</u>
Depth (inche					-				
Remarks:									
HYDROLO	DGY								
	drology Indicate	ors:							
-	cators (minimum		required: check	all that a	nnlv)		Seco	ndary Indica	ators (minimum of two required)
X Surface					Fauna (B	(13)	0000		il Cracks (B6)
	iter Table (A2)				uatic Plar	,		-	atterns (B10)
X Saturatio	. ,					Odor (C	1)		n Water Table (C2)
	arks (B1)						Living Roots	Crayfish Bu	. ,
	nt Deposits (B2)			(C3)	2 T T T T Z O O P				Visible on Aerial Imagery (C9)
	posits (B3)			-	e of Redu	uced Iron	(C4) X		Stressed Plants (D1)
	at or Crust (B4)								c Position (D2)
	osits (B5)			(C6)				FAC-Neutra	
	on Visible on Aeria	al Imager	/ (B7)		ck Surfac	ce (C7)		-	
	Vegetated Conca				or Well Da	. ,			
Water-S	tained Leaves (B9	)		-		Remarks	)		
Field Obser	vations:				-				
Surface wat		Yes	X No	Х	Depth (i	inches):	2		
Water table		Yes	X No		Depth (i		8	Indic	ators of wetland
Saturation p		Yes	X No		Depth (i			hydr	rology present? Y
	pillary fringe)								· · ·
Describe red	corded data (strea	am daud	e. monitorina wel	l. aerial c	photos, p	revious i	nspections), if av	ailable:	
	,	5 5	, 3	, 1	, I		1 //		
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Medicine		ampling Date:	10/17/2017	
Applicant/Owner: RES Americas		State:	MN	Sampling Poin		w-114n46w11-w02	
Investigator(s): JLK/KD		Sectio	on, Township	ip, Range: T114N R46W Sec. 11			
Landform (hillslope, terrace, etc.): Depres	sson	Local re	elief (concav	e, convex, r	none):	Concave	
Slope (%): 1-6 Lat: 44.696247		Long:	-96.37739	93 <u></u> Da	atum:	NAD83	
Soil Map Unit Name Barnes-Buse-Svea complex, 1 to	6 percent s		NWI C	Classificatior	n:	PEM	
Are climatic/hydrologic conditions of the site typical for	this time o	of the year?	Y (If	f no, explain	n in remarks)		
Are vegetation, soil, or hydrold	ogy	significantly	/ disturbed?	A	re "normal circur	mstances"	
Are vegetation, soil, or hydrold	ogy	naturally pro	oblematic?			present? Yes	
SUMMARY OF FINDINGS				(If needed	l, explain any an	swers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? Y	_	Is the s	ampled area	a within a w	vetland?	Y	
Indicators of wetland hydrology present? Y	`	f yes, op	tional wetlan	id site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Rainfall for previous three months is 37% wette	er than no	ormal.					
VEGETATION Use scientific names of plant	ie i						
	Absolute	Dominan	Indicator	Dominan	ce Test Worksh	neet	
<u>Tree Stratum</u> (Plot size: )		t Species	Staus		Dominant Specie		
1 (************************************					BL, FACW, or FA		
2				Total Nu	umber of Domina	nt	
3				Specie	s Across all Strat	a: <u> </u>	
4		·			Dominant Specie		
5		<u></u>		that are OB	BL, FACW, or FA	C: 0.00% (A/B)	
Oline/Ohmuh stratum (Diat aiza)	0 :	= Total Cover	í l	Brougland	Inday Works	h - 4	
Sapling/Shrub stratum (Plot size:)				Total % C	ce Index Works	neet	
2		·		OBL spec		1 = 0	
3				FACW spe			
4			[	FAC spec		3 = 30	
5				FACU spe	ecies <u>30</u> x	4 = 120	
	0 :	= Total Cover	ſ	UPL speci	ies <u>0</u> x	5 = 0	
Herb stratum (Plot size:)				Column to	otals 50 (A	A) <u>170</u> (B)	
1 Amaranthus retroflexus	25	Y	FACU	Prevalenc	e Index = B/A =	3.40	
2 Urtica dioica	5	N	FACW				
3 Echinochloa crus-galli	5	<u>N</u>	FACW		ytic Vegetation		
4 Ambrosia trifida	5	<u>N</u>	FAC		l test for hydroph		
5 Elymus repens 6 Panicum capillare	5	<u>N</u>	FACU FAC		nance test is >5( Ilence index is ≤		
6 Panicum capillare		<u> </u>					
8					nogical adaptatic orting data in Rei		
9					ate sheet)		
10		·			ematic hydrophy	tic vegetation*	
	50	= Total Cover	r	X (expla		5	
Woody vine stratum (Plot size:)				*Indicators	of hydric soil and w	vetland hydrology must be	
1				pre	esent, unless disturb	, ,,	
2					ophytic		
	0 :	= Total Cover	-	veget prese			
	(			P			
Remarks: (Include photo numbers here or on a separa	-		امرين ما احد-		I_		
Location is a mudflat that was flooded in sp	ing and i	Now domina	aleu by upi	lanu weeu	IS.		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-12	10 YR 3/1	55	10 YR 4/1	40	D	М			Silty Clay
			7.5 YR 4/6	5	C	M			
			7.5 TR 4/0	5	C	IVI			
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduc	ed Matrix	, MS = N	Aasked S	and Grains.	**Location:	PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators f	or Problem	natic Hydric Soils:
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coast P	rairie Redo	x (A16) ( <b>LRR K, L, R)</b>
Hist	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark Su	urface (S7) (	LRR K, L)
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Ma	nganese Ma	asses (F12) ( <b>LRR K, L, R)</b>
	Irogen Sulfide (A4	4)	Loa	imy Mucl	ky Minera	al (F1)		-	Surface (TF12)
	atified Layers (A5			imy Gley	•	. ,		explain in re	
	m Muck (A10)	,		pleted Ma			`		,
	leted Below Dark	c Surface		dox Dark	. ,				
	ck Dark Surface (			pleted Da		. ,	*Indicator	rs of hydrop	hytic vegetation and weltand
	dy Mucky Minera	,		dox Depr		. ,			present, unless disturbed or
	n Mucky Peat or	· · ·				( - )			oblematic
	3	,	/			1		1	
	Layer (if observ	ea):					Uudria aa	il procent?	×
Type:	) -				-		Hydric so	il present?	<u> </u>
Depth (inche	es):				-				
Remarks:									
HYDROLO	DGY								
	drology Indicate	ors:							
-	cators (minimum		required check	all that a	nnlv)		Seco	ndary Indica	ators (minimum of two required)
X Surface					Fauna (B	(13)	<u>3600</u>		il Cracks (B6)
	iter Table (A2)				uatic Plar	,			atterns (B10)
Saturatio						Odor (C	1)		n Water Table (C2)
	arks (B1)						Living Roots	Crayfish Bu	
	nt Deposits (B2)			(C3)	11112034				Visible on Aerial Imagery (C9)
	posits (B3)			-	e of Redu	uced Iron			Stressed Plants (D1)
	at or Crust (B4)								c Position (D2)
	osits (B5)			(C6)	Ton Rout			FAC-Neutra	
	on Visible on Aeria	al Imagery	/ (B7)		ck Surfac	e (C7)		-	
	Vegetated Conca				or Well Da	. ,			
	tained Leaves (B9			-		Remarks	)		
Field Obser		/		_ (	•		/	I	
Surface wat		Yes	X No	х	Depth (i	inches).	2		
Water table		Yes	No No	~	Depth (i		<u> </u>	Indic	ators of wetland
Saturation p		Yes	No		Depth (i				rology present? Y
	pillary fringe)							,	
	corded data (strea	am daude	e. monitoring wel	l aerial r	hotos n	revious i	nspections) if av	ailable <sup>.</sup>	
Decembered		un gaag	s, monitoring wor	i, donar p	110100, p		nopeotione), il avi		
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/County:	Yellow Med	licine Sampli	ng Date: 10/17/20	)17
Applicant/Owner: RES Americas	Stat	te: MN	I Sampli	ng Point: w-114n46w	14-u01
Investigator(s): JLK/KD	S	Section, Townshi	p, Range:	T114n R46w Sec. 14	
Landform (hillslope, terrace, etc.): Flat	Lor	cal relief (conca	ve, convex, none)	: none	
Slope (%): 0-3 Lat: 44.683352	Long:	-96.3780	97 Datum	NAD83	
Soil Map Unit Name Lakepark-Roliss-Parnell, depressional	, complex, 0 to	3 percent s\WI	Classification:	Upland	
Are climatic/hydrologic conditions of the site typical for this	time of the yea	ar? <u>Y</u> (	lf no, explain in re	marks)	
Are vegetation, soil, or hydrology _	signific	antly disturbed?	Are "no	ormal circumstances"	
Are vegetation, soil, or hydrology	natural	ly problematic?		present?	íes
SUMMARY OF FINDINGS			(If needed, exp	lain any answers in rem	arks.)
Hydrophytic vegetation present? N					
Hydric soil present? N	ls ti	he sampled are	a within a wetlar	nd? N	
Indicators of wetland hydrology present? N	f yes	s, optional wetlaı	nd site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate report.)				
D-infall for previous three months is 27% watter th					
Rainfall for previous three months is 37% wetter th	ian normai.				
<b>VEGETATION</b> Use scientific names of plants.					
	solute Domina	an Indicator	Dominance Te	est Worksheet	
	Cover t Specie	es Staus	Number of Dom	•	
1			that are OBL, FA		(A)
2				r of Dominant	(D)
3			-	oss all Strata: 1	_(B)
<sup>4</sup>			Percent of Dom that are OBL, FA		(A/B)
—	0 = Total C	Cover	,		_(****)
Sapling/Shrub stratum (Plot size:)			Prevalence Inc	dex Worksheet	
1			Total % Cover		
2			OBL species	0 x 1 = 0	_
3			FACW species		_
4			FAC species FACU species	$\begin{array}{c} 0 \\ \hline 0 \\ \hline 0 \\ x 4 = \end{array} \begin{array}{c} 0 \\ \hline 0 \\ \end{array}$	—
	0 = Total C	Cover	UPL species	$\frac{0}{0} \times 4 = 0$	—
Herb stratum (Plot size: )			Column totals	$\frac{0}{0}$ (A) $\frac{0}{0}$	(B)
/	100 Y	NI	Prevalence Ind		_``
2					_
3				egetation Indicators:	
4				for hydrophytic vegetation	วท
5				e test is >50%	
<u> </u>			——	e index is ≤3.0*	
8				al adaptations* (provide	
9 9			supporting separate sl	data in Remarks or on a heet)	3
10				c hydrophytic vegetatior	ו*
	100 = Total C	Cover	(explain)	onjaroprij	
Woody vine stratum (Plot size:)			*Indicators of hyd	dric soil and wetland hydrolog	y must be
1				unless disturbed or problemat	tic
2		. <u></u>	Hydrophy vegetation		
	0 = Total C	Cover	present?	N	
Remarks: (Include photo numbers here or on a separate sh	heet)		·		
Wetland is a mudflat that was flooded in the sp	-	, dominated by	vuoland weeds	2	l
	ning and non		y aplana needa		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment th	e indicat	tor or confirm th	e absence o	of indicators.)		
Depth	Matrix		Rec	lox Feat	ures						
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks		
0-24	10 YR 2/1	100						5	Silty Clay		
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix		
-	oil Indicators:								atic Hydric Soils:		
	tisol (A1)				ed Matrix	(S4)			: (A16) ( <b>LRR K, L, R)</b>		
	tic Epipedon (A2)			dy Redo	• •			rface (S7) ( <b>I</b>	· ·		
	ck Histic (A3)			•	ıtrix (S6)			-	sses (F12) ( <b>LRR K, L, R)</b>		
Hyo	drogen Sulfide (A4	4)	Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark S	Surface (TF12)		
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matrix	x (F2)	Other (e	explain in rer	narks)		
2 c	m Muck (A10)		Dep	leted Ma	atrix (F3)						
De	oleted Below Dark	Surface	(A11) Rec	lox Dark	Surface	(F6)					
Thi	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicator	s of hydroph	ytic vegetation and weltand		
Sar	ndy Mucky Minera	ıl (S1)	Rec	lox Depr	essions	(F8)			resent, unless disturbed or		
	m Mucky Peat or		)	·		. ,	, ,	•	blematic		
	Layer (if observe	od):				1		-			
	Layer (II Observ	eu).					Hydric co	il procont?	N		
Type:	~~);				-		Hyunc so	il present?	<u>N</u>		
Depth (inch	es):				-						
Remarks:											
HYDROL											
	drology Indicato	vre '									
-	cators (minimum		required: check	all that a	nnly)		Casa	adam ( Indiaa)	tore (minimum of two required		
			Tequired, check			12)	Secon		<u>tors (minimum of two required</u> Cracks (B6)		
	Water (A1)				Fauna (B						
	ater Table (A2)				uatic Plar en Sulfide		1)	-	atterns (B10)		
Saturati	larks (B1)						Living Roots	Crayfish Bu	Water Table (C2)		
	nt Deposits (B2)			(C3)	a Khizosp	neres on			(isible on Aerial Imagery (C9)		
	posits (B3)				e of Redu	iced Iron	(C4)		Stressed Plants (D1)		
	at or Crust (B4)						Filled Soils		Position (D2)		
	posits (B5)			(C6)	lion Reut			FAC-Neutra			
	on Visible on Aeria	l Imager	(B7)		ck Surfac	e (C7)					
	y Vegetated Conca				or Well Da	( )					
	tained Leaves (B9			-	Explain in		:)				
Field Obse	,	/				rtomanto	·)				
Surface wat		Yes	No	Х	Depth (i	nches).					
Water table		Yes	No	X	Depth (i			Indica	itors of wetland		
Saturation p		Yes	No	X	Depth (i				ology present? N		
		100		~	-			iiyan			
	(includes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Describe re	corded data (strea	am gauge	e, monitoring weil	, aenai p	photos, p	revious i	nspections), il ava				
Remarks:											
i terridi No.											

Investigator(s): JLK/KD       Section, Township, Range:       T114n R46w Sec. 14         Landform (hillslope, terrace, etc.):       Depression       Local relief (concave, convex, none):       Concave         Slope (%):       0-3       Lat:       44.683352       Long:       -96.378097       Datum:       NAD83         Soil Map Unit NameLakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent sWU Classification:       PEM         Are vegletation       , soil       , or hydrology       significantly disturbed?       Are "normal circumstances"         Are vegletation       , soil       , or hydrology       naturally problematic?       present?       Yes         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegletation present?       Y       Is the sampled area within a wetland?       Y         Hydrophytic vegletation present?       Y       Is the sampled area within a wetland?       Y         Hydrophytic vegletation present?       Y       f yes, optional wetland site ID:       Number of Dominant Species         Remarks: (Explain alternative procedures here or in a separate report.)       Absolute       Dominan       Indicator         Status       Absolute       Dominan       Indicator       Number of Dominant Species         1	Project/Site Bitter Root Wind Farm Project	City/0	County:	Yellow Med	icine	Sampling Dat	te: 10/17/2017	
Landform (hillslope, terrace, etc.):       Depression       Local relief (concave, convex, none):       Concave         Slope (%):       0-3       Lat:       44.683352       Long:       -96.378097       Datum:       NAD83         Solid Map Unit Name Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent stWU (Issification:       PEM         Are climatic/hydrologic conditions of the site typical for this time of the year?       Y       (If no, explain in remarks)         Are vegetation       , soil       , or hydrology       significantly disturbed?       Are "normal circumstances"         Are vegetation       , soil       , or hydrology       naturally problematic?       present? Yes         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Indicators of wetland hydrology present?       Y       Is the sampled area within a wetland?       Y         Remarks: (Explain alternative procedures here or in a separate report.)       Rainfall for previous three months is 37% wetter than normal.       Number of Dominant Species         VEGETATION Use scientific names of plants.	Applicant/Owner: RES Americas		State:	MN	I Sampling P		Point: w-114n46w14-w01	
Slope (%): 0-3       Lat:       44.683352       Long:       -96.378097       Datum:       NAD83         Soil Map Unit NameLakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent stWI Classification:       PEM         Are climatic/hydrologic conditions of the site typical for this time of the year?       Y       (If no, explain in remarks)         Are vegetation       , soil       , or hydrology       significantly disturbed?       Are "normal circumstances"         Are vegetation       , soil       , or hydrology       naturally problematic?       Are "normal circumstances"         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Hydrophytic vegetation present?       Y       f yes, optional wetland site ID:	Investigator(s): JLK/KD		Secti	on, Township	p, Range:	T11	4n R46w Sec. 14	
Soil Map Unit Name Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent stWI Classification:       PEM         Are climatic/hydrologic conditions of the site typical for this time of the year?       Y       (If no, explain in remarks)         Are vegetation       , soil       , or hydrology       significantly disturbed?       Are "normal circumstances"         Are vegetation       , soil       , or hydrology       naturally problematic?       Are "normal circumstances"         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Hydroin bytic vegetation present?       Y       Is the sampled area within a wetland?       Y         Indicators of wetland hydrology present?       Y       Is the sampled area within a wetland?       Y         Remarks: (Explain alternative procedures here or in a separate report.)       Rainfall for previous three months is 37% wetter than normal.       Dominant Indicator       Dominant Species         VEGETATION Use scientific names of plants.       Absolute       Dominan Indicator       Number of Dominant Species         1	Landform (hillslope, terrace, etc.): Depress	sion	Local r	elief (concav	ve, convex	, none):	Concave	
Are climatic/hydrologic conditions of the site typical for this time of the year? Y       (If no, explain in remarks)         Are vegetation, soil, or hydrology naturally problematic?       Are "normal circumstances" present? Yes         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y         Hydrophytic vegetation present?       Y         Hydrophytic vegetation present?       Y         Indicators of wetland hydrology present?       Y         Indicators of wetland hydrology present?       Y         Remarks: (Explain alternative procedures here or in a separate report.)         Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)         A_=	Slope (%): 0-3 Lat: 44.683352		Long:	-96.37809	97	Datum:	NAD83	
Are vegetation, soil, or hydrology significantly disturbed?       Are "normal circumstances" present? Yes         Are vegetation, soil, or hydrology naturally problematic?       Are "normal circumstances" present? Yes         SUMMARY OF FINDINGS       (If needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y         Hydrophytic vegetation present?       Y         Indicators of wetland hydrology present?       Y         Indicators of wetland hydrology present?       Y         Remarks: (Explain alternative procedures here or in a separate report.)         Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)         Absolute       Dominan         Mater of Dominant Species         that are OBL, FACW, or FAC:       0.00% (A)         Total Number of Dominant Species         that are OBL, FACW, or FAC:       0.00% (A/B)         Percent of Dominant Species         that are OBL, FACW, or FAC:       0.00% (A/B)         1	Soil Map Unit Name Lakepark-Roliss-Parnell, depressio	nal, comp	lex, 0 to 3 pe	ercent sVWI (	Classificat	ion:	PEM	
Are vegetation, soil, or hydrology naturally problematic? present? Yes	Are climatic/hydrologic conditions of the site typical for t	his time of	f the year?	Y (l	f no, expla	ain in remarks	)	
SUMMARY OF FINDINGS       (if needed, explain any answers in remarks.)         Hydrophytic vegetation present?       Y         Hydroic soil present?       Y         Indicators of wetland hydrology present?       Y         Remarks: (Explain alternative procedures here or in a separate report.)         Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Image: Stratum       (Plot size:)         Absolute       Dominan         Model and the are OBL, FACW, or FAC:       0         (A)       Total Number of Dominant         Species       0         =       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         0       =         1       0         2       0         0       =	Are vegetation , soil , or hydrolog	ду	significantly	/ disturbed?		Are "normal c	ircumstances"	
Hydrophytic vegetation present?       Y         Hydric soil present?       Y         Indicators of wetland hydrology present?       Y         Remarks: (Explain alternative procedures here or in a separate report.)         Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Image: Stratum       (Plot size:)         Absolute       Dominan         Image: Stratum       (Plot size:)         Mage: Stratum       (Plot size:)         Image: Stratum       (Plot size:)	Are vegetation , soil , or hydrolog	ду	naturally pr	oblematic?			present? Yes	
Hydric soil present?       Y       Is the sampled area within a wetland?       Y         Indicators of wetland hydrology present?       Y       f yes, optional wetland site ID:	SUMMARY OF FINDINGS				(If need	ed, explain an	y answers in remarks.)	
Indicators of wetland hydrology present?       Y       f yes, optional wetland site ID:         Remarks: (Explain alternative procedures here or in a separate report.)         Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute Dominan Indicator Staus       Dominant Species that are OBL, FACW, or FAC: (A)         2	Hydrophytic vegetation present? Y							
Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Remarks: (Explain alternative procedures here or in a separate report.)         Main for previous three months is 37% wetter than normal.         Dominant Species         1         O       Fotal Cover         Prevalence Index Worksheet         Total Cover         Prevalence Index Worksheet         Total % Cover of:         O       Fotal Cover         Prevalence Index Worksheet         Total % Cover of:         O       FACW species       0         FACW species <th co<="" td=""><td>Hydric soil present? Y</td><td></td><td>Is the s</td><td>ampled area</td><td>a within a</td><td>wetland?</td><td>Y</td></th>	<td>Hydric soil present? Y</td> <td></td> <td>Is the s</td> <td>ampled area</td> <td>a within a</td> <td>wetland?</td> <td>Y</td>	Hydric soil present? Y		Is the s	ampled area	a within a	wetland?	Y
Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute % Cover       Dominan t Species       Indicator Staus       Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:0(A)         2	Indicators of wetland hydrology present? Y		f yes, op	tional wetlan	nd site ID:			
Rainfall for previous three months is 37% wetter than normal.         VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute % Cover       Dominan t Species       Indicator Staus       Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:0(A)         2	Remarks: (Explain alternative procedures here or in a si	enarate re	port)					
VEGETATION Use scientific names of plants.         Tree Stratum       (Plot size:)       Absolute % Cover       Dominan t Species       Indicator       Number of Dominant Species       Number of Dominant Species         1		opulatore	,port.)					
Image: Indicator Image: Indicator Image: I	Rainfall for previous three months is 37% wetter	r than no	ormal.					
Image: Indicator Image: Indicator Image: I	VECETATION Lise scientific names of plants							
Tree Stratum       (Plot size:)       % Cover       t Species       Staus         1	•		Dominan	Indicator	Domina	ance Test Wo	rksheet	
1								
3	·						-	
4Percent of Dominant Species that are OBL, FACW, or FAC: $0.00\%$ (A/B)50= Total CoverPrevalence Index Worksheet Total % Cover of:10= Total CoverOBL species020= Total % Cover of:OBL species03	2				Total	Number of Do	minant	
5       0       = Total Cover       that are OBL, FACW, or FAC: 0.00% (A/B)         0       = Total Cover       Prevalence Index Worksheet         1       Total % Cover of:       OBL species       0       x 1 = 0         3	3				Spec	cies Across all	Strata: <u> </u>	
0       = Total Cover         Sapling/Shrub stratum (Plot size:)       0       = Total Cover         Prevalence Index Worksheet       Total % Cover of:         OBL species       0       x 1 =       0         3         FACW species       0       x 2 =       0         4         FAC species       0       x 3 =       0         5          FACU species       30       x 4 =       120	4						•	
Sapling/Shrub stratur       (Plot size:)         1          2          3          4          5          5	5		Tatal Origina		that are (	OBL, FACW, o	r FAC: 0.00% (A/B)	
1Total % Cover of:2 $\bigcirc$ $\bigcirc$ $X = 0$ 3 $\bigcirc$ $\bigcirc$ $X = 0$ 4 $\bigcirc$ $\bigcirc$ $\bigcirc$ $X = 0$ 5 $\bigcirc$ $\bigcirc$ $X = 0$ FAC species $\bigcirc$ $x = 120$	Sapling/Shrub stratur (Plot size:	0	= Total Cove		Provale	nce Index W	orksheet	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								
4	2				OBL sp	ecies 0	x 1 = 0	
5 FACU species 30 x 4 = 120	3				FACW	species 0	x 2 = 0	
	4							
	5							
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Horb stratum (Dist size:	0 =	= Total Cove	r	-			
	/	20	V		-			
1     Amaranthus retroflexus     30     Y     FACU     Prevalence Index = B/A =     4.00		30	<u> </u>	FACU	Prevale	nce index = B	/A = 4.00	
3 Hydrophytic Vegetation Indicators:					Hydrop	hvtic Vegeta	tion Indicators:	
4 Rapid test for hydrophytic vegetation	4							
5 Dominance test is >50%	5				Dor	ninance test is	s >50%	
6 Prevalence index is ≤3.0*	6				Pre	valence index	is ≤3.0*	
7 Morphogical adaptations* (provide	7							
8 supporting data in Remarks or on a							n Remarks or on a	
9 separate sheet)					· ·			
10     Problematic hydrophytic vegetation*       30     = Total Cover     X (explain)		30 :	= Total Cove			-	opnytic vegetation*	
Woody vine stratum (Plot size:	Woody vine stratum (Plot size: )	00						
1 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	· · · · · · · · · · · · · · · · · · ·						,	
2 Hydrophytic	2				Нус	Irophytic		
0 = Total Cover vegetation		0 :	= Total Cove		-		V	
present? Y					pre	sent?	ľ	
Remarks: (Include photo numbers here or on a separate sheet)		-						
Wetland is a mudflat that was flooded in the spring and now dominated by upland weeds.	vveliand is a mudilat that was flooded in the	spring a	na now do	minated by	/ upland	weeus.		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment th	e indicat	or or confirm th	he absence of i	ndicators.)
Depth	Matrix		Re	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	e	Remarks
0-9	10 YR 2/1	100						Silty	<sup>r</sup> Clay
	10 YR 2/1	90	10 YR 5/2	10	С	М			r Clay
	10 11(2/1	00	10 11( 0/2	10	<u> </u>	101		Only	olay
*Type: C = (	Concentration, D :	– Donlot	ion PM - Peduc	ed Matrix	/ MS - N	lasked S	and Grains	**Location: PL	= Pore Lining, M = Matrix
	bil Indicators:	- Depiet			(, IVIO – IV	laskeu c		for Problematic	
-	tisol (A1)		Sa	ndy Gley	ed Matrix	(S4)			16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			ndy Redo		(04)		urface (S7) ( <b>LRF</b>	
	ck Histic (A3)			ipped Ma	• •				es (F12) ( <b>LRR K, L, R</b> )
	lrogen Sulfide (A	4)		amy Muc	. ,	al (F1)		hallow Dark Surf	
	atified Layers (A5	'		amy Gley	-			explain in remar	. ,
	m Muck (A10)	/		pleted Ma					,
	leted Below Dark	s Surface		' dox Dark					
	ck Dark Surface (			pleted Da			*Indicato	ors of hydrophytic	c vegetation and weltand
Sar	dy Mucky Minera	al (S1)	Re	dox Depr	essions	(F8)			ent, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	s)					proble	
Restrictive	Layer (if observ	ed).							
Type:		cu).					Hydric so	oil present?	Y
Depth (inche	es):				-		inguine ex		<u> </u>
Remarks:	/				-				
HYDROLO									
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check				Seco		<u>s (minimum of two required)</u>
	Water (A1)			-	Fauna (B			Surface Soil Cra	( )
	iter Table (A2)				uatic Plar	. ,		Drainage Patter	
Saturatio					en Sulfide			Dry-Season Wa	
	arks (B1) nt Deposits (B2)			(C3)	a Rhizosp	oneres on	Living Roots	Crayfish Burrow	vs (C8) ble on Aerial Imagery (C9)
	posits (B3)				e of Redu	iced Iron		Stunted or Stres	
	at or Crust (B4)			-				Geomorphic Po	
	osits (B5)			(C6)	lion touc			FAC-Neutral Te	
	on Visible on Aeria	al Imager	y (B7)	. ,	ck Surfac	e (C7)		_	( -)
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge	or Well Da	ata (D9)			
X Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	vations:								
Surface wat		Yes	No	Х	Depth (i				
Water table		Yes	X No		Depth (i		2		rs of wetland
Saturation p		Yes	X No		Depth (i	nches):	0	hydrolo	gy present? Y
	pillary fringe)							1	
Describe red	corded data (strea	am gaug	e, monitoring we	ll, aerial p	photos, p	revious i	nspections), if av	/ailable:	
Remarks:									
i tomanto.									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Sampli	ing Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sampli	Sampling Point: w-114n46w19-u01	
Investigator(s): JLK/KD		Secti	on, Townshi	o, Range:	T114n F	46w Sec. 19
Landform (hillslope, terrace, etc.): Depre	ssion	Local ı	elief (concav	e, convex, none)	:	Concave
Slope (%): 0-1 Lat: 44.668214	ļ	Long:	44.66821	I4 Datum	:	NAD83
Soil Map Unit Name Lamoure silty clay loam, 0 to 2 pe	ercent slope	s, frequently	floodedWI (	Classification:		Upland
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (I	f no, explain in re	emarks)	
Are vegetation , soil , or hydrol	logy	significantl	y disturbed?	Are "no	ormal circu	mstances"
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, exp	lain any ar	swers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? Y		Is the s	ampled area	a within a wetlar	nd?	Ν
Indicators of wetland hydrology present? N		f yes, op	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Rainfall for previous three months is 37% wet	-					
VEGETATION Use scientific names of plan	ts					
	Absolute	Dominan	Indicator	Dominance Te	st Works	neet
<u>Tree Stratum</u> (Plot size:) 1		t Species	Staus	Number of Dom that are OBL, FA		
2				Total Numbe Species Acr	r of Domina	nt
4				Percent of Dom		
5				that are OBL, FA	•	
	0	= Total Cove	r			
Sapling/Shrub stratum (Plot size:	)			Prevalence In		heet
				Total % Cover		1 - 0
2				OBL species FACW species	0 x	1 = 0 2 = 0
4				FAC species		3 = 0
5				FACU species		4 = 400
	0	= Total Cove	r	UPL species	0 x	5 = 0
Herb stratum (Plot size:	)			Column totals	100 (/	A) 400 (B)
1 Bromus inermis	95	Y	FACU	Prevalence Ind	ex = B/A =	4.00
2 Cirsium arvense	5	Ν	FACU			
3				Hydrophytic V	-	
4						nytic vegetation
5				Dominance Prevalence		-
7						
8				1 0		ons* (provide marks or on a
9				separate s		
10	100	= Total Cove		Problemati (explain)	c hydrophy	tic vegetation*
Woody vine stratum (Plot size:	)			*Indicators of hyd		vetland hydrology must be bed or problematic
2				Hydrophy		
	0	= Total Cove		vegetatior present?	n <u>N</u>	
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)													
Depth     Matrix     Redox Features													
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks					
0-5	10 YR 2/1	100	. , ,					Silty Clay					
	10 YR 2/1			60									
5-12	10 YR 2/1	40	10 YR 5/1	60 10	D C	M M		Silty Clay					
			10 YR 5/6										
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix													
	oil Indicators:							Problematic Hydric Soils:					
-	tisol (A1)		San	dv Glev	ed Matrix	(S4)		ie Redox (A16) ( <b>LRR K, L, R)</b>					
	Histisol (A1) Sandy Gleyed Matrix Histic Epipedon (A2) Sandy Redox (S5)						Dark Surface (S7) (LRR K, L)						
	Black Histic (A3)												
	lrogen Sulfide (A	4)		-	ky Minera			w Dark Surface (TF12)					
	atified Layers (A5	-		-	ed Matrix			ain in remarks)					
	m Muck (A10)	/			atrix (F3)								
	pleted Below Dark	Surface			Surface								
	ck Dark Surface (				ark Surfa	. ,	*Indicators of	hydrophytic vegetation and weltand					
	ndy Mucky Minera				ressions	• •		nust be present, unless disturbed or					
	n Mucky Peat or	. ,			00010110	(10)	nyarology n	problematic					
	-	-	7					problemate					
	Layer (if observ	ed):											
Туре:					-		Hydric soil p	resent? Y					
Depth (inche	es):				_								
Remarks:													
HYDROLO													
-	drology Indicate												
Primary Indi	cators (minimum	of one is	required; check				<u>Seconda</u>	ry Indicators (minimum of two required)					
Surface	Water (A1)			Aquatic Fauna (B13) Surface Soil Cracks (B6)									
High Water Table (A2)					uatic Plar	ainage Patterns (B10)							
Saturation (A3)				Hydroge	en Sulfide	-Season Water Table (C2)							
Water Marks (B1)				Oxidized	d Rhizosp	heres on	•	ayfish Burrows (C8)					
Sediment Deposits (B2) (C3)						Saturation Visible on Aerial Imagery (C9)							
Drift Deposits (B3)								nted or Stressed Plants (D1)					
-	at or Crust (B4)				Iron Redu	uction in T		omorphic Position (D2)					
	oosits (B5)			(C6)			FA	C-Neutral Test (D5)					
	on Visible on Aeria				ck Surfac								
	/ Vegetated Conca		ce (B8)	-	or Well Da								
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)						
Field Obser													
Surface wat		Yes	No	Х	Depth (i								
Water table		Yes	No	Х	Depth (i			Indicators of wetland					
Saturation p		Yes	No	Х	Depth (i	inches):		hydrology present? N					
(includes ca	pillary fringe)												
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if availal	ole:					
Remarks:													

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Medicine		Sampling Date: 10/17/2017								
Applicant/Owner: RES Americas	State:	MN			w-114n46w19-u01								
Investigator(s): JLK/KD		Sect	R46w Sec. 19										
Landform (hillslope, terrace, etc.):	at	Local	relief (concav	e, convex, none): none		none							
Slope (%): 0-1 Lat: 44.66893		Long:			Datum:	NAD83							
Soil Map Unit Name Southam silty clay loam, 0 to 1 pe		NMI (	NWI Classification: Upland										
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)													
Are vegetation , soil , or hydrol	logy	significantly disturbed? Are "normal circumstances"											
Are vegetation , soil , or hydrol													
SUMMARY OF FINDINGS				(If neede	ed, explain any a	nswers in remarks.)							
Hydrophytic vegetation present? N													
Hydric soil present? N		Is the s	sampled are	ea within a wetland? N									
Indicators of wetland hydrology present? N		f yes, o	ptional wetlar	nd site ID:									
Remarks: (Explain alternative procedures here or in a separate report.)													
Rainfall for previous three months is 37% wetter than normal.													
VEGETATION Use scientific names of plants.													
	Absolute	Dominan	Indicator	Domina	nce Test Works	heet							
<u>Tree Stratum</u> (Plot size:) 1	% Cover	t Species	Staus		of Dominant Spec DBL, FACW, or FA								
2					Number of Domin ies Across all Stra	ant							
4					of Dominant Spec								
5					OBL, FACW, or FA								
	0	= Total Cove	er										
Sapling/Shrub stratum (Plot size:	)				nce Index Work	sheet							
1					Cover of:								
2				OBL spe		-							
3				FACW s FAC spe		x 2 = 0 x 3 = 0							
5				FACU sp		x 4 = 0							
	0	= Total Cove	er	UPL spe		x 5 = 0							
Herb stratum (Plot size:	)			Column		(A) 0 (B)							
1 Glycine max	100	Y	NI	Prevaler	nce Index = B/A :	=							
2													
3					hytic Vegetatior								
4				· ·	id test for hydrop								
5					hinance test is >5 alence index is :								
6													
8					phogical adaptat porting data in Re								
9					arate sheet)								
10				Prob	plematic hydroph	ytic vegetation*							
	100	= Total Cove	er	(exp	lain)								
Woody vine stratum     (Plot size:)       1	)				ors of hydric soil and present, unless distu	wetland hydrology must be bed or problematic							
2					rophytic								
	0	= Total Cove	er	-	etation sent? N								
Remarks: (Include photo numbers here or on a separa	ate sheet)												

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	e absence o	of indicators.)
Depth	Matrix		Rec	lox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-24	10 YR 2/1	100						5	Silty Clay
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix
-	oil Indicators:								atic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)			(A16) ( <b>LRR K, L, R)</b>
	tic Epipedon (A2)			dy Redo	• •			rface (S7) (l	· ·
	ck Histic (A3)			•	ıtrix (S6)			-	isses (F12) ( <b>LRR K, L, R)</b>
Hyo	drogen Sulfide (A4	1)	Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark S	Surface (TF12)
Stra	atified Layers (A5)	)	Loa	my Gley	ed Matrix	k (F2)	Other (e	xplain in rer	narks)
2 c	m Muck (A10)		Dep	leted Ma	atrix (F3)				
De	oleted Below Dark	Surface	(A11) Rec	lox Dark	Surface	(F6)			
Thi	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicator	s of hydroph	nytic vegetation and weltand
Sar	ndy Mucky Minera	l (S1)	Rec	lox Depr	essions	(F8)			resent, unless disturbed or
	m Mucky Peat or		)	·		. ,	, ,	• •	blematic
	Layer (if observe	, ,	,						
	Layer (II Observ	eu).					Hydria cai	I procont?	Ν
Type:					-		Hydric soi	i present?	<u>N</u>
Depth (inch	es):				-				
Remarks:									
HYDROL	nev								
	drology Indicato	vro :							
-	••		required, check,	all that a			0	1	
	cators (minimum	of one is	required; check			10)			tors (minimum of two required
	Water (A1)				Fauna (B	-			Cracks (B6)
	ater Table (A2)				uatic Plar			-	atterns (B10)
Saturati					en Sulfide				Water Table (C2)
	larks (B1)				a Rnizosp	neres on	•	Crayfish Bu	( )
	nt Deposits (B2)			(C3)	o of Dodu	upped Iron			/isible on Aerial Imagery (C9) Stressed Plants (D1)
	posits (B3) at or Crust (B4)				e of Redu				Position (D2)
	osits (B5)			(C6)	Iron Reau			FAC-Neutra	
	on Visible on Aeria	l Imagen	(B7)		ck Surfac	o (C7)		TAC-Neulla	riest (D3)
	y Vegetated Conca				or Well Da	· · ·			
	tained Leaves (B9			-	Explain in		)		
	,	)				Remarks	)		
Field Obse		Vee	No	v	Donth (i	nohoo);			
Surface wat Water table		Yes Yes	No No	X X	Depth (i Depth (i			Indica	ators of wetland
Saturation p		Yes	No		Depth (i				ology present? N
	pillary fringe)	100		~	-			iiyan	
		maarre	monitoring	ocrial -	botoc -		nepoetiene) if e	allabler	
Describe re	corded data (strea	am gauge	e, monitoring weil	, aenai p	photos, p	revious i	nspections), if ava	allable:	
Remarks:									
nomaiño.									

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Med	icine	Sampling	Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN		Sampling	Point:	w-114n46w19-u03
Investigator(s): JLK/KD		Secti	ion, Township	p, Range:	-	T114n R4	16w Sec. 19
Landform (hillslope, terrace, etc.): Flat		Local ı	relief (concav	e, conve	x, none):		None
Slope (%): 6-12 Lat: 44.668607		Long:	-96.4493 <sup>-</sup>	16	Datum:		NAD83
Soil Map Unit Name Barnes-Buse complex, 6 to 12 perce	ent slopes	s, moderatel	y erode\WI C	Classificat	tion:		Upland
Are climatic/hydrologic conditions of the site typical for th	is time of	f the year?	Y (l	f no, expl	ain in rema	arks)	
Are vegetation, soil, or hydrology	y	significantl	y disturbed?		Are "norm	al circun	istances"
Are vegetation , soil , or hydrology	y	naturally p	roblematic?				present? Yes
SUMMARY OF FINDINGS				(If need	ded, explair	n any ans	wers in remarks.)
Hydrophytic vegetation present? N							
Hydric soil present? Y		Is the s	ampled area	a within a	a wetland?	•	N
Indicators of wetland hydrology present? N		f yes, op	otional wetlan	nd site ID:			
Remarks: (Explain alternative procedures here or in a se	parate re	port.)					
	-						
Rainfall for previous three months is 37% wetter	than no	rmal.					
VEGETATION Use scientific names of plants.							
-	bsolute	Dominan	Indicator	Domina	ance Test	Worksh	eet
		t Species	Staus		· of Domina		
1				that are	OBL, FACV	V, or FAC	: <u> </u>
2				Total	I Number of	Dominar	
3				Spe	cies Across	all Strata	:: <u>1</u> (B)
4					t of Dominal	•	
5	0 =	Total Cove		that are	OBL, FACV	v, or FAC	: <u>0.00%</u> (A/B)
Sapling/Shrub stratum (Plot size: )			1	Prevale	ence Index	Works	neet
1					Cover of:		
2				OBL sp	oecies	0 x	1 = 0
3				FACW	species	0 x 2	2 = 0
4				FAC sp			3 = 0
5				FACU	-		1 = 0
(Dist size)	0 =	Total Cove	r	UPL sp			$\overline{b} = 0$
Herb stratum (Plot size:)	100	N/		Columr		0 (A	) <u>    0   </u> (B)
1 Glycine max	100	Y	<u></u> NI	Prevale	ence Index	= B/A =	
2				Hydror	ohytic Veg	etation I	ndicators:
4							tic vegetation
5					' minance te		
6				Pre	evalence in	dex is ≤3	.0*
7				Mo	rphogical a	Idaptatio	ns* (provide
8							narks or on a
9					parate shee	-	
10	100 =	Total Cove			plematic n plain)	yaropnyt	ic vegetation*
Woody vine stratum (Plot size: )	100 -		1				Alexad busiles to
1							etland hydrology must be ed or problematic
2					drophytic		·
	0 =	Total Cove	r		getation		
				pre	esent?	N	_
Remarks: (Include photo numbers here or on a separate	,			-			
Wetland is a mudflat, ponded in the spring ar	nd now o	dominated	by upland	weeds.			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence of indicators.)	
Depth	Matrix		Red	lox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-7	10 YR 2/1	100			I			Silty Clay	
7 - 25	10 YR 2/1	40	10 YR 5/1	55	D	М		Silty Clay	
7-25	10 11( 2/1	40						Silty Clay	
			10 YR 5/6	5	С	М			
		= Deplet	ion, RM = Reduce	ed Matrix	k, MS = N	/lasked S		**Location: PL = Pore Lining, M	= Matrix
-	oil Indicators:							or Problematic Hydric Soils:	
	tisol (A1)				ed Matrix	: (S4)		airie Redox (A16) ( <b>LRR K, L, R</b>	R)
	tic Epipedon (A2)			dy Redo				face (S7) ( <b>LRR K, L)</b>	
	ck Histic (A3)				ıtrix (S6)		Iron-Ma	nganese Masses (F12) ( <b>LRR K,</b>	L, R)
Hyd	lrogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark Surface (TF12)	
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	k (F2)	Other (e	xplain in remarks)	
2 ci	n Muck (A10)		Dep	leted Ma	atrix (F3)				
Dep	leted Below Dark	surface	e (A11) X Rec	lox Dark	Surface	(F6)			
	ck Dark Surface (			leted Da	ark Surfa	ce (F7)	*Indicator	s of hydrophytic vegetation and	weltand
Sar	dy Mucky Minera	al (S1)	Rec	lox Depr	essions (	(F8)		y must be present, unless distur	
	m Mucky Peat or	. ,			·	- /		problematic	
	-	•	,					·	
	Layer (if observ	ea):					Uvdria aai	nrocont? V	
Type:	) -				-		Hydric so	present? Y	
Depth (inche					-				
Remarks:									
HYDROLO	JGY								
-	drology Indicate	are:							
-			required, ebeeld	all that a	mmlu ()		0		
		of one is	required; check			(0)	Secor	dary Indicators (minimum of two	o required)
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)	
	iter Table (A2)				uatic Plar		·····	Drainage Patterns (B10)	
Saturatio					en Sulfide			Dry-Season Water Table (C2)	
	arks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Burrows (C8)	(00)
	nt Deposits (B2)			(C3)	(		(Q.1)	Saturation Visible on Aerial Image	ery (C9)
	posits (B3)				e of Redu			Stunted or Stressed Plants (D1)	
	at or Crust (B4)				Iron Redu	iction in 1	illed Soils	Geomorphic Position (D2)	
	osits (B5)	. I Inc ···	(D7)	(C6)	ale Orant			FAC-Neutral Test (D5)	
	on Visible on Aeria				ck Surfac				
	Vegetated Conca		се (В8)	-	or Well Da		\ \		
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser									
Surface wat	•	Yes	No	X	Depth (i		0		
Water table		Yes	No	X	Depth (i			Indicators of wetland	
Saturation p		Yes	No	Х	Depth (i	nches):		hydrology present?	Ν
(includes ca	pillary fringe)								
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious ii	nspections), if ava	ilable:	
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/0	County:	Yellow Med	icine Samplin	g Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sampling	Sampling Point: w-114n46v	
Investigator(s): JLK/KD		Sect	ion, Townshij	o, Range:	T114n R4	6w Sec. 19
Landform (hillslope, terrace, etc.): Fla	at	Local	relief (concav	e, convex, none):		none
Slope (%): 1-4 Lat: 44.667665		Long:	-96.4451	51 Datum:		NAD83
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	cent slopes	;	NWI C	Classification:		Jpland
Are climatic/hydrologic conditions of the site typical for	r this time o	f the year?	Y (I	f no, explain in ren	narks)	
Are vegetation , soil , or hydrol	ogy	significantl	y disturbed?	Are "nor	mal circum	stances"
Are vegetation , soil , or hydrol	ogy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, expla	ain any ans	wers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N		Is the s	sampled area	a within a wetland	1?	Ν
Indicators of wetland hydrology present? N		f yes, o	otional wetlar	id site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Rainfall for previous three months is 37% wett						
VEGETATION Use scientific names of plant	te					
	Absolute	Dominan	Indicator	Dominance Tes	t Worksh	et
<u>Tree Stratum</u> (Plot size:)		t Species	Staus	Number of Domin that are OBL, FAC	ant Specie	6
2				Total Number Species Acros	of Dominan	tt
4				Percent of Domin		
5		= Total Cove		that are OBL, FAC	•	
Sapling/Shrub stratur (Plot size: )	0		;1	Prevalence Inde	ex Worksh	leet
1				Total % Cover o		
2				OBL species	0 x 2	= 0
3				FACW species	0 x 2	2 = 0
4				FAC species	0 x 3	
5				FACU species	<u>0</u> x 4	
Horb stratum (Dist size:	0	= Total Cove	er	UPL species Column totals	0 x 5	
Herb stratum (Plot size:)	100	V	NU	-	0 (A	) <u>    0   </u> (B)
1 Glycine max	100	Y	NI	Prevalence Inde	x = b/A =	
3				Hydrophytic Ve	egetation I	ndicators:
4					-	tic vegetation
5				Dominance		
6				Prevalence i	index is ≤3	.0*
7				Morphogical		
8				supporting d		arks or on a
9 10				separate she	,	a vagatation*
	100	= Total Cove	er	(explain)	пуагорнус	c vegetation*
Woody vine stratum       (Plot size:)         1				present, ur	nless disturbe	tland hydrology must be d or problematic
2				Hydrophytic vegetation	C	
	0	= Total Cove	er	present?	N	_
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm the	absence of indicators.)	
Depth	Matrix			dox Feat				,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remar	٢S
0-24	10 YR 2/1	100	. , ,					Silty Clay	
021	10 11(2/1	100							
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	/asked S	Sand Grains. *	*Location: PL = Pore Lining	, M = Matrix
	oil Indicators:							or Problematic Hydric Soil	
His	tisol (A1)		Sar	ndy Gleve	ed Matrix	(S4)	Coast Pr	airie Redox (A16) ( <b>LRR K, I</b>	., R)
	tic Epipedon (A2)			ndy Redo		( )		face (S7) (LRR K, L)	
	ck Histic (A3)			pped Ma				ganese Masses (F12) (LRR	K. L. R)
	drogen Sulfide (A4	4)			ky Minera	al (F1)		allow Dark Surface (TF12)	,,,
	atified Layers (A5	,			ed Matrix	( )		(plain in remarks)	
	m Muck (A10)	/			atrix (F3)				
	pleted Below Dark	Surface			Surface				
	ck Dark Surface (				ark Surfa	. ,	*Indicator	of hydrophytic vegetation a	nd weltand
	ndy Mucky Minera	,			essions	• •		/ must be present, unless di	
	m Mucky Peat or	. ,			00010110	(10)	nyarolog	problematic	Sturbed of
	-	-	)			-		problematic	
	Layer (if observe	ed):							
Туре:					-		Hydric soi	present? N	
Depth (inche	es):				_				
Remarks:									
	OGY drology Indicato	vre ·							
-			required: check	all that a	nnly)		Casar	dam (Indiantara (minimum at	
	cators (minimum	or one is	required; check			40)		dary Indicators (minimum of	two required
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)	
Saturati	ater Table (A2)				uatic Plar n Sulfide			Drainage Patterns (B10) Dry-Season Water Table (C2)	
	larks (B1)							Crayfish Burrows (C8)	)
	nt Deposits (B2)			(C3)	плигозр			Saturation Visible on Aerial In	(C9) vraner
	posits (B3)				e of Redu	iced Iron		Stunted or Stressed Plants (D	
	at or Crust (B4)			-			. ,	Geomorphic Position (D2)	.,
	posits (B5)			(C6)				FAC-Neutral Test (D5)	
	on Visible on Aeria	I Imagery	/ (B7)		ck Surfac	e (C7)		(	
	y Vegetated Conca			_	or Well Da	• •			
	tained Leaves (B9		. ,		xplain in	. ,	;)		
Field Obse	vations.	,			•		,		
Surface wat		Yes	No	х	Depth (i	nches):			
Water table		Yes	No	Х	Depth (i			Indicators of wetland	
Saturation p		Yes	No	Х	Depth (i			hydrology present?	Ν
	pillary fringe)				<u> </u>	,			
Describe re	corded data (strea	am daude	e, monitoring well	l aerial r	hotos p	revious i	nspections), if ava	ilable:	
2000100100		guug	, mernening wen	., aonai p					
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	licine Sa	ampling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sa	mpling Point:	w-114n46w19-u05
Investigator(s): JLK/KD		Secti	on, Townshij	p, Range:	T114n F	46w Sec. 19
Landform (hillslope, terrace, etc.):	at	Local r	elief (concav	/e, convex, n	one):	none
Slope (%): 1-4 Lat: 44.667605	5	Long:	-96.4443		atum:	NAD83
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	rcent slopes		NWI (	Classification	:	Upland
Are climatic/hydrologic conditions of the site typical fo	r this time o	of the year?	Y (I	f no, explain	in remarks)	
Are vegetation , soil , or hydrol	logy	significantly	/ disturbed?	Ar	e "normal circu	mstances"
Are vegetation , soil , or hydrol	logy	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed,	, explain any ar	swers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N	-	Is the s	ampled area	a within a w	etland?	Ν
Indicators of wetland hydrology present? N	-	f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	senarate re	enort)				
		sport.)				
Rainfall for previous three months is 37% wet	ter than no	ormal.				
VEGETATION Use scientific names of plan	to					
VEGETATION Use scientific names of plan	Absolute	Dominan	Indicator	Dominanc	e Test Works	poot
Tree Stratum (Plot size: )		t Species	Staus		Dominant Specie	
1 (* 100 0.101)					L, FACW, or FA	
2				Total Nu	mber of Domina	
3				Species	Across all Strat	a: <u>1</u> (B)
4					Dominant Speci	
5				that are OB	L, FACW, or FA	C: 0.00% (A/B)
Sanling/Shrub stratum (Dist size)	0	= Total Cove	r	Dravalana	e Index Works	haat
Sapling/Shrub stratum (Plot size:)	)			Total % Co		sneet
2				OBL speci		1 = 0
3				FACW spe		-
4				FAC speci	es 0 x	3 = 0
5				FACU spe		4 = 480
	0	= Total Cove	r	UPL specie		5 = 0
Herb stratum (Plot size:)	)			Column to	\	A) <u>480</u> (B)
1 Bromus inermis	100	<u>Y</u>	FACU	Prevalence	e Index = B/A =	4.00
2 Cirsium arvense 3 Trifolium pratense	<u>10</u> 5	<u>N</u>	FACU	Hudrophy	tic Vegetation	Indiactora
3 Trifolium pratense 4 Taraxacum officinale	5	<u> </u>	FACU FACU		-	nytic vegetation
5			17,00	·	ance test is >50	, ,
6					ence index is ≤	
7				Morph	ogical adaptatio	ons* (provide
8				suppor	rting data in Re	
9					ate sheet)	
10	400	<b>T</b> 1 1 0			matic hydrophy	tic vegetation*
Woody vine stratum (Plot size:	120	= Total Cove	r	(explai		
<u>Woody vine stratum</u> (Plot size:)	)				of hydric soil and v sent, unless disturt	vetland hydrology must be
2					phytic	
	0	= Total Cove	r	vegeta		
				prese	nt? Y	
Remarks: (Include photo numbers here or on a separa	ate sheet)			•		

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment th	e indicat	or or confirm the	absence of indicators.)	
Depth	Matrix			dox Feat				,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Rema	arks
0-24	10 YR 2/1	100	. , ,					Silty Clay	
021	10 11(2/1	100							
					-				
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	/lasked S	Sand Grains.	*Location: PL = Pore Linir	ng, M = Matrix
	oil Indicators:							or Problematic Hydric So	
-	tisol (A1)		Sar	ndy Gleve	ed Matrix	(S4)		airie Redox (A16) ( <b>LRR K</b>	
	tic Epipedon (A2)			ndy Redo		( )		face (S7) ( <b>LRR K, L)</b>	,
	ck Histic (A3)				trix (S6)			iganese Masses (F12) ( <b>LR</b>	R K. L. R)
	drogen Sulfide (A4	1)			ky Minera	al (F1)		allow Dark Surface (TF12)	
	atified Layers (A5	,			ed Matrix	( )		(plain in remarks)	
	m Muck (A10)	/			atrix (F3)			(plain in romano)	
	pleted Below Dark	Surface			Surface				
	ck Dark Surface (				ark Surfa	. ,	*Indicator	of hydrophytic vogstation	and waltand
	ndy Mucky Minera	,			ressions	• •		of hydrophytic vegetation y must be present, unless	
	m Mucky Peat or	. ,		юх рері	63510115	(10)	nyurolog	problematic	
	-	-	)					problematic	
	Layer (if observe	ed):							
Туре:					_		Hydric soi	present? N	
Depth (inche	es):				-				
Remarks:									
-	drology Indicato			- 11 41 4 -			2		
	cators (minimum	of one is	required; check			40)		dary Indicators (minimum	of two required
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)	
	ater Table (A2)				uatic Plar			Drainage Patterns (B10)	2)
Saturati	. ,				en Sulfide		· · · · · · · · · · · · · · · · · · ·	Dry-Season Water Table (C	2)
	larks (B1)				a Rhizosp	oneres on		Crayfish Burrows (C8) Saturation Visible on Aerial	Imagany (CO)
	nt Deposits (B2) posits (B3)			(C3)	e of Redu	lead Iron		Stunted or Stressed Plants	
	at or Crust (B4)			-				Geomorphic Position (D2)	(01)
	osits (B5)			(C6)	IIOIIINeut			FAC-Neutral Test (D5)	
	on Visible on Aeria	l Imagen	/ (B7)		ck Surfac	e (C7)			
	y Vegetated Conca			_	or Well Da	. ,			
	tained Leaves (B9				Explain in	. ,	)		
	,	/				rtomanto	,		
Field Obse Surface wat		Yes	No	х	Depth (i	nchec).			
Water table		Yes	No	- <u>x</u>	Depth (i			Indicators of wetlar	hd
Saturation p		Yes	No	<u> </u>	Depth (i			hydrology present	
	pillary fringe)	100			-			ing allology prosent	
-			monitorio		botas	rou/o	nonootiona) if	ilabla	
Describe ree	corded data (strea	am gauge	e, monitoring well	i, aeriai p	photos, p	revious i	nspections), if ava	liadie:	
Remarks:									
Kennal No.									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	licine	Sampling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	5	Sampling Point:	w-114n46w19-u06
Investigator(s): JLK/KD		Sectio	on, Township	p, Range:	T114n	R46w Sec. 19
Landform (hillslope, terrace, etc.):	ıt	Local r	elief (concav	/e, convex,	, none):	none
Slope (%): 1-4 Lat: 44.668494		Long:	-96.44199	93	Datum:	NAD83
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	cent slopes	3	NMI C	Classificati	on:	Upland
Are climatic/hydrologic conditions of the site typical for	this time o	of the year?	Y (I	f no, expla	in in remarks)	
Are vegetation, soil, or hydrol	ogy	significantly	disturbed?		Are "normal circ	umstances"
Are vegetation , soil , or hydrol	ogy	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If neede	ed, explain any a	inswers in remarks.)
Hydrophytic vegetation present? N	_					
Hydric soil present? N	_	Is the s	ampled area	a within a	wetland?	Ν
Indicators of wetland hydrology present? N	_	f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Rainfall for previous three months is 37% wett	er than no	ormal.				
VEGETATION Use scientific names of plant	S.					
	Absolute	Dominan	Indicator	Domina	nce Test Works	sheet
Tree Stratum (Plot size:)	% Cover	t Species	Staus		of Dominant Spec	
1				that are C	DBL, FACW, or FA	AC: <u> </u>
2					Number of Domin	
					ies Across all Stra	,
5					of Dominant Spec OBL, FACW, or F/	
	0	= Total Cover	r	_	, - ,	(+=)
Sapling/Shrub stratum (Plot size: )				Prevale	nce Index Work	sheet
1					Cover of:	
2				OBL spe		
				FACW s FAC spe	·	x 2 = 70 x 3 = 0
4				FAC Spe		x = 0 x = 280
·	0	= Total Cover		UPL spe		x = 0
Herb stratum (Plot size: )				Column		(A) <u>350</u> (B)
1 Bromus inermis	55	Y	FACU	Prevaler	nce Index = B/A	= 3.33
2 Phalaris arundinacea	35	Y	FACW			
3 Asclepias syriaca	10	Ν	FACU		hytic Vegetatio	
4 Cirsium arvense	5	N	FACU			ohytic vegetation
5 6					hinance test is >{ /alence index is :	
7						
8					phogical adaptat porting data in R	
9					arate sheet)	
10					plematic hydroph	ytic vegetation*
	105	= Total Cover	r	(exp	olain)	
Woody vine stratum (Plot size:)						wetland hydrology must be
1					present, unless distu rophytic	rbed or problematic
2	0	= Total Cover			etation	
	0			-	sent? N	<u>l                                     </u>
Remarks: (Include photo numbers here or on a separa	ate sheet)			1		
	-					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment th	e indicat	or or confirm the	absence of indicators.)	
Depth	Matrix			dox Feat				,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Rema	arks
0-24	10 YR 2/1	100	. , ,					Silty Clay	
021	10 11(2/1	100						enty enty	
					-				
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	/lasked S	Sand Grains.	*Location: PL = Pore Linir	ng, M = Matrix
	oil Indicators:							or Problematic Hydric So	
-	tisol (A1)		Sar	ndy Gleve	ed Matrix	(S4)		airie Redox (A16) ( <b>LRR K</b>	
	tic Epipedon (A2)			ndy Redo		( )		face (S7) ( <b>LRR K, L)</b>	,
	ck Histic (A3)				trix (S6)			iganese Masses (F12) ( <b>LR</b>	R K. L. R)
	drogen Sulfide (A4	1)			ky Minera	al (F1)		allow Dark Surface (TF12)	
	atified Layers (A5	,			ed Matrix	( )		(plain in remarks)	
	m Muck (A10)	/			atrix (F3)			(plain in romano)	
	pleted Below Dark	Surface			Surface				
	ck Dark Surface (				ark Surfa	. ,	*Indicator	of hydrophytic vogstation	and waltand
	ndy Mucky Minera	,			ressions	• •		of hydrophytic vegetation y must be present, unless	
	m Mucky Peat or	. ,		юх рері	63510115	(10)	nyurolog	problematic	
	-	-	)					problematic	
	Layer (if observe	ed):							
Туре:					_		Hydric soi	present? N	
Depth (inche	es):				-				
Remarks:									
-	drology Indicato			- 11 41 4 -			2		
	cators (minimum	of one is	required; check			40)		dary Indicators (minimum	of two required
	Water (A1)				Fauna (B			Surface Soil Cracks (B6)	
	ater Table (A2)				uatic Plar			Drainage Patterns (B10)	2)
Saturati	. ,				en Sulfide		· · · · · · · · · · · · · · · · · · ·	Dry-Season Water Table (C	2)
	larks (B1)				a Rhizosp	oneres on		Crayfish Burrows (C8) Saturation Visible on Aerial	Imagany (CO)
	nt Deposits (B2) posits (B3)			(C3)	e of Redu	lead Iron		Stunted or Stressed Plants	
	at or Crust (B4)			-				Geomorphic Position (D2)	(01)
	osits (B5)			(C6)	IIOIIINeut			FAC-Neutral Test (D5)	
	on Visible on Aeria	l Imagen	/ (B7)		ck Surfac	e (C7)			
	y Vegetated Conca			_	or Well Da	. ,			
	tained Leaves (B9				Explain in	. ,	)		
	,	/				rtomanto	,		
Field Obse Surface wat		Yes	No	х	Depth (i	nchec).			
Water table		Yes	No	- <u>x</u>	Depth (i			Indicators of wetlar	hd
Saturation p		Yes	No	<u> </u>	Depth (i			hydrology present	
	pillary fringe)	100			-			ing allology prosent	
-			monitorio		botas	rou/o	nonootiona) if	ilabla	
Describe ree	corded data (strea	am gauge	e, monitoring well	i, aeriai p	photos, p	revious i	nspections), if ava	liadie:	
Remarks:									
Kennal No.									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine San	npling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sam	Sampling Point: w-114n46w19-	
Investigator(s): JLK/KD		Secti	ion, Townshij	p, Range:	T114n F	R46w Sec. 19
Landform (hillslope, terrace, etc.): Depre	ssion	Local ı	relief (concav	e, convex, noi	ne):	Concave
Slope (%): 0-1 Lat: 44.66817		Long:	-96.4510	89 Dati	um:	NAD83
Soil Map Unit Name Lamoure silty clay loam, 0 to 2 pe	ercent slope	es, frequently	floodedWI (	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	r this time c	of the year?	Y (I	f no, explain ir	n remarks)	
Are vegetation , soil , or hydro	logy	significantl	y disturbed?	Are	"normal circu	mstances"
Are vegetation , soil , or hydro	logy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, e	explain any a	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y	-	Is the s	ampled area	a within a wet	land?	Y
Indicators of wetland hydrology present? Y		f yes, op	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Rainfall for previous three months is 37% wet	ter than no	ormal.				
VEGETATION Use scientific names of plan	ts.					
	Absolute	Dominan	Indicator	Dominance	Test Works	heet
<u>Tree Stratum</u> (Plot size:) 1	% Cover	t Species	Staus		ominant Spec FACW, or FA	
2		·			ber of Domina Across all Stra	ant
4				-	ominant Spec	. ,
5					•	.C: <u>100.00%</u> (A/B)
	0	= Total Cove	r			
Sapling/Shrub stratur (Plot size:	)				Index Works	sheet
				Total % Cov		1 – AF
2				OBL species FACW spec		(1 = 45) (2 = 140)
4				FAC species		$x_{3} = 0$
5				FACU speci		4 = 0
	0	= Total Cove	r	UPL species	s <u> </u>	x 5 = 0
Herb stratum (Plot size:	)			Column tota	ls 115 (	A) <u>185</u> (B)
1 Phalaris arundinacea	70	Y	FACW	Prevalence	Index = B/A =	1.61
2 Carex lacustris	30	Y	OBL			
3 Typha X glauca	10	<u>N</u>	OBL		c Vegetation	
4 Persicaria amphibia	5	<u>N</u>	OBL		est for nyarop nce test is >5	hytic vegetation
5					nce index is ≤	
7						ons* (provide
8						emarks or on a
9				separate		
10	115	= Total Cove	er	Problem (explain		vtic vegetation*
Woody vine stratum (Plot size:	)					wetland hydrology must be bed or problematic
2				Hydrop		
	0	= Total Cove	r	vegetat present	ion	
Remarks: (Include photo numbers here or on a separ	ate sheet)			I		
	,					

Profile Des	cription: (Descr	ibe to th	e depth nee	ded to d	locu	ment the	e indicat	or or confirm th	e absence o	of indicators.)	
Depth	Matrix			Redox	Feat	ures					
(Inches)	Color (moist)	%	Color (moi	st)	%	Type*	Loc**	Texture		Remarks	
0-4	10 YR 2/1	100							S	Silty Clay	
4-12	10 YR 2/1	55	10 YR 4/	1	40	D	М			Silty Clay	
4-12	10 1K 2/1	55			-				3		
			10 YR 5/	4	5	С	M				
	Concentration, D	= Depleti	on, RM = Re	duced N	1atrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix	
Hydric So	oil Indicators:							Indicators f	or Problem	atic Hydric Soils:	
Hist	tisol (A1)			Sandy	Gleye	ed Matrix	: (S4)	Coast P	rairie Redox	: (A16) ( <b>LRR K, L, R)</b>	
Hist	tic Epipedon (A2)			Sandy	Redo	ox (S5)			ırface (S7) ( <b>İ</b>		
Blac	ck Histic (A3)			Strippe	d Ma	trix (S6)			•	sses (F12) ( <b>LRR K, L, R)</b>	
Hyc	Irogen Sulfide (A4	4)		Loamy	Mucl	ky Minera	al (F1)	Very Sh	allow Dark S	Surface (TF12)	
Stra	atified Layers (A5	)		Loamy	Gley	ed Matrix	k (F2)	Other (e	explain in ren	narks)	
2 cr	m Muck (A10)			Deplete	ed Ma	atrix (F3)					
Dep	leted Below Dark	c Surface	e (A11) X	Redox	Dark	Surface	(F6)				
	ck Dark Surface (	,		Deplete	ed Da	ark Surfa	ce (F7)	*Indicator	rs of hydroph	ytic vegetation and weltand	
Sar	ndy Mucky Minera	al (S1)		Redox	Depr	essions (	(F8)	hydrolog	gy must be p	resent, unless disturbed or	
5 cr	m Mucky Peat or	Peat (S3	)						pro	blematic	
Restrictive	Layer (if observ	ed):									
Туре:		,						Hydric so	il present?	Y	
Depth (inche	es):					-		,		·	
Remarks:											
HYDROLO	DGY										
Wetland Hy	drology Indicate	ors:									
Primary Indi	cators (minimum	of one is	required; ch	eck all tl	nat a	pply)		Seco	ndary Indicat	tors (minimum of two required)	
X Surface	Water (A1)			Aqı	uatic	Fauna (B	13)		Surface Soil	Cracks (B6)	
High Wa	iter Table (A2)			Tru	e Aq	uatic Plar	nts (B14)		Drainage Pa	itterns (B10)	
Saturatio	on (A3)			Нус	droge	en Sulfide	Odor (C	I)	Dry-Season	Water Table (C2)	
Water M	arks (B1)			Oxi	dizec	l Rhizosp	heres on	Living Roots	Crayfish Bur		
Sedimer	nt Deposits (B2)			(C3	5)					isible on Aerial Imagery (C9)	
	oosits (B3)			Pre	senc	e of Redu	uced Iron			tressed Plants (D1)	
	at or Crust (B4)					ron Redu	iction in T			Position (D2)	
	osits (B5)			(C6				X	FAC-Neutral	l Test (D5)	
	on Visible on Aeria					ck Surfac					
	Vegetated Conca		ce (B8)		-	or Well Da	. ,				
	tained Leaves (B9	)			ier (E	xplain in	Remarks	)			
Field Obser											
Surface wat		Yes		lo		Depth (i		1			
Water table		Yes			X	Depth (i				tors of wetland	
	Saturation present? Yes No X Depth (inches): hydrology present? Y										
-											
Describe rec	corded data (strea	am gaug	e, monitoring	well, ae	rial p	photos, p	revious i	nspections), if ava	ailable:		
Remarks:											
INCINDINS.											

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samp	ling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Samp	ling Point:	w-114n46w19-w02
Investigator(s): JLK/KD		Secti	on, Townshij	o, Range:	T114n F	R46w Sec. 19
Landform (hillslope, terrace, etc.): Depress	sion	Local r	elief (concav	e, convex, none	e):	Concave
Slope (%): 0-1 Lat: 44.669114		Long:	-96.44954	43 Datur	n:	NAD83
Soil Map Unit Name Southam silty clay loam, 0 to 1 per	cent slope	s	NWI (	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	this time o	f the year?	Y (I	f no, explain in i	emarks)	
Are vegetation , soil , or hydrolo	gy	significantly	/ disturbed?	Are "r	ormal circu	mstances"
Are vegetation , soil , or hydrolo	gy	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, ex	plain any ai	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	ampled area	a within a wetla	nd?	Υ
Indicators of wetland hydrology present? Y		f yes, op	tional wetlar	nd site ID:	_	
Remarks: (Explain alternative procedures here or in a s	separate re	eport.)				
	opulato it	<b>,</b> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Rainfall for previous three months is 37% wette	er than no	ormal.				
VEGETATION Use scientific names of plants						
	Absolute	Dominan	Indicator	Dominance 1	ost Works	heet
		t Species	Staus	Number of Dor		
1		•		that are OBL, F	•	
2				Total Numb	er of Domina	ant
3				Species Ac	ross all Stra	ta: <u>        2      (</u> B)
4				Percent of Dor		
5		<u></u>		that are OBL, F	ACW, or FA	C: <u>100.00%</u> (A/B)
Sopling/Shrub strature (Plot size:	0	= Total Cove	r	Prevalence I	adax Wark	shoot
Sapling/Shrub stratum (Plot size:)				Total % Cove		Sileet
2				OBL species	75 x	1 = 75
3				FACW specie		
4				FAC species	0 ×	3 = 0
5				FACU species		4 = 0
,	0	= Total Cove	r	UPL species		(5 = 0)
Herb stratum (Plot size:)				Column totals		A) <u>135</u> (B)
1 Carex lacustris	60	Y Y	OBL	Prevalence In	dex = B/A =	1.29
2 Phalaris arundinacea 3 Schoenoplectus tabernaemontani	30 10	<u> </u>	FACW OBL	Hydrophytic	Vegetation	Indicators:
4 Persicaria amphibia	5	N	OBL		-	hytic vegetation
5				X Dominan		, ,
6				X Prevalence	e index is ≤	3.0*
7				Morphogi	cal adaptati	ons* (provide
8					-	marks or on a
9				separate	-	
10	105	= Total Cove		Problema (explain)	tic hydroph	/tic vegetation*
Woody vine stratum (Plot size: )	105		1			
1 (* **********************************						wetland hydrology must be bed or problematic
2				Hydroph		I
	0	= Total Cove	r	vegetatio		
				present?	N	
Remarks: (Include photo numbers here or on a separat	te sheet)					

Oppin         Matrix         Coder (most)         %         Type'         Loc"         Texture         Remarks           0-6         10 YR 2/1         100         %         Type'         Loc"         Silty Clay         Silty Clay           0-2         10 YR 2/1         35         10 YR 5/2         60         D         M         Silty Clay           0-2         10 YR 2/1         35         10 YR 5/6         G         M         Silty Clay           0-2         10 YR 2/6         0         M         Silty Clay         Silty Clay           1         10 YR 5/6         5         C         M         Silty Clay         Silty Clay           1         10 YR 5/6         0         M         Matrix         Microsoff         Silty Clay           1         10 YR 5/6         0         D         Matrix         Microsoff         Matrix           Yper: C = Concentration, D = Depletion, RM = Reduced Matrix (S4)         Each Matrix (S4)         Each Matrix (S4)         Each Matrix (S4)         Tor-Manganese Masses (F1) (RK L, R)         Tor-Manganese Masses (F1	Profile Des	cription: (Descr	ibe to th	e depth n	eeded	to docu	ment the	e indicat	or or confirm th	e absence of i	indicators.)	
(Inches)         Color (moist)         %         Type*         Loc*         Texture         Remarks           0-6         10 YR 2/1         100         Image: the state of th				-							•	
0-6         10 YR 2/1         10		Color (moist)	%	Color (n	noist)	%	Type*	Loc**	Texture	•	Remarks	
6 - 25         10 YR 2/1         35         10 YR 5/2         60         D         M         Sitty Clay           6 - 25         10 YR 5/6         5         C         M         Image: Classical Clasi		10 YR 2/1	100							Silt	v Clav	
Image: Solution of the second structure of the				10 VD	E/2	60		NA				
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix.         Hydric Soli Indicators:         Hittis Epipadon (A2)         Sandy Gleyed Matrix (S4)         Black Histic (A3)         Sandy Gleyed Matrix (S6)         Indicators for Problematic Redox (A16) (LRR K, L, R)         Black Histic (A3)         Sandy Medox (Matrix (S6)         Depleted Matrix (S6)         Depleted Matrix (S6)         Depleted Matrix (S6)         Depleted Matrix (S6)         Depleted Below Dark Surface (F12) (LRR K, L, R)         Depleted Below Dark Surface (F12)         Very Shallow Dark Surface (F12)         Depleted Below Dark Surface (F12)         Strattfied Layers (A6)         Depleted Below Dark Surface (F12)         Stratter (Layer (If Observed):         Type:         Deptet (Dark Surface (F12)         Strate Sol Torsein         Hydroc soil present, unless disturbed or problematic         Strate Sol Torsein         Hydric soil present?         Ype:         Deptet (Dark Surface (F12)         Hydro Sol Indicators:         Problematic         Strate Sol Torsein         Surface Water (A1)         Aquato Fauna (B13) <td>0-25</td> <td>10 1K 2/1</td> <td>30</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Sill</td> <td></td>	0-25	10 1K 2/1	30							Sill		
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge				10 YR	Color (moist)       %       Type*       Loc**       Texture       Remarks         10 YR 5/2       60       D       M       Silty Clay         10 YR 5/2       60       D       M       Silty Clay         10 YR 5/6       5       C       M       Silty Clay							
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge												
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge												
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge												
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge												
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)         Histis (Epipedon (A2)       Sandy Redox (S5)         Black Histic (A3)       Stripped Matrix (S4)         Hydrogen Sulfide (A4)       Loarny Mudey Mineral (F1)         Stratified Layers (A5)       Loarny Gleyed Matrix (F2)         Depleted Bolow Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)         So m Mucky Peat or Peat (S3)       Redox Depressions (F8)         Problematic       Hydrology must be present, unless disturbed or problematic         Problematics       Y         Mettand Hydrology Indicators:       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Hydrogen Sulfde Cdor (C1)       Drakage Saltration (C2)         Sediment Deposits (B2)       CG3)       Crayfin Burrows (C3)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Coald Carage CG7)       Geauge												
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils:         Histisol (A1)       Sandy Gleyed Matrix (S4)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Stripped Matrix (S6)       Dark Surface (S7) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Mueky Mineral (F1)       Very Shallow Dark Surface (F2)         Stratified Layers (A5)       Loamy Gleyed Matrix (F3)       Other (explain in remarks)         Thick Dark Surface (A11)       Redox Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):       Type:       Hydric soil present?       Y         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         Startation (A3)       Thue Aquatic Plants (B14)       Dariage Patterns (B10)         Saturation (A3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1)       Crack for Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Mater Marks (B1) <td></td>												
Histisol (A1)       Sandy Gleyed Matrix (S4)       Coast Parline Redox (A16) (LRR K, L, R)         Histic Epipedon (A2)       Sandy Redox (S5)       Dark Surface (S7) (LRR K, L)         Black Histic (A3)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Stratified Layers (A5)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Other (explain in remarks)       Depleted Matrix (F2)       Other (explain in remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Dark Surface (F7)       Hydric soil present?       Y         Pipe:       Pipelete Soil Cracks (B6)       problematic       Pipelete Soil Cracks (B6)         Surface Water (A1)       Aquatic Fauna (B13)       Sturface Soil Cracks (B6)       Drainage Patterns (B10)         Surface Water (A1)       Hydrogen Sulfde Cdor (C1)       Drainage Patterns (B10)       Crayfish Burrows (C3)         Secondary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Hydrogen Sulfde Cdor (C1)       Drainage Patterns (B10)       Drainage Patterns (B10)         Secondary Indicators (B1)       Crayfish Burrows (C3)       Saturation Visible on Aerial Imagery			= Deplet	on, RM =	Reduce	ed Matrix	k, MS = N	/lasked S				
Histic Epipedon (A2)       Sandy Redox (S5)       Dark Surface (S7) (LRR K, L)         Black Histic (A3)       Stripped Matrix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Yery Shallow Dark Surface (S7)       Loamy Mucky Mineral (F1)       Other (explain in remarks)         2 cm Muck (A10)       Depleted Dark Surface (F6)       Other (explain in remarks)         Thick Dark Surface (A12)       Depleted Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Depleted Dark Surface (F1)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Presence       Y       Depleted Park Surface (C12)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Surface Soil Cracks (B6)         HYDROLOGY       True Aquatic Plants (B14)       Dry-Season Water Table (C2)       Crayfish Burrows (C3)         Saturation (A3)       Hydrogen Sufface GOr (C1)       Dry-Season Water Table (C2)       Crayfish Burrows (C3)         Sectiment Deposits (B2)       (C3)       Sturate (C1)       Sturate (C1)       Sturate (C1)         Aquatic Fauna (C2)       Thin Muck Sufface (C7)       Sturate Water Table (C2)       FAC-Neutral Test (D5)	Hydric So	il Indicators:							Indicators f	for Problemati	c Hydric Soils:	
Black Histic (A3)       Stripped Matrix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         Depleted Below Dark Surface (A11)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (If observed):       Type:       Hydric soil present?       Y         Depth (inches):       Mucky Pat or Peat (S3)       Surface (R6)       Surface Soil Cracks (B6)         Surface Water (A1)       Aquatic Faun a(B13)       Surface Soil Cracks (B6)       Dry-Season Water Table (A2)         High Water Table (A2)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)       Dry-Season Water Table (C2)         Sutraction (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)       CrayIth Burrows (C8)         Secondary Indicators (B1)       Coldicade Rhizospheres on Living Roots       Sturtaton Visible on Aerial Imagery (C9)         Staturation (A3)       Hydrogen Sulfide Odor (C1)       Sturtaton Visible on Aerial Imagery (C9)       Sturtaton V	Hist	isol (A1)		_	Sar	dy Gley	ed Matrix	: (S4)				
Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         Depleted Below Dark Surface (A12)       Depleted Matrix (F2)       Other (explain in remarks)         Thick Dark Surface (A12)       Depleted Matrix (F2)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depleted Watrix (S1)       A qauatic Fauna (B13)       Surface Soil Cracks (B6)       Primary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)       Dry.Season Water Table (C2)         HYDROLOGY       True Aquatic Plants (B14)       Drainage Patterns (B10)       Surface Soil Cracks (B6)         Hydrogen Sulfide Codr (C1)       Dry.Season Water Table (C2)       Crayfish Burrows (C3)       Surface Soil Cracks (B6)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)         Sparely Vegetated Concave Surface (B8)       Gauge or Well Data (C1)       Stauration Visible on Aerial Imagery (C9)       Stauration Visible on Aerial Imagery (C9)         Sparely Vegetated Concave Surface (B8)       Gauge or Well Data (C2	Hist	ic Epipedon (A2)			Sar	idy Redo	ox (S5)					
Strattfied Layers (A5)       Loamy Gleyed Matrix (F2)       Other (explain in remarks)         2 cm Muck (A10)       Depleted Matrix (F3)       Tedox Dark Surface (A11)         Thick Dark Surface (A12)       X Redox Dark Surface (F6)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       "Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depth (inches):	Bla	ck Histic (A3)		_	Stri	pped Ma	trix (S6)		Iron-Ma	inganese Mass	es (F12) ( <b>LRR K, L, R)</b>	
2 cm Muck (A10)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depleted Matrix (F3)       Hydric soil present?       Y         Depletid (inches):	Hyd	lrogen Sulfide (A4	4)	-	Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark Sur	face (TF12)	
Depleted Below Dark Surface (A11)       Redox Dark Surface (F6)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       *Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depth (inches):	Stra	tified Layers (A5	)	-	Loa	my Gley	ed Matrix	k (F2)	Other (e	explain in rema	rks)	
Thick Dark Surface (A12)       Depleted Dark Surface (F7)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Sandy Mucky Peat or Peat (S3)       Predox Depressions (F8)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Type:	2 cr	n Muck (A10)		-	Dep	leted Ma	atrix (F3)					
Sandy Mucky Mineral (S1)       Redox Depressions (F8)       hydrology must be present, unless disturbed or problematic         Restrictive Layer (if observed):       Type:       Hydric soil present?       Y         Depth (inches):	Dep	leted Below Dark	Surface	e (A11)	X Rec	lox Dark	Surface	(F6)				
	Thie	ck Dark Surface (	A12)	-	Dep	leted Da	ark Surfa	ce (F7)	*Indicator	rs of hydrophyti	ic vegetation and weltand	
Restrictive Layer (if observed):         Type:	Sar	dy Mucky Minera	ıl (S1)	-	Rec	lox Depr	essions	(F8)	hydrolog	gy must be pres	sent, unless disturbed or	
Type:       Hydric soil present?       Y         Depth (inches):	5 cr	n Mucky Peat or	Peat (S3	)						proble	ematic	
Type:       Hydric soil present?       Y         Depth (inches):	Restrictive	l aver (if observ	ed).									
Depth (inches):									Hydric so	il present?	Y	
Remarks:         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plana (B13)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Dift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Water stained Leaves (B9)       Other (Explain in Remarks)       Field Observations:         Surface water present?       Yes       No       Depth (inches):       Indicators of wetland Aturate present? Yes       No         Saturation present?       Yes       No       Z Depth (inches):       Indicators of wetland Aturate present? Yes       No       X Depth (inches): <td></td> <td>is).</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td>i i julio ee</td> <td></td> <td><u> </u></td>		is).					-		i i julio ee		<u> </u>	
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)         Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Sturted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Surface water present?       Yes       No       Depth (inches):       6         Water table present?       Yes       No       Z       Depth (inches):       1         Saturation present?       Yes       No       Z       Depth (inches):       1 <t< td=""><td></td><td colspan="11"></td></t<>												
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Sturator Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water table present?       Yes       No       Depth (inches):       6         Surface water present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1       1	Remarks:											
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water table present?       Yes       No       X       Depth (inches):       6         Surface water present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1												
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunation Visible on Aerial Imagery (C9)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Geomorphic Position (D2)         Inon Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Fleid Observations:         Surface water present?       Yes       No       X       Depth (inches):       6         Mater table present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunation Visible on Aerial Imagery (C9)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Geomorphic Position (D2)         Inon Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Fleid Observations:         Surface water present?       Yes       No       X       Depth (inches):       6         Mater table present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunation Visible on Aerial Imagery (C9)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Geomorphic Position (D2)         Inon Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Fleid Observations:         Surface water present?       Yes       No       X       Depth (inches):       6         Mater table present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sarsely Vegetated Concave Surface (B8)         Water table present?       Yes       X       No       Depth (inches):       6         Surface water present?       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       6       Indicators of wetland hydrology present?       Y         Gauge or well nate present?       Yes       No       X       Depth (inches):       1<	HYDROLO	DGY										
Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Inon Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Field Observations:         Surface water present?       Yes       No       Depth (inches):       6         Water table present?       Yes       No       Z       Depth (inches):       1         Saturation present?       Yes       No       Z       Depth (inches):       1       hydrology present?       Y         Saturation present?       Yes       No       Z       Depth (inches):       <	Wetland Hy	drology Indicate	ors:									
Surface Water (A1)       Aquatic Fauna (B13)       Surface Soil Cracks (B6)         High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation (C4)       Stanted or Stressed Plants (D1)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stanted or Stressed Plants (D1)       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water Table present?       Yes       No       Depth (inches):       6       Indicators of wetland         Sutration present?       Yes       No       X       Depth (inches):       1       Ydrology present?       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Ydrology present?       Y	Primary Indi	cators (minimum	of one is	required;	check	all that a	pply)		Seco	ndary Indicator	s (minimum of two required)	
High Water Table (A2)       True Aquatic Plants (B14)       Drainage Patterns (B10)         Saturation (A3)       Hydrogen Sulfide Odor (C1)       Dry-Season Water Table (C2)         Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water Table present?       Yes       X       No       Depth (inches):       6         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         Mater table present?       Yes       No       X       Depth (inches):       1         Mater table present?       Yes       No       X       Depth (inches):       1         Mater table present?       Yes       No       X       Depth (inches):       1         Describe recorded data (								13)				
Water Marks (B1)       Oxidized Rhizospheres on Living Roots       Crayfish Burrows (C8)         Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland         Field Observations:       No       X       Depth (inches):       6         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         Mater table present?       Yes       No       X       Depth (inches):       1       1         Saturation present?       Yes       No       X       Depth (inches):       1       1       1         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Indicators of wetland       1       1		( )									. ,	
Sediment Deposits (B2)       (C3)       Saturation Visible on Aerial Imagery (C9)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Saturation Visible on Aerial Imagery (C9)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       Thin Muck Surface (C7)       Geomorphic Position (D2)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland hydrology present?         Field Observations:       No       X       Depth (inches):       6         Saturation present?       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?         Saturation present?       Yes       No       X       Depth (inches):       -       -         Saturation present?       Yes       No       X       Depth (inches):       -       -         Saturation present?       Yes       No       X       Depth (inches):       -       -         Saturation present?       Yes       No       X       Depth (inches):       -       -       -         Describe recorded data (stream gauge, monitoring well, aerial photos, prev	Saturatio	on (A3)				Hydroge	en Sulfide	Odor (C	1)	Dry-Season W	ater Table (C2)	
Drift Deposits (B3)       Presence of Reduced Iron (C4)       Stunted or Stressed Plants (D1)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)       FAC-Neutral Test (D5)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland         Field Observations:       No       X       Depth (inches):       6         Saturation present?       Yes       No       X       Depth (inches):       1         Saturation present?       Yes       No       X       Depth (inches):       1         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y	Water M	arks (B1)				Oxidized	d Rhizosp	heres on	Living Roots	Crayfish Burrow	ws (C8)	
Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils       Geomorphic Position (D2)         Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)       Indicators of wetland         Field Observations:       No       X       Depth (inches):       6         Surface water present?       Yes       No       X       Depth (inches):       Indicators of wetland         Saturation present?       Yes       No       X       Depth (inches):       Y       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Pailable:	Sedimer	nt Deposits (B2)				(C3)				Saturation Visil	ble on Aerial Imagery (C9)	
Iron Deposits (B5)       (C6)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)       Other (Explain in Remarks)         Field Observations:       Surface water present?       Yes       X       No       Depth (inches):       6       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       1       hydrology present?       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Invalues	Drift Dep	oosits (B3)				Presenc	e of Redu	uced Iron	(C4)	Stunted or Stre	essed Plants (D1)	
Inundation Visible on Aerial Imagery (B7)       Thin Muck Surface (C7)         Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       0         Surface water present?       Yes         Yes       No         Water table present?       Yes         No       X         Depth (inches):       6         Indicators of wetland hydrology present?         Yes       No         X       Depth (inches):         Gauge or Well Data (D9)         Other (Explain in Remarks)         Indicators of wetland hydrology present?         Yes       No         X       Depth (inches):         (includes capillary fringe)       Yes         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							Iron Redu	iction in T	illed Soils			
Sparsely Vegetated Concave Surface (B8)       Gauge or Well Data (D9)         Water-Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       Surface water present?       Yes       X       No       Depth (inches):       6         Sufface water present?       Yes       No       X       Depth (inches):       6       Indicators of wetland hydrology present?         Water table present?       Yes       No       X       Depth (inches):       6       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       1       Hydrology present?       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	·	( )								FAC-Neutral T	est (D5)	
Water-Stained Leaves (B9)       Other (Explain in Remarks)         Field Observations:       Surface water present?       Yes       X       No       Depth (inches):       6       Indicators of wetland hydrology present?         Water table present?       Yes       No       X       Depth (inches):       6       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?       Y         (includes capillary fringe)       Depth (inches):       Y       Y       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Y       Y								. ,		_		
Field Observations:         Surface water present?       Yes       X       No       Depth (inches):       6       Indicators of wetland hydrology present?         Water table present?       Yes       No       X       Depth (inches):       6       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       1       hydrology present?       Y         (includes capillary fringe)       Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Indicators of welland hydrology present?       Y		-		ce (B8)		-						
Surface water present?       Yes       X       No       Depth (inches):       6         Water table present?       Yes       No       X       Depth (inches):       6         Saturation present?       Yes       No       X       Depth (inches):       6         (includes capillary fringe)       No       X       Depth (inches):       1       hydrology present?       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Indicators of wetland       Y	Water-S	tained Leaves (B9	)			Other (E	xplain in	Remarks	)			
Water table present?       Yes       No       X       Depth (inches):       Indicators of wetland hydrology present?       Y         Saturation present?       Yes       No       X       Depth (inches):       hydrology present?       Y         (includes capillary fringe)       V       Depth (inches):       Indicators of wetland hydrology present?       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Period (inches)       Y												
Saturation present?       Yes       No       X       Depth (inches):       hydrology present?       Y         (includes capillary fringe)       0       X       Depth (inches):       hydrology present?       Y         Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       No       X       Depth (inches):       No				Х					6			
(includes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:												
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			Yes		No	Х	_Depth (i	nches):		hydrolo	ogy present? Y	
	-											
Remarks:	Describe red	orded data (strea	am gaug	e, monitori	ng well	, aerial p	ohotos, p	revious i	nspections), if av	ailable:		
Remarks:												
Remarks:	Densis											
	Remarks:											

Project/Site Bitter Root Wind Farm Project	City/C	ounty:	Yellow Medi	icine	Sampling	Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN		Sampling	mpling Point: w-114n46w19 T114n R46w Sec. 19 one): Concave atum: NAD83 : PEM in remarks) e "normal circumstances" present? Ye explain any answers in remarks etland? Y etland? Y etland? Y ce Test Worksheet Dominant Species L, FACW, or FAC: 1 mber of Dominant a Across all Strata: 2 Dominant Species L, FACW, or FAC: 50.00% re Index Worksheet over of: es 0 x 1 = 0 acies 0 x 2 = 0 es 50 x 3 = 150 cies 30 x 4 = 120 es 0 x 5 = 0 tals 80 (A) 270 e Index = B/A = 3.38 tic Vegetation Indicators: test for hydrophytic vegetation ance test is >50% ence index is $\leq 3.0^*$ ogical adaptations* (provide rting data in Remarks or on a ate sheet) matic hydrophytic vegetation* in) of hydric soil and wetland hydrology sent, unless disturbed or problematic phytic ation	
Investigator(s): JLK/KD		Sectio	on, Township	o, Range:	-	T114n R	46w Sec. 19
Landform (hillslope, terrace, etc.): Depression	ו	Local re	elief (concav	e, conve	k, none):		Concave
Slope (%): 6-12 Lat: 44.668607		Long:	-96.44931	16	Datum:		NAD83
Soil Map Unit Name Barnes-Buse complex, 6 to 12 percent	t slopes,	moderately	v erodeNWI C	Classificat	tion:		PEM
Are climatic/hydrologic conditions of the site typical for this	time of	the year?	Y (II	f no, expl	ain in rema	arks)	
Are vegetation, soil, or hydrology		significantly	disturbed?		Are "norm	al circur	nstances"
Are vegetation , soil , or hydrology		naturally pro	oblematic?				present? Yes
SUMMARY OF FINDINGS				(If need	led, explair	n any an	swers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the sa	ampled area	a within a	a wetland?	·	Y
Indicators of wetland hydrology present? Y		f yes, op	tional wetlan	d site ID:			
Remarks: (Explain alternative procedures here or in a sepa	arate rep	oort.)					
Rainfall for previous three months is 37% wetter the	han nor	mal.					
VEGETATION Use scientific names of plants.							
	solute	Dominan	Indicator	Domin	ance Test	Worksh	eet
		t Species	Staus				
1				that are	OBL, FACV	V, or FAC	C: 1 (A)
2							
3				Spe	cies Across	all Strata	a: <u>2</u> (B)
						•	
5	0 =	Total Cover		that are	OBL, FACV	v, or FAC	C: <u>50.00%</u> (A/B)
Sapling/Shrub stratur (Plot size: )				Prevale	ence Index	Works	heet
1					Cover of:		
2				OBL sp	ecies	0 x	1 = 0
3				FACW	species	0 x	2 = 0
4				FAC sp			
5		<u> </u>		FACU	·		
	0 =	Total Cover		UPL sp			
Herb stratum (Plot size:)			540	Columr		``	
	50	Y Y	FAC	Prevale	ence Index	= B/A =	3.38
2 Amaranthus retroflexus	30	ř	FACU	Hydror	obytic Veg	otation	Indicators:
4							
5							
6	·			Pre	valence in	dex is ≤3	8.0*
7				Mo	rphogical a	daptatio	ns* (provide
8				sup	porting dat	ta in Rer	
9					parate shee		
10		<u></u>				ydrophy	tic vegetation*
	= 08	Total Cover		X (ex	piain)		
Woody vine stratum (Plot size:)					-		, ,,
2					drophytic	,55 aistuiD	
	0 =	Total Cover		veç	getation		
				pre	esent?	Y	_
Remarks: (Include photo numbers here or on a separate sl	heet)		•				
Wetland is a mudflat, ponded in the spring and	l now d	ominated	by upland	weeds.			

Profile Des	cription: (Descr	ibe to th	e depth need	led to docu	ument the	e indicat	or or confirm th	e absence of indicators.)			
Depth	Matrix		-					· · ·			
(Inches)	Color (moist)	%	Color (mois	st) %	Type*	Loc**	Texture	Remarks			
0-7	10 YR 2/1	100						Silty Clay			
7 - 25	10 YR 2/1	40	10 YR 5/1	55		N4					
7 - 25	10 1K 2/1	40						Silty Clay			
			10 YR 5/6	VI     55     D     M     Silty Clay							
		= Depleti	ion, RM = Red	duced Matri	x, MS = N	Aasked S			latrix		
Hydric Sc	oil Indicators:							-			
Hist	tisol (A1)					(S4)					
Hist	tic Epipedon (A2)			Sandy Red	ox (S5)		Dark Su	rface (S7) ( <b>LRR K, L)</b>			
Bla	ck Histic (A3)			Stripped Ma	atrix (S6)		Iron-Ma	nganese Masses (F12) ( <b>LRR K, L, I</b>	R)		
Hyo	Irogen Sulfide (A	4)		Loamy Muc	ky Miner	al (F1)	Very Sh	allow Dark Surface (TF12)			
Stra	atified Layers (A5	)		Loamy Gley	ed Matrix	x (F2)	Other (e	xplain in remarks)			
2 cr	n Muck (A10)			Depleted M	atrix (F3)						
Dep	leted Below Dark	Surface	e (A11) X	Redox Dark	Surface	(F6)					
	ck Dark Surface (		· · ·	Depleted D	ark Surfa	ce (F7)	*Indicator	s of hydrophytic vegetation and well	tand		
	dy Mucky Minera	,		•		. ,					
	m Mucky Peat or	. ,				( - )					
	-	-	,			r —		•			
	Layer (if observ	ea):						l area ant2			
Type:	) -				-		Hydric sol				
Depth (inche	es):				_						
Remarks:											
HYDROLO	OGY										
	drology Indicato	ore:									
-			no quino du obo	al all that a	n m m la c)		0				
		of one is	requirea; che		· · · · ·	4.0	Secor		<u>quired)</u>		
X Surface	( )		-								
•	iter Table (A2)		-		•	( )		0 ( )			
Saturatio			-								
	arks (B1)				a Rnizosp	oneres on	Living Roots				
	nt Deposits (B2)		-						(C9)		
	posits (B3)		-								
	at or Crust (B4)				Iron Real	ICtion in 1					
	oosits (B5) on Visible on Aeria	l Imagon	(B7)		ick Surfee						
	Vegetated Conca					. ,					
	tained Leaves (B9		-				)				
	· ·	)				Remarks	·)				
Field Obser		V	V N	-	Derth (	in also = )	4				
Surface wat		Yes					4	Indiactors of watland			
Water table		Yes									
	Saturation present? Yes No X Depth (inches): hydrology present? Y										
-					. 1 4						
Describe red	corded data (strea	am gaug	e, monitoring	well, aerial	pnotos, p	revious i	nspections), if ava				
Domerica											
Remarks:											
1											

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samplir	10/17/2017		
Applicant/Owner: RES Americas		State:	MN	Samplin	g Point:	g Point: w-114n46w19-w04	
Investigator(s): JLK/KD		Sect	ion, Townshi	p, Range:	T114n R	46w Sec. 19	
Landform (hillslope, terrace, etc.): Depre	ssion	Local	relief (concav	ve, convex, none):		Concave	
Slope (%): 1-4 Lat: 44.667576	6	Long:	-96.4450	46 Datum:		NAD83	
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	rcent slopes		NWI (	Classification:		PEM	
Are climatic/hydrologic conditions of the site typical fo	r this time o	of the year?	Y (I	f no, explain in rer	marks)		
Are vegetation , soil , or hydro	logy	significantl	y disturbed?	Are "no	rmal circu	mstances"	
Are vegetation , soil , or hydro	logy	naturally p	roblematic?			present? Yes	
SUMMARY OF FINDINGS				(If needed, expl	ain any an	swers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the s	ampled are	a within a wetlan	d?	Y	
Indicators of wetland hydrology present? Y		f yes, op	otional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport)					
		50011.)					
Rainfall for previous three months is 37% wet	ter than no	ormal.					
VEGETATION Use scientific names of plan	te						
VEGETATION Use scientific flames of plan	Absolute	Dominan	Indicator	Dominance Te	st Workst	leet	
Tree Stratum (Plot size: )		t Species	Staus	Number of Domin			
1	-			that are OBL, FA	•		
2				Total Number	of Domina	nt	
3				Species Acro	ss all Strat	a: <u> </u>	
4				Percent of Domin			
5				that are OBL, FA	CW, or FA	C: <u>100.00%</u> (A/B)	
Sanling/Shrub stratum (Dist size)	0	= Total Cove	r	Prevalence Ind	ov Morko	haat	
Sapling/Shrub stratum (Plot size:)	) 5	Y	FACW	Total % Cover of		neet	
2		<u>'</u>	17,000	OBL species	л. 5 х	1 = 5	
3				FACW species	_		
4				FAC species	5 x	3 = 15	
5				FACU species	0 x	4 = 0	
	5	= Total Cove	r	UPL species		5 = 0	
Herb stratum (Plot size:	)			Column totals	115 (/		
1 Echinochloa crus-galli	90	Y	FACW	Prevalence Inde	ex = B/A =	2.00	
2 Phalaris arundinacea 3 Ambrosia trifida	<u>10</u> 5	<u> </u>	FACW FAC	Hydrophytic Vo	actation	Indicators	
4 Persicaria amphibia	5	<u></u> N	OBL		-	nytic vegetation	
5				X Dominance	• •		
6				X Prevalence	index is ≤	3.0*	
7				Morphogica	l adaptatio	ons* (provide	
8						marks or on a	
9				separate sh	-		
10	110	- Total Cave			hydrophy	tic vegetation*	
Woody vine stratum (Plot size:	110	= Total Cove	:[	(explain)			
1	)					vetland hydrology must be ed or problematic	
2				Hydrophyti			
	0	= Total Cove	r	vegetation			
				present?	<u> </u>		
Remarks: (Include photo numbers here or on a separ	ate sheet)						

Profile Des	cription: (Descr	ibe to th	e depth nee	ded to doo	ument th	e indicat	tor or confirm th	e absence of indicators.)			
Depth	Matrix		-	Redox Fe							
(Inches)	Color (moist)	%	Color (moi	st) %	Type*	Loc**	Texture	Remarks			
0-6	10 YR 2/1	100						Silty Clay			
6 - 24	10 YR 2/1	40	10 YR 5/	1 55	D	Ν4					
0 - 24	10 1K 2/1	40			_			Silty Clay			
			10 YR 5/	6 5	С	Type*       Loc**       Texture       Remarks         D       M       Silty Clay         C       M       Silty Clay         C       M       Silty Clay         C       M       Silty Clay         M       Silty Clay         C       M         M       Silty Clay         M       Silty Clay         Matrix (S4)       Indicators for Problematic Hydric Soils:         Coast Prairie Redox (A16) (LRR K, L, R)         Matrix (S4)       Coast Prairie Redox (A16) (LRR K, L)         ix (S6)       Iron-Manganese Masses (F12) (LRR K, L, R)         / Mineral (F1)       Very Shallow Dark Surface (TF12)         / Matrix (F3)       Other (explain in remarks)         sistrace (F6)       *Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic         Hydric soil present?       Y					
		= Depleti	on, RM = Re	duced Mat	rix, MS = I	Masked S			= Matrix		
Hydric Sc	oil Indicators:							-			
Hist	tisol (A1)			Sandy Gle	yed Matrix	x (S4)			R)		
Hist	tic Epipedon (A2)			Sandy Re	dox (S5)		Dark Su	rface (S7) ( <b>LRR K, L)</b>			
Bla	ck Histic (A3)			Stripped N	latrix (S6)		Iron-Ma	nganese Masses (F12) ( <b>LRR K,</b>	, L, R)		
Hyo	Irogen Sulfide (A	4)		Loamy Mu	icky Miner	al (F1)	Very Sh	allow Dark Surface (TF12)			
Stra	atified Layers (A5	)		Loamy Gle	eyed Matri	x (F2)	Other (e	xplain in remarks)			
2 cr	n Muck (A10)			Depleted I	Matrix (F3)	)					
Dep	leted Below Dark	Surface	e (A11) X	Redox Da	rk Surface	(F6)					
	ck Dark Surface (			Depleted I	Dark Surfa	ice (F7)	*Indicator	s of hydrophytic vegetation and	weltand		
	dy Mucky Minera	,				. ,					
	m Mucky Peat or	. ,	)			( )	, ,	-			
	-	-	,			T		•			
	Layer (if observ	ea):					Uudria aa	I present?			
Type:	) -				_		Hydric so				
Depth (inche	es):										
Remarks:											
HYDROLO	OGY										
	drology Indicate	ors:									
-	cators (minimum		roquirod: ob	ook oll that	opply)		0				
		or one is	required; ch				Secol		o requirea)		
X Surface	( )										
•	iter Table (A2)				•	· · ·		0 ( )			
Saturatio					-						
	arks (B1)				eu Rhizosp	Sheres on			on(C0)		
	nt Deposits (B2)			(C3)	and of Rod	upped Iron		-	ery (C9)		
	oosits (B3) at or Crust (B4)										
	osits (B5)			(C6)	I IION Real						
	on Visible on Aeria	l Imagen	/ (B7)		luck Surfa			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
	Vegetated Conca					. ,					
	tained Leaves (B9						.)				
Field Obser	,	/				Remarks	')				
Surface wat		Yes	~ •	lo	Donth (	inchoc):	2				
Water table		Yes		lo X			Ζ	Indicators of wetland			
Saturation p		Yes							Y		
	(includes capillary fringe)										
-			monitorio	woll cor!-	Inhotoo -	rovicus :	noncotiona) if				
Describe rec	corded data (strea	an gaug	e, monitoring	weil, aeria	i priotos, p	NEVIOUS I	nspections), if ava				
Remarks:											
i tomains.											

Project/Site Bitter Root Wind Farm Project	City/	City/County: Yellow Med			dicine Sampling Date: 10/17/2017			
Applicant/Owner: RES Americas		State:	MN	Sa	mpling Point:	g Point: w-114n46w19-w05		
Investigator(s): JLK/KD		Secti	on, Townshi	p, Range:	T114n F	R46w Sec. 19		
Landform (hillslope, terrace, etc.): Depre	ssion	Local	elief (concav	/e, convex, n	one):	concave		
Slope (%): 1-4 Lat: 44.667549	)	Long:	-96.4445		atum:	NAD83		
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	rcent slopes		NWI (	Classification		PEM		
Are climatic/hydrologic conditions of the site typical fo	r this time o	of the year?	Y (I	f no, explain	in remarks)			
Are vegetation , soil , or hydrol	logy	significantl	y disturbed?	Ar	e "normal circu	mstances"		
	logy		roblematic?			present? Yes		
SUMMARY OF FINDINGS				(If needed	, explain any ar	nswers in remarks.)		
Hydrophytic vegetation present? Y								
Hydric soil present? Y	-	Is the s	ampled are	a within a w	etland?	Y		
Indicators of wetland hydrology present? Y	-	f yes, op	otional wetlar	nd site ID:	-			
Remarks: (Explain alternative procedures here or in a	- senarate re	aport )						
Internative procedures here of in a	separate it	epon.)						
Rainfall for previous three months is 37% wet	ter than no	ormal.						
	4-							
VEGETATION Use scientific names of plan		Densinen	Indicator	Dominand	ce Test Works	hoot		
<u>Tree Stratum</u> (Plot size: )	Absolute % Cover	Dominan t Species	Staus		Dominant Speci			
1		t oposioo	olado		L, FACW, or FA			
2					Imber of Domina			
3					s Across all Stra			
4					Dominant Speci			
5				that are OB	L, FACW, or FA	C: <u>100.00%</u> (A/B)		
	0	= Total Cove	r					
Sapling/Shrub stratum (Plot size:	)			Total % Co	e Index Works	sheet		
				OBL speci		1 = 0		
3				FACW spe		_		
4				FAC speci		3 = 60		
5				FACU spe	cies 0 x	4 = 0		
	0	= Total Cove	r	UPL speci		5 = 0		
Herb stratum (Plot size:	)			Column to	(	·· · ·		
1 Phalaris arundinacea	90	Y	FACW	Prevalence	e Index = B/A =	2.18		
2 Rumex crispus	10	<u>N</u>	FAC					
3 Poa pratensis	10	<u>N</u>	FAC		tic Vegetation	Indicators: nytic vegetation		
5					ance test is >5			
6					lence index is ≤			
7					ogical adaptati			
8					rting data in Re			
9				separa	ate sheet)			
10					matic hydrophy	tic vegetation*		
	110	= Total Cove	r	X (expla	in)			
Woody vine stratum (Plot size:	)				•	vetland hydrology must be		
1					sent, unless disturi phytic	bed or problematic		
2	0	= Total Cove		vegeta				
	0		•	prese				
Remarks: (Include photo numbers here or on a separa	ate sheet)			1				
	,							

Profile Des	cription: (Descr	ibe to th	e depth n	eeded	to docu	ment the	e indicat	or or confirm th	e absence of indic	ators.)	
Depth	Matrix		-								
(Inches)	Color (moist)	%	Color (n	noist)	%	Type*	Loc**	Texture		Remarks	
0-5	10 YR 2/1	100							Silty Clay	/	
				E/4	25		N.4				
5-24	10 YR 2/1	60	10 YR						Silly Cia	y	
			10 YR	5/4	5	odocument the indicator or confirm the absence of indicators.)         x Features       Remarks         %       Type*       Loc**       Texture       Remarks         35       D       M       Silty Clay         35       D       M       Silty Clay         5       C       M       Silty Clay         6       C       M       Silty Clay         7       C       M       Silty Clay         6       C       M       Silty Clay         7       C       M       Silty Clay         6       C       M       Silty Clay         7       C       M       Silty Clay         6       C       M       Silty Clay         6       C       Matrix (Slay       Silty Clay         7       Matrix, MS = Masked Sand Grains.       **Location: PL = Pore Lining, M = Matrix         1       Indicators for Problematic Hydric Soils:       Coast Prairie Redox (A16) (LRR K, L, R)         7       Matrix (S6)       Torn-Manganese Masses (F12) (LRR K, L, R)         9       Mucky Mineral (F1)       Very Shallow Dark Surface (TF12)         9       Very Shallow Dark Surface (F6)       *Indicators of hydrophytic vegetation and weltand hydrolo					
*Type: C = 0	Concentration, D	= Deplet	on, RM =	Reduce	ed Matrix	k, MS = N	/lasked S				
Hydric So	il Indicators:							Indicators f	or Problematic Hy	dric Soils:	
Hist	tisol (A1)			Sar	dy Gley	ed Matrix	(S4)	Coast F	rairie Redox (A16) (	LRR K, L, R)	
Hist	tic Epipedon (A2)		_	Sar	idy Redo	ox (S5)		Dark Su	Irface (S7) ( <b>LRR K,</b>	L)	
Bla	ck Histic (A3)		_	Stri	pped Ma	ıtrix (S6)		Iron-Ma	nganese Masses (F	12) ( <b>LRR K, L, R)</b>	
Hyd	Irogen Sulfide (A4	4)		Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark Surface	(TF12)	
Stra	atified Layers (A5	)	_	Loa	my Gley	ed Matrix	x (F2)	Other (e	explain in remarks)		
2 cr	m Muck (A10)			Dep	leted Ma	atrix (F3)					
Dep	leted Below Dark	Surface	e (A11)	X Rec	lox Dark	Surface	(F6)				
Thie	ck Dark Surface (	A12)		Dep	leted Da	ark Surfa	ce (F7)	*Indicator	s of hydrophytic veg	etation and weltand	
Sar	ndy Mucky Minera	ıl (S1)		Rec	lox Depr	essions	(F8)	hydrolog	y must be present,	unless disturbed or	
5 cr	m Mucky Peat or	Peat (S3	)						problemati	с	
Restrictive	Layer (if observ	ed):									
Type:		,						Hydric so	il present? Y		
Depth (inche	es):					-			•	_	
Remarks:											
HYDROLO											
-	drology Indicato										
	cators (minimum	of one is	required;	check				<u>Seco</u>		nimum of two required)	
X Surface	( )					Fauna (B			Surface Soil Cracks		
•	iter Table (A2)					uatic Plar	· · ·		Drainage Patterns (E	,	
Saturatio						en Sulfide			Dry-Season Water T		
	arks (B1)					a Rhizosp	heres on	Living Roots	Crayfish Burrows (C		
	nt Deposits (B2)				(C3)	o of Dodu	upped lines	(C4)		Aerial Imagery (C9)	
· · ·	oosits (B3) at or Crust (B4)					e of Redu		(C4) illed Soils	Stunted or Stressed Geomorphic Position	. ,	
	osits (B5)				(C6)	Iron Reau			FAC-Neutral Test (D		
· ·	on Visible on Aeria	l Imager	(B7)			ck Surfac	e (C7)				
	Vegetated Conca					or Well Da	. ,				
	tained Leaves (B9				-	xplain in		)			
Field Obser		,				•		,			
Surface wat		Yes	х	No		Depth (i	nches):	3			
Water table		Yes		No	X	Depth (i		-	Indicators of	wetland	
Saturation p		Yes		No	X	Depth (i			hydrology p		
	pillary fringe)					、	,				
Describe red	corded data (strea	am gauq	e, monitori	ng well	, aerial r	photos, p	revious i	nspections), if av	ailable:		
	,	5 5		<b>J</b>		, L		. ,,			
Remarks:											

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Sam	10/17/2017	
Applicant/Owner: RES Americas		State:	MN	Samp	ling Point:	w-114n46w19-w06
Investigator(s): JLK/KD		Secti	on, Townshij	p, Range:	T114n F	R46w Sec. 19
Landform (hillslope, terrace, etc.): Depres	ssion	Local r	elief (concav	e, convex, non	e):	concave
Slope (%): 1-4 Lat: 44.668341		Long:	-96.4420	76 Datu	m:	NAD83
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	cent slopes		NWI (	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	this time o	f the year?	Y (I	f no, explain in	remarks)	
Are vegetation , soil , or hydrole	ogy	significantly	y disturbed?	Are "	normal circu	mstances"
Are vegetation , soil , or hydrole	ogy	naturally p	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, ex	plain any a	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y	-	Is the s	ampled area	a within a wetl	and?	Y
Indicators of wetland hydrology present? Y	-	f yes, op	otional wetlar	nd site ID:	_	
Remarks: (Explain alternative procedures here or in a	senarate re	enort)				
internative procedures here of in a	Separate R	sport.)				
Rainfall for previous three months is 37% wett	er than no	ormal.				
	-					
VEGETATION Use scientific names of plant	S. Absolute	Densinen	lu all'a a fa u	Dominance <sup>·</sup>	Fact Warks	hoot
<u>Tree Stratum</u> (Plot size: )		Dominan t Species	Indicator Staus	Number of Do		
1			010.00	that are OBL, I	•	
2					er of Domina	
3					cross all Stra	
4				Percent of Do	•	
5				that are OBL, I	FACW, or FA	AC: <u>100.00%</u> (A/B)
	0	= Total Cove	r	Duralization		- h 4
Sapling/Shrub stratum (Plot size:)				Prevalence I Total % Cove		sneet
2		<u> </u>		OBL species	5 >	(1= 5
3				FACW specie		
4				FAC species		3 = 30
5				FACU specie	s 0 >	( 4 = 0
	0	= Total Cove	r	UPL species		x 5 = <u>0</u>
Herb stratum (Plot size:)				Column totals		A) <u>215</u> (B)
1 Phalaris arundinacea	65	Y	FACW	Prevalence Ir	ndex = B/A =	2.05
2 Carex spp.	20	<u>N</u>	FACW	l la selare as las sti e	Manatatian	la dia atawa
3 Poa pratensis 4 Typha X glauca	10 5	<u> </u>	FAC OBL	Hydrophytic Rapid tes	-	hytic vegetation
5 Urtica dioica	5	N	FACW	X Dominan		
6				X Prevalen		
7				 Morphog	cal adaptati	ons* (provide
8						emarks or on a
9				separate	sheet)	
10					tic hydroph	vtic vegetation*
	105	= Total Cove	r	X (explain)		
Woody vine stratum (Plot size:)						wetland hydrology must be
1				Hydroph		bed or problematic
<sup>2</sup>	0	= Total Cove		vegetatio		
	-			present?	Y Y	
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth r	needed	to docu	ment the	e indicat	or or confirm th	e absence of	indicators.)		
Depth	Matrix		-	Rec	dox Feat	ures						
(Inches)	Color (moist)	%	Color (I	noist)	%	Type*	Loc**	Texture		Remarks		
0-6	10 YR 2/1	100							Sil	tv Clav		
6-24	10 YR 2/1	60	10 YF	2 5/1	35	D	М					
0-24	10 11( 2/1	00							01	ty Clay		
			10 YF	8 5/4	5	С	М	Silty Clay         Salty Clay				
	Concentration, D	= Deplet	ion, RM =	Reduce	ed Matrix	k, MS = N	/lasked S					
-	oil Indicators:									-		
	tisol (A1)		_			ed Matrix	(S4)					
His	tic Epipedon (A2)				idy Redo							
Bla	ck Histic (A3)		-	Stri	pped Ma	trix (S6)		Iron-Ma	nganese Mas	ses (F12) ( <b>LRR K, L, R)</b>		
Hyd	Irogen Sulfide (A	4)	-	Loa	my Mucl	ky Minera	al (F1)	Very Sh	allow Dark Su	urface (TF12)		
Stra	atified Layers (A5	)	-	Loa	my Gley	ed Matrix	x (F2)	Other (e	explain in rema	arks)		
2 ci	n Muck (A10)		-	Dep	leted Ma	atrix (F3)						
Dep	leted Below Dark	c Surface	e (A11)	X Rec	lox Dark	Surface	(F6)					
	ck Dark Surface (		· / -			ark Surfa	. ,	*Indicato	s of hydrophy	tic vegetation and weltand		
	dy Mucky Minera	,	-			essions	. ,					
	m Mucky Peat or	· · ·	-) -				( - )					
	-	-	/				1					
	Layer (if observ	ea):							:I	X		
Type:						-		Hydric so	ii present?	<u>Y</u>		
Depth (inche	es):					-						
Remarks:												
HYDROLO	JGY											
	drology Indicate	are:										
-					- 11 41 4 -					( · · · · · · · · · · · · · · · · · · ·		
	cators (minimum	of one is	required;	спеск				Seco				
	Water (A1)					Fauna (B						
•	iter Table (A2)					uatic Plar		· · · · ·	-			
X Saturation	. ,					en Sulfide						
	arks (B1)					d Rhizosp	heres on	Living Roots				
	nt Deposits (B2)				(C3)	(		(Q.1)				
	posits (B3)					e of Redu		· · · ·				
	at or Crust (B4)					ron Redu	iction in 1	illed Soils				
	osits (B5)				(C6)		(07)		FAC-Neutral	Test (D5)		
	on Visible on Aeria				-	ck Surfac	• •					
	Vegetated Conca		се (В8)			or Well Da	. ,	<b>`</b>				
	tained Leaves (B9	)			Other (E	xplain in	Remarks	)	-			
Field Obser				••								
Surface wat		Yes		No	<u>X</u>	Depth (i						
Water table		Yes		No	X	Depth (i	,					
Saturation p		Yes	X	No		Depth (i	nches):	0	hydrol	ogy present? Y		
-	pillary fringe)											
Describe rea	corded data (strea	am gaug	e, monitor	ing well	, aerial p	ohotos, p	revious i	nspections), if av	ailable:			
Remarks:												

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Medi	dicine Sampling Date: 10/17/2017					
Applicant/Owner: RES Americas		State:	MN		Sampling	Point:	w-114n46w20-u01		
Investigator(s): JLK/KD		Sectio	on, Township	, Range:		T114n R	46w Sec. 20		
Landform (hillslope, terrace, etc.): Flat		Local re	elief (concav	e, convex	, none):		none		
Slope (%): 0-2 Lat: 44.667163		Long:	-96.42334	9	Datum:		NAD83		
Soil Map Unit Name Vallers clay loam, 0 to 2 percent slope	es		NWI C	lassificat	ion:		Upland		
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	Y (If	no, expla	ain in rem	arks)			
Are vegetation , soil , or hydrology		significantly	disturbed?		Are "norr	nal circun	nstances"		
Are vegetation, soil, or hydrology		naturally pro	oblematic?						
SUMMARY OF FINDINGS				(If need	ed, explai	in any an	swers in remarks.)		
Hydrophytic vegetation present? N									
Hydric soil present? Y		Is the sa	ampled area	within a	wetland	? _	N		
Indicators of wetland hydrology present? N		f yes, optional wetland site ID:							
Remarks: (Explain alternative procedures here or in a sepa	arate rep	port.)							
	-								
Rainfall for previous three months is 37% wetter the	han noi	rmal.							
VEGETATION Use scientific names of plants.									
•	solute	Dominan	Indicator	Domina	ance Test	t Worksh	eet		
		t Species	Staus	Number	of Domina	ant Specie	s		
1					OBL, FAC	•			
2					Number o				
3		·			cies Acros		````		
4	,	·			of Domina OBL, FAC				
<sup>5</sup>	0 =	Total Cover		แลเ ลเซ ง	UBL, FAG		0.00% (AD)		
Sapling/Shrub stratum (Plot size: )	0		ŀ	Prevale	ence Inde	x Works	heet		
1					Cover of				
2	·······			OBL sp	ecies	0 x	1 = 0		
3	·			FACW	· _	0 x	2 = 0		
4		,		FAC sp			3 = 0		
5				FACU s	· · · · · ·		4 = 0		
	0 =	Total Cover		UPL spe Column			5 = 0		
Herb stratum (Plot size:)				-	_	0 (A	A) <u>0</u> (B)		
2	,	·		Prevale	nce Index	( = B/A =			
3	<u> </u>	·		Hydron	hvtic Ver	retation	Indicators:		
4	·	·					ytic vegetation		
5	·	·		-	ninance te				
6	·			Pre	valence ir	ndex is ≤3	8.0*		
7				Mor	phogical	adaptatio	ns* (provide		
8							narks or on a		
9	·				arate she		· · · · ·		
10	0 =	Total Cover		Pro X (exp		hydrophyi	tic vegetation*		
Woody vine stratum         (Plot size:)           1	_						etland hydrology must be ed or problematic		
2	·			-	drophytic	;			
	0 =	Total Cover		-	jetation sent?	N			
Remarks: (Include photo numbers here or on a separate s	sheet)								
Recently tilled farm field. No vegetation.									
-									

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm the	e absence of indicators.)				
Depth	Matrix											
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks				
0-5	10 YR 2/1	100						Silty Clay				
5-12			10 VP 5/1	60		M						
5-12	10 YR 2/1	40	10 1 1 5/1	60	U	IVI		Texture       Remarks         Silty Clay       Silty Clay         Site Clay       Silty Clay         Source Soft Problematic Hydric Soils:       Coast Prairie Redox (A16) (LRR K, L, R)         Oark Surface (S7) (LRR K, L)       Tron-Manganese Masses (F12) (LRR K, L, R)         Other (explain in remarks)       Surface Soil present, unless disturbed of problematic         Mic soil present?       Y         Surface Soil Cracks (B6)       Drainage Patterns (B10)         Dry-Season Water Table (C2)       Dry-Season Water Table (C2)				
		r (moist) % Color (moist) % Type* Loc** Texture Remarks YR 2/1 100 YR 2/1 40 10 YR 5/1 60 D M Silty Clay YR 2/1 40 10 YR 5/1 60 D M IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII										
		= Deplet	ion, RM = Reduce	ed Matrix	k, MS = N	/lasked S						
Hydric So	il Indicators:						Indicators for	or Problematic Hydric Soils:				
Hist	isol (A1)		Sar	dy Gleye	ed Matrix	: (S4)						
Hist	ic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Su	face (S7) ( <b>LRR K, L)</b>				
Blac	ck Histic (A3)		Stri	pped Ma	ıtrix (S6)		Iron-Mar	nganese Masses (F12) ( <b>LRR K, L, R)</b>				
Hyc	lrogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Sha	allow Dark Surface (TF12)				
Stra	tified Layers (A5	)	Loa	my Gley	ed Matrix	k (F2)	Other (e	xplain in remarks)				
2 cr	n Muck (A10)		Dep	leted Ma	atrix (F3)							
X Dep	leted Below Dark	Surface	e (A11) Red	lox Dark	Surface	(F6)						
Thio	k Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators	s of hydrophytic vegetation and weltan				
Sar	dy Mucky Minera	al (S1)	Rec	lox Depr	essions	(F8)	hydrolog	y must be present, unless disturbed or				
5 cr	n Mucky Peat or	Peat (S3	s)					problematic				
Restrictive	l aver (if observ	ed).										
Type:		cuj.					Hydric soi	nresent? V				
Depth (inche	<i>ic).</i>				-		riyane son					
					-							
Remarks:												
HYDROLO	DGY											
Wetland Hv	drology Indicate	ors:										
-			required: check	all that a	nnlv)		Secon	dary Indicators (minimum of two requi				
	Water (A1)					13)						
	ter Table (A2)							. ,				
Saturatio	· · ·							5				
	arks (B1)					•						
	nt Deposits (B2)				a 1111203p		•					
	osits (B3)				e of Redu	iced Iron						
	it or Crust (B4)											
	osits (B5)											
·	( )	l Imager	y (B7)		ck Surfac	e (C7)						
						. ,						
Water-S	tained Leaves (B9	)		-			)					
Field Obser	vations:			. `	-		I					
Surface wat		Yes	No	х	Depth (i	nches):						
Water table								Indicators of wetland				
Saturation p						,						
	pillary fringe)				<u> </u>	,						
-		am daug	e. monitoring well	. aerial r	photos p	revious i	nspections), if ava	ilable:				
			,	,	, p		, ii ava					
Remarks:												

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Medi	icine	Sampling [	Date: 10/17/2	2017
Applicant/Owner: RES Americas	_	State:	MN	l Sampline		g Point: w-114n46w20-u02	
Investigator(s): JLK/KD		Section	on, Township	o, Range:	Т	114n R46w Sec. 2	0
Landform (hillslope, terrace, etc.): Flat		Local r	elief (concav	e, convex	, none):	none	
Slope (%): 1-6 Lat: 44.667413		Long:	-96.42329	97	Datum:	NAD83	
Soil Map Unit Name Barnes-Buse-Svea complex, 1 to 6	percent sl		NMI C	Classificati	ion:	Upland	
Are climatic/hydrologic conditions of the site typical for th	nis time of	the year?	Y (li	f no, expla	ain in remar	ks)	
Are vegetation , soil , or hydrology	У	significantly	disturbed?		Are "norma	al circumstances"	
Are vegetation , soil , or hydrology	у	naturally pr	oblematic?			present?	Yes
SUMMARY OF FINDINGS				(If need	ed, explain	any answers in rer	narks.)
Hydrophytic vegetation present? N							
Hydric soil present? Y		Is the s	ampled area	a within a	wetland?	Ν	
Indicators of wetland hydrology present? N		f yes, op	tional wetlan	nd site ID:			
Remarks: (Explain alternative procedures here or in a se	eparate re	port.)					
	-						
Rainfall for previous three months is 37% wetter	than no	rmal.					
VEGETATION Use scientific names of plants.							
· · · · · ·	bsolute	Dominan	Indicator	Domina	ance Test V	Vorksheet	
Tree Stratum (Plot size:) %	6 Cover	t Species	Staus		of Dominan OBL, FACW	•	(A)
2				Total	Number of I	Dominant	
3					cies Across a		(B)
4					of Dominan	•	
°	0 =	Total Cove		that are t	OBL, FACW	, 01 FAC. 0.00%	(A/B)
Sapling/Shrub stratum (Plot size: )				Prevale	ence Index	Worksheet	
1				Total %	Cover of:		
2				OBL spe		0 x 1 = 0	
3				FACW	·	0 x 2 = 0	
4				FAC spe		$0 \times 3 = 0$	
5	0 =	Total Cove		FACU s UPL spe	-	$\begin{array}{ccc} 0 & x  4 = & 0 \\ \hline 0 & x  5 = & 0 \end{array}$	
Herb stratum (Plot size: )				Column		$\frac{0}{0}$ (A) $\frac{0}{0}$	(B)
1 Zea mays	100	Y	NI		nce Index =		_(")
2	100			Tievale			
3				Hydrop	hytic Vege	tation Indicators:	
4						ydrophytic vegetat	
5				Don	ninance tes	t is >50%	
6				Pre	valence ind	ex is ≤3.0*	
7						laptations* (provide	
8					porting data arate sheet	a in Remarks or on	а
10						/ drophytic vegetatic	n*
	100 =	Total Cove	r		olain)		/11
Woody vine stratum         (Plot size:)           1        )					-	oil and wetland hydrolo s disturbed or problem	
2				-	lrophytic		
	0 =	Total Cove	r	-	etation sent?	N	
Remarks: (Include photo numbers here or on a separate	sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the at	osence of indicators.)
Depth	Matrix		Red	lox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10 YR 2/1	100			1			Silty Clay
7-16	10 YR 2/1	65	10 YR 5/1	35	D	М		Silty Clay
7-10	10 1K 2/1	05	10 11 3/1	- 35		IVI		
		= Deplet	ion, RM = Reduce	ed Matrix	k, MS = N	/lasked S		ocation: PL = Pore Lining, M = Matrix
-	oil Indicators:							Problematic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)		e Redox (A16) ( <b>LRR K, L, R)</b>
	tic Epipedon (A2)			dy Redo				e (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)			•	ıtrix (S6)			nese Masses (F12) ( <b>LRR K, L, R)</b>
	lrogen Sulfide (A	,		•	ky Minera	. ,		w Dark Surface (TF12)
	atified Layers (A5	)			ed Matrix		Other (expla	ain in remarks)
	m Muck (A10)				atrix (F3)			
	oleted Below Dark				Surface	• •		
	ck Dark Surface (				ark Surfa	. ,		hydrophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	ressions	(F8)	hydrology m	ust be present, unless disturbed or
5 ci	m Mucky Peat or	Peat (S3	5)					problematic
Restrictive	Layer (if observ	ed):						
Type:		,					Hydric soil pr	resent? Y
Depth (inche	es):				-		, ,	
Remarks:	, <u> </u>				-			
	DGY drology Indicate	are.						
-			required sheek	all that a	nnh()		C d	
		or one is	required; check			10)		ry Indicators (minimum of two required)
	Water (A1)				Fauna (B			face Soil Cracks (B6)
Saturatio	ater Table (A2)				uatic Plar en Sulfide			ninage Patterns (B10) /-Season Water Table (C2)
	larks (B1)							ayfish Burrows (C8)
	nt Deposits (B2)			(C3)	a 1111203p		•	uration Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu	uced Iron		nted or Stressed Plants (D1)
	at or Crust (B4)							omorphic Position (D2)
	osits (B5)			(C6)				C-Neutral Test (D5)
	on Visible on Aeria	al Imager	y (B7)		ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ave Surfa	ce (B8)		or Well Da			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:			•				
Surface wat	er present?	Yes	No	Х	Depth (i	nches):		
Water table		Yes	No	Х	Depth (i			Indicators of wetland
Saturation p	resent?	Yes	No	Х	Depth (i	nches):		hydrology present? N
(includes ca	pillary fringe)							
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if availat	ble:
	Υ.	0 0	, <b>O</b>		<i>*</i> <b>•</b>		1 //	
Remarks:								

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Medi	cine	Sampling	Date:	10/17/2017
Applicant/Owner: RES Americas	-	State:	MN		Sampling	Point:	w-114n46w20-w01
Investigator(s): JLK/KD		Sectio	on, Township	, Range:	-	T114n R	46w Sec. 20
Landform (hillslope, terrace, etc.): Depressio	n	Local re	elief (concav	e, convex	k, none):		Concave
Slope (%): 0-2 Lat: 44.667225		Long:	-96.42278	35	Datum:		NAD83
Soil Map Unit Name Vallers clay loam, 0 to 2 percent slop	es		NMI C	Classificat	tion:		PEM
Are climatic/hydrologic conditions of the site typical for this	s time of	the year?	Y (li	f no, expla	ain in rema	arks)	
Are vegetation, soil, or hydrology		significantly	disturbed?		Are "norm	nal circun	nstances"
Are vegetation, soil, or hydrology		naturally pro	oblematic?				present? Yes
SUMMARY OF FINDINGS				(If need	led, explair	n any an	swers in remarks.)
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the s	ampled area	a within a	a wetland?	?	Y
Indicators of wetland hydrology present? Y		f yes, op	tional wetlan	d site ID:			
Remarks: (Explain alternative procedures here or in a sep	parate re	port.)					
Rainfall for previous three months is 37% wetter t	than no	rmal.					
VEGETATION Use scientific names of plants.							
· · · · · ·	osolute	Dominan	Indicator	Domina	ance Test	Worksh	eet
		t Species	Staus	Number	of Domina	nt Specie	S
1					OBL, FACV		
2					Number of		
3					cies Across		
4					of Domina	•	
	0 =	Total Cover	-	that are	OBL, FACI	V, OFFAC	. <u>0.00 %</u> (А/В)
Sapling/Shrub stratum (Plot size: )				Prevale	ence Index	works	heet
1				Total %	Over of:		
2				OBL sp	ecies	<u>0</u> x	1 = 0
3					species		2 = 0
4				FAC sp			3 = 30
5	0 =	Total Cover		FACU s UPL sp	· —		4 = 200 5 = 0
Herb stratum (Plot size: )				Column		60 (A	
1 Amaranthus retroflexus	50	Y	FACU		ence Index		3.83
2 Setaria pumila	10	 N	FAC	Tiovalo		Birt	0.00
3				Hydrop	hytic Veg	etation	ndicators:
4				Rap	pid test for	hydroph	ytic vegetation
5					minance te		
6				Pre	valence in	dex is ≤3	8.0*
						•	ns* (provide
8	<u> </u>				porting da		narks or on a
10						-	ic vegetation*
	60 =	Total Cover	-	X (ex		yuropriyi	
Woody vine stratum (Plot size: )						soil and w	etland hydrology must be
1					present, unle		ed or problematic
2					drophytic		
	0 =	Total Cover	-	-	getation sent?	Y	
Demosiles (Include photo purchase have a series of	ab a s <sup>t</sup>			Pie	Sont:		_
Remarks: (Include photo numbers here or on a separate s Wetland is a mudflat that was flooded in the s	-	nd now day	minated by	unlond	woodo		
	Pilly al		ininated by	upianu	weeus.		

Profile Dese	cription: (Descr	ibe to th	e depth ne	eded	to docu	ment the	e indicat	or or confirm th	e absence o	of indicators.)
Depth	Matrix		-	Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (mo		%	Type*	Loc**	Texture	•	Remarks
0-5	10 YR 2/1	100							ę	Silty Clay
5-12	10 YR 2/1	40	10 YR 5	:/1	60	D	М			Silty Clay
5-12	10 1K 2/1	40		0/ I	00	D	IVI			
	Concentration, D	= Depleti	on, RM = R	educe	ed Matrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix
Hydric So	il Indicators:							Indicators	for Problem	atic Hydric Soils:
Hist	isol (A1)			Sar	ndy Gleye	ed Matrix	: (S4)	Coast F	Prairie Redox	(A16) ( <b>LRR K, L, R)</b>
Hist	ic Epipedon (A2)			Sar	ndy Redo	ox (S5)			urface (S7) (l	
Blac	ck Histic (A3)				pped Ma			Iron-Ma	inganese Ma	sses (F12) ( <b>LRR K, L, R)</b>
Hyd	lrogen Sulfide (A4	4)		Loa	my Mucl	ky Minera	al (F1)	Very Sł	nallow Dark S	Surface (TF12)
Stra	tified Layers (A5	)		Loa	my Gley	ed Matrix	k (F2)	Other (e	explain in rer	narks)
	n Muck (A10)					atrix (F3)				
	leted Below Dark		e (A11)			Surface	. ,			
	ck Dark Surface (					ark Surfa	. ,	*Indicato	rs of hydroph	nytic vegetation and weltand
	idy Mucky Minera	· · ·		Rec	lox Depr	essions	(F8)	hydrolog	gy must be p	resent, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	)						pro	oblematic
Restrictive	Layer (if observ	ed):								
Type:		,						Hydric so	il present?	Y
Depth (inche	es):					-		2	•	
	,					-				
Remarks:										
HYDROLO										
Wetland Hy	drology Indicate	ors:								
Primary Indi	cators (minimum	of one is	required; c	heck	all that a	pply)		<u>Seco</u>	ndary Indica	tors (minimum of two required)
X Surface	Water (A1)				Aquatic	Fauna (B	13)		Surface Soil	Cracks (B6)
High Wa	ter Table (A2)					uatic Plar			Drainage Pa	atterns (B10)
Saturatio	on (A3)				Hydroge	en Sulfide	Odor (C	1)	Dry-Season	Water Table (C2)
X Water M	· · /				Oxidized	d Rhizosp	heres on	Living Roots	Crayfish Bu	
	nt Deposits (B2)				(C3)				-	isible on Aerial Imagery (C9)
	oosits (B3)				Presenc	e of Redu	uced Iron			Stressed Plants (D1)
	it or Crust (B4)					ron Redu	iction in T	illed Soils X		Position (D2)
·	osits (B5)				(C6)				FAC-Neutra	l Test (D5)
	on Visible on Aeria				-	ck Surfac				
	Vegetated Conca		ce (B8)		-	or Well Da		<b>`</b>		
	tained Leaves (B9	)			Other (E	xplain in	Remarks	)		
Field Obser			.,							
Surface wate		Yes		No		Depth (i		1	lus all a s	
Water table		Yes		No	<u> </u>	Depth (i				ators of wetland
Saturation p	resent? pillary fringe)	Yes		No	Х	Depth (i	ncnes):		nyar	ology present? Y
						1 . 1 .			<u> </u>	
Describe rec	corded data (strea	am gauge	e, monitorin	g wel	i, aerial p	pnotos, p	revious i	nspections), if av	allaple:	
Remarks:										
. tomanto.										

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samplin	g Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sampling	g Point: 🕠	w-114n46w20-w02
Investigator(s): JLK/KD		Sect	ion, Townshij	o, Range:	T114n R4	6w Sec. 20
Landform (hillslope, terrace, etc.): Depres	ssion	Local	relief (concav	e, convex, none):		Concave
Slope (%): 0-2 Lat: 44.667413		Long:	-96.42329	97 Datum:		NAD83
Soil Map Unit Name Vallers clay loam, 0 to 2 percent s	slopes		NWI C	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	r this time o	of the year?	Y (I	f no, explain in ren	narks)	
Are vegetation , soil , or hydrol	ogy	significantl	y disturbed?	Are "nor	mal circum	stances"
Are vegetation , soil , or hydrol	ogy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, expla	ain any ans	wers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	sampled area	a within a wetland	1?	Y
Indicators of wetland hydrology present? Y		f yes, o	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
	-					
Rainfall for previous three months is 37% wett	er than no	ormal.				
VEGETATION Use scientific names of plant	ts.					
	Absolute	Dominan	Indicator	Dominance Tes	st Workshe	et
<u>Tree Stratum</u> (Plot size:)		t Species	Staus	Number of Domin that are OBL, FAC	ant Species	6
2				Total Number	of Dominan	t
				Species Acros		
5				Percent of Domin that are OBL, FAC	•	; 100.00%(A/B)
	0	= Total Cove	er			
Sapling/Shrub stratum (Plot size:)				Prevalence Inde Total % Cover o		eet
2				OBL species	0 x 1	= 0
3				FACW species	95 x 2	
4				FAC species	0 x 3	
5				FACU species	10 x 4	= 40
	0	= Total Cove	er	UPL species	0 x 5	
Herb stratum (Plot size:)				Column totals	105 (A)	
1 Phalaris arundinacea	95	Y	FACW	Prevalence Inde	x = B/A =	2.19
2 Amaranthus retroflexus	10	<u>N</u>	FACU	Lludron butie Ve	a station l	diaatawa
3				Hydrophytic Ve	-	tic vegetation
5				X Dominance		-
6				X Prevalence		
7				Morphogical	adaptation	s* (provide
8				supporting d		
9				separate she	,	
10	105	= Total Cove	er	Problematic X (explain)	hydrophyti	c vegetation*
<u>Woody vine stratum</u> (Plot size:)						tland hydrology must be d or problematic
2				Hydrophyti		
	0	= Total Cove	er	vegetation present?	Y	
Remarks: (Include photo numbers here or on a separa	ate sheet)					
	/					

Profile Des	cription: (Descr	ibe to th	e depth n	eeded	to docu	ment the	e indicat	or or confirm th	ne absence	of indicators.)
Depth	Matrix			Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (m	noist)	%	Type*	Loc**	Texture	e	Remarks
0-7	10 YR 2/1	100							9	Silty Clay
7-16	10 YR 2/1	65	10 YR	5/1	35	D	М			Silty Clay
7-10	10 11(2/1	00		0/1	00		101			
$*T_{VDO} = 0$	Concentration, D	I – Doplati	on PM - I	Doduo	d Matrix	/ MS – N	l Aackod S	Cond Crains	**Location:	PL = Pore Lining, M = Matrix
	bil Indicators:	- Depieti	01, 110 – 1	Venno		ι, iniο – in	laskeu c			atic Hydric Soils:
-	tisol (A1)			Sar	dv Gleve	ed Matrix	(S4)			(A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)		-		idy Redo		(04)		urface (S7) (	
	ck Histic (A3)		-		-	trix (S6)			. , .	asses (F12) ( <b>LRR K, L, R)</b>
	Irogen Sulfide (A	4)				ky Minera	al (F1)		-	Surface (TF12)
	atified Layers (A5	,	_		•	ed Matrix	. ,		explain in rei	
	m Muck (A10)	/	_			atrix (F3)		(		,
	leted Below Dark	s Surface	e (A11)			Surface				
	ck Dark Surface (					ark Surfa	• •	*Indicato	rs of hvdrop	hytic vegetation and weltand
Sar	dy Mucky Minera	al (S1)	_	Rec	lox Depr	essions (	(F8)			present, unless disturbed or
5 ci	m Mucky Peat or	Peat (S3	·) —		·		. ,	, , , , , , , , , , , , , , , , , , ,	••••••	oblematic
Restrictive	Layer (if observ	ed).								
Type:	Layer (in observ	cu).						Hydric so	oil present?	Y
Depth (inche	es):					•		ngano oc	in procentri	<u>.</u>
						•				
Remarks:										
HYDROLO										
-	drology Indicate							_		
	cators (minimum	of one is	required;	check			(0)	<u>Seco</u>	-	tors (minimum of two require
	Water (A1)					Fauna (B				I Cracks (B6)
	iter Table (A2)					uatic Plar		1)	_ 0	atterns (B10)
X Saturatio	arks (B1)					en Sulfide		Living Roots	Crayfish Bu	Water Table (C2)
	nt Deposits (B2)				(C3)	италгозр				/isible on Aerial Imagery (C9)
	posits (B3)				-	e of Redu	uced Iron	(C4) X		Stressed Plants (D1)
	at or Crust (B4)									c Position (D2)
	osits (B5)				(C6)				FAC-Neutra	
	on Visible on Aeria	al Imagery	y (B7)		Thin Mu	ck Surfac	e (C7)		_	
Sparsely	Vegetated Conca	ave Surfa	ce (B8)		Gauge c	or Well Da	ata (D9)			
Water-S	tained Leaves (B9	)			Other (E	xplain in	Remarks	)		
Field Obser	vations:									
Surface wat		Yes		No	Х	Depth (i				_
Water table		Yes		No	Х	Depth (i	,			ators of wetland
Saturation p		Yes	<u> </u>	No		Depth (i	nches):	0	hydr	ology present? Y
-	pillary fringe)								<u> </u>	
Describe red	corded data (strea	am gaug	e, monitori	ng wel	, aerial p	photos, p	revious i	nspections), if av	ailable:	
Remarks:										
ntomanto.										

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	licine Sa	ampling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Sa	mpling Point:	w-114n46w-21-u01
Investigator(s): JLK/KD		Secti	on, Townshi	p, Range:	T114n F	R46w Sec. 21
Landform (hillslope, terrace, etc.):	at	Local r	elief (concav	/e, convex, n	one):	none
Slope (%): 0-1 Lat: 44.663824	ļ	Long:	-96.4146		atum:	NAD83
Soil Map Unit Name Southam silty clay loam, 0 to 1 pe	ercent slope		NWI (	Classification	n:	Upland
Are climatic/hydrologic conditions of the site typical fo			Y (I	lf no, explain	in remarks)	
Are vegetation , soil , or hydrol	logy	significantly	y disturbed?	Ar	e "normal circu	mstances"
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed	, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? Y		Is the s	ampled are	a within a w	etland?	Ν
Indicators of wetland hydrology present? N		f yes, op	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
	-					
Rainfall for previous three months is 37% wet	ter than no	ormal.				
VEGETATION Use scientific names of plan	ts					
	Absolute	Dominan	Indicator	Dominand	ce Test Works	neet
Tree Stratum (Plot size: )		t Species	Staus	Number of	Dominant Speci	es
1					L, FACW, or FA	
2					umber of Domina	
3				Species	s Across all Stra	ta: <u>2</u> (B)
4					Dominant Speci	
<sup>5</sup>	0	= Total Cove		that are OB	L, FACW, or FA	C: 0.00% (A/B)
Sapling/Shrub stratur (Plot size:	)		1	Prevalence	e Index Works	sheet
1	,			Total % Co		
2				OBL speci	ies 0 x	1 = 0
3				FACW spe	ecies 20 x	2 = 40
4				FAC speci		3 = 0
5		- Tatal Oau		FACU spe		
Herb stratum (Plot size:	0	= Total Cove	1	UPL speci Column to		5 = 0 A) 460 (B)
1 Bromus inermis	75	V	FACU	-	e Index = B/A =	,( ,
2 Cirsium arvense	75 30	Y Y	FACU	Flevalenc		3.00
3 Phalaris arundinacea	20	N	FACW	Hydrophy	tic Vegetation	Indicators:
4					-	nytic vegetation
5				Domin	ance test is >5	0%
6				Preva	lence index is ≤	3.0*
7					ogical adaptati	
8					rting data in Re	marks or on a
9 10					ate sheet) ematic hydrophy	rtic vegetation*
	125	= Total Cove		(expla		
Woody vine stratum (Plot size:	)					vetland hydrology must be
1					sent, unless distur	
2				-	phytic	
	0	= Total Cove	r	vegeta prese		
Demonstra (Include abote and Include	-4			hiese	···· · · · ·	_
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm the	e absence of	indicators.)
Depth	Matrix		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0-7	N 2/0	95	5 YR 4/6	5				Silt	y Clay
-									, - , ,
*Type: C = 0	Concentration, D :	= Depleti	ion, RM = Reduce	ed Matrix	k, MS = N	Aasked S			. = Pore Lining, M = Matrix
Hydric So	oil Indicators:						Indicators for	or Problemati	ic Hydric Soils:
His	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coast Pr	rairie Redox ( <i>I</i>	A16) ( <b>LRR K, L, R)</b>
His	tic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark Su	rface (S7) ( <b>LR</b>	R K, L)
	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Mar	nganese Mass	ses (F12) ( <b>LRR K, L, R)</b>
	drogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)		allow Dark Su	
	atified Layers (A5				ed Matri		Other (e	xplain in rema	ırks)
	m Muck (A10)				atrix (F3)	. ,		•	,
	oleted Below Dark	Surface			Surface				
	ck Dark Surface (				ark Surfa	. ,	*Indicators	s of hydrophyt	ic vegetation and weltand
	ndy Mucky Minera				essions	. ,			sent, unless disturbed or
	m Mucky Peat or					( - )			ematic
	-	•	/			1		I	
	Layer (if observe	ea):							V
Type:					-		Hydric soi	present?	Y
Depth (inch	es):				-				
Remarks:									
HYDROL	OGY								
Wetland Hy	drology Indicate	ors:							
-	icators (minimum		required: check	all that a	(vlaa		Secon	dary Indicator	rs (minimum of two required
	Water (A1)				Fauna (B	13)		Surface Soil C	
	ater Table (A2)				uatic Plar			Drainage Patte	
Saturati						Odor (C		0	/ater Table (C2)
	larks (B1)						· · · · · · · · · · · · · · · · · · ·	Crayfish Burro	
	nt Deposits (B2)			(C3)					ble on Aerial Imagery (C9)
	posits (B3)			-	e of Redu	uced Iron			essed Plants (D1)
	at or Crust (B4)			-				Geomorphic P	
	oosits (B5)			(C6)				FAC-Neutral T	
	on Visible on Aeria	I Imager	y (B7)	Thin Mu	ck Surfac	ce (C7)			
Sparsel	y Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obse	rvations:			-					
Surface wat	er present?	Yes	No	Х	Depth (i	inches):			
Water table		Yes	No	Х	Depth (i			Indicato	ors of wetland
Saturation p		Yes	No	Х	Depth (i	inches):		hydrolo	ogy present? N
(includes ca	pillary fringe)								
Describe re	corded data (strea	am gaug	e, monitoring wel	l, aerial p	photos, p	revious i	nspections), if ava	ilable:	
	`	2 0			• •				
Remarks:		-							

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Sampling	g Date: 10/17/2017		
Applicant/Owner: RES Americas		State:	MN	Sampling	Sampling Point: w-114n46w-21-w01		
Investigator(s): JLK/KD		Sect	ion, Townshij	o, Range:	T114n R46w Sec. 21		
Landform (hillslope, terrace, etc.): Depre	ssion	Local	relief (concav	e, convex, none):	Concave		
Slope (%): 1-6 Lat: 44.663746	6	Long:	-96.4146	25 Datum:	NAD83		
Soil Map Unit Name Barnes-Buse-Svea complex, 1 to	6 percent s		NWI (	Classification:	PEM		
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (I	f no, explain in rem	narks)		
Are vegetation , soil , or hydro	logy	significantl	y disturbed?	Are "nor	mal circumstances"		
Are vegetation , soil , or hydro	logy	naturally p	roblematic?		present? Yes		
SUMMARY OF FINDINGS				(If needed, expla	in any answers in remarks.)		
Hydrophytic vegetation present? Y							
Hydric soil present? Y	_	Is the s	ampled area	a within a wetland	<b>?</b> Y		
Indicators of wetland hydrology present? Y		f yes, op	otional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a	senarate re	enort )					
internative procedures here of in a	separate n	epon.)					
Rainfall for previous three months is 37% wet	ter than no	ormal.					
VECETATION Lies estantific nomes of plan	4-						
VEGETATION Use scientific names of plan		Densinen	lu alla a ta u	Dominance Tes	t Morkshoot		
Tree Stratum (Plot size: )	Absolute % Cover	Dominan t Species	Indicator Staus	Number of Domin			
1		t oposioo	olado	that are OBL, FAC	•		
2				Total Number of	of Dominant		
3				Species Acros	s all Strata: 1 (B)		
4				Percent of Domin	•		
5		TILO		that are OBL, FAC	W, or FAC: <u>100.00%</u> (A/B)		
Sapling/Shrub stratum (Plot size:	0	= Total Cove	r	Prevalence Inde	v Workshoot		
1	)			Total % Cover of			
2				OBL species	15 x 1 = 15		
3				FACW species	110 x 2 = 220		
4				FAC species	0 x 3 = 0		
5				FACU species	0 x 4 = 0		
	0	= Total Cove	r	UPL species	$0 \times 5 = 0$		
Herb stratum (Plot size:	)			Column totals	125 (A) 235 (B)		
1 Phalaris arundinacea	100	<u>Y</u>	FACW	Prevalence Index	x = B/A = <u>1.88</u>		
2 Urtica dioica 3 Carex lacustris	<u>10</u> 10	<u>N</u>	FACW OBL	Hydrophytic Vo	getation Indicators:		
4 Asclepias incarnata	5	<u> </u>	OBL		r hydrophytic vegetation		
5				X Dominance t			
6				X Prevalence i	ndex is ≤3.0*		
7				Morphogical	adaptations* (provide		
8				supporting d	ata in Remarks or on a		
9				separate she			
10	125	= Total Cove		Problematic (explain)	hydrophytic vegetation*		
Woody vine stratum (Plot size:	)				c soil and wetland hydrology must be		
1					less disturbed or problematic		
2				Hydrophytic	;		
	0	= Total Cove	r	vegetation present?	N		
Remarks: (Include photo numbers here or on a separ	ate sheet)						
	,						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence o	of indicators.)
Depth	Matrix			dox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	;	Remarks
0-7	N 2/0	95	5 YR 4/6	5					Silty Clay
01	11 2/0	00	0 11( 4/0	Ŭ					
*Type: C = (	Concentration, D	- Donloti	on PM - Reduce	d Matrix		laskod S	and Grains	**Location:	PL = Pore Lining, M = Matrix
	bil Indicators:	- Depier			(, 1VIO – IV	Maskeu C			atic Hydric Soils:
-			Corr		ad Matrix	(04)			-
	tisol (A1)				ed Matrix	(54)			(A16) ( <b>LRR K, L, R)</b>
	tic Epipedon (A2)			idy Redo	• •			urface (S7) (l	
	ck Histic (A3)				trix (S6)			•	sses (F12) ( <b>LRR K, L, R)</b>
	drogen Sulfide (A	,			ky Minera				Surface (TF12)
	atified Layers (A5	)			ed Matri	. ,	Other (e	explain in rer	narks)
	m Muck (A10)				atrix (F3)				
	pleted Below Dark				Surface	• •			
Thi	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicator	rs of hydroph	nytic vegetation and weltand
Sar	ndy Mucky Minera	ıl (S1)	Rec	lox Depr	essions	(F8)	hydrolog	gy must be p	resent, unless disturbed or
5 c	m Mucky Peat or	Peat (S3	)					pro	oblematic
	Layer (if observ	od).				1			
	Layer (II Observ	eu).					Uudria aa	il procent?	V
Type:					-		Hydric so	il present?	<u>Y</u>
Depth (inch	es):				-				
Remarks:									
HYDROL	DGY								
Wetland Hy	drology Indicato	ors:							
-	cators (minimum		required: check	all that a	nnlv)		Seco	ndary Indica	tors (minimum of two required
	Water (A1)				Fauna (B	(13)	0000		Cracks (B6)
	ater Table (A2)				uatic Plar			-	atterns (B10)
Saturati	. ,					Odor (C	1)	0	Water Table (C2)
	larks (B1)						Living Roots	Crayfish Bu	
	nt Deposits (B2)			(C3)	11112034				/isible on Aerial Imagery (C9)
	posits (B3)			-	e of Redu	uced Iron	(C4)		Stressed Plants (D1)
	at or Crust (B4)						illed Soils		Position (D2)
	osits (B5)			(C6)	Ton Neur			FAC-Neutra	
	on Visible on Aeria	l Imagen	(B7)		ck Surfac	o (C7)			riest (D3)
	Vegetated Conca				or Well Da	· · ·			
	tained Leaves (B9			-		Remarks	)		
	,	)			лрыштт	Remarks	)		
Field Obse				Ň	<b>D</b> (1) (1)				
Surface wat		Yes	No No	X	Depth (i			lu alla a	
Water table		Yes	X No		Depth (i		1		ators of wetland
Saturation p		Yes	No	X	Depth (i	incnes):		nydr	ology present? Y
(includes ca	pillary fringe)								
Describe re	corded data (strea	am gaug	e, monitoring wel	, aerial p	ohotos, p	revious i	nspections), if av	ailable:	
Remarks:									
I									

WETLAND DETERMINATION DATA FORM - Midwest Reg
---

Project/Site Bitter Root Wind Farm Project	City/County:	Yellow Media	cine Sampling Date:	10/18/2017
Applicant/Owner: RES Americas	State:	MN	Sampling Point:	W-114n46w25-u01
Investigator(s): JLK/KD	Sect	ion, Township	, Range: T114N F	R46W Sec. 25
Landform (hillslope, terrace, etc.): Depression, S	SH Local	relief (concave	e, convex, none):	Convex
Slope (%): 0-3 Lat: 44.652487	Long:	-96.34626	7 Datum:	NAD83
Soil Map Unit Name Lakepark-Rollis-Parnell, complex, 0 to	3 percent slopes	NWI C	lassification:	PEM
Are climatic/hydrologic conditions of the site typical for this	time of the year?	Y (If	no, explain in remarks)	
Are vegetation , soil , or hydrology	significantl	y disturbed?	Are "normal circu	ımstances"
Are vegetation , soil , or hydrology	naturally p	roblematic?		present? Yes
SUMMARY OF FINDINGS			(If needed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? N				
Hydric soil present? Y	Is the s	sampled area	within a wetland?	Ν
Indicators of wetland hydrology present? N	f yes, o	ptional wetland	d site ID:	
Remarks: (Explain alternative procedures here or in a sepa	arate report )			
	arate report.)			
Rainfall for previous three months is 37% wetter th	nan normal.			
VEGETATION Use scientific names of plants.				haat
	solute Dominan Cover t Species	Indicator Staus	Dominance Test Works	
1 (FIOLSIZE) 70 C	Sover i Species	Staus	Number of Dominant Spect that are OBL, FACW, or FA	
2			Total Number of Domina	
3			Species Across all Stra	
4			Percent of Dominant Spec	
5			that are OBL, FACW, or FA	
	0 = Total Cove	er		
Sapling/Shrub stratum (Plot size:)			Prevalence Index Works	sheet
1			Total % Cover of:	4
2				x = 0
3			· · · · · · · · · · · · · · · · · · ·	$\begin{array}{c} x 2 = & 0 \\ x 3 = & 0 \end{array}$
+			· · · · · · · · · · · · · · · · · · ·	$x^{3} = \frac{0}{0}$
·	0 = Total Cove	er		$x_{5} = 0$
Herb stratum (Plot size: )				(A) 0 (B)
1			Prevalence Index = B/A =	
2				
3			Hydrophytic Vegetation	Indicators:
4			Rapid test for hydrop	hytic vegetation
5			Dominance test is >5	-
6			Prevalence index is ≤	
/			Morphogical adaptati	
8		······	supporting data in Re separate sheet)	marks or on a
10			Problematic hydrophy	vtic vegetation*
	0 = Total Cove	er	(explain)	yie vegetation
Woody vine stratum (Plot size: )			*Indicators of hydric soil and	wetland hydrology must be
1			present, unless distur	, ,,
2			Hydrophytic	
	0 = Total Cove	er	vegetation	
			present? N	
Remarks: (Include photo numbers here or on a separate sh				
No vegetation as the agricultural field was rece	ently tilled.			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth	Matrix		Red	dox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-5	10 YR 2/1	100					Silty Clay	
				40	0			
5-12	10 YR 2/1	90	5 YR 4/6	10	С	М	Silty Clay	
*Type: C = 0	Concentration, D	= Deplet	ion, RM = Reduce	ed Matrix	, MS = N	Aasked S	and Grains. **L	ocation: PL = Pore Lining, M = Matrix
Hydric So	oil Indicators:						Indicators for	Problematic Hydric Soils:
His	tisol (A1)		Sar	dy Gley	ed Matrix	(S4)	Coast Prair	rie Redox (A16) ( <b>LRR K, L, R</b> )
His	tic Epipedon (A2)			idy Redo		. ,	Dark Surfa	ce (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Manga	anese Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Shallo	ow Dark Surface (TF12)
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)	Other (exp	ain in remarks)
	m Muck (A10)	, ,			atrix (F3)			,
	pleted Below Dark	Surface			Surface			
	ck Dark Surface (			leted Da	ark Surfa	ce (F7)	*Indicators o	f hydrophytic vegetation and weltand
	ndy Mucky Minera	,			essions	. ,		nust be present, unless disturbed or
	m Mucky Peat or	. ,				( )	, ,,	problematic
	Layer (if observ		,			<u> </u>		•
Type:	Layer (II Observ	eu).					Hydric soil p	racant? V
Depth (inche					-		nyunc son p	resent? Y
Depth (inche	=5).				-			
Remarks:								
HYDROLO	DGY							
Wetland Hy	drology Indicate	ors:						
-	cators (minimum		required: check	all that a	nnlv)		Seconda	ary Indicators (minimum of two required)
	Water (A1)				Fauna (B	(13)		Irface Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturatio	( )				en Sulfide			y-Season Water Table (C2)
	larks (B1)							ayfish Burrows (C8)
	nt Deposits (B2)			(C3)			0	turation Visible on Aerial Imagery (C9)
	posits (B3)			• •	e of Redu	uced Iron		unted or Stressed Plants (D1)
	at or Crust (B4)							eomorphic Position (D2)
	osits (B5)			(C6)				C-Neutral Test (D5)
Inundati	on Visible on Aeria	l Imager	y (B7)	Thin Mu	ck Surfac	ce (C7)		
Sparsely	Vegetated Conca	ve Surfa	ce (B8)	Gauge of	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:			-				
Surface wat	er present?	Yes	No	Х	Depth (i	inches):		
Water table	present?	Yes	No	Х	Depth (i			Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	inches):		hydrology present? N
(includes ca	pillary fringe)							
Describe red	corded data (strea	am gaug	e, monitoring wel	, aerial p	ohotos, p	revious i	nspections), if availa	ble:
Remarks:								
I								

Project/Site Bitter Root Wind Farm Project City/C		County:	Yellow Med	icine Sampl	ing Date:	10/18/2017	
Applicant/Owner: RES Americas		State:	MN	Sampl	ing Point:	W-114n46w25-w01	
Investigator(s): JLK/KD		Sect	Section, Township, Range: T1			R46W Sec. 25	
Landform (hillslope, terrace, etc.): Depress	Depression, TS		Local relief (concave				
Slope (%): 0-3 Lat: 44.65248		Long:	-96.3464	-96.34649 Datum: NAD83		NAD83	
Soil Map Unit Name Lakepark-Rollis-Parnell, complex, 0 to 3 per		cent slopes	NWI C	VWI Classification: PEM			
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)							
Are vegetation , soil , or hydrol	ly disturbed?	Are "n	ormal circu	mstances"			
Are vegetation , soil , or hydrology			roblematic?	present? Yes			
SUMMARY OF FINDINGS				(If needed, exp	olain any ai	nswers in remarks.)	
Hydrophytic vegetation present? Y						,	
Hydric soil present? Y			Is the sampled area within a wetland?				
Indicators of wetland hydrology present? Y	-		ptional wetlar				
Remarks: (Explain alternative procedures here or in a separate report.)							
Rainfall for previous three months is 37% wett	er than no	ormal.					
VEGETATION Use scientific names of plant	ts.						
· · · ·	Absolute	Dominan	Indicator	Dominance T	est Works	heet	
<u>Tree Stratum</u> (Plot size:) 1	% Cover	t Species	Staus	Number of Dom that are OBL, F			
2				Total Numbe Species Acr			
4				Percent of Dom			
5					•	.C: <u>100.00%</u> (A/B)	
	0	= Total Cove	er				
Sapling/Shrub stratum (Plot size:)				Prevalence In		sheet	
1				Total % Cover			
2				OBL species FACW species	0 > 100 >		
3				FAC w species		3 = 0	
5				FACU species		4 = 0	
	0	= Total Cove	er	UPL species		5 = 0	
Herb stratum (Plot size: )				Column totals	100 (	A) 200 (B)	
1 Phalaris arundinacea	100	Y	FACW	Prevalence Inc	dex = B/A =	= 2.00	
2							
3				Hydrophytic \	-		
4						hytic vegetation	
5				X Dominance			
6				X Prevalence			
/						ons* (provide	
8				supporting separate s		emarks or on a	
10					,	vtic vegetation*	
	100	= Total Cove	er	(explain)	ic nyuroph <sub>.</sub>	yie vegetation	
Woody vine stratum       (Plot size:)         1      )				present,	unless distur	wetland hydrology must be bed or problematic	
2				Hydrophy			
	0	= Total Cove	er	vegetation present?	n Y		
Remarks: (Include photo numbers here or on a separa	ate sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abser	ice of indicators.)			
Depth	Matrix		Rec	lox Feat	ures						
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks			
0-5	10 YR 2/1	100	· · · ·				Silty Clay				
5-12	10 YR 2/1	90	5 YR 4/6	10	С	М	Silty Clay				
J-12	10 11 2/1	90	5 TK 4/0	10	C	IVI	Silly Clay				
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	k, MS = N	/lasked S		on: PL = Pore Lining, M = Matrix			
Hydric Sc	oil Indicators:							lematic Hydric Soils:			
Hist	tisol (A1)				ed Matrix	: (S4)		edox (A16) ( <b>LRR K, L, R</b> )			
Hist	tic Epipedon (A2)		San	dy Redo	ox (S5)		Dark Surface (S				
	ck Histic (A3)			•	trix (S6)			e Masses (F12) ( <b>LRR K, L, R</b> )			
Hyd	Irogen Sulfide (A4	4)	Loa	my Mucl	ky Minera	al (F1)	Very Shallow Da	ark Surface (TF12)			
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	k (F2)	Other (explain i	n remarks)			
	n Muck (A10)			leted Ma	atrix (F3)						
Dep	leted Below Dark	Surface	e (A11) Rec	lox Dark	Surface	(F6)					
	ck Dark Surface (	,			ark Surfa	• •	*Indicators of hyd	rophytic vegetation and weltand			
Sar	ndy Mucky Minera	ıl (S1)	X Rec	lox Depr	essions	(F8)	hydrology must	be present, unless disturbed or			
5 cm Mucky Peat or Peat (S3) problematic											
Restrictive	Restrictive Layer (if observed):										
Туре:		,-					Hydric soil prese	nt? Y			
Depth (inche	es):				-		<b>,</b>				
Remarks:	/				-						
HYDROLO	DGY										
Wetland Hy	drology Indicato	ors:									
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Secondary In	<u>dicators (minimum of two required)</u>			
Surface	Water (A1)			Aquatic	Fauna (B	13)	Surface	Soil Cracks (B6)			
High Wa	iter Table (A2)			True Aq	uatic Plar	nts (B14)	Drainag	e Patterns (B10)			
Saturatio						Odor (C		ason Water Table (C2)			
	arks (B1)				l Rhizosp	heres on		n Burrows (C8)			
	nt Deposits (B2)			(C3)				on Visible on Aerial Imagery (C9)			
-	posits (B3)					uced Iron		or Stressed Plants (D1)			
	at or Crust (B4)				ron Redu	iction in 1		rphic Position (D2)			
· · · · ·	oosits (B5) on Visible on Aeria	Imagan	(P7)	(C6)	ak Surfaa	a (C7)	X FAC-Ne	eutral Test (D5)			
	Vegetated Conca				ck Surfac or Well Da	· · ·					
	tained Leaves (B9			-		Remarks	)				
Field Obser		/				rtomanto	,				
Surface wat		Yes	No	Х	Depth (i	nches).					
Water table		Yes	No	X	Depth (i		In	dicators of wetland			
Saturation p		Yes	No		Depth (i			ydrology present? Y			
	pillary fringe)				(		I '	· · · · · · · · · · · · · · · · · · ·			
-		am daug	e monitoring well	aerial r	hotos n	revious i	nspections) if available.				
2000/100/100	escribe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks:											

Project/Site Bitter Root Wind Farm Project	City/0	City/County: Yellow Med			ampling Date:	10/18/2017
Applicant/Owner: RES Americas	_	State:	MN	Sa	ampling Point:	W-114n46w26-u01
Investigator(s): JLK/KD		Section	on, Townshij	p, Range:	T114N F	46W Sec. 26
Landform (hillslope, terrace, etc.): Depression	n, SH	Local r	elief (concav	/e, convex, r	none):	Convex
Slope (%): 0-2 Lat: 44.65281		Long:	-96.3673	94 D	atum:	NAD83
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent sl	opes		NWI (	Classificatior	n:	
Are climatic/hydrologic conditions of the site typical for the	nis time of	f the year?	Y (I	f no, explain	in remarks)	
Are vegetation, soil, or hydrolog	У	significantly	/ disturbed?	A	re "normal circu	mstances"
Are vegetation , soil , or hydrolog	у	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed	l, explain any ar	swers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	ampled area	a within a w	vetland?	N
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a se	eparate re	eport.)				
Rainfall for previous three months is 37% wetter	-					
VEGETATION Use scientific names of plants.						
	bsolute	Dominan	Indicator	Dominan	ce Test Worksl	neet
		t Species	Staus	Number of	Dominant Speci 3L, FACW, or FA	es
2				Total N	umber of Domina s Across all Strat	int
4					Dominant Speci	
5					BL, FACW, or FA	
	0 =	Total Cove	r			、
Sapling/Shrub stratum (Plot size:)				Prevalence	ce Index Works	sheet
1				Total % C		
2				OBL spec		1 = 0
3				FACW sp FAC spec		2 = 0 3 = 30
5				FACU spec		$3 = \frac{30}{4} = \frac{30}{2}$
	0 =	- Total Cove		UPL spec		5 = 0
Herb stratum (Plot size: )				Column to		A) <u>30</u> (B)
1 Zea mays	100	Y	NI	Prevalenc	e Index = B/A =	3.00
2 Setaria pumila	5	Ν	FAC			
3 Panicum capillare	5	Ν	FAC		tic Vegetation	
4					test for hydroph	
5					hance test is >50	
6 					lence index is ≤	
8					nogical adaptation Prting data in Re	
9					ate sheet)	
10	110 =	Total Cove		Proble (expla	ematic hydrophy ain)	tic vegetation*
Woody vine stratum (Plot size: )						vetland hydrology must be
1					esent, unless disturb	, ,,
2				-	ophytic	
	0 =	= Total Cove	r	veget prese		_
Remarks: (Include photo numbers here or on a separate	sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abs	ence of indicators.)				
Depth	Matrix		Re	dox Feat	ures							
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks				
0-8	10 YR 2/1	100			I		Silt Loam					
8-18	10 YR 2/1	85	5 YR 4/6	10	С	М	Silt Loam					
0-10	10 11 2/1	00	5 TK 4/0	10		IVI						
	Concentration, D	= Depleti	ion, RM = Reduc	ed Matrix	k, MS = N	/lasked S		ation: PL = Pore Lining, M = Matrix				
Hydric So	il Indicators:							oblematic Hydric Soils:				
	isol (A1)				ed Matrix	(S4)		Redox (A16) ( <b>LRR K, L, R</b> )				
	ic Epipedon (A2)			ndy Redo	• •			(S7) ( <b>LRR K, L)</b>				
Blac	ck Histic (A3)				ıtrix (S6)			se Masses (F12) ( <b>LRR K, L, R</b> )				
· · ·	lrogen Sulfide (A	,		•	ky Minera	. ,		Dark Surface (TF12)				
	tified Layers (A5	)			ed Matri		Other (explain	in remarks)				
	n Muck (A10)				atrix (F3)							
	leted Below Dark				Surface	. ,						
	ck Dark Surface (	,			ark Surfa	• •		ydrophytic vegetation and weltand				
	idy Mucky Minera	. ,		dox Depr	ressions	(F8)	hydrology mus	t be present, unless disturbed or				
5 cr	n Mucky Peat or	Peat (S3	5)					problematic				
Restrictive	Restrictive Layer (if observed):											
Type:												
Depth (inche	es):				-							
Remarks:	,				-							
HYDROLO	DGY											
Wetland Hy	drology Indicate	ors:										
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Secondary	Indicators (minimum of two required)				
Surface	Water (A1)			Aquatic	Fauna (B	13)		ce Soil Cracks (B6)				
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	Drain	age Patterns (B10)				
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) Dry-S	eason Water Table (C2)				
	arks (B1)			Oxidized	d Rhizosp	heres on		sh Burrows (C8)				
	nt Deposits (B2)			(C3)				ation Visible on Aerial Imagery (C9)				
	oosits (B3)			-	e of Redu			ed or Stressed Plants (D1)				
	it or Crust (B4)				Iron Redu	iction in T		norphic Position (D2)				
	osits (B5)		· (DZ)	(C6)		(07)	X FAC-	Neutral Test (D5)				
	on Visible on Aeria			-	ck Surfac	. ,						
	Vegetated Conca tained Leaves (B9			-	or Well Da Explain in		)					
	(	)				I CIII di KS	)					
Field Obser Surface wate		Vaa	No	v	Danth /	n a h a a ).						
Water table	•	Yes Yes	No No	$\frac{X}{X}$	Depth (i Depth (i			Indicators of wetland				
Saturation p		Yes	No		Depth (i	,		hydrology present? N				
	pillary fringe)	103			-		——— I					
-		manua	e monitoring wel	l aerial r	photos n	revioue	nspections), if available					
Describe rec		ani yauy	e, monitoring wei	i, aeriai p	11010s, p	levious i	nspections), il avaliable					
Remarks:												

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	dicine Sampling Date: 10/18/2017			
Applicant/Owner: RES Americas		State:	MN	Sampling	g Point: W-114n46w26-w01		
Investigator(s): JLK/KD		Sect	on, Townshi	o, Range:	T114N R46W Sec. 26		
Landform (hillslope, terrace, etc.): Depress	ion, TS	Local	elief (concav	e, convex, none):	Concave		
Slope (%): 0-2 Lat: 44.652951		Long:	-96.36726	66 Datum:	NAD83		
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent	slopes		NWI C	Classification:	PEM		
Are climatic/hydrologic conditions of the site typical for	r this time o	f the year?	Y (I	f no, explain in rem	narks)		
Are vegetation , soil , or hydrol	ogy	significantl	y disturbed?	Are "nor	mal circumstances"		
Are vegetation , soil , or hydrol	ogy	naturally p	roblematic?		present? Yes		
SUMMARY OF FINDINGS				(If needed, expla	ain any answers in remarks.)		
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the s	ampled area	a within a wetland	<b>1?</b> Y		
Indicators of wetland hydrology present? Y		f yes, op	otional wetlar	id site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Rainfall for previous three months is 37% wet							
VECETATION Lise scientific names of plan	te						
VEGETATION Use scientific names of plan	Absolute	Dominan	Indicator	Dominance Tes	t Worksheet		
Tree Stratum (Plot size: )	% Cover		Staus	Number of Domin			
1 Salix fragilis	5	Y	FAC	that are OBL, FAC	•		
2				Total Number of Species Acros			
4				Percent of Domin	ant Species		
5				that are OBL, FAC	CW, or FAC: 100.00% (A/B)		
	5	= Total Cove	r				
Sapling/Shrub stratur (Plot size:)				Prevalence Inde Total % Cover of			
2				OBL species	20 x 1 = 20		
3				FACW species	$100 \times 2 = 200$		
4				FAC species	5 x 3 = 15		
5				FACU species	0 x 4 = 0		
	0	= Total Cove	r	UPL species	0 x 5 = 0		
Herb stratum (Plot size:)				Column totals	125 (A) 235 (B)		
1 Phalaris arundinacea	100	Y	FACW	Prevalence Inde	x = B/A = 1.88		
2 Persicaria hydropiper	<u>15</u> 5	<u>N</u>	OBL	Lludronbutio Vo	actation Indiantary		
3 Typha X glauca	5	<u>N</u>			getation Indicators: or hydrophytic vegetation		
5				X Dominance 1			
6				X Prevalence i			
7				Morphogical	adaptations* (provide		
8					lata in Remarks or on a		
9				separate she			
10	120	= Total Cove		Problematic (explain)	hydrophytic vegetation*		
<u>Woody vine stratum</u> (Plot size:)					ic soil and wetland hydrology must be nless disturbed or problematic		
2				Hydrophytic	•		
	0	= Total Cove	r	vegetation present?	Y		
Remarks: (Include photo numbers here or on a separa	ate sheet)			-			

Profile Des	cription: (Descr	ibe to th	e depth neede	d to docu	ment the	e indicat	or or confirm the abser	nce of indicators.)
Depth	Matrix		Re	edox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10 YR 2/1	100					Silt Loam	
8-18	10 YR 2/1	85	5 YR 4/6	10	С	М	Silt Loam	
0-10	10 1K 2/1	00	5 TK 4/0	10	C	IVI	SIILLUAITI	
	Concentration, D	= Depleti	ion, RM = Redu	ced Matrix	k, MS = N	/lasked S		ion: PL = Pore Lining, M = Matrix
Hydric Sc	oil Indicators:							elematic Hydric Soils:
	tisol (A1)			indy Gley		(S4)		edox (A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)			indy Redo	• •		Dark Surface (S	
	ck Histic (A3)			ripped Ma	• • •			e Masses (F12) ( <b>LRR K, L, R</b> )
Hyd	drogen Sulfide (A4	4)	Lo	amy Muc	ky Minera	al (F1)	Very Shallow D	ark Surface (TF12)
Stra	atified Layers (A5	)	Lo	amy Gley	ed Matrix	x (F2)	Other (explain i	n remarks)
2 cr	m Muck (A10)		De	epleted Ma	atrix (F3)			
Dep	oleted Below Dark	Surface	e (A11) X Re	edox Dark	Surface	(F6)		
Thie	ck Dark Surface (	A12)	De	epleted Da	ark Surfa	ce (F7)	*Indicators of hyd	Irophytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)	Re	edox Depr	essions	(F8)	hydrology must	be present, unless disturbed or
5 cr	m Mucky Peat or	Peat (S3	s)					problematic
Restrictive	Layer (if observ	ed):						
Туре:		,-					Hydric soil prese	nt? Y
Depth (inche	es):				-		<b>, ,</b>	
Remarks:	,				-			
HYDROLO	DGY							
Wetland Hy	drology Indicate	ors:						
-	cators (minimum		required: check	all that a	(vlaa		Secondary In	dicators (minimum of two required)
	Water (A1)	01 0110 10			Fauna (B	13)		e Soil Cracks (B6)
	iter Table (A2)				uatic Plar	-		ge Patterns (B10)
X Saturatio	( )				en Sulfide			ason Water Table (C2)
	larks (B1)							h Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			Saturat	ion Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presence	e of Redu	uced Iron	(C4) Stunted	l or Stressed Plants (D1)
-	at or Crust (B4)				Iron Redu	iction in T		rphic Position (D2)
· · · · ·	oosits (B5)			(C6)			X FAC-Ne	eutral Test (D5)
	on Visible on Aeria		,	_	ck Surfac	· · ·		
	Vegetated Conca		ce (B8)	-	or Well Da		,	
	tained Leaves (B9	)		_Other (E	xplain in	Remarks	)	
Field Obser								
Surface wat	•	Yes	No	<u>X</u>	Depth (i			diastana af matian d
Water table		Yes	No No	X	Depth (i	,		idicators of wetland
Saturation p	resent? pillary fringe)	Yes	X No		Depth (i	ncnes):	<u> </u>	nydrology present? Y
-				II. a a di d	- <b>b</b>			
Describe red	corded data (strea	am gaug	e, monitoring we	ell, aerial p	photos, p	revious ii	nspections), if available:	
Remarks:								
i tomanto.								

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	dicine Sampling Date: 10/16/2017			
Applicant/Owner: RES Americas		State:	MN	Sampling Point: W-114n46w29-w01			
Investigator(s): JLK/KD		Secti	on, Townshij	o, Range: T114N R46W Sec. 29			
Landform (hillslope, terrace, etc.): Channe	el, SH	Local r	elief (concav	e, convex, none): Convex			
Slope (%): 2-6 Lat: 44.6521		Long:	-96.4381	53 Datum: NAD83			
Soil Map Unit Name Barnes-Buse Complex, 6-12 perc	ent slopes		NMI (	Classification:			
Are climatic/hydrologic conditions of the site typical for	this time o	f the year?	Y (I	f no, explain in remarks)			
Are vegetation , soil , or hydrole	ogy	significantly	disturbed?	Are "normal circumstances"			
Are vegetation , soil , or hydrole	ogy	naturally pr	oblematic?	present? Yes			
SUMMARY OF FINDINGS				(If needed, explain any answers in remarks.)			
Hydrophytic vegetation present? N							
Hydric soil present? Y		Is the s	ampled area	a within a wetland? N			
Indicators of wetland hydrology present? N	-	f yes, op	tional wetlan	d site ID:			
Remarks: (Explain alternative procedures here or in a	senarate re	enort)					
	Separate re	sport.)					
Rainfall for previous three months is 37% wett	er than no	ormal.					
VECETATION Lies scientific names of plant							
VEGETATION Use scientific names of plant	.s. Absolute	Dominan	Indicator	Dominance Test Worksheet			
Tree Stratum (Plot size: )		t Species	Staus	Number of Dominant Species			
1 (, , , , , , , , , , , , , , , , , , ,				that are OBL, FACW, or FAC: 0 (A)			
2				Total Number of Dominant			
3				Species Across all Strata: 1 (B)			
4				Percent of Dominant Species			
5				that are OBL, FACW, or FAC: 0.00% (A/B)			
Combine (Christian (District))	0	= Total Cove	r	Prevalence Index Worksheet			
Sapling/Shrub stratum (Plot size:)				Total % Cover of:			
2				OBL species $0 \times 1 = 0$			
3				FACW species $0 \times 2 = 0$			
4				FAC species $0 \times 3 = 0$			
5				FACU species 105 x 4 = 420			
	0	= Total Cove	r	UPL species $0 \times 5 = 0$			
Herb stratum (Plot size:)				Column totals <u>105</u> (A) <u>420</u> (B)			
1 Bromus inermis	90	<u>Y</u>	FACU	Prevalence Index = B/A = 4.00			
2 Asclepias syriaca	5	<u>N</u>	FACU	Undragh tie Verstetien Indicatory			
3 Cirsium arvense 4 Solidago canadensis	5	<u>N</u>	FACU FACU	Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation			
5				Dominance test is >50%			
6				Prevalence index is ≤3.0*			
7				Morphogical adaptations* (provide			
8				supporting data in Remarks or on a			
9				separate sheet)			
10				Problematic hydrophytic vegetation*			
Woody vine stratum (Plat size:	105	= Total Cove	r	(explain)			
<u>Woody vine stratum</u> (Plot size:)				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic			
2				Hydrophytic			
	0	= Total Cove	r	vegetation			
				present? N			
Remarks: (Include photo numbers here or on a separa	ate sheet)						

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the	absence of indicators.)
Depth	Matrix		Red	lox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10 YR 4/1	60	10 YR 3/1	40	D	М	Silty Clay	
	Concentration, D	= Deplet	on, RM = Reduce	ed Matrix	k, MS = N	/lasked S		Location: PL = Pore Lining, M = Matrix
-	oil Indicators:							Problematic Hydric Soils:
	tisol (A1)				ed Matrix	(S4)		irie Redox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo				ace (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)			•	trix (S6)			janese Masses (F12) ( <b>LRR K, L, R</b> )
	Irogen Sulfide (A			•	ky Minera	• •		low Dark Surface (TF12)
	atified Layers (A5	)			ed Matrix	. ,	Other (exp	olain in remarks)
	n Muck (A10)				atrix (F3)			
	leted Below Dark				Surface	. ,		
	ck Dark Surface (	,			ark Surfa	. ,		of hydrophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions	(F8)	hydrology	must be present, unless disturbed or
5 ci	n Mucky Peat or	Peat (S3	)					problematic
Restrictive	Layer (if observ	ed):						
Type:	2 .						Hydric soil	present? Y
Depth (inche	es):				-		-	
Remarks:	- I				-			
rtemants.								
HYDROLO								
-	drology Indicate							
Primary Indi	cators (minimum	of one is	required; check				<u>Second</u>	ary Indicators (minimum of two required
Surface	Water (A1)				Fauna (B		S	urface Soil Cracks (B6)
0	iter Table (A2)				uatic Plar			rainage Patterns (B10)
Saturatio	on (A3)					Odor (C	·	ry-Season Water Table (C2)
	arks (B1)				l Rhizosp	heres on	0	rayfish Burrows (C8)
	nt Deposits (B2)			(C3)				aturation Visible on Aerial Imagery (C9)
	posits (B3)					uced Iron		tunted or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in T		Beomorphic Position (D2)
	osits (B5)		(DZ)	(C6)		(0-)	F.	AC-Neutral Test (D5)
	on Visible on Aeria				ck Surfac	· · ·		
	Vegetated Conca		се (В8)	-	or Well Da		<b>`</b>	
	tained Leaves (B9	)		Other (E	xpiain in	Remarks	)	
Field Obser					<b>_</b>		Γ	
Surface wat		Yes	No	<u>X</u>	Depth (i			he d'a stand of southers d
Water table		Yes	No	X	Depth (i			Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	ncnes):	I	hydrology present? N
-	pillary fringe)						<i>a</i> >	
Describe rea	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if avail	able:
Damariliai								
Remarks:								
1								

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	dicine Sampling Date: 10/16/2017			
Applicant/Owner: RES Americas		State:	MN	Sampling	g Point: W-114n46w29-w01		
Investigator(s): JLK/KD		Sect	ion, Townshij	o, Range:	T114N R46W Sec. 29		
Landform (hillslope, terrace, etc.): Chann	el, TS	Local	relief (concav	e, convex, none):	Concave		
Slope (%): 0-2 Lat: 44.652504	ļ	Long:	-96.4382	17 Datum:	NAD83		
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent	t slopes		NMI (	Classification:	PEM		
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (I	f no, explain in rem	narks)		
Are vegetation , soil , or hydrol	logy	significantl	y disturbed?	Are "nor	mal circumstances"		
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?		present? Yes		
SUMMARY OF FINDINGS				(If needed, expla	ain any answers in remarks.)		
Hydrophytic vegetation present? Y							
Hydric soil present? Y	-	Is the s	sampled area	a within a wetland	<b>I?</b> Y		
Indicators of wetland hydrology present? Y		f yes, o	otional wetlar	nd site ID:			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)					
Rainfall for previous three months is 37% wet	-						
VEGETATION Use scientific names of plan	ts.						
	Absolute	Dominan	Indicator	Dominance Tes	t Worksheet		
<u>Tree Stratum</u> (Plot size:) 1		t Species	Staus	Number of Domin that are OBL, FAC	•		
2				Total Number of Species Acros			
4				Percent of Domin			
5					CW, or FAC: 100.00% (A/B)		
Comling/Chryth stratum (Dist size)	0	= Total Cove	er	Drevelopeo Inde	w Werkeheet		
Sapling/Shrub stratum (Plot size:)	)			Prevalence Inde Total % Cover of			
2				OBL species	10 x 1 = 10		
3				FACW species			
4				FAC species	5 x 3 = 15		
5				FACU species	0 x 4 = 0		
	0	= Total Cove	er	UPL species	0 x 5 = 0		
Herb stratum (Plot size:)	)			Column totals	115 (A) 225 (B)		
1 Phalaris arundinacea	100	Y	FACW	Prevalence Index	x = B/A = 1.96		
2 Typha X glauca	10	<u>N</u>	OBL		notation Indiantana.		
3 Rumex crispus	5	<u>N</u>	FAC		getation Indicators: or hydrophytic vegetation		
5				X Dominance t			
6				X Prevalence i			
7					adaptations* (provide		
8					ata in Remarks or on a		
9				separate she	et)		
10	115	= Total Cove	er	Problematic (explain)	hydrophytic vegetation*		
Woody vine stratum     (Plot size:       1	)				ic soil and wetland hydrology must be nless disturbed or problematic		
2				Hydrophytic	2		
	0	= Total Cove	er	vegetation present?	<u> </u>		
Remarks: (Include photo numbers here or on a separa	ate sheet)			-			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth	Matrix		Red	lox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-18	10 YR 4/1	60	10 YR 3/1	40	D	М	Silty Clay	
	Concentration, D :	= Deplet	ion, RM = Reduce	ed Matrix	k, MS = N	/lasked S		ocation: PL = Pore Lining, M = Matrix
-	oil Indicators:							Problematic Hydric Soils:
	tisol (A1)				ed Matrix	(S4)		ie Redox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo				ce (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)			•	trix (S6)		-	anese Masses (F12) ( <b>LRR K, L, R</b> )
	lrogen Sulfide (A4			•	ky Minera	. ,		ow Dark Surface (TF12)
	atified Layers (A5)	)			ed Matrix		Other (exp	ain in remarks)
	n Muck (A10)			leted Ma	atrix (F3)			
	leted Below Dark				Surface	. ,		
	ck Dark Surface (	,			ark Surfa	. ,		f hydrophytic vegetation and weltand
Sar	ndy Mucky Minera	ıl (S1)	Rec	lox Depr	essions	(F8)	hydrology n	nust be present, unless disturbed or
5 ci	m Mucky Peat or I	Peat (S3	s)					problematic
Restrictive	Layer (if observe	ed):						
Туре:							Hydric soil p	resent? Y
Depth (inche	es):				-			
					-			
Remarks:								
HYDROLO	DGY							
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seconda	ry Indicators (minimum of two required)
	Water (A1)				Fauna (B	13)		rface Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturatio	on (A3)					Odor (C		y-Season Water Table (C2)
Water N	arks (B1)			Oxidized	l Rhizosp	heres on	Living Roots Cr	ayfish Burrows (C8)
Sedimer	nt Deposits (B2)			(C3)			Sa	turation Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)			Presenc	e of Redu	uced Iron	(C4) Stu	unted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils Ge	eomorphic Position (D2)
Iron Dep	osits (B5)			(C6)			FA	C-Neutral Test (D5)
	on Visible on Aeria			Thin Mu	ck Surfac	e (C7)		
Sparsely	Vegetated Conca	ive Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat	er present?	Yes	No	Х	Depth (i			
Water table		Yes	X No		Depth (i	,	3	Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	nches):		hydrology present? Y
(includes ca	pillary fringe)							
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if availa	ble:
	•	- 0	-	•			•	
Remarks:								

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Medi	icine Sampling Date:	10/16/2017
Applicant/Owner: RES Americas	-	State:	MN		w-114n46w30-non1
Investigator(s): JLK/KD		Sectio	on, Township	o, Range: T114N	R46W Sec. 30
Landform (hillslope, terrace, etc.): Flat		Local re	elief (concav	e, convex, none):	none
Slope (%): 0-2 Lat: 44.65693		Long:	-96.44948	34 Datum:	NAD83
Soil Map Unit Name Fulda Silty Clay, 0 to 2 percent slope	es		NMI C	Classification:	PFO
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the year?	Y (li	f no, explain in remarks)	
Are vegetation, soilX, or hydrology	у	significantly	disturbed?	Are "normal circ	umstances"
Are vegetation, soil, or hydrology	у	naturally pro	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any a	inswers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? N		Is the sa	ampled area	a within a wetland?	Ν
Indicators of wetland hydrology present? N		f yes, op	tional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a ser	parate re	eport.)			
	-				
Rainfall for previous three months is 37% wetter	than no	ormal.			
<b>VEGETATION</b> Use scientific names of plants.					
-	bsolute	Dominan	Indicator	Dominance Test Works	sheet
Tree Stratum (Plot size:) %	6 Cover	t Species	Staus	Number of Dominant Spec	
1 Populus deltoides	20	Y	FAC	that are OBL, FACW, or F	AC: <u>2</u> (A)
2 Fraxinus pennsylvanica	20	Y	FACW	Total Number of Domin	
3				Species Across all Stra	( )
		· ·		Percent of Dominant Spec	
5	40 =	= Total Cover		that are OBL, FACW, or F	AC: <u>66.67%</u> (A/B)
Sapling/Shrub stratum (Plot size: )	40 -			Prevalence Index Work	sheet
1				Total % Cover of:	
2		<u> </u>			x 1 = 0
3					x 2 = 40
4				· · · · · · · · · · · · · · · · · · ·	x 3 = 75
5		·		·	x 4 = 440
	0 =	= Total Cover		· · ·	x 5 = 0
Herb stratum (Plot size:)					(A) <u>555</u> (B)
1 Bromus inermis	100	<u>Y</u>	FACU	Prevalence Index = B/A	= 3.58
2 Setaria pumila	5	<u> </u>	FAC	Undrenkutia Vagatatia	- la dia atang
3 Asclepias syriaca 4 Cirsium arvense	5	<u>N</u>	FACU FACU	Hydrophytic Vegetation Rapid test for hydrog	
5			FAUU	X Dominance test is >	
6		······································		Prevalence index is	
7				Morphogical adaptat	
8				supporting data in R	
9				separate sheet)	
10				Problematic hydroph	vtic vegetation*
	115 =	= Total Cover		(explain)	
Woody vine stratum (Plot size:)				*Indicators of hydric soil and	, ,,
1				present, unless distu	rbed or problematic
2	0 =	= Total Cover		Hydrophytic vegetation	
	0 -			present? Y	/
Remarks: (Include photo numbers here or on a separate s	sheet)				
Trees have been cleared for a two-track farm	-	4			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm the	absence o	of indicators.)		
Depth	Matrix			lox Feat					•		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks		
0-24	10 YR 2/1	100	- ( )		71		Silty Clay				
0-24	10 11 2/1	100					Silly Cidy				
	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	α, MS = Ν	/lasked S			PL = Pore Lining, M = Matrix		
Hydric So	oil Indicators:						Indicators for	or Problema	atic Hydric Soils:		
His	tisol (A1)		Sar	dy Gleye	ed Matrix	: (S4)	Coast Pr	airie Redox	: (A16) ( <b>LRR K, L, R</b> )		
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Sur	face (S7) ( <b>I</b>	LRR K, L)		
	ck Histic (A3)			oped Ma	. ,		Iron-Mar	iganese Ma	sses (F12) (LRR K, L, R)		
	lrogen Sulfide (A	4)		•	ky Minera	al (F1)		-	Surface (TF12)		
	atified Layers (A5	,			ed Matrix			xplain in ren			
	m Muck (A10)	/			atrix (F3)	, ,			hantoy		
	bleted Below Dark	Surface			Surface						
	ck Dark Surface (						*1. 1		. C		
	· · ·	,			ark Surfa	. ,			nytic vegetation and weltand		
	ndy Mucky Minera			lox Depr	essions	(F8)	nyarology		resent, unless disturbed or		
5 CI	n Mucky Peat or	Peat (S3	)					pro	blematic		
Restrictive Layer (if observed):											
Type: Hydric soil present? N											
Depth (inche	es):				•		•				
	·				-						
Remarks:											
Soils are	disturbed. A tv	<i>wo-tracl</i>	< farm field acc	ess is p	present.	Soils a	are highly compa	acted.			
				•							
HYDROLO	DGY										
	drology Indicato	ore .									
	cators (minimum	of one is	required; check						tors (minimum of two required		
	Water (A1)				Fauna (B				Cracks (B6)		
-	iter Table (A2)				uatic Plar			-	atterns (B10)		
Saturatio	. ,					Odor (C			Water Table (C2)		
	larks (B1)				Rhizosp	heres on		Crayfish Bur			
	nt Deposits (B2)			(C3)					isible on Aerial Imagery (C9)		
	oosits (B3)			Presenc	e of Redu	uced Iron			Stressed Plants (D1)		
-	at or Crust (B4)				ron Redu	iction in T			Position (D2)		
Iron Dep	oosits (B5)			(C6)				FAC-Neutral	l Test (D5)		
Inundati	on Visible on Aeria	al Imagery	/ (B7)	Thin Mu	ck Surfac	e (C7)					
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge o	or Well Da	ata (D9)					
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)				
Field Obser	vations:										
Surface wat		Yes	No	х	Depth (i	nches):					
Water table		Yes	No	X	Depth (i			Indica	ntors of wetland		
Saturation p		Yes	No	X	Depth (i				ology present? N		
	pillary fringe)			-		,-					
				oorial n	botos n	rovious i	nspections), if ava	ilabla:			
Describe rec		am gauge	e, monitoring wei	, aenai p	notos, p	revious i	rispections), il ava	lilable.			
Remarks:											
INCIDALKS.											

Project/Site Bitter Root Wind Farm Project	City/County: Yellow Med			cine	Sampling	Date:	10/16/20	)17
Applicant/Owner: RES Americas		State:	MN		Sampling	Point:	w-114n46w3	0-non2
Investigator(s): JLK/KD		Sectio	on, Township	, Range:	-	T114N R	46W Sec. 30	1
Landform (hillslope, terrace, etc.): hillslope		Local re	elief (concav	e, convex	, none):		CL	
Slope (%): 0-2 Lat: 44.647704	L	_ong:	-96.43954	11	Datum:		NAD83	
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent slop	bes		NWI C	Classificati	ion:		PEM	
Are climatic/hydrologic conditions of the site typical for this	s time of th	he year?	Y (If	f no, expla	ain in rema	arks)		
Are vegetation , soil , or hydrology	s	ignificantly	disturbed?		Are "norm	nal circur	nstances"	
Are vegetation , soil , or hydrology	n	naturally pro	oblematic?				present?	/es
SUMMARY OF FINDINGS				(If need	ed, explai	n any an	swers in rem	arks.)
Hydrophytic vegetation present? N								
Hydric soil present? N		Is the sa	ampled area	a within a	wetland	?	Ν	
Indicators of wetland hydrology present? N		f yes, op	tional wetlan	d site ID:				
Remarks: (Explain alternative procedures here or in a sepa	arate repo	ort.)						
		,						
Rainfall for previous three months is 37% wetter the	han norr	mal.						
VEGETATION Use scientific names of plants.								
	solute [	Dominan	Indicator	Domina	ance Test	Worksh	eet	
	Cover t		Staus		of Domina			
1					OBL, FAC			(A)
2				Total	Number o	f Domina	nt	_
3				Spec	cies Across	s all Strata	a: 0	(B)
4					of Domina			
5	0 = T	otal Cover		that are 0	OBL, FAC\	W, or ⊢A0	C: 0.00%	_(A/B)
Sapling/Shrub stratur (Plot size: )				Prevale	nce Inde	x Works	heet	
1					Cover of:			
2				OBL spe	ecies	0 x	1 = 0	
3				FACW s	species	0 x	2 = 0	
4				FAC spe			3 = 0	_
5	<u> </u>			FACU s	· _		4 = 0	_
Horb stratum (Dist size:	0 = T	otal Cover		UPL spe Column			5 = 0	(P)
Herb stratum (Plot size:)							() 0	_(B)
2				Prevalei	nce Index	= B/A =		-
3				Hydrop	hvtic Vec	etation	Indicators:	
4		·				-	ytic vegetatio	on
5					ninance te			
6				Prev	valence in	idex is ≤3	3.0*	
7							ns* (provide	
8							narks or on a	a
9 10					arate shee	-		*
	0 = T	otal Cover			plematic r plain)	iyaropny	tic vegetatior	1
Woody vine stratum (Plot size: )	<u> </u>			<u> </u>			ational budrala	v must he
1							etland hydrolog ed or problema	
2				Hyd	drophytic			
	0 = T	otal Cover		-	etation	N		
				pres	sent?	N	_	
Remarks: (Include photo numbers here or on a separate s	sheet)							
No venetation present of the site is a mean	<b>4</b> 1.4411.4	d aaveka -	n field					
No vegetation present as the site is a recen	itiy tilleo	u soybea	in tield.					

Depth						o maioa	tor or confirm the	absence of mulcators.)
Depui	Matrix		Re	dox Feat	ures		Τ	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-24	10 YR 2/1	100		1		1	Silty Clay	
<u> </u>			<u> </u>	╂────		╂────		
	<i>ب</i>	┟────′	┣────	──	───	──	<b></b>	
		<u> </u>						
		1 '	1					
	1		[				1	
	<i>י</i>	'		<u> </u>		<u> </u>	<del> </del>	
	<i>'</i>	<b>├</b> ────'	<b> </b>	──	┥────	──	<u> </u>	<u> </u>
	ļ′	<b>└──</b> ′	<b></b>	$\vdash$	<u> </u>		ļ	
	· /	1'	l					
*Type: C =	Concentration, D =	= Depleti	ion, RM = Reduc	ed Matrix	x. MS = M	Masked S	Sand Grains. *	**Location: PL = Pore Lining, M = Matr
	oil Indicators:				.,			or Problematic Hydric Soils:
-	stisol (A1)		Sar	ndy Gleye	ed Matrix	x (S4)		rairie Redox (A16) ( <b>LRR K, L, R</b> )
	stic Epipedon (A2)			ndy Redo		(0-)		face (S7) ( <b>LRR K, L)</b>
	ack Histic (A3)			ipped Ma	• •			nganese Masses (F12) (LRR K, L, R)
	drogen Sulfide (A4	4)		amy Mucł	. ,			allow Dark Surface (TF12)
	•			•	•	. ,		
	atified Layers (A5)	)		amy Gley				xplain in remarks)
	m Muck (A10)	~ ~		pleted Ma	• • •	,		
	pleted Below Dark		· · ·	dox Dark		. ,		
	ick Dark Surface (/	. ,		pleted Da		· · ·		s of hydrophytic vegetation and weltan
	ndy Mucky Minera			dox Depr	ressions	(F8)	hydrology	y must be present, unless disturbed or
<u>5</u> c	m Mucky Peat or I	Peat (S3	·)					problematic
Restrictive	Layer (if observe	ed):				τ		
Туре:	<b>Lujo</b> ,	50.7.					Hydric soil	I present? N
Depth (inch					-		••••••	
	<u> </u>							
Remarks:								
HYDROL								
Wetland Hy	ydrology Indicato	ors:						
Prima <u>ry Ind</u>	licators (minimum	of o <u>ne is</u>	require <u>d; check</u>	all t <u>hat a</u>	ylqa <u>ı</u>		<u>Secon</u>	dary Indicators (minimum of two requi
	Water (A1)	<u> </u>			Fauna (B	313)		Surface Soil Cracks (B6)
	ater Table (A2)				uatic Plar			Drainage Patterns (B10)
Saturati						e Odor (C		Dry-Season Water Table (C2)
	/larks (B1)							Crayfish Burrows (C8)
	nt Deposits (B2)			(C3)		//		Saturation Visible on Aerial Imagery (C9
	posits (B3)			-	e of Red	uced Iron		Stunted or Stressed Plants (D1)
	at or Crust (B4)			-				Geomorphic Position (D2)
	posits (B5)			(C6)				FAC-Neutral Test (D5)
				Thin Mu	ick Surfar	co (C7)		
Inundati	ion Visible on Aeria	I Imagery	V(B7)		on Ouriac			
	ion Visible on Aeria y Vegetated Conca				or Well Da	· · ·		
Sparsel		ave Surfac		Gauge o	or Well Da	. ,	3)	
Sparsel Water-S	y Vegetated Conca Stained Leaves (B9)	ave Surfac		Gauge o	or Well Da	ata (D9)	3)	
Sparsel Water-S Field Obse	y Vegetated Conca Stained Leaves (B9) rvations:	ave Surfac	ce (B8)	Gauge o Other (E	or Well Da Explain in	ata (D9) Remarks	5)	
Sparsel Water-S Field Obse Surface wat	y Vegetated Conca Stained Leaves (B9) <b>rvations:</b> ter present?	ave Surfac	No	Gauge o Other (E X	or Well Da Explain in Depth (i	ata (D9) Remarks	s) 	Indicators of wetland
Sparsel Water-S Field Obse	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present?	ave Surfac )) Yes	ce (B8)	Gauge o Other (E	or Well Da Explain in Depth (i Depth (i	ata (D9) Remarks (inches): (inches):	s) 	Indicators of wetland hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present?	ave Surfac )) Yes Yes	No	Gauge o Other (E X X	or Well Da Explain in Depth (i Depth (i	ata (D9) Remarks	s) 	
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):	s)	hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca Describe re	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca Describe re	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N
Sparsel Water-S Field Obse Surface wat Water table Saturation p (includes ca Describe re	y Vegetated Conca Stained Leaves (B9) rvations: ter present? present? present? apillary fringe)	ave Surfac )) Yes Yes Yes	ce (B8)             No            No	Gauge of Other (E	Depth (i Depth (i Depth (i Depth (i Depth (i	ata (D9) Remarks (inches): (inches): (inches):		hydrology present? N

Project/Site Bitter Root Wind Farm Project Cit	ty/County:	Yellow Medi	cine Sampling	g Date: 10/16/2017
Applicant/Owner: RES Americas	State:	MN	Sampling	Point: W-114n46w30-u01
Investigator(s): JLK/KD	Secti	on, Township	, Range:	T114N R46W Sec. 30
Landform (hillslope, terrace, etc.): Depression, SH	Local	elief (concav	e, convex, none):	Convex
Slope (%): 0-2 Lat: 44.651498	Long:	-96.44087	78 Datum:	NAD83
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent slopes		NMI C	lassification:	
Are climatic/hydrologic conditions of the site typical for this time	e of the year?	Y (If	no, explain in rem	arks)
Are vegetation , soil , or hydrology	significantl	y disturbed?	Are "norr	mal circumstances"
Are vegetation , soil , or hydrology	naturally p	oblematic?	/	present? Yes
SUMMARY OF FINDINGS			(If needed, explai	in any answers in remarks.)
Hydrophytic vegetation present? N				
Hydric soil present? Y	Is the s	ampled area	within a wetland	? N
Indicators of wetland hydrology present? N	f yes, op	tional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a separate	e report.)			
Rainfall for previous three months is 37% wetter than	normal.			
VEGETATION Use scientific names of plants.				
Absolut	te Dominan	Indicator	Dominance Test	t Worksheet
	er t Species	Staus	Number of Domina that are OBL, FAC	
2			Total Number o	of Dominant
3			Species Acros	
5			Percent of Domina that are OBL, FAC	-
0	= Total Cove	r		
Sapling/Shrub stratum (Plot size:)			Prevalence Inde	
1			Total % Cover of:	
2			OBL species	0 x 1 = 0
3			FACW species _	$\begin{array}{c} 0 \\ \hline 0 \\ \hline 0 \\ x 3 = \\ \end{array} = \begin{array}{c} 0 \\ \hline 0 \\ \hline \end{array}$
5			FACU species	$\frac{0}{0} \times 4 = 0$
0	= Total Cove	r	UPL species	$0 \times 5 = 0$
Herb stratum (Plot size: )			Column totals	0 (A) 0 (B)
1 Glycine max 100	Y	NI	- Prevalence Index	( = B/A =
2				
3			Hydrophytic Veg	getation Indicators:
4				r hydrophytic vegetation
5			Dominance te	
6			Prevalence ir	1dex is ≤3.0*
/				adaptations* (provide
8			supporting da separate she	ata in Remarks or on a
10				hydrophytic vegetation*
100	= Total Cove	r	(explain)	
Woody vine stratum (Plot size:)			•	c soil and wetland hydrology must be less disturbed or problematic
2			Hydrophytic	
0	= Total Cove	r	vegetation present?	Ν
Pomorko: (Includo photo pumboro horo er er e concrete -tt	•)		FIGGOIN	
Remarks: (Include photo numbers here or on a separate sheet	)			

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth <u>Matrix</u> <u>Redox Features</u>								
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4	10 YR 2/1	100	. ,				Silty Clay	
4-12	10 YR 2/1	90	10 YR 5/1	10	D	М		
4-12	10 1K 2/1	90	10 18 3/1	10	U	IVI	Silty Clay	
					ļ	ļ		
*Type: C = 0	Concentration, D	= Deplet	ion, RM = Reduce	ed Matrix	k, MS = N	Aasked S	and Grains. **L	ocation: PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:						Indicators for I	Problematic Hydric Soils:
Hist	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast Prair	ie Redox (A16) ( <b>LRR K, L, R</b> )
Hist	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Surfac	ce (S7) ( <b>LRR K, L)</b>
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-Manga	nese Masses (F12) ( <b>LRR K, L, R</b> )
Hyd	lrogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Shallo	w Dark Surface (TF12)
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)	Other (expl	ain in remarks)
2 cr	m Muck (A10)		Dep	leted Ma	atrix (F3)			
Dep	leted Below Dark	c Surface	e (A11) Red	lox Dark	Surface	(F6)		
Thie	ck Dark Surface (	A12)	X Dep	leted Da	ark Surfa	ce (F7)	*Indicators o	f hydrophytic vegetation and weltand
Sar	dy Mucky Minera	al (S1)	Rec	lox Depr	essions	(F8)		nust be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	·)	-				problematic
Restrictive	Layer (if observ	od).				r –		
Type:		cuj.					Hydric soil p	resent? Y
Depth (inche	<i>sc).</i>				-		riyune son p	
					-			
Remarks:								
HYDROLO	DGY							
Wetland Hy	drology Indicato	ors:						
Primary Indi	cators (minimum	of one is	required: check	all that a	(vlaa		Seconda	ry Indicators (minimum of two required)
	Water (A1)				Fauna (B	13)		rface Soil Cracks (B6)
	iter Table (A2)				uatic Plar			ainage Patterns (B10)
Saturatio	· · ·				en Sulfide			/-Season Water Table (C2)
	arks (B1)							ayfish Burrows (C8)
	nt Deposits (B2)			(C3)			•	turation Visible on Aerial Imagery (C9)
	oosits (B3)			. ,	e of Redu	uced Iron		Inted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	Iron Redu	uction in T	illed Soils Ge	omorphic Position (D2)
Iron Dep	osits (B5)			(C6)			FA	C-Neutral Test (D5)
Inundati	on Visible on Aeria	al Imager	y (B7)	Thin Mu	ck Surfac	ce (C7)		
Sparsely	Vegetated Conca	ave Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser	vations:							
Surface wat	er present?	Yes	No	Х	Depth (i	inches):		
Water table		Yes	No	Х	Depth (i			Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	inches):		hydrology present? N
	pillary fringe)							
Describe red	corded data (strea	am gaug	e, monitoring wel	, aerial p	photos, p	revious i	nspections), if availa	ble:
_ ·								
Remarks:								
1								

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Sampling Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN	Sampling Point:	W-114n46w30-w01
Investigator(s): JLK/KD		Secti	on, Townshi	o, Range: T114N R	46W Sec. 30
Landform (hillslope, terrace, etc.): Depress	ion, TS	Local ı	elief (concav	e, convex, none):	Concave
Slope (%): 0-2 Lat: 44.651781		Long:	-96.4408	99 Datum:	NAD83
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent	slopes		NMI (	Classification:	PEM
Are climatic/hydrologic conditions of the site typical for	r this time o	of the year?	Y (I	f no, explain in remarks)	
Are vegetation , soil , or hydrol	ogy	significantl	y disturbed?	Are "normal circur	nstances"
Are vegetation , soil , or hydrol	ogy	naturally p	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any an	swers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y	-	Is the s	ampled area	a within a wetland?	Y
Indicators of wetland hydrology present? Y	-	f yes, op	otional wetlar	d site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)			
Rainfall for previous three months is 37% wett	-				
VEGETATION Use scientific names of plant	ts.				
	Absolute	Dominan	Indicator	Dominance Test Worksh	eet
<u>Tree Stratum</u> (Plot size:) 1	% Cover	t Species	Staus	Number of Dominant Specie that are OBL, FACW, or FA	
2				Total Number of Domina Species Across all Strat	
4				Percent of Dominant Specie	
5		T. L. L.O.		that are OBL, FACW, or FAC	
Sapling/Shrub stratur (Plot size: )	0	= Total Cove	r	Prevalence Index Works	hoot
1				Total % Cover of:	lieet
2				OBL species 10 x	1 = 10
3				FACW species 100 x	2 = 200
4				•	3 = 15
5					4 = 0
	0	= Total Cove	r	· · · · · · · · · · · · · · · · · · ·	5 = 0
Herb stratum (Plot size:)				Column totals 115 (A	· · · ·
1 Echinochloa crus-galli	100	Y	FACW	Prevalence Index = B/A =	1.96
2 Persicaria hydropiper	5	<u>N</u>	OBL OBL	Hydrophytic Vegetation	Indiaatora
3 Persicaria amphibia 4 Xanthium strumarium	5	<u>N</u>	FAC	Rapid test for hydroph	
5				X Dominance test is >50	
6				X Prevalence index is ≤	
7				Morphogical adaptation	ons* (provide
8				supporting data in Rei	
9				separate sheet)	
10	115	= Total Cove	r	Problematic hydrophy (explain)	tic vegetation*
<u>Woody vine stratum</u> (Plot size:)				*Indicators of hydric soil and w present, unless disturb	, ,,
2				Hydrophytic	
	0	= Total Cove	r	vegetation present? Y	
Remarks: (Include photo numbers here or on a separa	ate sheet)				_

Profile Des	cription: (Descr	ibe to th	e depth neede	d to docu	ment the	e indicat	or or confirm the abse	nce of indicators.)	
Depth	Matrix		R	edox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-4	10 YR 2/1	100					Silty Clay		
4-12	10 YR 2/1	90	10 YR 5/1	10	D	М	Silty Clay		
4-12	10 11( 2/1	30	10 11( 3/1	10	0	IVI	Only Oldy		
*T		Denlati		a a al Mantulio		An alva al C		tion DL – Dono Lining M – Motrix	
	Concentration, D :	= Deplet	ion, RM = Redu	ced Matrix	k, ims = i	lasked S		tion: PL = Pore Lining, M = Matrix	
-	il Indicators:		0	andu Clau	od Motrix	(01)		blematic Hydric Soils:	
	isol (A1) ic Epipedon (A2)			andy Gley andy Redo		(54)		Redox (A16) ( <b>LRR K, L, R</b> ) S7) ( <b>LRR K, L)</b>	
	ck Histic (A3)			ripped Ma	• •			e Masses (F12) ( <b>LRR K, L, R</b> )	
	lrogen Sulfide (A4	1)		amy Muc	. ,			Dark Surface (TF12)	
	tified Layers (A5)	,		amy Gley	•	. ,	Other (explain		
	n Muck (A10)	)		epleted M		. ,		in ternarks)	
	eted Below Dark	Surface		edox Dark	. ,				
· · ·	ck Dark Surface (			epleted Da		. ,	*Indicators of hu	drophytic vegetation and weltand	
	idy Mucky Minera			edox Depi				be present, unless disturbed or	
	n Mucky Peat or I	• •			00010110	(10)	nyurology mus	problematic	
	-	•	7			r		problemale	
	Layer (if observe	ed):							
Type:					-		Hydric soil pres	ent? Y	
Depth (inche	es):				-				
Remarks:									
HYDROLO	DGY								
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; chec	k all that a	pply)		Secondary I	ndicators (minimum of two required)	
X Surface	Water (A1)			Aquatic	Fauna (B	13)	Surfac	e Soil Cracks (B6)	
High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	Draina	ge Patterns (B10)	
Saturatio	on (A3)				ogen Sulfide Odor (C1) Dry-Season Water Table (C2)				
	arks (B1)				d Rhizosp	heres on		sh Burrows (C8)	
	nt Deposits (B2)			(C3)				tion Visible on Aerial Imagery (C9)	
	osits (B3)				e of Redu		· · · ·	d or Stressed Plants (D1)	
	it or Crust (B4) osits (B5)				Iron Redu	iction in 1		orphic Position (D2)	
·	osits (B5) on Visible on Aeria	Imagan	(B7) —	(C6)	ck Surfac	$\sim (C7)$		leutral Test (D5)	
	Vegetated Conca				or Well Da	( )			
	tained Leaves (B9		<u> </u>	-	Explain in		)		
Field Obser	,	/				Ttomanto	)		
Surface wat		Yes	X No		Depth (i	inches).	2		
Water table		Yes	No	X	Depth (i	,		ndicators of wetland	
Saturation p		Yes	X No		Depth (i			hydrology present? Y	
	pillary fringe)					,	[		
-		am daud	e, monitorina w	ell, aerial ı	ohotos, n	revious i	nspections), if available:		
		33	,	,	<i>-</i> , P		,,,		
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samp	ling Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Samp	ing Point:	w-114n46w34-non1
Investigator(s): JLK/KD		Secti	on, Townshij	o, Range:	T114N I	R46W Sec. 34
Landform (hillslope, terrace, etc.): Depres	sion	Local r	elief (concav	e, convex, none	):	Concave
Slope (%): 0-2 Lat: 44.645387		Long:	-96.38952	26 Datun	ו:	NAD83
Soil Map Unit Name Vallers Clay Loam, 0 to 2 percent	slopes		NMI C	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	this time o	f the year?	Y (I	f no, explain in r	emarks)	
Are vegetation , soil , or hydrolo	gy	significantly	/ disturbed?	Are "r	ormal circu	imstances"
Are vegetation , soil , or hydrolo	gy	naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If needed, ex	plain any a	nswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N		Is the s	ampled area	a within a wetla	nd?	Ν
Indicators of wetland hydrology present? N		f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a s	separate re	eport.)		-		
	opulato it	50010.)				
Rainfall for previous three months is 37% wette	er than no	ormal.				
VEGETATION Use scientific names of plants						
	Absolute	Dominan	Indicator	Dominance T	est Works	heet
Tree Stratum (Plot size: )		t Species	Staus	Number of Dor	ninant Spec	ies
1				that are OBL, F	•	
2				Total Numb	er of Domin	ant
3				Species Ac	ross all Stra	ita: <u>        2      (</u> B)
4				Percent of Don	•	
5	0	= Total Cove		that are OBL, F	ACW, or FA	AC: <u>50.00%</u> (A/B)
Sapling/Shrub stratum (Plot size: )	0	- Total Cove	I	Prevalence Ir	dex Work	sheet
1				Total % Cove		
2				OBL species	0 >	x 1 = 0
3				FACW specie	s 50 x	x 2 = 100
4				FAC species		x 3 = 0
5				FACU species		x 4 = <u>220</u>
Llark strature (Dist size)	0	= Total Cove	r	UPL species Column totals		x = 0
Herb stratum (Plot size:)	50	V			· · · · · · · · · · · · · · · · · · ·	(A) <u>320</u> (B)
1 Phalaris arundinacea 2 Bromus inermis	50 35	<u>Y</u> Y	FACW FACU	Prevalence In	dex = B/A =	= <u>3.05</u>
3 Cirsium arvense	15	 N	FACU	Hydrophytic	Vegetation	Indicators:
4 Asclepias syriaca	5	N	FACU		-	hytic vegetation
5				Dominand	e test is >5	60%
6				Prevalence	e index is ≤	≦3.0*
7						ons* (provide
8						emarks or on a
9 10				separate :	,	utio vogotation*
	105	= Total Cove		(explain)	lic nyaroph	ytic vegetation*
Woody vine stratum (Plot size: )	100		•		drie seil and	watland budgalagy must be
, <u> </u>						wetland hydrology must be bed or problematic
2				Hydrophy		
	0	= Total Cove	r	vegetatio		
				present?	N	
Remarks: (Include photo numbers here or on a separat	te sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment th	e indicat	or or confirm the a	bsence of indicators.)
Depth	Matrix		Red	lox Feat	ures			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10 YR 2/1	100					Silty Clay Loam	
							, <u>,</u>	
*Type: C = 0	Concentration, D	= Depleti	on, RM = Reduce	ed Matrix	, MS = N	Aasked S	and Grains. **L	ocation: PL = Pore Lining, M = Matrix
Hydric So	oil Indicators:						Indicators for	Problematic Hydric Soils:
His	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast Prair	ie Redox (A16) ( <b>LRR K, L, R</b> )
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Surfa	ce (S7) ( <b>LRR K, L)</b>
	ck Histic (A3)		Stri	oped Ma	trix (S6)		Iron-Manga	anese Masses (F12) (LRR K, L, R)
	drogen Sulfide (A	4)	Loa	my Mucl	ky Miner	al (F1)	Very Shallo	w Dark Surface (TF12)
	atified Layers (A5			•	ed Matri	. ,		ain in remarks)
	m Muck (A10)				atrix (F3)		、 .	,
	oleted Below Dark	Surface			Surface			
	ck Dark Surface (		· · ·		ark Surfa	. ,	*Indicators o	f hydrophytic vegetation and weltand
	ndy Mucky Minera				essions	· · ·		nust be present, unless disturbed or
	m Mucky Peat or					()	,	problematic
	-	•	/			1		
	Layer (if observe	ea):					11	
Type:					-		Hydric soil p	resent? N
Depth (inch	es):				-			
Remarks:								
HYDROL	OGY							
Wetland Hy	drology Indicate	ors:						
Primary Ind	cators (minimum	of one is	required; check	all that a	(ylqq		Seconda	ry Indicators (minimum of two required
	Water (A1)		<b>·</b> · · ·		Fauna (B	(13)		rface Soil Cracks (B6)
	ater Table (A2)					nts (B14)		ainage Patterns (B10)
Saturati						Odor (Ć		y-Season Water Table (C2)
	larks (B1)							ayfish Burrows (C8)
Sedime	nt Deposits (B2)			(C3)				turation Visible on Aerial Imagery (C9)
Drift De	posits (B3)				e of Red	uced Iron	(C4) Stu	unted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)			Recent I	ron Redu	uction in T	illed Soils Ge	omorphic Position (D2)
Iron Dep	oosits (B5)			(C6)			FA	C-Neutral Test (D5)
Inundati	on Visible on Aeria	I Imagery	/ (B7)	Thin Mu	ck Surfac	ce (C7)		
Sparsel	y Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)		
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obse	rvations:			-				
Surface wat	er present?	Yes	No	Х	Depth (i	inches):		
Water table	present?	Yes	No	Х	Depth (			Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	inches):		hydrology present? N
(includes ca	pillary fringe)							
Describe re	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if availa	ble:
	```	2 0	5	•	••			
Remarks:		-		-	-		-	
1								

Project/Site Bitter Root Wind Farm Project	C	City/County:	Yellow Med	licine Sampli	ng Date:	10/17/2017
Applicant/Owner: RES Americas		State:	MN	Samplir	ng Point:	W-114n46w35-U06
Investigator(s): JLK/KD		Sec	tion, Townshi	p, Range:	T114N F	R46W Sec. 35
Landform (hillslope, terrace, etc.): De	pression, SH	Local	relief (concav	/e, convex, none):		Convex
Slope (%): 0-2 Lat: 44.6	37915	Long:	-96.3696	63 Datum:		NAD83
Soil Map Unit Name Vallers Clay Loam, 0 to 2 p	ercent slopes		NWL	Classification:		
Are climatic/hydrologic conditions of the site typ	ical for this tin	ne of the year?	Y (	lf no, explain in re	marks)	
Are vegetation , soil , or	hydrology	significant	ly disturbed?	Are "no	rmal circu	imstances"
	hydrology		problematic?	,		present? Yes
SUMMARY OF FINDINGS				(If needed, exp	lain any ai	nswers in remarks.)
Hydrophytic vegetation present?	Ν					
Hydric soil present?	Y	Is the	sampled are	a within a wetlan	d?	Ν
Indicators of wetland hydrology present?	N	f yes, o	ptional wetlar	nd site ID:	_	
Remarks: (Explain alternative procedures here of		-	•			
Remarks. (Explain alternative procedures here o	or in a separa	te report.)				
Rainfall for previous three months is 37%	wetter than	n normal.				
VEGETATION Use scientific names of				Deminence Te	- 4 \ \ \ 4 /	h 4
<u>Tree Stratum</u> (Plot size:	Absolu	ute Dominan /er t Species	Indicator Staus	Dominance Te		
1 (Plot size.	_) % 00	lei i Species	Slaus	Number of Domi that are OBL, FA		
2				Total Number		
3				Species Acro		
4				Percent of Domi	nant Spec	
5				that are OBL, FA	CW, or FA	C: 0.00% (A/B)
	0	= Total Cove	er			
Sapling/Shrub stratum (Plot size:	)			Prevalence Inc		sheet
1				Total % Cover OBL species	of: 0 >	(1- 0
3				FACW species		(1 = 0) (2 = 0)
4				FAC species		$x_{2} = \frac{0}{0}$
5				FACU species		4 = 560
	0	= Total Cove	er	UPL species	0 >	x 5 = 0
Herb stratum (Plot size:	)			Column totals	140 (	A) 560 (B)
1 Elymus trachycaulus	100	Y	FACU	Prevalence Inde	ex = B/A =	= 4.00
2 Cirsium arvense	30	Y	FACU			
3 Medicago sativa	10	<u>N</u>	FACU	Hydrophytic V	-	
4						hytic vegetation
5				Dominance Prevalence		
6				—		
8					•	ons* (provide emarks or on a
9				separate sh		
10					-	vtic vegetation*
	140	= Total Cove	er	(explain)		, C
<u>Woody vine stratum</u> (Plot size:	)			-		wetland hydrology must be
2				Hydrophyt		bed or problematic
	0	= Total Cove	er	vegetation		
	Ũ			present?	N	
Remarks: (Include photo numbers here or on a	sonarato shor					
	separate shee	el)				
Location is a mudflat that was flooded	-		nated by we	eedy vegetation	ı.	

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the absen	ce of indicators.)
Depth <u>Matrix</u> <u>Redox Features</u>								
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-16	10 YR 2/1	100					Silty Clay	
16-20	10 YR 2/1	80	10YR 4/1	20	D	М	Silty Clay	
					_		,,	
*Tvpe: C = (	Concentration, D	= Deplet	on. RM = Reduce	ed Matrix	. MS = N	Aasked S	and Grains. **Locati	on: PL = Pore Lining, M = Matrix
	oil Indicators:				,			lematic Hydric Soils:
-	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)		edox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo		( )	Dark Surface (S	
	ck Histic (A3)			•	trix (S6)		Iron-Manganese	Masses (F12) (LRR K, L, R)
Hyd	lrogen Sulfide (A	4)	Loa	my Mucl	ky Minera	al (F1)	Very Shallow Da	ark Surface (TF12)
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)	Other (explain ir	n remarks)
2 cr	n Muck (A10)		Dep	leted Ma	atrix (F3)			
	leted Below Dark				Surface	. ,		
	ck Dark Surface (	,			ark Surfa			rophytic vegetation and weltand
	ndy Mucky Minera	. ,		lox Depr	essions	(F8)	hydrology must l	be present, unless disturbed or
5 cr	n Mucky Peat or	Peat (S3	5)					problematic
Restrictive	Layer (if observ	ed):						
Туре:							Hydric soil prese	nt? Y
Depth (inche	es):				_			
Remarks:								
HYDROLO	DGY							
Wetland Hy	drology Indicate	ors:						
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Secondary In	dicators (minimum of two required)
	Water (A1)				Fauna (B	(13)	-	Soil Cracks (B6)
	iter Table (A2)				uatic Plar			e Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1) Dry-Sea	son Water Table (C2)
	arks (B1)				d Rhizosp	heres on		Burrows (C8)
	nt Deposits (B2)			(C3)				on Visible on Aerial Imagery (C9)
-	posits (B3)					uced Iron		or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in I		phic Position (D2)
	oosits (B5) on Visible on Aeria	l Imager	(B7)	(C6)	ck Surfac	$\sim (C7)$	FAC-Ne	utral Test (D5)
	Vegetated Conca				or Well Da	( )		
	tained Leaves (B9			-		Remarks	)	
Field Obser	·	/					/	
Surface wat		Yes	No	Х	Depth (i	inches):		
Water table	•	Yes	No		Depth (i		In	dicators of wetland
Saturation p		Yes	No	Х	Depth (i		h	ydrology present? N
	pillary fringe)				- · · ·			
Describe rec	corded data (strea	am gaug	e, monitoring wel	, aerial p	photos, p	revious i	nspections), if available:	
Damand								
Remarks:								

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Med	icine	Sampling Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN	Ş	Sampling Point:	W-114n46w35-w06
Investigator(s): JLK/KD		Secti	on, Township	o, Range:	T114N	R46W Sec. 35
Landform (hillslope, terrace, etc.): Depression,	TS	Local r	elief (concav	e, convex,	, none):	Concave
Slope (%): 0-2 Lat: 44.638025		Long:	-96.36959	99	Datum:	NAD83
Soil Map Unit Name Parnell Silty Clay Loam, 0 to 1 percen	nt slopes	3	NWI C	Classificati	on:	PEM
Are climatic/hydrologic conditions of the site typical for this	s time of	f the year?	Y (l	f no, expla	ain in remarks)	
Are vegetation , soil , or hydrology		significantly	/ disturbed?		Are "normal circ	umstances"
Are vegetation , soil , or hydrology		naturally pr	oblematic?			present? Yes
SUMMARY OF FINDINGS				(If neede	ed, explain any a	answers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the s	ampled area	a within a	wetland?	Y
Indicators of wetland hydrology present? Y		f yes, op	tional wetlan	nd site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate re	port.)				
Rainfall for previous three months is 37% wetter the	han no	rmal.				
VEGETATION Use scientific names of plants.						
•	solute	Dominan	Indicator	Domina	nce Test Works	sheet
		t Species	Staus		of Dominant Spec	
1		·			OBL, FACW, or F	
2				Total	Number of Domir	nant
3				Spec	ies Across all Stra	ata: <u> </u>
4					of Dominant Spec	
5		Total Cove		that are C	OBL, FACW, or FA	AC: <u>66.67%</u> (A/B)
Sapling/Shrub stratum (Plot size: )	0 =	- Total Cove	ſ	Provalo	nce Index Work	rshoot
1					Cover of:	Sheet
2				OBL spe	-	x 1 = 0
3				FACW s		x 2 = 20
4				FAC spe	ecies 10	x 3 = 30
5				FACU s	-	x 4 = <u>100</u>
	0 =	Total Cove	r	UPL spe		x 5 = 0
Herb stratum (Plot size:)				Column		(A) <u>150</u> (B)
,	25	<u>Y</u>	FACU	Prevaler	nce Index = B/A	= <u>3.33</u>
	10 10	Y Y	FACW FAC	Hydrop	hytic Vegetatio	n Indicators:
4	10	<u> </u>	FAC			phytic vegetation
5					ninance test is >	
6					valence index is	
7				Mor	phogical adaptat	tions* (provide
8					porting data in R	emarks or on a
9					arate sheet)	
10	45	Tatal Carro			olematic hydroph	vtic vegetation*
Woody vine stratum (Plot size: )	45 =	Total Cove	ſ		olain)	
1					ors of hydric soil and present, unless distu	wetland hydrology must be
2					Irophytic	
—	0 =	Total Cove		veg	etation	
				pres	sent?	<u></u>
Remarks: (Include photo numbers here or on a separate s						
Location is a mudflat that was flooded in spring	g and r	now domin	ated by we	edy vege	etation.	

Profile Des	cription: (Descr	ibe to th	e depth r	needed	to docu	ment the	e indicat	or or confirm the	absence	of indicators.)
Depth	Matrix			Rec	lox Feat	ures				
(Inches)	Color (moist)	%	Color (I	noist)	%	Type*	Loc**	Texture		Remarks
0-16	10 YR 2/1	100						Silty Clay		
16-20	10 YR 2/1	80	10YR	4/1	20	D	М	Silty Clay		
10-20	10 11( 2/1	00	1011		20	0	IVI	Only Olay		
	Concentration, D	= Deplet	ion, RM =	Reduce	ed Matrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix
-	oil Indicators:									atic Hydric Soils:
	tisol (A1)		_			ed Matrix	(S4)			k (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)		_		dy Redo				face (S7) (	
	ck Histic (A3)				•	trix (S6)			-	asses (F12) ( <b>LRR K, L, R</b> )
Hyd	Irogen Sulfide (A4	4)		Loa	my Mucl	ky Minera	al (F1)	Very Sha	allow Dark	Surface (TF12)
Stra	atified Layers (A5	)	_	Loa	my Gley	ed Matrix	x (F2)	Other (ex	xplain in rei	marks)
	m Muck (A10)		-	Dep	leted Ma	atrix (F3)				
	leted Below Dark		e (A11)			Surface	. ,			
	ck Dark Surface (	,	_			ark Surfa	. ,			nytic vegetation and weltand
Sar	ndy Mucky Minera	l (S1)		Rec	lox Depr	essions	(F8)	hydrology	y must be p	present, unless disturbed or
5 ci	n Mucky Peat or	Peat (S3	)						pro	oblematic
Restrictive	Layer (if observ	ed):								
Type:		,-						Hydric soil	present?	Y
Depth (inche	es):					-				
						-				
Remarks:										
HYDROLO	DGY									
Wetland Hy	drology Indicate	ors:								
Primary Indi	cators (minimum	of one is	required;	check	all that a	pply)		Secon	darv Indica	tors (minimum of two required)
X Surface			• •			Fauna (B	13)			I Cracks (B6)
	iter Table (A2)					uatic Plar				atterns (B10)
Saturatio	· · ·						Odor (Ć		-	Water Table (C2)
Water N	arks (B1)							·	Crayfish Bu	
Sedimer	nt Deposits (B2)				(C3)				Saturation \	/isible on Aerial Imagery (C9)
Drift Dep	oosits (B3)				Presenc	e of Redu	uced Iron	(C4) X S	Stunted or S	Stressed Plants (D1)
Algal Ma	at or Crust (B4)				Recent I	ron Redu	ction in T	illed Soils X	Geomorphic	c Position (D2)
Iron Dep	osits (B5)				(C6)			Х	FAC-Neutra	ıl Test (D5)
	on Visible on Aeria					ck Surfac	. ,			
	Vegetated Conca		ce (B8)	_		or Well Da	. ,			
Water-S	tained Leaves (B9	)			Other (E	xplain in	Remarks	)		
Field Obser	vations:									
Surface wat	er present?	Yes	Х	No		Depth (i	nches):	3		
Water table		Yes		No	Х	Depth (i			Indica	ators of wetland
Saturation p		Yes	Х	No		Depth (i	nches):	0	hydr	ology present? Y
(includes ca	pillary fringe)								<u>.</u>	<u>_</u>
Describe red	corded data (strea	am gaug	e, monitor	ing well	, aerial p	photos, p	revious i	nspections), if avai	ilable:	
	,			~	•					
Remarks:					-					

Project/Site Bitter Root Wind Farm Project	City/C	County:	Yellow Medi	icine Sampling	Date: 10/16/2017
Applicant/Owner: RES Americas		State:	MN	Sampling	Point: w-115n46w31-u0
Investigator(s): JLK/KD		Sectio	on, Township	o, Range:	T115n R46w Sec31
Landform (hillslope, terrace, etc.): Hillslope	е	Local re	elief (concav	e, convex, none):	LL
Slope (%): <2% Lat: 44.732388		Long:	-96.4497	1 Datum:	NAD83
Soil Map Unit Name Fordville loam, coteau, 0 to 2 percer	nt slopes		NWI C	Classification:	Upland
Are climatic/hydrologic conditions of the site typical for th	is time of	the year?	Y (li	f no, explain in rem	arks)
Are vegetation , soil , or hydrology	у	significantly	disturbed?	Are "norn	nal circumstances"
Are vegetation , soil , or hydrology	у	naturally pro	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explai	in any answers in remarks.)
Hydrophytic vegetation present? N					
Hydric soil present? Y		Is the sa	ampled area	a within a wetland	? N
Indicators of wetland hydrology present? N		f yes, opt	tional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a se	parate re	port.)			
	paratorio	P =)			
Rainfall for previous three months is 37% wetter	than no	rmal.			
VEGETATION Use scientific names of plants.					
	bsolute	Dominan	Indicator	Dominance Test	Worksheet
		t Species	Staus	Number of Domina	
1 ,,		·		that are OBL, FAC	
2				Total Number o	f Dominant
3				Species Acros	s all Strata: <u>2</u> (B)
4				Percent of Domina	•
5	0 =	Total Cover		that are OBL, FAC	W, or FAC: <u>50.00%</u> (A/E
Sapling/Shrub stratum (Plot size: )	=	- Total Cover		Prevalence Inde	x Worksheet
1				Total % Cover of:	
2		·		OBL species	0 x 1 = 0
3		·		FACW species	0 x 2 = 0
4				FAC species	75 x 3 = 225
5				FACU species	$25 \times 4 = 100$
	0 =	Total Cover		UPL species	$0 \times 5 = 0$
Herb stratum (Plot size:)	70	V	540	Column totals	100 (A) $325$ (B)
1     Poa pratensis       2     Elymus repens	70 20	<u>Y</u> Y	FAC FACU	Prevalence Index	x = B/A = 3.25
3 Plantago major	5	<u> </u>	FAC	Hydrophytic Ver	getation Indicators:
4 Cirsium arvense	5	<u> </u>	FACU		hydrophytic vegetation
5		·		N Dominance te	
6				N Prevalence ir	ndex is ≤3.0*
7					adaptations* (provide
8		·			ata in Remarks or on a
9 10				separate she	et) nydrophytic vegetation*
	100 =	Total Cover		(explain)	rydrophytic vegetation
Woody vine stratum (Plot size: )					soil and wetland hydrology must
1					ess disturbed or problematic
2		·		Hydrophytic	
	0 =	Total Cover		vegetation	N
				present?	<u>N</u>
Remarks: (Include photo numbers here or on a separate	sheet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm the a	bsence of indicators.)	
Depth	Matrix		-	dox Feat				,	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-25	10 YR 2/1	100	- ( )	I	71	I		SC	
0-23	10 11( 2/1	100						30	
									,
									,
*Turnet O = (	L Concentration D	– Domiati	ian DM – Daduar	d Matrix		laakad C	l Canal Craina **!	eastism: DL - Dere Lining M - L	Matrix
	Concentration, D	= Depleti	ion, Rivi = Reduce	ed Matrix	, IVIS = IN	/lasked S		ocation: PL = Pore Lining, M = I	viatrix
-	oil Indicators:					( <b>a</b> 1)		Problematic Hydric Soils:	
	tisol (A1)				ed Matrix	(S4)		rie Redox (A16) ( <b>LRR K, L, R</b> )	
	tic Epipedon (A2)			ndy Redo	. ,			ice (S7) ( <b>LRR K, L)</b>	
	ck Histic (A3)			pped Ma	• • •			anese Masses (F12) ( <b>LRR K, L,</b>	R)
Hyd	drogen Sulfide (A4	4)	Loa	my Mucl	ky Minera	al (F1)	Very Shall	ow Dark Surface (TF12)	
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)	Other (exp	lain in remarks)	
2 ci	m Muck (A10)		Dep	oleted Ma	atrix (F3)				
Dep	oleted Below Dark	Surface	e (A11) Rec	lox Dark	Surface	(F6)			
X Thi	ck Dark Surface (	A12)	Dep	pleted Da	ark Surfa	ce (F7)	*Indicators	of hydrophytic vegetation and we	ltand
Sar	ndy Mucky Minera	ıl (S1)	Rec	dox Depr	essions	(F8)		nust be present, unless disturbe	
	m Mucky Peat or	. ,				( - )		problematic	
	-	-	/			r		1	
	Layer (if observe	ed):							
Туре:							Hydric soil p	oresent? Y	
Depth (inche	es):				-				
Remarks:									
HYDROLO									
-	drology Indicate								
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Second	ary Indicators (minimum of two re	equired
Surface	Water (A1)			Aquatic	Fauna (B	13)	S	urface Soil Cracks (B6)	
High Wa	ater Table (A2)			True Aq	uatic Plar	nts (B14)	D	ainage Patterns (B10)	
Saturatio	on (A3)			Hydroge	n Sulfide	Odor (C	1) D	y-Season Water Table (C2)	
Water N	larks (B1)			Oxidized	l Rhizosp	heres on	Living Roots C	ayfish Burrows (C8)	
Sedimer	nt Deposits (B2)			(C3)			S	aturation Visible on Aerial Imagery	(C9)
Drift Dep	posits (B3)			Presenc	e of Redu	uced Iron	(C4) St	unted or Stressed Plants (D1)	
Algal Ma	at or Crust (B4)			Recent I	ron Redu	iction in T	Tilled Soils G	eomorphic Position (D2)	
Iron Dep	oosits (B5)			(C6)			F/	AC-Neutral Test (D5)	
Inundati	on Visible on Aeria	I Imagery	y (B7)	Thin Mu	ck Surfac	e (C7)			
Sparsely	y Vegetated Conca	ve Surfa	ce (B8)	Gauge c	or Well Da	ata (D9)			
Water-S	tained Leaves (B9	)		Other (E	xplain in	Remarks	)		
Field Obser	rvations:			-					
Surface wat		Yes	No	Х	Depth (i	nches):			
Water table		Yes	No	Х	Depth (i			Indicators of wetland	
Saturation p		Yes	No	X	Depth (i		——— I	hydrology present?	١
	pillary fringe)				• · ·	,			—
Describe rea	corded data (strea	am dalida	e monitoring well	l aerial r	hotos n	revious i	nspections), if availa	able:	-
Describered		ani yauyo	e, monitoring wen	i, acriai p	notos, p	i evious i	rispections), il avalla	idle.	
Remarke.									
Remarks:									
Remarks:									
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	licine	Sampling Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN		Sampling Point:	w-115n46w31-u02
Investigator(s): JLK/KD		Sect	ion, Townshij	p, Range:	·	
Landform (hillslope, terrace, etc.): Hillsl	оре	Local	relief (concav	/e, convex	, none):	LL
Slope (%): <2% Lat: 44.731882	2	Long:	-96.4459	94	Datum:	NAD83
Soil Map Unit Name Fordville loam, coteau, 0 to 2 per	cent slopes		NWI (	Classificat	ion:	Upland
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (I	f no, expla	ain in remarks)	
Are vegetation , soil , or hydrol	logy	significantl	y disturbed?		Are "normal circu	mstances"
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?			present? Yes
SUMMARY OF FINDINGS				(If need	ed, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? N		Is the s	sampled area	a within a	wetland?	Ν
Indicators of wetland hydrology present? N		f yes, op	ptional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport)				
		sport.)				
Rainfall for previous three months is 37% wet	ter than no	ormal.				
VEGETATION Use scientific names of plan	te					
	Absolute	Dominan	Indicator	Domina	ance Test Works	heet
<u>Tree Stratum</u> (Plot size:)		t Species	Staus	Number	of Dominant Speci OBL, FACW, or FA	es
2				Total	Number of Domina	ant
3				-	cies Across all Stra	. ,
5					of Dominant Speci OBL, FACW, or FA	.C: 100.00% (A/B)
·	0	= Total Cove	er		, ,	()
Sapling/Shrub stratum (Plot size:	)			Prevale	ence Index Works	sheet
1				Total %	Cover of:	
2				OBL sp		x 1 = <u>0</u>
3				FACW	·	
4			. <u> </u>	FAC sp FACU s		3 = 0 4 = 80
3	0	= Total Cove	۲ <u></u>	UPL sp	· · · · · · · · · · · · · · · · · · ·	4 = 80 5 = 0
Herb stratum (Plot size:	)		<i>/</i>	Column		A) 280 (B)
1 Phalaris arundinacea	, 100	Y	FACW		nce Index = B/A =	· · ·
2 Cirsium arvense	10	N	FACU			
3 Asclepias syriaca	10	Ν	FACU	Hydrop	hytic Vegetation	Indicators:
4				Rap	oid test for hydrop	hytic vegetation
5					ninance test is >5	
6				X Pre	valence index is ≤	:3.0*
					phogical adaptati	
8					porting data in Re arate sheet)	emarks or on a
10					blematic hydrophy	vtic vegetation*
	120	= Total Cove	er		plain)	
Woody vine stratum     (Plot size:)       1	, 				present, unless distur	wetland hydrology must be bed or problematic
2	0	= Total Cove	er	veg	drophytic Jetation sent? Y	
Demorker (Include shote symbols have a set	oto cha-4					<u> </u>
Remarks: (Include photo numbers here or on a separa	ate sneet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the abs	ence of indicators.)
Depth	Matrix		-	lox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10 YR 2/1	100	· · · · ·					SC
12 - 24	10 YR 3/2	100						SC
12 - 24	10 113/2	100						30
	Concentration, D	= Depleti	ion, RM = Reduce	ed Matrix	κ, MS = Ν	lasked S		ation: PL = Pore Lining, M = Matrix
Hydric So	oil Indicators:							oblematic Hydric Soils:
	tisol (A1)				ed Matrix	: (S4)		Redox (A16) ( <b>LRR K, L, R)</b>
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)			(S7) ( <b>LRR K, L)</b>
Bla	ck Histic (A3)		Stri	oped Ma	trix (S6)		Iron-Mangane	ese Masses (F12) ( <b>LRR K, L, R)</b>
Hyd	drogen Sulfide (A	4)	Loa	my Mucł	ky Minera	al (F1)	Very Shallow	Dark Surface (TF12)
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	(F2)	Other (explair	n in remarks)
2 ci	m Muck (A10)		Dep	leted Ma	atrix (F3)			
Dep	pleted Below Dark	surface	e (A11) Rec	lox Dark	Surface	(F6)		
X Thi	ck Dark Surface (	A12)	Dep	leted Da	ark Surfa	ce (F7)	*Indicators of h	ydrophytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)			essions (	• •		st be present, unless disturbed or
	m Mucky Peat or	. ,		•	·	. ,	, ,,	problematic
	-		,					•
	Layer (if observ	ea):						ant? N
Type:					-		Hydric soil pres	sent? N
Depth (inche	es):				-			
Remarks:								
l ikely m	eets A12.							
Encory	00007(12)							
HYDROL								
		ore:						
-	drology Indicate							
	cators (minimum	of one is	required; check			(0)		Indicators (minimum of two required)
	Water (A1)				Fauna (B			ce Soil Cracks (B6)
0	ter Table (A2)				uatic Plar			age Patterns (B10)
Saturatio					n Sulfide			Season Water Table (C2)
	larks (B1)				l Rhizosp	heres on	<b>e</b> ,	ish Burrows (C8)
	nt Deposits (B2)			(C3)				ation Visible on Aerial Imagery (C9)
	posits (B3)				e of Redu			ed or Stressed Plants (D1)
	at or Crust (B4)				ron Redu	iction in 1		norphic Position (D2)
	osits (B5)		· (DZ)	(C6)		. (07)	FAC-	Neutral Test (D5)
	on Visible on Aeria				ck Surfac			
	/ Vegetated Conca		се (В8)	-	or Well Da		N N	
	tained Leaves (B9	)		Other (E	xplain in	Remarks	)	
Field Obser								
Surface wat	•	Yes	No	<u>X</u>	Depth (i			In the state of the state of
Water table		Yes	No	X	Depth (i	,		Indicators of wetland
Saturation p		Yes	No	Х	Depth (i	ncnes):		hydrology present? N
	pillary fringe)							
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if available	2
Remarks:								

Project/Site Bitter Root Wind Farm Project	City/0	County:	Yellow Med	icine Samplin	g Date: 10/16/2017
Applicant/Owner: RES Americas		State:	MN	Sampling	g Point: w-115n46w31-w01
Investigator(s): JLK/KD		Section	on, Township	o, Range:	T155N R46W Sec. 31
Landform (hillslope, terrace, etc.): Depre	sson	Local r	elief (concav	e, convex, none):	Concave
Slope (%): 0-2 Lat: 44.732582		Long:	-96.44976	58 Datum:	NAD83
Soil Map Unit Name Fordville loam, coteau, 0 to 2 per	cent slopes		NMI C	Classification:	PSS
Are climatic/hydrologic conditions of the site typical for	r this time of	f the year?	Y (l	f no, explain in rem	narks)
Are vegetation, soil, or hydrol	ogy	significantly	/ disturbed?	Are "nor	mal circumstances"
Are vegetation , soil , or hydrol	ogy	naturally pr	oblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, expla	ain any answers in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y	_	Is the s	ampled area	a within a wetland	<b>!?</b> Y
Indicators of wetland hydrology present? Y	_	f yes, op	tional wetlan	d site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)			
Rainfall for previous three months is 37% wett	er than no	ormal.			
VEGETATION Use scientific names of plant	ts.				
	Absolute	Dominan	Indicator	Dominance Tes	t Worksheet
Tree Stratum (Plot size:)	% Cover	t Species	Staus	Number of Domin	ant Species
1 Acer negundo	5	Y	FAC	that are OBL, FAC	
2 Fraxinus pennsylvanica	5	Y	FACW	Total Number	
3 Salix fragilis	5	Y	FAC	Species Acros	( )
4 5				Percent of Domin that are OBL, FAC	•
<u> </u>	15 =	= Total Cover			$\mathcal{W}, \mathcal{O} \cap \mathcal{A} \mathcal{O}$ . $\mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} $
Sapling/Shrub stratum (Plot size: )		- 1000 0010	1	Prevalence Inde	ex Worksheet
1 Acer negundo	10	Y	FAC	Total % Cover of	
2 Fraxinus pennsylvanica	10	Y	FACW	OBL species	0 x 1 = 0
3				FACW species	125 x 2 = 250
4				FAC species	$20 \times 3 = 60$
5	=	= Total Cover		FACU species UPL species	$\begin{array}{c} 0 \\ x 4 = \\ 0 \\ x 5 = \\ \end{array}$
Herb stratum (Plot size: )			ſ	Column totals	$\begin{array}{c} 0 \\ \hline 145 \\ \hline 145 \\ \hline (A) \\ \hline 310 \\ \hline (B) \\ \hline \end{array}$
1 Phalaris arundinacea	100	Y	FACW	Prevalence Inde	
2 Urtica dioica	5	 N	FACW	T TOVAIONOO Migo	
3 Arisaema triphyllum	5	N	FACW	Hydrophytic Ve	getation Indicators:
4					or hydrophytic vegetation
5				X Dominance	
6				X Prevalence i	
7					adaptations* (provide
8		. <u> </u>		supporting d separate she	lata in Remarks or on a
10					hydrophytic vegetation*
	110 =	= Total Cover		(explain)	
Woody vine stratum (Plot size: )				*Indicators of hydri	ic soil and wetland hydrology must be
1				present, un	nless disturbed or problematic
2				Hydrophytic	C
	0 =	= Total Cover	r	vegetation present?	Y
Remarks: (Include photo numbers here or on a separa	ate sheet)			•	
	ile sheet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	tor or confirm t	he absence	of indicators.)
Depth	Matrix		Re	dox Feat	ures				-
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Textur	e	Remarks
0-17	10 YR 2/1	100							Clay loam
17 - 24	10 YR 3/1	80	10YR 5/1	20					loam
17 - 24	10 11 3/1	80	1011 3/1	20					IUalli
	Concentration, D	= Depleti	on, RM = Reduc	ed Matrix	k, MS = N	/lasked S			PL = Pore Lining, M = Matrix
Hydric Sc	il Indicators:								natic Hydric Soils:
Hist	isol (A1)		Sar	ndy Gley	ed Matrix	(S4)	Coast	Prairie Redo	x (A16) ( <b>LRR K, L, R)</b>
Hist	ic Epipedon (A2)		Sar	ndy Redo	ox (S5)		Dark S	Surface (S7)	(LRR K, L)
Bla	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron-M	anganese M	asses (F12) ( <b>LRR K, L, R)</b>
Hyd	lrogen Sulfide (A	1)	Loa	my Mucl	ky Minera	al (F1)	Very S	hallow Dark	Surface (TF12)
Stra	tified Layers (A5	)			ed Matrix		Other	(explain in re	marks)
	n Muck (A10)				atrix (F3)	. ,			,
	leted Below Dark	Surface			Surface				
	ck Dark Surface (		· · ·		ark Surfa	· · /	*Indicate	ors of hydron	hytic vegetation and weltand
	dy Mucky Minera				essions	• •			present, unless disturbed or
	n Mucky Peat or	. ,				()			oblematic
	-	-	/			1		•	
	Layer (if observe	ea):					II. data a		X
Type:	<b>`</b>				-		Hydric se	oil present?	<u> </u>
Depth (inche	es):				-				
Remarks:									
HYDROLO									
	drology Indicato								
-				- 11 41 4 -			-		
	cators (minimum	of one is	required; check				Seco		ators (minimum of two required)
	Water (A1)			-	Fauna (B	-			il Cracks (B6)
	ter Table (A2)				uatic Plar				atterns (B10)
X Saturatio					en Sulfide				n Water Table (C2)
	arks (B1)				d Rhizosp	heres on	Living Roots	Crayfish Bu	
	t Deposits (B2)			(C3)	(		(O1) —		Visible on Aerial Imagery (C9)
-	oosits (B3)			-	e of Redu				Stressed Plants (D1)
-	t or Crust (B4)				Iron Redu	iction in 1	Tilled Soils		c Position (D2)
· · · ·	osits (B5) on Visible on Aoric	Imagan	(B7)	(C6)	ok Sunfe -				al Test (D5)
	on Visible on Aeria Vegetated Conca				ck Surfac or Well Da				
	tained Leaves (B9		се (во)		Explain in	. ,	)		
	(	)			лріант ін	I CIIIdi KS	5)	_	
Field Obser		N/	N	V					
Surface wat		Yes	No	X	Depth (i			les all a	stans of motional
Water table		Yes	X No		Depth (i	,	5		ators of wetland
Saturation p		Yes	X No		Depth (i	ncnes):	1	nya	rology present? Y
-	pillary fringe)				• •			1	
Describe red	corded data (strea	am gaug	e, monitoring wel	I, aerial p	photos, p	revious i	nspections), if a	vailable:	
Damas									
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samplir	ig Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN	Samplin	g Point: w-'	115n46w31-w02
Investigator(s): JLK/KD		Sect	ion, Townshij	o, Range:	T155N R46V	V Sec. 31
Landform (hillslope, terrace, etc.): Depre	sson	Local	relief (concav	e, convex, none):	C	oncave
Slope (%): 1-4 Lat: 44.731861		Long:	-96.44592	21 Datum:	٨	IAD83
Soil Map Unit Name Hokans-Svea complex, 1 to 4 per	rcent slopes		NWI C	Classification:	PI	ΞM
Are climatic/hydrologic conditions of the site typical fo	r this time o	of the year?	Y (I	f no, explain in rer	narks)	
Are vegetation , soil , or hydrol	logy	significantl	y disturbed?	Are "no	rmal circumsta	ances"
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?			esent? Yes
SUMMARY OF FINDINGS				(If needed, expla	ain any answe	ers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y	-	Is the s	sampled area	a within a wetland	d?	Y
Indicators of wetland hydrology present? Y	-	f yes, o	otional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a	separate re	eport)				
		50011.)				
Rainfall for previous three months is 37% wet	ter than no	ormal.				
VEGETATION Use scientific names of plan	te					
	Absolute	Dominan	Indicator	Dominance Tes	st Worksheet	
Tree Stratum (Plot size: )		t Species	Staus	Number of Domir		
1 Salix fragilis	2		FAC	that are OBL, FA		1 (A)
2				Total Number	of Dominant	
3				Species Acro	ss all Strata:	1 (B)
4				Percent of Domir	•	
5		Tatal Cause		that are OBL, FA	CW, or FAC:	100.00% (A/B)
Sapling/Shrub stratum (Plot size:	2	= Total Cove	er	Prevalence Ind	ox Workshor	+
1	1			Total % Cover o		, t
2				OBL species	0 x 1 =	0
3				FACW species	105 x 2 =	210
4				FAC species	2 x 3 =	6
5				FACU species	0 x 4 =	
	0	= Total Cove	er	UPL species	$0 \times 5 =$	
Herb stratum (Plot size:)	)		54.014	Column totals	107 (A)	<u>216</u> (B)
1 Phalaris arundinacea 2 Urtica dioica	<u>100</u> 5	<u> </u>	FACW FACW	Prevalence Inde	x = B/A = -	2.02
3		11	FACIV	Hydrophytic Ve	egetation Ind	icators:
4				X Rapid test for	-	
5				X Dominance		0
6				X Prevalence	index is ≤3.0*	
7					I adaptations*	
8					data in Remar	ks or on a
9				separate sh		
10	105	= Total Cove		explain)	hydrophytic v	regetation*
Woody vine stratum (Plot size:	)		•1			
1					nic soil and wetlar	nd hydrology must be r problematic
2				Hydrophyti	С	
	0	= Total Cove	er	vegetation		
				present?	<u>Y</u>	
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm th	e absence	of indicators.)
Depth	Matrix			dox Feat					•
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	•	Remarks
0-12	10 YR 2/1	80	7.5 YR 6/8	20	C	М	SC		
0-12	10 11( 2/1	00	7.5 11( 0/0	20	<u> </u>	IVI	00		
*Tupo: C = (	Concentration, D :	– Doploti	ion PM - Roduce	nd Matrix	/ MS - N	lackad S	and Grains	**Location	: PL = Pore Lining, M = Matrix
		- Depieti		eu main	(, 1013 – 10	laskeu c			natic Hydric Soils:
-	bil Indicators:		0			(04)			-
	tisol (A1)				ed Matrix	(54)			ox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			idy Redo	. ,				(LRR K, L)
	ck Histic (A3)				ıtrix (S6)			•	lasses (F12) ( <b>LRR K, L, R)</b>
	lrogen Sulfide (A	,		-	ky Minera				Surface (TF12)
	atified Layers (A5	)			ed Matrix		Other (e	explain in re	emarks)
	m Muck (A10)				atrix (F3)				
Dep	oleted Below Dark	Surface	e (A11) X Red	lox Dark	Surface	(F6)			
Thi	ck Dark Surface (	A12)	Dep	pleted Da	ark Surfa	ce (F7)	*Indicator	rs of hydrop	phytic vegetation and weltand
Sar	ndy Mucky Minera	al (S1)	Rec	lox Depr	ressions	(F8)	hydrolog	gy must be	present, unless disturbed or
5 ci	m Mucky Peat or	Peat (S3	s)					p	roblematic
	Layer (if observ	- 				1			
	Layer (II Observ	eu).					Uudria aa	il propont?	
Type:					-		Hydric so	il present?	? <u>Y</u>
Depth (inche	es):				-				
Remarks:									
HYDROLO									
Wetland Hy	drology Indicate	ors:							
Primary Indi	cators (minimum	of one is	required; check	all that a	pply)		Seco	ndary Indic	ators (minimum of two required)
Surface	Water (A1)			Aquatic	Fauna (B	13)		Surface So	oil Cracks (B6)
X High Wa	ter Table (A2)			True Aq	uatic Plar	nts (B14)	X	Drainage F	Patterns (B10)
Saturatio	on (A3)			Hydroge	en Sulfide	Odor (C	1)	Dry-Seaso	n Water Table (C2)
Water N	larks (B1)			Oxidized	d Rhizosp	heres on	Living Roots	Crayfish B	urrows (C8)
Sedimer	nt Deposits (B2)			(C3)				Saturation	Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)			-	e of Redu	uced Iron	(C4)		Stressed Plants (D1)
	at or Crust (B4)								ic Position (D2)
-	osits (B5)			(C6)			X	FAC-Neutr	al Test (D5)
	on Visible on Aeria	al Imager	(B7)	-	ck Surfac	e (C7)		-	( )
	Vegetated Conca			-	or Well Da				
	tained Leaves (B9		. ,	-	xplain in		)		
Field Obser	·	/		- (	•		/		
Surface wat		Yes	No	х	Depth (i	nches).			
Water table		Yes	X No	~	Depth (i		10	India	cators of wetland
			No			,	10		
Saturation p	pillary fringe)	Yes		<u>X</u>	Depth (i	nunes).		iiya	rology present? Y
-								I	
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if ava	ailable:	
Remarks:									

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Sampling Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN	Sampling Point:	w-115n47w34-u01
Investigator(s): JLK/KD		Secti	on, Townshi	o, Range:	
Landform (hillslope, terrace, etc.): Hillsl	оре	Local ı	relief (concav	re, convex, none):	LL
Slope (%): <1% Lat: 44.732375	5	Long:	-96.452	7 Datum:	NAD83
Soil Map Unit Name Parnell-Vallers complex			NWI (	Classification:	Upland
Are climatic/hydrologic conditions of the site typical fo	r this time c	of the year?	Y (I	f no, explain in remarks)	
Are vegetation, soil, or hydrol	logy	significantl	y disturbed?	Are "normal circu	umstances"
Are vegetation , soil , or hydrol	logy	naturally p	roblematic?		present? Yes
SUMMARY OF FINDINGS				(If needed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? N					
Hydric soil present? N		Is the s	ampled area	a within a wetland?	N
Indicators of wetland hydrology present? N		f yes, op	otional wetlar	id site ID:	
Remarks: (Explain alternative procedures here or in a	separate re	eport.)			
Rainfall for previous three months is 37% wet	ter than no	ormal.			
VEGETATION Use scientific names of plan	ts.				
	Absolute	Dominan	Indicator	Dominance Test Works	heet
<u>Tree Stratum</u> (Plot size:) 1	% Cover	t Species	Staus	Number of Dominant Spec that are OBL, FACW, or FA	
2				Total Number of Domin Species Across all Stra	
4				Percent of Dominant Spec	
5				that are OBL, FACW, or FA	
	0	= Total Cove	r		
Sapling/Shrub stratur (Plot size:	)			Prevalence Index Work	sheet
1				Total % Cover of:	×1- 0
2				OBL species 0	x 1 = 0 x 2 = 0
4				· · · · · · · · · · · · · · · · · · ·	x 3 = 225
5				· · · · · · · · · · · · · · · · · · ·	x 4 = 100
	0	= Total Cove	r	UPL species 0	x 5 = 0
Herb stratum (Plot size:	)			Column totals 100	(A) <u>325</u> (B)
1 Poa pratensis	70	Y	FAC	Prevalence Index = B/A =	= 3.25
2 Elymus repens	20	Y	FACU		
3 Plantago major	5	<u>N</u>	FAC	Hydrophytic Vegetation	
4 Cirsium arvense	5	<u>N</u>	FACU	Rapid test for hydrop	
5				N Prevalence index is	
7				Morphogical adaptat	
8				supporting data in Re	
9				separate sheet)	
10	100	= Total Cove	r	Problematic hydroph (explain)	ytic vegetation*
Woody vine stratum (Plot size:	)			*Indicators of hydric soil and present, unless distur	, ,,
2				Hydrophytic	
	0	= Total Cove	r	vegetation present?  N	
Remarks: (Include photo numbers here or on a separa	ate sheet)				

Profile Des	cription: (Descr	ibe to th	e depth needed	to docu	ment the	e indicat	or or confirm the a	bsence of indicators.)
Depth	Matrix		-	lox Feat				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6	10 YR 3/1	100						loam
6-18	10 YR 3/2	100						loam
0-10	10 110 5/2	100						Ioan
	Concentration, D	= Depleti	ion, RM = Reduce	ed Matrix	κ, MS = Ν	/lasked S		ocation: PL = Pore Lining, M = Matrix
Hydric So	oil Indicators:							Problematic Hydric Soils:
His	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coast Prai	rie Redox (A16) ( <b>LRR K, L, R)</b>
His	tic Epipedon (A2)		Sar	dy Redo	ox (S5)		Dark Surfa	ce (S7) ( <b>LRR K, L)</b>
Bla	ck Histic (A3)		Stri	oped Ma	trix (S6)		Iron-Manga	anese Masses (F12) ( <b>LRR K, L, R)</b>
Hyd	drogen Sulfide (A	4)	Loa	my Mucł	ky Minera	al (F1)	Very Shall	ow Dark Surface (TF12)
Stra	atified Layers (A5	)	Loa	my Gley	ed Matrix	x (F2)		lain in remarks)
	m Muck (A10)	,			atrix (F3)		、	,
	pleted Below Dark	s Surface			Surface			
	ck Dark Surface (				ark Surfa	. ,	*Indicators of	of hydrophytic vegetation and weltand
	ndy Mucky Minera	,			essions (	• •		nust be present, unless disturbed or
	n Mucky Peat or	· · /				(10)	nyarology i	problematic
	3	,	7					problemate
	Layer (if observ	ed):						
Туре:							Hydric soil p	oresent? N
Depth (inche	es):				-			
Remarks:								
HYDROLO								
	drology Indicate	ors:						
-	cators (minimum		required: check	all that a	nnly)		Second	any Indiantora (minimum of two required
			required, check			12)		ary Indicators (minimum of two required
	Water (A1)				Fauna (B			urface Soil Cracks (B6)
Saturatio	iter Table (A2)				uatic Plar	Odor (C		ainage Patterns (B10)
	larks (B1)							y-Season Water Table (C2) ayfish Burrows (C8)
	nt Deposits (B2)			(C3)	і кпідозр	neres on	•	aturation Visible on Aerial Imagery (C9)
	posits (B3)				a of Radi	uced Iron		unted or Stressed Plants (D1)
	at or Crust (B4)							eomorphic Position (D2)
	oosits (B5)			(C6)	ion Redu			AC-Neutral Test (D5)
	on Visible on Aeria	al Imagen	(B7)		ck Surfac	$ \sim (C7) $		
	Vegetated Conca				or Well Da			
	tained Leaves (B9			-		Remarks	)	
	·	/				. comuno	/	
Field Obser		Var	Ma	v	Donth /:	nohoc):		
Surface wat	•	Yes	No No	X	Depth (i Depth (i			Indicators of wetland
Water table Saturation p		Yes Yes	No No	X X	Depth (i	,	<u> </u>	hydrology present? N
	pillary fringe)	165		^	- Depui (I	nones).	<u> </u>	
					la a t			
Describe red	corded data (strea	am gaug	e, monitoring well	, aerial p	photos, p	revious i	nspections), if availa	adie:
Pomerkei								
Remarks:								

Project/Site Bitter Root Wind Farm Project	City/	County:	Yellow Med	icine Samplin	ng Date:	10/16/2017
Applicant/Owner: RES Americas		State:	MN	Samplin	g Point:	w-115n47w34-w01
Investigator(s): JLK/KD		Section	on, Townshij	p, Range:	T155N R	46W Sec. 31
Landform (hillslope, terrace, etc.): Depre	sson	Local r	elief (concav	ve, convex, none):		Concave
Slope (%): 0-2 Lat: 44.732401		Long:	-96.4527	11 Datum:		NAD83
Soil Map Unit Name Parnell-Vallers complex			NWI (	Classification:		PEM
Are climatic/hydrologic conditions of the site typical for	r this time o	f the year?	Y (I	f no, explain in ren	narks)	
Are vegetation , soil , or hydrol	ogy	significantly	/ disturbed?		rmal circur	nstances"
		naturally pr				present? Yes
SUMMARY OF FINDINGS				(If needed, expla	ain any an	swers in remarks.)
Hydrophytic vegetation present? Y						,
Hydric soil present? Y	-	Is the s	ampled area	a within a wetland	d?	Y
Indicators of wetland hydrology present? Y	-		tional wetlar			
Remarks: (Explain alternative procedures here or in a	separate re	eport.)				
Rainfall for previous three months is 37% wet	-					
VEGETATION Use scientific names of plan	ts					
	Absolute	Dominan	Indicator	Dominance Tes	st Worksh	eet
<u>Tree Stratum</u> (Plot size:) 1		t Species	Staus	Number of Domir that are OBL, FA0		
2				Total Number Species Acro		
4				Percent of Domir		、
5				that are OBL, FA	CW, or FAC	C: 100.00% (A/B)
	0	= Total Cove	r	Describer of the		h 4
Sapling/Shrub stratur (Plot size:)				Prevalence Ind Total % Cover o		neet
2				OBL species	и. О Х	1 = 0
3				FACW species	-	
4				FAC species	0 x	
5				FACU species	0 x	4 = 0
	0	= Total Cove	r	UPL species	0 x	5 = 0
Herb stratum (Plot size:)				Column totals	115 (A	A) 230 (B)
1 Phalaris arundinacea	100	Y	FACW	Prevalence Inde	ex = B/A =	2.00
2 Echinochloa crus-galli	10	Ν	FACW			
3 Urtica dioica	5	Ν	FACW	Hydrophytic Ve	-	
4				X Rapid test fo		
5				X Dominance		
6				X Prevalence		
/						ns* (provide
9 9				supporting of separate sh		narks or on a
10				·	,	tic vegetation*
	115	= Total Cove	r	(explain)		
Woody vine stratum     (Plot size:)       1						etland hydrology must be ed or problematic
2				Hydrophyti	С	
	0	= Total Cove	r	vegetation present?	Y	_
Remarks: (Include photo numbers here or on a separa	ate sheet)					

Profile Des	cription: (Descr	ibe to th	e depth need	ed to docu	ment the	e indicat	or or confirm the	e absence of indicators.)	
Depth	Matrix			Redox Feat					
(Inches)	Color (moist)	%	Color (mois		Type*	Loc**	Texture	Remarks	
0-15	10 YR 2/1	100	· · · · ·					SC	
			10VP 4/1	20					
15 - 25	10 YR 2/1	80	10YR 4/1	20				L	
						-			
*Type: C = 0	Concentration, D	= Depleti	on, RM = Rec	luced Matrix	x, MS = N	Aasked S	and Grains.	**Location: PL = Pore Lining, N	/I = Matrix
	il Indicators:							or Problematic Hydric Soils:	
-	tisol (A1)		:	Sandy Gley	ed Matrix	(S4)		airie Redox (A16) ( <b>LRR K, L,</b>	R)
	tic Epipedon (A2)			Sandy Redo		( )		rface (S7) (LRR K, L)	,
	ck Histic (A3)			Stripped Ma				nganese Masses (F12) ( <b>LRR K</b>	(. L. R)
	Irogen Sulfide (A	4)		_oamy Muc				allow Dark Surface (TF12)	, , ,
	atified Layers (A5	-		_oamy Gley	-			xplain in remarks)	
	m Muck (A10)	/		Depleted M					
	pleted Below Dark	Surface		Redox Dark	. ,				
	ck Dark Surface (			Depleted Da		. ,	*Indicator	s of hydrophytic vegetation and	h weltand
	ndy Mucky Minera	,		Redox Depi		. ,		y must be present, unless dist	
	n Mucky Peat or	. ,				(10)	nyarolog	problematic	
	-	-	/					prosioniato	
	Layer (if observ	ed):							
Туре:					-		Hydric soi	I present? Y	
Depth (inche	es):				_				
Remarks:									
-	drology Indicato								
	cators (minimum	of one is	required; che				Secor	idary Indicators (minimum of tw	vo required)
X Surface	( )		-		Fauna (B			Surface Soil Cracks (B6)	
Ŭ	iter Table (A2)		-		uatic Plar	. ,		Drainage Patterns (B10)	
Saturatio			-		en Sulfide			Dry-Season Water Table (C2)	
	arks (B1) nt Deposits (B2)			(C3)	u Knizosp	neres on	Living Roots	Crayfish Burrows (C8) Saturation Visible on Aerial Imag	aony(C0)
	posits (B3)		-		ce of Redu	uced Iron	(C4)	Stunted or Stressed Plants (D1)	
	at or Crust (B4)		-				illed Soils	Geomorphic Position (D2)	
	osits (B5)			(C6)	non neut			FAC-Neutral Test (D5)	
	on Visible on Aeria	al Imager	/ (B7)		ick Surfac	e (C7)			
	Vegetated Conca				or Well Da				
	tained Leaves (B9				Explain in		)		
Field Obser	·	/					,		
Surface wat		Yes	X No	5	Depth (i	inches):	1		
Water table		Yes	No		Depth (i		<u> </u>	Indicators of wetland	
Saturation p		Yes	No		Depth (i	,		hydrology present?	Y
	pillary fringe)					,			
		am dalio	e. monitorina v	well, aerial i	ohotos n	revious i	nspections), if ava	ilable:	
Describered		un gaag	s, monitoring (	Non, aonar j	photoo, p	i e viede i			
Remarks:									

Project/Site: BitterRoot	City/County: Yellow M	edicine	Sampling Date: 2016-09-27		
Applicant/Owner: Renewable Energy Systems Americas		State: MN	Sampling Point: w-114n46w35-w04b		
Investigator(s): JLK/BJC	Section, Township, Ra	ange: <u>114N-46W-35</u>			
Landform (hillslope, terrace, etc.): Depression	Local relief	f (concave, convex, ne	one): <u>CC</u>		
Slope (%): <u>0-2%</u> Lat: <u>44.639160</u>	Long: <u>-96.367045</u>		Datum: WGS84		
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI cla	ssification:		
Are climatic / hydrologic conditions on the site typical for this t	time of year? Yes 🖌 No	(If no, explain	ı in Remarks.)		
Are Vegetation, Soil, or Hydrology sig	inificantly disturbed? Are	"Normal Circumstance	ces" present? Yes No		
Are Vegetation, Soil, or Hydrology na	turally problematic? (If n	problematic? (If needed, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map s	howing sampling point	locations, transe	ects, important features, etc.		
Hydrophytic Vegetation Present?       Yes _ ✓ No         Hydric Soil Present?       Yes _ ✓ No         Wetland Hydrology Present?       Yes _ ✓ No	within a Wetla		No		
Remarks:					

The wetland is a shallow marsh dominated by cattail and reed canary grass. It is located in a depression between planted fields.

#### **VEGETATION** – Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Species		
1				That Are OBL, FACW, or FAC: 2	(A)	
2						
3				Total Number of Dominant Species Across All Strata: 2	(B)	
				Species Across All Strata.	(6)	
4				Percent of Dominant Species		
5				That Are OBL, FACW, or FAC: 100.00	(A/B)	
	0	= Total Cov	rer	Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: 15 )						
1	. <u> </u>			Total % Cover of:Multiply by:		
2	. <u> </u>			OBL species <u>40</u> x 1 = <u>40</u>	_	
3				FACW species <u>70</u> x 2 = <u>140</u>		
4				FAC species x 3 =0		
5				FACU species x 4 =		
J				UPL species $0 \times 5 = 0$		
Herb Stratum (Plot size: <u>5</u> )	0	= Total Cov	er			
,	70	Y		Column Totals: <u>110</u> (A) <u>180</u>	(B)	
1. <u>Phalaris arundinacea</u>				Prevalence Index = B/A = <u>1.64</u>		
2. <u>Typha X glauca</u>					—	
3. <u>Persicaria amphibia</u>	15	N	OBL	Hydrophytic Vegetation Indicators:		
4				✓ 1 - Rapid Test for Hydrophytic Vegetation		
5				✓ 2 - Dominance Test is >50%		
6				$\checkmark$ 3 - Prevalence Index is ≤3.0 <sup>1</sup>		
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting		
				data in Remarks or on a separate sheet)		
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
9					,	
10				The discrete set is the data and the set of the set is the set of		
	110	= Total Cov	rer	<sup>1</sup> Indicators of hydric soil and wetland hydrology be present, unless disturbed or problematic.	must	
Woody Vine Stratum (Plot size: 30)						
1	·			Hydrophytic		
2	. <u> </u>			Vegetation		
				Present? Yes 🖌 No		
		= Total Cov	rer			
Remarks: (Include photo numbers here or on a separate sheet.)						
The area is dominated by reed canary grass and cattail.						

Profile Des Depth	cription: (Descri Matri	•	oth needed to document the Redox Feature		the absence of ir	ndicators.)	
(inches)	Color (moist)		<u>Color (moist)</u> %		Texture	Remarks	
0-16	10YR 2/1	100			Μ		
	·						
			r				
	·						
		Depletion, RM	=Reduced Matrix, MS=Maske	d Sand Grains.		n: PL=Pore Lining, M=Ma	
-	Indicators:					Problematic Hydric Soils	s°:
✓ Histoso	. ,		Sandy Gleyed M		Coast Prair	rie Redox (A16)	
	pipedon (A2) listic (A3)		- Sandy Redox (St		— Dark Surfac	ce (S7)	
	en Sulfide (A4)		Stripped Matrix ( Loamy Mucky Mi		Iron-Manga	anese Masses (F12)	
	d Layers (A5)		Loamy Gleyed M		Very Shallo	ow Dark Surface (TF12)	
	uck (A10)		Depleted Matrix (		Other (Exp	lain in Remarks)	
·	ed Below Dark Sur	. ,	Redox Dark Surf	ace (F6)			
	ark Surface (A12)		Depleted Dark S	· · /		ydrophytic vegetation and	ł
	Mucky Mineral (S		Redox Depressio	ins (F8)	•	drology must be present, urbed or problematic.	
	ucky Peat or Peat Layer (if observe					urbed of problematic.	
Type:		54).					
	iches):				Hydric Soil Pres	sent? Yes 🖌 No	0
Remarks:	iones).						
IYDROLC							
	drology Indicato						
		of one is requi	ired; check all that apply)			ndicators (minimum of two	required
	Water (A1)		Water-Stained Leav			Soil Cracks (B6)	
-	ater Table (A2)		Aquatic Fauna (B13	,		e Patterns (B10)	
✓ Saturati			True Aquatic Plants			son Water Table (C2)	
	Marks (B1) Int Deposits (B2)		Hydrogen Sulfide C	eres on Living Roots (		Burrows (C8) on Visible on Aerial Image	rv (C9)
	posits (B3)		Presence of Reduc			or Stressed Plants (D1)	iy (C9)
	at or Crust (B4)			ion in Tilled Soils (C6)		phic Position (D2)	
	posits (B5)		Thin Muck Surface	. ,		utral Test (D5)	
	ion Visible on Aer	ial Imagery (B		. ,	<u> </u>		
	y Vegetated Cond						
Field Obser	rvations:						
Surface Wa	ter Present?	Yes	No 🖌 Depth (inches):				
Water Table	Present?		No Depth (inches):				
Saturation F		Yes _✓	No Depth (inches):	0 Wetla	nd Hydrology Pre	esent? Yes 🖌 N	o
(Includes ca	pillary fringe) ecorded Data (stre		onitoring well, aerial photos, p	revious inspections) i	f available <sup>.</sup>		
		an gauge, m	ormoning won, donar priotos, p				
Remarks:							
	and chowe	ciano of r	oriodio inundation				
ine wet	and shows	signs of p	periodic inundation.				

Project/Site: BitterRoot	City/Co	unty: <u>Yellow Medicir</u>	ne	Sampling Date: 2016-09-27		
Applicant/Owner: Renewable Energy Systems Americas			State: MN	_ Sampling Point:	w-114n46w35-u02a	
Investigator(s): BJC/JLK	Section	Section, Township, Range: <u>114N-46W-35</u>				
Landform (hillslope, terrace, etc.): Side slope		Local relief (con	cave, convex, no	ne): <u>VL</u>		
Slope (%): <u>8-15%</u> Lat: <u>44.639868</u>	Long: -	96.373093		Datum: WGS8	34	
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes			NWI clas	sification:		
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Ye	s 🖌 No	(If no, explain	n Remarks.)		
Are Vegetation, Soil, or Hydrologysign	ificantly disturb	ed? Are "Nori	mal Circumstance	s" present? Yes	✓ No	
Are Vegetation, Soil, or Hydrology natu	rally problemat	ic? (If neede	d, explain any an	swers in Remarks.	)	
SUMMARY OF FINDINGS – Attach site map sh	owing sam	pling point loca	tions, transe	cts, important	features, etc.	
Hydrophytic Vegetation Present? Yes No _	✓	Is the Sampled Are	22			
Hydric Soil Present? Yes No	1	within a Wetland?		No∕		
Wetland Hydrology Present? Yes No _						
Remarks:						
The upland is a grassland dominated by t	big blueste	em and smoot	h brome.			

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:(A)
2 3				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)
Conting/Chryth Chrothers (Dist size)	0	= Total Cov	rer	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15 )				
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species $0 \times 2 = 0$
4				FAC species $50 \times 3 = 150$
5				FACU species $55$ x 4 = $220$
Herb Stratum (Plot size: 5)	0	= Total Cov	rer	UPL species $0 \times 5 = 0$
	25	Y	EAC	Column Totals: <u>105</u> (A) <u>370</u> (B)
1. <u>Andropogon gerardii</u>				Prevalence Index = $B/A = 3.52$
2. <u>Bromus inermis</u>				Hydrophytic Vegetation Indicators:
3. <u>Panicum virgatum</u>				
4. <u>Asclepias syriaca</u>		<u>    N     </u>		1 - Rapid Test for Hydrophytic Vegetation
5. <u>Cirsium arvense</u>	10	<u>     N                               </u>	FACU	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30)	105	= Total Cov	rer	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
		= Total Cov	rer	Present? Yes No
Remarks: (Include photo numbers here or on a separate s	sheet.)			
The upland is dominated by smooth bro	ome and	l big blu	estem.	

Profile Descr	iption: (Describe	e to the depti	n needed to docum	nent the i	ndicator	or confirm	the absence	e of indicators.)			
Depth	Matrix		Redo	x Feature							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-7	10YR 2/1	100					SICL				
7-18	10YR 3/2	100					SCL				
						·					
						·······					
						·		- <u>-</u>			
								- <u> </u>			
		pletion, RM=I	Reduced Matrix, MS	S=Maskec	Sand Gra	ains.		ocation: PL=Pore Lining, M=Mat			
Hydric Soil Ir								s for Problematic Hydric Soils <sup>3</sup>	:		
Histosol (			Sandy C	Bleyed Ma	trix (S4)		Coas	t Prairie Redox (A16)			
	pedon (A2)		Sandy F		,		— Dark	Surface (S7)			
Black His	n Sulfide (A4)			l Matrix (S Nucky Mir	,		Iron-N	Manganese Masses (F12)			
	Layers (A5)			Gleyed Ma			Very	Shallow Dark Surface (TF12)			
2 cm Muc				d Matrix (I			Other	(Explain in Remarks)			
Depleted	Below Dark Surfac	ce (A11)		Dark Surfa							
	rk Surface (A12)				rface (F7)			s of hydrophytic vegetation and			
	ucky Mineral (S1)		Redox [	Depressio	ns (F8)		wetland hydrology must be present,				
	cky Peat or Peat (S ayer (if observed)						unless disturbed or problematic.				
Type:											
	hoc).						Hydric So	il Prosont? Vos No	./		
Depth (incl	hes):						Hydric So	il Present? Yes <u>No</u>	✓		
Remarks:							Hydric So	il Present? Yes No	<u>√</u>		
Remarks:	tors of hydric	c soil wer	e observed.				Hydric So	il Present? Yes No			
Remarks:		c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>		
Remarks:		c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>		
Remarks: No indica	tors of hydrid	c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>		
Remarks: No indica HYDROLOG	tors of hydric		e observed.				Hydric So	il Present? Yes No	_ <b>√</b>		
Remarks: No indica HYDROLOC Wetland Hyd	tors of hydrid SY rology Indicators	:									
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica	tors of hydrid GY rology Indicators	:	ed; check all that ap				<u>Second</u>	lary Indicators (minimum of two r			
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V	tors of hydrid	:	ed; check all that ap Water-Stai	ned Leav	( )		<u>Second</u>	lary Indicators (minimum of two r rface Soil Cracks (B6)			
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat	tors of hydric GY rology Indicators ators (minimum of Vater (A1) er Table (A2)	:	ed; check all that ap Water-Stai Aquatic Fa	ned Leav una (B13	)		<u>Seconc</u> Su Dra	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10)			
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua	ned Leav Juna (B13 tic Plants	) (B14)		<u>Seconc</u> Su Dra Dra	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2)			
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma	tors of hydric BY rology Indicators ators (minimum of a Vater (A1) er Table (A2) n (A3) arks (B1)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen	ned Leav una (B13 tic Plants Sulfide Od	) (B14) dor (C1)	ing Roots (	<u>Seconc</u> Su Dra Dr	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8)	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ned Leav luna (B13 tic Plants Sulfide Oo thizosphe	) (B14) dor (C1) res on Liv	-	<u>Seconc</u> Su Dra Dra Cra (C3) Sa	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	tors of hydric GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence o	ned Leav una (B13 tic Plants Sulfide Oo hizosphe	) (B14) dor (C1) res on Liv d Iron (C4	+)	<u>Seconc</u> <u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1)	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	tors of hydrid Frology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ned Leav una (B13 tic Plants Sulfide O thizosphe of Reduce n Reducti	) (B14) dor (C1) res on Liv d Iron (C <sup>2</sup> on in Tille	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo	tors of hydrid Frology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	: one is require	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence of Recent Iro Thin Muck	ned Leav una (B13 tic Plants Sulfide Oo Rhizosphe of Reduce n Reducti Surface (	(B14) dor (C1) res on Liv d Iron (C <sup>2</sup> on in Tilleo C7)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) c or Crust (B4) posits (B5)	: one is require Imagery (B7)	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13 tic Plants Sulfide Od thizosphe of Reduce n Reducti Surface ( Well Data	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydric Frology Indicators ators (minimum of a Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) c or Crust (B4) posits (B5) n Visible on Aerial Vegetated Concav	: one is require Imagery (B7)	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13 tic Plants Sulfide Od thizosphe of Reduce n Reducti Surface ( Well Data	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)		
Remarks: No indica MyDROLOC Wetland Hyd Primary Indica 	tors of hydrid For a start of the start of	: one is require Imagery (B7) /e Surface (B	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13) tic Plants Sulfide Oo hizosphe of Reduce n Reducti Surface ( Well Data plain in Re	(B14) dor (C1) res on Liv d Iron (C <sup>4</sup> on in Tilled C7) (D9) marks)	d Soils (C6	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydrid Frongy Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) arks (B3) c or Crust (B4) osits (B5) n Visible on Aerial Vegetated Concav ations: r Present?	: one is require Imagery (B7) /e Surface (B Yes N	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Gauge or V 8) Other (Exp	ned Leav una (B13) tic Plants Sulfide Oc hizosphe of Reduce n Reducti Surface ( Well Data plain in Re	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9) marks)	d Soils (C6	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)		

Remarks:

No indicators of wetland hydrology were observed.

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

(includes capillary fringe)

Project/Site: BitterRoot	City/County: Yellow Me	dicine	Sampling Date: 2016-09-27				
Applicant/Owner: Renewable Energy Systems Americas		State: MN	Sampling Point: w-114n46w35-w04a				
Investigator(s): <u>JLK/BJC</u>	Section, Township, Rai	_ Section, Township, Range: <u>114N-46W-35</u>					
Landform (hillslope, terrace, etc.): Depression	Local relief	(concave, convex, n	one): <u>CC</u>				
Slope (%): <u>0-2%</u> Lat: <u>44.640498</u>	Long: <u>-96.369287</u>		Datum: WGS84				
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI cla	ssification:				
Are climatic / hydrologic conditions on the site typical for this tim	e of year? Yes 🖌 No _	(If no, explair	n in Remarks.)				
Are Vegetation, Soil, or Hydrology signif	icantly disturbed? Are "	Normal Circumstand	ces" present? Yes No				
Are Vegetation, Soil, or Hydrology nature	ally problematic? (If ne	eded, explain any a	nswers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map sho	wing sampling point l	ocations, trans	ects, important features, etc.				
Hydrophytic Vegetation Present?       Yes _ ✓ No _         Hydric Soil Present?       Yes _ ✓ No _         Wetland Hydrology Present?       Yes _ ✓ No _         Remarks:       Yes _ ✓ No _	within a Wetlar		No				
Nomano.							

The wetland is a shallow marsh dominated by cattail and reed canary grass. It is located in a depression between planted fields.

	Absolute	Dominant		Dominance Test worksheet	i:		
Tree Stratum (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Species			
1				That Are OBL, FACW, or FAC	C:	1	(A)
2							
3				Total Number of Dominant Species Across All Strata:		1	(P)
				Species Across Air Strata.		<u> </u>	(D)
4				Percent of Dominant Species	\$		
5				That Are OBL, FACW, or FAC	C: <u>1(</u>	00.00	(A/B)
	0	= Total Cov	rer	Prevalence Index workshee			
Sapling/Shrub Stratum (Plot size: 15 )							
1				Total % Cover of:	Mult	tiply by:	-
2	<u> </u>			OBL species <u>30</u>	x 1 =	30	_
3				FACW species 90	x 2 =	180	_
4				FAC species 0			
				FACU species 0			
5							
Herb Stratum (Plot size: <u>5</u> )	0	= Total Cov	rer	UPL species 0			
,	00	V		Column Totals: <u>120</u>	(A)	210	_ (B)
1. <u>Phalaris arundinacea</u>		<u>    Y     </u>			٨	1 75	
2. <u>Typha X glauca</u>				Prevalence Index = B//			_
3. <u>Persicaria amphibia</u>	15	N	OBL	Hydrophytic Vegetation In			
4	<u> </u>			1 - Rapid Test for Hydrop		getation	
5				✓ 2 - Dominance Test is >5	50%		
6				✓ 3 - Prevalence Index is ≤	3.0 <sup>1</sup>		
7				4 - Morphological Adapta	ations <sup>1</sup> (Pr	rovide sup	oorting
				data in Remarks or or	n a separa	ate sheet)	s or ung
8				Problematic Hydrophytic	: Vegetati	on <sup>1</sup> (Expla	in)
9					, vogotati		,
10				1			
	120	= Total Cov	rer	<sup>1</sup> Indicators of hydric soil and be present, unless disturbed			nust
Woody Vine Stratum (Plot size: <u>30</u> )				be present, unless disturbed		matic.	
1				Hydrophytic			
2				Vegetation			
					/No		
		= Total Cov	rer				
Remarks: (Include photo numbers here or on a separate s	sheet.)						
The area is dominated by reed canary g	grass ar	nd cattai	1.				

(inches)	Matrix			Red	ox Featur				
(1101103)	Color (moist)	%	Co	lor (moist)	%	4	_Loc <sup>2</sup>	Texture	Remarks
0-16	10YR 2/1	100						M	
							<u></u>	<u></u>	
					_		·	·	
							·	·	·
	ncentration, D=D	epletion, RI	M=Redu	ced Matrix, N	S=Maske	d Sand G	ains.		Location: PL=Pore Lining, M=Matrix.
Hydric Soil II	ndicators:							Indicate	ors for Problematic Hydric Soils <sup>3</sup> :
✓ Histosol (	. ,			Sandy	Gleyed M	latrix (S4)		Coa	ast Prairie Redox (A16)
Histic Epipedon (A2) Black Histic (A3)				— Sandy				— Dar	k Surface (S7)
Black Histic (A3) Hydrogen Sulfide (A4)					d Matrix (			Iron	-Manganese Masses (F12)
						ineral (F1) 1atrix (F2)			y Shallow Dark Surface (TF12)
Stratified Layers (A5) 2 cm Muck (A10)					ed Matrix				er (Explain in Remarks)
	Below Dark Surf	ace (A11)			Dark Sur				
Thick Da	Deplete	ed Dark S	urface (F7	)	<sup>3</sup> Indicat	ors of hydrophytic vegetation and			
Sandy M	Redox	Depressi	ons (F8)		wet	and hydrology must be present,			
	cky Peat or Peat							unle	ess disturbed or problematic.
Restrictive L	ayer (if observe	d):							
Туре:									_
Remarks:	<sup>hes):</sup>			e soil pro	ofile.			Hydric S	oil Present? Yes 🖌 No
Remarks:				e soil pro	ofile.			Hydric S	oil Present? Yes 🖌 No
Remarks: Muck was	s observed			e soil pro	ofile.			Hydric S	oil Present? Yes <u> </u> No
Remarks: Muck was	s observed	through		e soil pro	ofile.			Hydric S	oil Present? Yes <u></u> No <u></u>
Remarks: Muck was IYDROLOC Wetland Hyd	s observed GY	through	out th						ndary Indicators (minimum of two require
Remarks: Muck was IYDROLOG Wetland Hyd Primary Indica	S Observed GY Irology Indicator	through	out th		pply)	ves (B9)		<u>Seco</u>	
Remarks: Muck was IYDROLOG Wetland Hyd Primary Indica Surface W	S observed GY Irology Indicator ators (minimum o	through	out th	neck all that a	pply) ained Lea			<u>Seco</u>	ndary Indicators (minimum of two require
Remarks: Muck was IYDROLOG Wetland Hyd Primary Indica Surface W	S Observed GY Irology Indicator ators (minimum o Water (A1) ter Table (A2)	through	out th	neck all that a Water-Sta Aquatic F True Aqu	pply) ained Lea auna (B1: atic Plants	3) s (B14)		<u>Seco</u> S	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2)
Remarks: Muck was IYDROLOC Wetland Hyd Primary Indica Surface V High Wat	S Observed GY Irology Indicator ators (minimum o Water (A1) ter Table (A2) n (A3)	through	out th	neck all that a Water-Sta Aquatic F True Aqu Hydroger	pply) ained Lea auna (B1 atic Plants Sulfide C	3) s (B14) Odor (C1)		<u>Seco</u> S C C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8)
Remarks: MUCK WAS IYDROLOO Wetland Hyd Primary Indica Surface V High Wat ✓ Saturatio Water Ma Sediment	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)	through	out th	heck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph	3) s (B14) Ddor (C1) eres on Liv	-	<u>Seco</u> S S S S S S	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Remarks: MUCK Was IYDROLOO Wetland Hyd Primary Indica Surface V High Wat Y Saturatio Water Ma Sediment Drift Dep	S observed GY Irology Indicator ators (minimum o Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)	through	out th	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence	pply) ained Lea auna (B1: atic Plants o Sulfide C Rhizosph of Reduc	3) s (B14) Odor (C1) eres on Liv ed Iron (C	4)	<u>Seco</u> <u>Seco</u> <u>C</u> <u>C</u> (C3) <u>S</u>	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Remarks: MUCK Was IYDROLOG Wetland Hyd Primary Indica Surface V High Wat ✓ Saturatio Water Ma Sediment Orift Dep Algal Mat	S observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)	through	out th	neck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc on Reduc	3) s (B14) Odor (C1) eres on Liv eed Iron (C tion in Tille	4)	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK Was IYDROLOC Wetland Hyd Primary Indica Surface V High Wat ✓ Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	through s: f one is req	uired; ch - - - - - - - - - - - - - - - - - - -	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc on Reduc k Surface	3) s (B14) Odor (C1) eres on Liv eed Iron (C tion in Tille (C7)	4)	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Remarks: MUCK WAS IYDROLOO Wetland Hyd Primary Indica Surface V High Wat Y Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Inundatio	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aeria	through s: f one is req	uired; ch - - - - - - - - - - - - - - - - - - -	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or	pply) ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc bn Reduc k Surface Well Data	3) s (B14) Odor (C1) eres on Liv eed Iron (C tion in Tille (C7) a (D9)	4)	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK WAS IYDROLOO Wetland Hyd Primary Indica Surface V High Wat ✓ Saturatio Water Ma Sediment Orift Depu Algal Mat Iron Depo Inundatio Sparsely	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca	through s: f one is req	uired; ch - - - - - - - - - - - - - - - - - - -	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	pply) ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc bn Reduc k Surface Well Data	3) s (B14) Odor (C1) eres on Liv eed Iron (C tion in Tille (C7) a (D9)	4)	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK Was IYDROLOO Wetland Hyd Primary Indica Surface V High Wat ✓ Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depo Inundatio Sparsely Field Observ	S observed GY Irology Indicator ators (minimum o Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca rations:	through s: f one is req al Imagery ( ave Surface	out th	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or Other (Ex	pply) ained Lea auna (B1: atic Plants o Sulfide C Rhizosph of Reduc on Reduc k Surface Well Dats plain in R	3) s (B14) Odor (C1) eres on Liv eres on Liv eres on Liv eres on C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK Was AVDROLOC Wetland Hyd Primary Indica Surface V High Wat Vater Ma Sediment Sediment Drift Dep Algal Mat Iron Depo Inundatio Sparsely Field Observ Surface Wate	S observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca vations: er Present?	through s: f one is req al Imagery ( ave Surface Yes	out th	heck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or Other (Ex	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc on Reduc k Surface Well Dats plain in R	3) s (B14) Odor (C1) eres on Liv red Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Seco</u> S C C (C3) S S 6) C	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK WAS MUCK WAS MUCK WAS ITOROLOC Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Sediment Algal Mat Iron Depo Inundatio Sparsely Field Observ Surface Wate Water Table F	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conce rations: er Present? Present?	through s: fone is req al Imagery ( ave Surface Yes Yes	B7) (B8) No	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Recent In Gauge or Other (Ex Depth (ir Depth (ir	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc bon Reduc k Surface Well Data plain in R nches): nches):	3) s (B14) Odor (C1) eres on Lived red Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Seco</u> S C C .(C3) S S 6) _✓ C F	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Remarks: MUCK WAS AUCK WAS AUC	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca rations: er Present? Present? esent?	through s: fone is req al Imagery ( ave Surface Yes Yes	B7) (B8) No	heck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or Other (Ex	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc bon Reduc k Surface Well Data plain in R nches): nches):	3) s (B14) Odor (C1) eres on Lived red Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	<u>Seco</u> S C C .(C3) S S 6) _✓ C F	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Remarks: MUCK WAS AUDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Algal Mat Iron Depo Algal Mat Sparsely Field Observ Surface Wate Water Table F Saturation Pro (includes capi	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca rations: er Present? Present? esent?	through	0ut th	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or Other (Ex Cher (Ex Depth (ir Depth (ir	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc bon Reduc k Surface Well Data plain in R nches): nches):	3) s (B14) Odor (C1) eres on Lived red Iron (C tion in Tille (C7) a (D9) emarks) 9	4) ed Soils (C	<u>Seco</u> S C C (C3) S S 6) _∠ C F	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Remarks: MUCK WAS HYDROLOO Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Algal Mat Iron Depo Inundatio Sparsely Field Observ Surface Wate Water Table F Saturation Pro (includes capi	S Observed GY Irology Indicator ators (minimum o Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aeria Vegetated Conca rations: Present? esent? esent? illary fringe)	through	0ut th	eck all that a Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc Gauge or Other (Ex Cher (Ex Depth (ir Depth (ir	pply) ained Lea auna (B1: atic Plants Sulfide C Rhizosph of Reduc bon Reduc k Surface Well Data plain in R nches): nches):	3) s (B14) Odor (C1) eres on Lived red Iron (C tion in Tille (C7) a (D9) emarks) 9	4) ed Soils (C	<u>Seco</u> S C C (C3) S S 6) _∠ C F	ndary Indicators (minimum of two require Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)

The wetland is ditched outside of the survey corridor.

Project/Site: BitterRoot	City/County: Yellow Medicine			Sampling Date: 2016-09-27					
Applicant/Owner: <u>Renewable Energy S</u>	ystems Americas				State: MN	Sampling Poin	t: <u>w-114n46w35-w03a</u>		
Investigator(s): BJC/JLK			Section, Township, Range: <u>114N-46W-35</u>						
Landform (hillslope, terrace, etc.): Dep		Local relief (co	oncave, convex, n	one): <u>CC</u>					
Slope (%): <u>0-2%</u> Lat: <u>44.64078</u>	_ Long: <u>-96</u>	.370052		Datum: WG	S84				
Soil Map Unit Name: Vallers clay loam,			NWI cla	assification:					
Are climatic / hydrologic conditions on t	he site typical for	r this time of	year? Yes	✓ No	(If no, explain	n in Remarks.)			
Are Vegetation, Soil, or	Hydrology	significant	ly disturbed	? Are "No	ormal Circumstand	ces" present? Yes	s No		
Are Vegetation, Soil, or	Hydrology	naturally p	roblematic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – A	ttach site m	ap showin	ng sampli	ng point loc	ations, trans	ects, importan	t features, etc.		
Hydrophytic Vegetation Present?	Yes✓	No	- Is	the Sampled A	rea				
Hydric Soil Present?		No	WI	thin a Wetland	? Yes	No	✓ No		
Wetland Hydrology Present?	Yes _✓	No	_						
Remarks:									
The such and is a such as a describer									

The wetland is a wet meadow dominated by prairie cordgrass and reed canary grass. It is located in a depression between planted fields.

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				
3				Total Number of Dominant Species Across All Strata:2 (B)
				Species Across All Strata. $\underline{2}$ (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100.00 (A/B)
	0	= Total Cov	er	
Sapling/Shrub Stratum (Plot size: 15 )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species x 1 =
3				FACW species <u>65</u> x 2 = <u>130</u>
				FAC species $0 \times 3 = 0$
4				FACU species $15 \times 4 = 60$
5				
	0	= Total Cov	er	UPL species x 5 =
Herb Stratum (Plot size: 5)				Column Totals: <u>80</u> (A) <u>190</u> (B)
1. <u>Spartina pectinata</u>			FACW	
2. Phalaris arundinacea	30	Y	FACW	Prevalence Index = $B/A = 2.38$
3. <u>Bromus inermis</u>	15	N	FACU	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
6				
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				
9				— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				
		= Total Cov	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 )			01	be present, unless disturbed or problematic.
1				
2				Hydrophytic
2	·			Vegetation Present? Yes <u>√</u> No
	0	= Total Cov	er	
Remarks: (Include photo numbers here or on a separate s				
The wetland is dominated by prairie as	darooo	and rea	doonor	
The wetland is dominated by prairie cor	uyrass	anuiee	u canal	y yrass.

Profile Desc	cription: (D	escribe	to the dep	th needed	to docun	nent the i	ndicator	or confiri	m the absen	ce of indicators.)
Depth		Matrix				x Feature				
(inches)	Color (I		%	Color (r	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-10	<u>10YR</u>	2/1	100						SICL	
10-18	10YR	4/2	95	10YR	5/8	5	С	Μ	SIC	
						·			·	
1						·				
<sup>1</sup> Type: C=Co Hydric Soil			etion, RM:	Reduced I	Matrix, MS	S=Maskec	I Sand Gra	ains.		Location: PL=Pore Lining, M=Matrix.
-					Sandy	loved Me	triv (CA)			•
Histosol (A1)     Sandy Gleyed Matrix (S4)       Histic Epipedon (A2)     Sandy Redox (S5)								st Prairie Redox (A16)		
Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6)							— Darl	s Surface (S7)		
	en Sulfide (A	4)		_		Mucky Mir				-Manganese Masses (F12)
	d Layers (A	5)				Gleyed Ma			-	/ Shallow Dark Surface (TF12)
	uck (A10)		( ) , , , , , , , , , , , , , , , , , ,			d Matrix (I			Othe	er (Explain in Remarks)
✓ Depleted	a Below Dal ark Surface		e (A11)		-	Dark Surfa	ice (F6) irface (F7)		<sup>3</sup> Indicat	ors of hydrophytic vegetation and
	/lucky Miner					Depression				and hydrology must be present,
	ucky Peat or	. ,	3)		-		( )			ess disturbed or problematic.
Restrictive I	Layer (if ob	served):								
Туре:										
Depth (in	ches):								Hydric S	oil Present? Yes 🖌 No
Remarks:										
A deplete	ed matri	x was	observ	ed und	er a da	irk surl	face la	yer.		
HYDROLO	GY									
Wetland Hy	drology Inc	licators:								
Primary India	cators (minii	mum of o	ne is requi	red; check	all that ap	ply)			Secor	ndary Indicators (minimum of two required)
Surface	Water (A1)			V	Vater-Stai	ned Leav	es (B9)		S	urface Soil Cracks (B6)
High Wa	ater Table (A	42)			Aquatic Fa		·		D	rainage Patterns (B10)
✓ Saturation	· · /				rue Aqua					ry-Season Water Table (C2)
	larks (B1)				lydrogen					rayfish Burrows (C8)
	nt Deposits	(B2)					res on Liv	-		aturation Visible on Aerial Imagery (C9)
	posits (B3) at or Crust (						ed Iron (C4 on in Tille	,		tunted or Stressed Plants (D1) eomorphic Position (D2)
	oosits (B5)	64)			hin Muck					AC-Neutral Test (D5)
	on Visible o	n Aerial lı	magery (B		Gauge or \		,		<u> </u>	
	y Vegetated			·	Other (Exp		. ,			
Field Obser	-			,	、 ・		,			
Surface Wat	er Present?	Y	es	No_√_	Depth (ind	ches):				
Water Table	Present?	Y	es	No_ <b>√</b>	Depth (ind	ches):				
Saturation P				No					land Hydrol	ogy Present? Yes 🖌 No
(includes cap		)							-	
Describe Ke	corded Data	a (stream	gauge, mo	onitoring we	aerial p	motos, pr	evious ins	pections)	, if available:	
Domortico										
Remarks:										
The wetla	and is d	Itched	outside	e or the	survey	y corric	lor.			

Project/Site: BitterRoot	City/County: Yellow Me	dicine	Sampling Date: 2016-09-27				
Applicant/Owner: <u>Renewable Energy Systems Americas</u>		State: MN	Sampling Point: w-114n46w35-w02a				
Investigator(s): <u>JLK/BJC</u>	Section, Township, Rar	_ Section, Township, Range: <u>114N-46W-35</u>					
Landform (hillslope, terrace, etc.): Toeslope	Local relief (	concave, convex, n	one): <u>CC</u>				
Slope (%): 0-2% Lat: 44.639985	Long: <u>-96.373052</u>		Datum: WGS84				
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI cla	ssification:				
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 sign	nificantly disturbed? Are "I	Normal Circumstand	es" present? Yes No				
Are Vegetation, Soil, or Hydrology nate	urally problematic? (If ne	eded, explain any a	nswers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map sh	nowing sampling point lo	ocations, transe	ects, important features, etc.				
Hydrophytic Vegetation Present?       Yes _ ✓ _ No _         Hydric Soil Present?       Yes _ ✓ _ No _         Wetland Hydrology Present?       Yes _ ✓ _ No _	within a Wetlan		No				
Remarks:							

The wetland is a shallow marsh dominated by cattail and reed canary grass. It is located in a depression between planted fields.

	Absolute	Dominant		Dominance Test workshee	et:		
Tree Stratum (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Specie			
1				That Are OBL, FACW, or FA	ιC:	2	(A)
2							
3				Total Number of Dominant Species Across All Strata:		2	(P)
				Species Across Air Strata.		2	(D)
4				Percent of Dominant Specie			
5				That Are OBL, FACW, or FA	NC: <u>1(</u>	00.00	(A/B)
	0	= Total Cov	rer	Prevalence Index workshe			
Sapling/Shrub Stratum (Plot size: 15 )							
1	. <u> </u>			Total % Cover of:	Mult	tiply by:	-
2	. <u> </u>			OBL species 25	_ x 1 = _	25	_
3				FACW species 100	x 2 =	200	_
4				FAC species 0			
5				FACU species 0			
J				UPL species 0			
Herb Stratum (Plot size: <u>5</u> )	0	= Total Cov	er				
1. <u>Phalaris arundinacea</u>	00	Y		Column Totals: <u>125</u>	_ (A)	225	_ (B)
				Prevalence Index = B	/^ _	1 90	
2. <u>Typha X glauca</u>							-
3. <u>Urtica dioica</u>	10	N	FACW	Hydrophytic Vegetation Ir			
4				1 - Rapid Test for Hydro		getation	
5				✓ 2 - Dominance Test is >	·50%		
6				✓ 3 - Prevalence Index is	≤3.0 <sup>1</sup>		
7				4 - Morphological Adapt	tations <sup>1</sup> (Pr	rovide sup	oorting
				data in Remarks or d	on a separ	ate sheet)	s or ung
8				Problematic Hydrophyt	ic Venetati	on <sup>1</sup> (Expla	in)
9					io vogotati		,
10							
	125	= Total Cov	rer	<sup>1</sup> Indicators of hydric soil and be present, unless disturbe			nust
Woody Vine Stratum (Plot size: 30)						matic.	
1				Hydrophytic			
2				Vegetation			
					🖌 No		
		= Total Cov	rer				
Remarks: (Include photo numbers here or on a separate s	sheet.)						
The area is dominated by reed canary g	grass ar	nd cattai	1.				

Profile Desc	ription: (D	escribe	to the dep	oth needed	to docun	nent the i	ndicator	or confirm	the absence of i	ndicators.)
Depth		Matrix			Redo	x Feature	s			
(inches)	Color (r	<u>moist)</u>	%	Color (r	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3	10YR	2/1	100						SICL	
3-18	10YR	2/1	95	7.5YR	5/8	5	С	M/PL	SICL	
						·				
<sup>1</sup> Type: C=Co		n, D=Dep	letion, RM	=Reduced I	Matrix, MS	S=Masked	I Sand Gra	ains.		n: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:								Indicators for	Problematic Hydric Soils <sup>3</sup> :
Histosol	· · ·			_	Sandy C	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
	pipedon (A2	2)				Redox (S5			— Dark Surfa	ice (S7)
Black Hi	stic (A3) n Sulfide (A	(4)				d Matrix (S	,		Iron-Mang	anese Masses (F12)
	d Layers (At	,		_		Mucky Mir Gleyed Ma	. ,		-	ow Dark Surface (TF12)
	ick (A10)	)		_		d Matrix (I				plain in Remarks)
	d Below Dar	rk Surface	∋ (A11)	√		Dark Surfa				,
	ark Surface				Deplete	d Dark Su	rface (F7)			hydrophytic vegetation and
	lucky Miner			_	Redox I	Depressio	ns (F8)			drology must be present,
	icky Peat or								unless dist	urbed or problematic.
Restrictive I	_ayer (if ob	served):								
Type:										
	ches):								Hydric Soil Pre	sent? Yes 🖌 No
Remarks:										
A dark la	yer with	redox	was o	bserved	d unde	r a dar	k surfa	ice laye	er.	
	0.1									
HYDROLO		llastana								
Wetland Hy					- 11 (1) - (				O	
Primary India		<u>mum of o</u>	ne is requi							ndicators (minimum of two required)
	Water (A1)					ined Leav	. ,			Soil Cracks (B6)
	iter Table (A	42)				una (B13)				e Patterns (B10)
✓ Saturatio	arks (B1)					tic Plants Sulfide Od	. ,			son Water Table (C2)
	nt Deposits	(B2)						ing Roots (		Burrows (C8) on Visible on Aerial Imagery (C9)
	oosits (B3)	(DZ)					ed Iron (C4	-		or Stressed Plants (D1)
	at or Crust (I	B4)					`	r) d Soils (C6		phic Position (D2)
-	osits (B5)	64)				Surface (			,	utral Test (D5)
·	on Visible o	n Aerial I	magery (B			Well Data	,		<u> </u>	
	Vegetated				-	plain in Re				
Field Obser	8		(				,			
Surface Wate		Y	es	No _✓	Depth (ind	ches):				
Water Table				No <u>√</u>						
Saturation P				No					and Hydrology Pr	esent? Yes 🖌 No
(includes cap	oillary fringe	)								
Describe Re			gauge, m	onitoring we	ell, aerial p	ohotos, pr	evious ins	pections), i	if available:	
Remarks:										

The wetland is ditched outside of the survey corridor.

Project/Site: BitterRoot	City/County: Yellow Medicine	Sampling Date: 2016-09-27
Applicant/Owner: Renewable Energy Systems Americas	State:	MN Sampling Point: w-114n46w35-w01a
Investigator(s): BJC/JLK	Section, Township, Range: <u>114N-</u> 4	46W-35
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, c	onvex, none): <u>CC</u>
Slope (%): 0-2% Lat: 44.638941	Long: <u>-96.375868</u>	Datum: WGS84
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI classification: PEM1Af
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Yes 🖌 No (If no	o, explain in Remarks.)
Are Vegetation, Soil, or Hydrology sign	ificantly disturbed? Are "Normal Circ	eumstances" present? Yes No
Are Vegetation, Soil, or Hydrology natu	arally problematic? (If needed, expla	in any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sh	owing sampling point locations,	transects, important features, etc.
Hydrophytic Vegetation Present? Yes _ ✓ No _	is the Sampled Area	
Hydric Soil Present? Yes <u>√</u> No _	within a wetland?	Yes No
Wetland Hydrology Present?     Yes No _       Remarks:		
The wetland is a wet meadow dominated by scot	ring rush and cattail. It is located i	n a depression within a corn field
The welland is a well meadow dominated by Scol	anny rush and callall. It is located i	n a depression within a com neid.

	Absolute	Dominant		Dominance Test worksheet:
		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
		= Total Cov		That Are OBL, FACW, OF FAC(A/B)
Sapling/Shrub Stratum (Plot size:15 )		- 10101 001		Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species <u>25</u> x 1 = <u>25</u>
3				FACW species <u>60</u> x 2 = <u>120</u>
				FAC species $0 \times 3 = 0$
4				FACU species $0 \times 4 = 0$
5				· <u> </u>
Herb Stratum (Plot size: 5)	0	= Total Cov	ver	UPL species $0 \times 5 = 0$
1. Equisetum hyemale	15	V		Column Totals: <u>85</u> (A) <u>145</u> (B)
			OBL	Prevalence Index = B/A = <u>1.71</u>
2. <u>Typha angustifolia</u>				Hydrophytic Vegetation Indicators:
3. <u>Urtica dioica</u>		<u>     N</u>	FACW	<ul> <li>✓ 1 - Rapid Test for Hydrophytic Vegetation</li> </ul>
4. <u>Zea mays</u>		<u>    N                                </u>		
5				$\checkmark$ 2 - Dominance Test is >50%
6				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
9				— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10				
		= Total Cov	ver	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 )				be present, unless disturbed or problematic.
1				Hudronkutio
2				Hydrophytic Vegetation
				Present? Yes 🖌 No
Develop (help help whether here here an		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate s	ineet.)			
The area is dominated by cattail and sc	ouring r	rush.		
-	-			

Depth		Matrix	to the dep	th needed		nent the ox Feature		or confil	rm the al	osence	e of indicators.)
(inches)	Color (r		%	Color (		<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Tex	ture	Remarks
0-14	10YR	2/1	100						SI	CL	
14-20	10YR	4/1	90	10YR	5/8	10	С	М	(	2	
		., .			0,0						
<sup>1</sup> Type: C=Co		n, D=Dep	letion, RM	=Reduced	Matrix, M	S=Masked	d Sand Gra	ains.			cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:								Ind	icators	s for Problematic Hydric Soils <sup>3</sup> :
Histosol	. ,				_ Sandy	Gleyed Ma	atrix (S4)			Coast	Prairie Redox (A16)
	pipedon (A2	)				Redox (S5				Dark S	Surface (S7)
Black Hi	stic (A3) en Sulfide (A	(1)				d Matrix (\$ Mucky Mi				Iron-N	langanese Masses (F12)
	d Layers (At					Gleyed M				Very S	Shallow Dark Surface (TF12)
	ick (A10)	-)				d Matrix (					(Explain in Remarks)
	d Below Dai	k Surface	e (A11)			Dark Surfa					
✓ Thick Date					_ Deplete	d Dark Su	Irface (F7)		<sup>3</sup> In	dicator	s of hydrophytic vegetation and
	lucky Miner	. ,			Redox	Depressio	ns (F8)				nd hydrology must be present,
5 cm Mu Restrictive I	icky Peat or									unless	s disturbed or problematic.
	Layer (If ob	served):									
Type:	abaa).								المعطا	ia Cai	
Depth (ind Remarks:	cnes):								пуа	10 301	l Present? Yes 🖌 No
	<u>cv</u>										
IYDROLO											
Wetland Hy											
Primary India		num of o	ne is requi						2		ary Indicators (minimum of two required)
	Water (A1)	121				ined Leav auna (B13			_		face Soil Cracks (B6) ainage Patterns (B10)
<ul> <li>✓ High Wa</li> <li>✓ Saturation</li> </ul>		AZ)			•	atic Plants	,		_		-Season Water Table (C2)
	larks (B1)					Sulfide O					ayfish Burrows (C8)
	nt Deposits	(B2)					res on Liv	ina Root	ts (C3)		curation Visible on Aerial Imagery (C9)
	posits (B3)	(==)					ed Iron (C4	-			inted or Stressed Plants (D1)
	at or Crust (	B4)					on in Tille		C6) .		omorphic Position (D2)
Iron Dep	osits (B5)	,				Surface					C-Neutral Test (D5)
Inundati	on Visible o	n Aerial I	magery (B			Well Data					
Sparsely	/ Vegetated	Concave	e Surface (	B8) (	Other (Exp	olain in Re	emarks)				
Field Obser	vations:										
Surface Wate	er Present?	Y	es	No 🖌	Depth (in	ches):		_			
Water Table	Present?	Y	es	No <u>√</u>	Depth (in	ches):	8	_			
Saturation P			es	No <u></u> ✓	Depth (in	ches):	4	We	etland Hy	drolog	gy Present? Yes 🖌 No
(includes cap Describe Re				onitoring w	oll aprial	nhotos nr	evious ins	nections	a) if avails	able.	
	oordeu Dala	a (ouedill	gauge, m	ormorning w	cii, actidi	prioros, pr	CVIOUS IIIS	PECHONS	ə, ii avalla		
Remarks:											
	ond in d	itabad	through	h tha -	ontor						
The wetla	anu is Q	nuned	unoug	п ше с	enter.						

Project/Site: BitterRoot	City/County: Yellow Medic	ine	Sampling Date: 2016-09-27	
Applicant/Owner: Renewable Energy Systems Americas		State: MN	_ Sampling Point: w-114n46w35-	∙u04b
Investigator(s): BJC/JLK	Section, Township, Range	: <u>114N-46W-35</u>		
Landform (hillslope, terrace, etc.): Side slope	Local relief (con	ncave, convex, no	ne): <u>VL</u>	-
Slope (%): <u>3-7%</u> Lat: <u>44.639169</u>	Long: <u>-96.367068</u>		Datum: WGS84	
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI clas	sification:	
Are climatic / hydrologic conditions on the site typical for this time c	of year? Yes 🖌 No _	(If no, explain i	n Remarks.)	
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "No	rmal Circumstance	s" present? Yes No	
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If neede	ed, explain any ans	swers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map show	ving sampling point loca	ations, transe	cts, important features, e	etc.
Hydrophytic Vegetation Present?       Yes No         Hydric Soil Present?       Yes No         Wetland Hydrology Present?       Yes No	within a Wetland?		No∕	
Remarks:	i			
The upland is located in a corn field.				
<b>VEGETATION</b> – Use scientific names of plants.				
Absol	lute Dominant Indicator D	ominance Test w	orksheet:	

<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:0 (A)
23				Total Number of Dominant Species Across All Strata:1 (B)
45				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: 15 )		- 10101 001		Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species0 x 1 =0
3.				FACW species0 x 2 =0
4				FAC species x 3 =
5				FACU species 0 x 4 = 0
···		= Total Cov		UPL species x 5 =
Herb Stratum (Plot size: 5)		- 10101 001		Column Totals: <u>0</u> (A) <u>0</u> (B)
1. <u>Zea mays</u>	90	Y	NI	
2				Prevalence Index = B/A =0
3				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10		= Total Cov		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
		= Total Cov	/er	Present? Yes No 🗸
Remarks: (Include photo numbers here or on a separate s	sheet.)			
The upland is dominated by healthy co	rn			

Profile Desc	cription: (D	escribe	to the dep	th needed	to docun	nent the i	ndicator	or confirm	the absence	of indicators.)			
Depth		Matrix			Redo	x Features	S						
(inches)	Color (r	<u>moist)</u>	%	Color (r	noist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks			
0-12	10YR	2/1	100						SC				
12-18	10YR	4/1	95	10YR	5/8	5	С	М	SC				
								·······		·			
<sup>1</sup> Type: C=C	oncentratior	n, D=Depl	letion, RM=	Reduced	Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Loc	cation: PL=Pore Lining, M=Matrix.			
Hydric Soil										for Problematic Hydric Soils <sup>3</sup> :			
Histosol	(A1)				Sandy C	Bleyed Ma	trix (S4)		Coast	Prairie Redox (A16)			
· ·	pipedon (A2	)			Sandy F	Redox (S5	)		— Dark S	Surface (S7)			
	istic (A3)					Matrix (S	,			anganese Masses (F12)			
	en Sulfide (A	,			-	Mucky Mir	· · ·			Shallow Dark Surface (TF12)			
	d Layers (Ał uck (A10)	)				Gleyed Ma d Matrix (I			Other (Explain in Remarks)				
	d Below Dai	k Surface	e (A11)			Dark Surfa							
Thick Da			5 (711)				rface (F7)		<sup>3</sup> Indicators	s of hydrophytic vegetation and			
	/lucky Miner	. ,				Depressio	( )			d hydrology must be present,			
	ucky Peat or								unless	disturbed or problematic.			
Restrictive	Layer (if ob	served):											
Туре:													
Depth (in	ches):								Hydric Soil	Present? Yes 🖌 No			
Remarks:									•				
Although	hydric :	soil wa	as obse	rved, la	ck of h	nydrolo	gy ind	cators	and domi	nance of healthy corn			
indicate	the area	is upl	and.			-				-			
		•											
HYDROLO	GY												
Wetland Hy	drology Inc	licators:											
Primary India	cators (minii	num of o	ne is requi	ed; check a	all that ap	ply)			Seconda	ary Indicators (minimum of two required)			
Surface	Water (A1)			V	Vater-Stai	ned Leav	es (B9)		Surf	face Soil Cracks (B6)			
High Wa	ater Table (A	A2)		A	quatic Fa	una (B13)	)			inage Patterns (B10)			
Saturatio	on (A3)			т	rue Aqua	tic Plants	(B14)		Dry-	-Season Water Table (C2)			
Water N	larks (B1)			H	lydrogen	Sulfide Od	dor (C1)		Cray	yfish Burrows (C8)			
Sedimer	nt Deposits	(B2)		C	xidized R	hizosphe	res on Liv	ing Roots (	(C3) Satu	uration Visible on Aerial Imagery (C9)			
Drift Dep	posits (B3)			P	resence	of Reduce	d Iron (C4	)	Stur	nted or Stressed Plants (D1)			
Algal Ma	at or Crust (I	B4)		R	ecent Iro	n Reducti	on in Tille	d Soils (C6	6) Geo	pmorphic Position (D2)			

Iron Deposits (B5)			_ Thin Muck Surface (C7)	7) FAC-Neutral Test (D5)	
Inundation Visible on A	erial Imager	y (B7)	_ Gauge or Well Data (D	09)	
Sparsely Vegetated Co	ncave Surfa	ce (B8)	Other (Explain in Rem	arks)	
Field Observations:					
Surface Water Present?	Yes	No _∕_	Depth (inches):		
Water Table Present?	Yes	No	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	No _∠	Depth (inches):	Wetland Hydrology Present? Yes	No 🖌
Describe Recorded Data (st	tream gauge	, monitoring	well, aerial photos, prev	ious inspections), if available:	
Remarks:					

No indicators of wetland hydrology were observed.

Project/Site: BitterRoot			City/County: Ye	llow Medicine		Sampling Dat	e: 2016-09-27
Applicant/Owner: Renewable Energy S	ystems Americas			State	e: MN	Sampling Point:	: <u>w-114n46w35-u04a</u>
Investigator(s): <u>JLK/BJC</u>			Section, Townsh	hip, Range: <u>114</u>	N-46W-35		
Landform (hillslope, terrace, etc.): Side	slope		Loca	I relief (concave	, convex, non	e): <u>LL</u>	
Slope (%): <u>3-7%</u> Lat: <u>44.64043</u>	37		Long: <u>-96.36924</u>	11		Datum: WGS	84
Soil Map Unit Name: Vallers clay loam,	0 to 2 percent slo	pes			NWI class	ification:	
Are climatic / hydrologic conditions on t	the site typical for	this time of y	ear?Yes 🖌	_ No (If	no, explain ir	n Remarks.)	
Are Vegetation, Soil, or	Hydrology		y disturbed?	Are "Normal C	ircumstances	s" present? Yes	No
Are Vegetation, Soil, or	Hydrology	naturally pr	roblematic?	(If needed, exp	plain any ans	wers in Remarks.	)
SUMMARY OF FINDINGS – A	ttach site ma	ap showing	g sampling p	oint location	s, transec	ts, important	features, etc.
Hydrophytic Vegetation Present?	Yes	No✓	ls the Sa	ampled Area			
Hydric Soil Present?	Yes	No 🧹		Wetland?	Yes	No√	/
Wetland Hydrology Present?	Yes	No <u>√</u>		Tottanu			
Remarks:							
The upland is a grassland	dominated	by smoo	oth brome.				
1							

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 0 (A)
2				
				Total Number of Dominant Species Across All Strata: 1 (B)
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 0.00 (A/B)
	0	= Total Cov	/er	
Sapling/Shrub Stratum (Plot size: 15 )				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x 1 =0
3				FACW species x 2 =0
				FAC species $0 \times 3 = 0$
4				
5				FACU species $110$ x 4 = $440$
	0	= Total Cov	/er	UPL species X 5 =0
Herb Stratum (Plot size: 5)				Column Totals: <u>110</u> (A) <u>440</u> (B)
1. <u>Bromus inermis</u>	90	Y	FACU	
2. <u>Cirsium arvense</u>	10	<u>N</u>	FACU	Prevalence Index = $B/A = 4.00$
3. Asclepias syriaca	10	N	FACU	Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				2 - Dominance Test is >50%
6				 3 - Prevalence Index is ≤3.0 <sup>1</sup>
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
				— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Weader View Chatter (Plat size) 20	110	= Total Cov	/er	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 30)				
1				Hydrophytic
2				Vegetation
	0	Tatal Oa		Present? Yes No 🗸
Remarks: (Include photo numbers here or on a separate s		= Total Cov	/er	
Tremaires. (include prioto numbers here of off a separate s	sieet.)			
The area is dominated by smooth brom	e.			
-				

Depth       Matrix       Redox Features         (inches)       Color (moist)       %       Type'       Loc'       Texture       Remarks         0-13       10YR       2/1       100       SCL       SCL         13-17       10YR       5/3       100       SCL       SCL         13-17       10YR       5/3       100       SCL       SCL
0-13       10YR       2/1       100       SCL         13-17       10YR       5/3       100       SCL         14       15       10       10       10       10         17       2       10       10       10       10       10         16       10       10       10       10       10       10         16       10       10       10       10       10       10       10         16       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10
13-17       10YR       5/3       100       SCL         ''Type:
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>1</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>1</sup> :         — Histic Epipedon (A2)       — Sandy Redox (S5)       — Dark Surface (S7)         — Histic Epipedon (A2)       — Sandy Gleyed Matrix (S4)       — Coast Prairie Redox (A16)         — Hydrigen Sulfide (A4)       — Loamy Mucky Mineral (F1)       — Ion-Manganese Masses (F12)         — Stratified Layers (A5)       — Loamy Gleyed Matrix (F2)       — Very Shallow Dark Surface (TF12)         _ 2 cm Muck (A10)       _ Depleted Matrix (F3)       _ Other (Explain in Remarks)         _ Depleted Below Dark Surface (A11)       _ Redox Dark Surface (F7) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         _ S orm Mucky Peat or Peat (S3)       _ Depleted Dark Surface (F7) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Type:
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>2</sup> :
Black Histic (A3)      Stripped Matrix (S6)
5 cm Mucky Peat or Peat (S3)       unless disturbed or problematic.         Restrictive Layer (if observed):
Restrictive Layer (if observed):       Type:
Depth (inches):       Hydric Soil Present? Yes       No         Remarks:       No indicators of hydric soil were observed.         Hydric Soil Present? Yes       No         Mo       ✓         Hydric Soil Present? Yes       No         No       ✓         Remarks:         No indicators of hydric soil were observed.         Hydric Soil Present? Yes       No         Hydric Soil Present? Yes       No         No       ✓         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Remarks:         No indicators of hydric soil were observed.         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
No indicators of hydric soil were observed.         HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
HYDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators:       Secondary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators:       Secondary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators:       Secondary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators:       Secondary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of two required)         Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)         High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)
High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)         Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)
Saturation (A3)       True Aquatic Plants (B14)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5)
<ul> <li>Inundation Visible on Aerial Imagery (B7)</li> <li>Gauge or Well Data (D9)</li> <li>Sparsely Vegetated Concave Surface (B8)</li> <li>Other (Explain in Remarks)</li> </ul>
Field Observations:
Surface Water Present? Yes No ✓ Depth (inches):
Water Table Present? Yes No _ ✓ Depth (inches):
Saturation Present? Yes No _ ✓ Depth (inches): Wetland Hydrology Present? Yes No _ ✓

Remarks:

No indicators of wetland hydrology were observed.

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

(includes capillary fringe)

Project/Site: BitterRoot	City/County: Yellow Medicine	•	Sampling Date: 2016-09-27		
Applicant/Owner: Renewable Energy Systems Americas	S	State: <u>MN</u>	Sampling Point: w-114n46w35-u03a		
Investigator(s): BJC/JLK	Section, Township, Range: <u>1</u>	114N-46W-35			
Landform (hillslope, terrace, etc.): Side slope	Local relief (conca	ave, convex, non	e): <u>VL</u>		
Slope (%): <u>3-7%</u> Lat: <u>44.640666</u>	Long: <u>-96.370024</u>	Long: <u>-96.370024</u> Datum: <u>WGS84</u>			
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes		NWI class	ification:		
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes 🖌 No	(If no, explain ir	n Remarks.)		
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Norma	al Circumstances	s" present? Yes No		
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed,	explain any ans	wers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map show	ing sampling point locati	ions, transed	ts, important features, etc.		
Hydrophytic Vegetation Present? Yes No					
Hydric Soil Present? Yes No			No 🗸		
Wetland Hydrology Present? Yes No					
Remarks:					
The upland is a grassland dominated by big	bluestem and smooth	brome.			

	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
23				Total Number of Dominant Species Across All Strata:2 (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size:15)				Prevalence Index worksheet:
1/				Total % Cover of:Multiply by:
2				OBL species         0         x 1 =
3				FACW species $0 x 2 = 0$
4				FAC species <u>35</u> x 3 = <u>105</u>
5				FACU species 70 x 4 = 280
		= Total Cov		UPL species x 5 =
Herb Stratum (Plot size: 5)		- 10101 001		Column Totals: <u>105</u> (A) <u>385</u> (B)
1. <u>Bromus inermis</u>	45	Y	FACU	
2. Andropogon gerardii	25	Y	FAC	Prevalence Index = $B/A = 3.67$
3. Asclepias syriaca	15	N	FACU	Hydrophytic Vegetation Indicators:
4. <u>Panicum virgatum</u>	10	N	FAC	1 - Rapid Test for Hydrophytic Vegetation
5. <u>Cirsium arvense</u>	10	N	FACU	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10			·	
10		= Total Cov		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30))				be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
		= Total Cov	ver	Present? Yes No 🗸
Remarks: (Include photo numbers here or on a separate s	sheet.)			
The upland is dominated by smooth bro	ome and	d big blu	estem.	

Profile Desc	cription: (Des	cribe to the dept	h needed to docur	nent the i	ndicator	or confirm	the absence of	indicators.)	
Depth	Ма	trix	Redo	x Features	S				
(inches)	Color (moi	<u>st) %</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-15	10YR 2	/1 100					SC		
15-18	10YR 5	5/3 100					SCL		
				·					
				. <u> </u>					
		=Depletion, RM=	Reduced Matrix, M	S=Masked	I Sand Gra	ains.		on: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils <sup>3</sup> :	
Histosol	( )		Sandy (	Gleyed Ma	atrix (S4)		Coast Pra	airie Redox (A16)	
	pipedon (A2)		— Sandy F				— Dark Surf	ace (S7)	
	istic (A3) en Sulfide (A4)			d Matrix (S Mucky Mir	,		Iron-Mano	ganese Masses (F12)	
	d Layers (A5)			Gleyed Ma				llow Dark Surface (TF12)	
	uck (A10)			d Matrix (F			Other (Ex	plain in Remarks)	
	d Below Dark S	urface (A11)		Dark Surfa					
	ark Surface (A1	,			rface (F7)			hydrophytic vegetation and	
-	/lucky Mineral (		Redox I	Depressio	ns (F8)		wetland hydrology must be present,		
	ucky Peat or Pe Layer (if obser						unless dis	sturbed or problematic.	
Type:							Undria Cail Dr		
	cnes):						Hydric Soil Pro	esent? Yes No 🖌	
Remarks:									
No Indica	ators of hy	dric soll we	re observed.						
	<u> </u>								
HYDROLO									
-	drology Indica								
-		n of one is requir	ed; check all that ap					Indicators (minimum of two required)	
	Water (A1)		Water-Sta		. ,			e Soil Cracks (B6)	
	ater Table (A2)		Aquatic Fa					ge Patterns (B10)	
Saturatio	. ,		True Aqua					ason Water Table (C2)	
	larks (B1)	\	Hydrogen			na Dooto //		h Burrows (C8)	
	nt Deposits (B2	)				ng Roots ((	,	tion Visible on Aerial Imagery (C9)	
	posits (B3) at or Crust (B4)		Presence			) I Soils (C6)		d or Stressed Plants (D1) orphic Position (D2)	
	posits (B5)		Thin Muck					eutral Test (D5)	
-		erial Imagery (B7							
		ncave Surface (E							
Field Obser			, <u> </u>		- /				
Surface Wate	er Present?	Yes N	lo _✓_ Depth (in	ches):		_			
Water Table	Present?		lo Depth (in			_			

Yes \_\_\_\_ No \_ ✓ Depth (inches): \_\_\_\_ (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation Present?

No indicators of wetland hydrology were observed.

Wetland Hydrology Present? Yes \_\_\_\_ No \_\_\_\_

Project/Site: BitterRoot	City/Co	unty: Yellow Medicir	ne Sampling Date: 2016-09-2			
Applicant/Owner: Renewable Energy Systems Americas			State: MN	_ Sampling Point:	w-114n46w35-u02a	
Investigator(s): BJC/JLK	Section	n, Township, Range:	114N-46W-35			
Landform (hillslope, terrace, etc.): Side slope		Local relief (con	cave, convex, no	ne): <u>VL</u>		
Slope (%): <u>8-15%</u> Lat: <u>44.639868</u>	Long: -	96.373093		Datum: WGS8	34	
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes			NWI clas	sification:		
Are climatic / hydrologic conditions on the site typical for this tir	me of year? Ye	s 🖌 No	(If no, explain	n Remarks.)		
Are Vegetation, Soil, or Hydrologysign	ificantly disturb	ly disturbed? Are "Normal Circumstances" present? Yes No				
Are Vegetation, Soil, or Hydrology natu	rally problemat	ic? (If neede	d, explain any an	swers in Remarks.	)	
SUMMARY OF FINDINGS – Attach site map sh	owing sam	pling point loca	tions, transe	cts, important	features, etc.	
Hydrophytic Vegetation Present? Yes No _	✓	Is the Sampled Are	22			
Hydric Soil Present? Yes No	1	within a Wetland?		No√		
Wetland Hydrology Present? Yes No _						
Remarks:						
The upland is a grassland dominated by t	big blueste	em and smoot	h brome.			

		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:(A)
2 3				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)
Conting/Chryth Chrothers (Dist size)	0	= Total Cov	rer	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: 15 )				
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species $0 \times 2 = 0$
4				FAC species $50 \times 3 = 150$
5				FACU species $55$ x 4 = $220$
Herb Stratum (Plot size: 5)	0	= Total Cov	rer	UPL species $0 \times 5 = 0$
	25	Y	EAC	Column Totals: <u>105</u> (A) <u>370</u> (B)
1. <u>Andropogon gerardii</u>				Prevalence Index = $B/A = 3.52$
2. <u>Bromus inermis</u>				Hydrophytic Vegetation Indicators:
3. <u>Panicum virgatum</u>				
4. <u>Asclepias syriaca</u>		<u>    N     </u>		1 - Rapid Test for Hydrophytic Vegetation
5. <u>Cirsium arvense</u>	10	<u>     N                               </u>	FACU	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
8				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30)	105	= Total Cov	rer	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation
		= Total Cov	rer	Present? Yes No
Remarks: (Include photo numbers here or on a separate s	sheet.)			
The upland is dominated by smooth bro	ome and	l big blu	estem.	

Profile Descr	iption: (Describe	e to the depti	n needed to docun	nent the i	ndicator	or confirm	the absence	e of indicators.)		
Depth	Matrix		Redo	x Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-7	10YR 2/1	100					SICL			
7-18	10YR 3/2	100					SCL			
						·				
						·······				
						·		- <u>-</u>		
								- <u> </u>		
		pletion, RM=I	Reduced Matrix, MS	S=Maskec	Sand Gra	ains.		ocation: PL=Pore Lining, M=Mat		
Hydric Soil Ir								s for Problematic Hydric Soils <sup>3</sup>	:	
Histosol (			Sandy C	Bleyed Ma	trix (S4)		Coas	t Prairie Redox (A16)		
	pedon (A2)		Sandy F		,		— Dark	Surface (S7)		
Black His	n Sulfide (A4)			l Matrix (S Nucky Mir	,		Iron-N	Manganese Masses (F12)		
	Layers (A5)			Gleyed Ma			Very	Shallow Dark Surface (TF12)		
2 cm Muc				d Matrix (I			Other	(Explain in Remarks)		
Depleted	Below Dark Surfac	ce (A11)		Dark Surfa						
	rk Surface (A12)				rface (F7)			s of hydrophytic vegetation and		
	ucky Mineral (S1)		Redox [	Depressio	ns (F8)		wetland hydrology must be present,			
	cky Peat or Peat (S ayer (if observed)						unles	s disturbed or problematic.		
Type:										
	hoc).						Hydric So	il Prosont? Vos No	./	
Depth (incl	hes):						Hydric So	il Present? Yes <u>No</u>	✓	
Remarks:							Hydric So	il Present? Yes No	<u>√</u>	
Remarks:	tors of hydric	c soil wer	e observed.				Hydric So	il Present? Yes No		
Remarks:		c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>	
Remarks:		c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>	
Remarks: No indica	tors of hydrid	c soil wer	e observed.				Hydric So	il Present? Yes No	<u> </u>	
Remarks: No indica HYDROLOG	tors of hydric		e observed.				Hydric So	il Present? Yes No	_ <b>√</b>	
Remarks: No indica HYDROLOC Wetland Hyd	tors of hydrid SY rology Indicators	:								
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica	tors of hydrid GY rology Indicators	:	ed; check all that ap				<u>Second</u>	lary Indicators (minimum of two r		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V	tors of hydrid	:	ed; check all that ap Water-Stai	ned Leav	( )		<u>Second</u>	lary Indicators (minimum of two r rface Soil Cracks (B6)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat	tors of hydric GY rology Indicators ators (minimum of e Vater (A1) er Table (A2)	:	ed; check all that ap Water-Stai Aquatic Fa	ned Leav una (B13	)		<u>Seconc</u> Su Dra	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua	ned Leav Juna (B13 tic Plants	) (B14)		<u>Seconc</u> Su Dra Dra	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2)		
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma	tors of hydric BY rology Indicators ators (minimum of a Vater (A1) er Table (A2) n (A3) arks (B1)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen	ned Leav una (B13 tic Plants Sulfide Od	) (B14) dor (C1)	ing Roots (	<u>Seconc</u> Su Dra Dr	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8)	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ned Leav luna (B13 tic Plants Sulfide Oo thizosphe	) (B14) dor (C1) res on Liv	-	<u>Seconc</u> <u>Seconc</u> <u>Su</u> Dra <u>Dra</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	tors of hydric GY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence o	ned Leav una (B13 tic Plants Sulfide Oo hizosphe	) (B14) dor (C1) res on Liv d Iron (C4	+)	<u>Seconc</u> <u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1)	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	tors of hydrid Frology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	:	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ned Leav una (B13 tic Plants Sulfide O thizosphe of Reduce n Reducti	) (B14) dor (C1) res on Liv d Iron (C <sup>2</sup> on in Tille	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo	tors of hydrid Frology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) t Deposits (B2) posits (B3) t or Crust (B4)	: one is require	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized Fa Presence of Recent Iro Thin Muck	ned Leav una (B13 tic Plants Sulfide Oo Rhizosphe of Reduce n Reducti Surface (	(B14) dor (C1) res on Liv d Iron (C <sup>2</sup> on in Tilleo C7)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery inted or Stressed Plants (D1) omorphic Position (D2)	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydric SY rology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) c or Crust (B4) posits (B5)	: one is require Imagery (B7)	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13 tic Plants Sulfide Od thizosphe of Reduce n Reducti Surface ( Well Data	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1) omorphic Position (D2)	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydric Frology Indicators ators (minimum of a Vater (A1) er Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3) c or Crust (B4) posits (B5) n Visible on Aerial Vegetated Concav	: one is require Imagery (B7)	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13 tic Plants Sulfide Od thizosphe of Reduce n Reducti Surface ( Well Data	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9)	+)	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1) omorphic Position (D2)	equired)	
Remarks: No indica MyDROLOG Wetland Hyd Primary Indica 	tors of hydrid For a start of the start of	: one is require Imagery (B7) /e Surface (B	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized R Presence o Recent Iro Guge or V	ned Leav una (B13) tic Plants Sulfide Oo hizosphe of Reduce n Reducti Surface ( Well Data plain in Re	(B14) dor (C1) res on Liv d Iron (C <sup>4</sup> on in Tilled C7) (D9) marks)	d Soils (C6	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1) omorphic Position (D2)	equired)	
Remarks: No indica HYDROLOC Wetland Hyd Primary Indica 	tors of hydrid Frongy Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1) arks (B1) arks (B3) c or Crust (B4) osits (B5) n Visible on Aerial Vegetated Concav ations: r Present?	: one is require Imagery (B7) /e Surface (B Yes N	ed; check all that ap Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Gauge or V 8) Other (Exp	ned Leav una (B13) tic Plants Sulfide Oc hizosphe of Reduce n Reducti Surface ( Well Data plain in Re	(B14) dor (C1) res on Liv d Iron (C4 on in Tilled C7) (D9) marks)	d Soils (C6	<u>Seconc</u> <u>Su</u> <u>Dra</u> <u>Cra</u> (C3) <u>Sa</u> (C3) <u>Sa</u> (C3) <u>Sa</u>	lary Indicators (minimum of two r rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery unted or Stressed Plants (D1) omorphic Position (D2)	equired)	

Remarks:

No indicators of wetland hydrology were observed.

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

(includes capillary fringe)

Project/Site: BitterRoot	City/County: Yellow Medicine Sampling Date: 2016-09-26					
Applicant/Owner: Renewable Energy Systems Americas	State: MN Sampling Point: w-114n46w9-w02a					
Investigator(s): LEB/TK	Section, Township, Range: <u>114N-46W-09</u>					
Landform (hillslope, terrace, etc.): Depression	Local relief (concave, convex, none): CC					
Slope (%): <u>3-7%</u> Lat: <u>44.698129</u>	_ Long: <u>-96.410406</u> Datum: <u>WGS84</u>					
Soil Map Unit Name: Lakepark-Roliss-Parnell, depressional, complex, 0	0 to 3 percent slopes NWI classification: PEM1A					
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	y disturbed? Are "Normal Circumstances" present? Yes No					
Are Vegetation, Soil, or Hydrology naturally pro	roblematic? (If needed, explain any answers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present?       Yes _ ✓ No         Hydric Soil Present?       Yes _ ✓ No         Wetland Hydrology Present?       Yes _ ✓ No         Remarks:       Yes _ ✓ No	within a Wetland? Yes ✓ No					

The vegetation consists of a PEM basin surrounded by cultivated wheat fields.

	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5	. <u> </u>			That Are OBL, FACW, or FAC: 100.00 (A/B)
		= Total Cov		
Sapling/Shrub Stratum (Plot size: 15 )				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
2				OBL species x 1 =0
3				FACW species x 2 =0
4				FAC species <u>100</u> x 3 = <u>300</u>
5				FACU species x 4 =0
		= Total Cov		UPL species0 x 5 =0
Herb Stratum (Plot size: 5)				Column Totals: 100 (A) 300 (B)
1. <u>Hordeum jubatum</u>	90	Y	FAC	
2. <u>Setaria pumila</u>	10	Ν	FAC	Prevalence Index = $B/A = 3.00$
3.				Hydrophytic Vegetation Indicators:
4				1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
				$\checkmark$ 3 - Prevalence Index is $\leq 3.0^{1}$
6				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
7				data in Remarks or on a separate sheet)
8				— Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>30</u> )	100	= Total Cov	rer	be present, unless disturbed or problematic.
1				Hydrophytic
2	·			Vegetation Present? Yes ✓ No
	0	= Total Cov	ver	Present? Yes 🖌 No
Remarks: (Include photo numbers here or on a separate s				1
The vegetation is dominated by foxtail I	barlev.			
	···· , ·			

Profile Desc	ription: (D	Describe	to the dep	th needed	to docun	nent the i	ndicator	or confirm	the absence of indicators.	)		
Depth		Matrix				x Features	4					
(inches)	Color (I	moist)	%	Color (r	<u>noist)</u>	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks			
0-5	10YR	2/1	100						LS			
5-18	10YR	2/1	80	5YR	4/4	20	<u> </u>	M	LS			
						·						
<sup>1</sup> Type: C=Co	oncentratior	n, D=Dep	letion, RM=	Reduced I	Matrix, MS	S=Masked	I Sand Gra	ains.	<sup>2</sup> Location: PL=Por	re Lining, M=Matrix.		
Hydric Soil I	ndicators:								Indicators for Problemat	tic Hydric Soils <sup>3</sup> :		
Histosol (A1) S				Sandy G	Gleyed Ma	atrix (S4)		Coast Prairie Redox (A16)				
·	pipedon (A2	2)		✓	- Sandy F	Redox (S5	)		— Dark Surface (S7)			
Black His	. ,					d Matrix (S	,		Iron-Manganese Masses (F12)			
	n Sulfide (A Layers (A	,				Mucky Mir Gleyed Ma	· · ·		Very Shallow Dark Surface (TF12)			
2 cm Mu		5)				d Matrix (I			Other (Explain in Remarks)			
	d Below Da	rk Surfac	e (A11)			Dark Surfa						
·	ark Surface		• (/ )		-		irface (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and			
Sandy M	lucky Miner	ral (S1)				Depressio	, ,		wetland hydrology must be present,			
5 cm Mu	icky Peat or	r Peat (S	3)						unless disturbed or pr	roblematic.		
Restrictive L	_ayer (if ob	served):										
Туре:												
Depth (inc	ches):								Hydric Soil Present? Y	'es 🖌 No		
Remarks:												
The soil of indicator		s of a c	dark sur	face la	yer und	derlain	by a la	ayer wit	h redox concentrati	ons, meeting		

### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
	Drainage Patterns (B10)          Dry-Season Water Table (C2)         C1)          on Living Roots (C3)           Saturation Visible on Aerial Imagery (C9)         on (C4)           Stunted or Stressed Plants (D1)          Geomorphic Position (D2)          FAC-Neutral Test (D5)
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remar	(S)
Field Observations:	
Surface Water Present? Yes No ✓ Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes _ ✓ No Depth (inches):         (includes capillary fringe)       Yes _ ✓ No Depth (inches):	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previo	us inspections), if available:
Remarks:	
Saturation was observed at a depth of 8 inches.	

Project/Site: BitterRoot 0	City/County: Yellow Medicine Sampling Date: 2016-09-26
Applicant/Owner: Renewable Energy Systems Americas	State: MN Sampling Point: w-114n46w9-u02a
Investigator(s): LEB/TK	Section, Township, Range: <u>114N-46W-09</u>
Landform (hillslope, terrace, etc.): Side slope	Local relief (concave, convex, none): <u>VV</u>
Slope (%): <u>3-7%</u> Lat: <u>44.698316</u>	Long: <u>-96.410515</u> Datum: WGS84
Soil Map Unit Name: Barnes-Buse complex, 6 to 12 percent slopes, mod	erately eroded NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year	ar? 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 pro	blematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?       Yes No         Hydric Soil Present?       Yes No         Wetland Hydrology Present?       Yes No	Is the Sampled Area within a Wetland? Yes No
Remarks:	
The upland sample point is located on a side slope w	ithin a large, harvested wheat field with rolling topography.
<b>VEGETATION</b> – Use scientific names of plants.	
Tree Stratum         (Plot size:30)         Absolute % Cover	Dominant Indicator       Dominance Test worksheet:         Species?       Status         Number of Dominant Species         That Are OBL, FACW, or FAC:       1         (A)

1			·	That Are OBL, FACW, or FAC:	. <u> </u>	(A)
2 3			·	Total Number of Dominant Species Across All Strata:	2	(B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:	50.00	(A/B)
Sapling/Shrub Stratum (Plot size:15)	0	_ = 10(a) C0	vei	Prevalence Index worksheet:	:	
1				Total % Cover of:	Multiply by:	
2.				OBL species 0	x 1 =	_
3				FACW species 0	x 2 =0	
4				FAC species 15	x 3 = <u>45</u>	_
5				FACU species 0	x 4 = 0	
		= Total Co		UPL species 0		
Herb Stratum (Plot size: 5)		_		Column Totals: 15		(B)
1. <u>Triticum aestivum</u>	60	Y	NI			_ 、 /
2. <u>Setaria pumila</u>	15	<u> </u>	FAC	Prevalence Index = $B/A$	= <u>3.00</u>	_
3				Hydrophytic Vegetation Indi	cators:	
4				1 - Rapid Test for Hydroph	ytic Vegetation	
5				2 - Dominance Test is >50	1%	
6				✓ 3 - Prevalence Index is ≤3.	.0 <sup>1</sup>	
7			·	4 - Morphological Adaptati data in Remarks or on		porting
8 9				Problematic Hydrophytic	Vegetation <sup>1</sup> (Expla	ain)
10		= Total Co		<sup>1</sup> Indicators of hydric soil and w	vetland hydrology	must
Woody Vine Stratum (Plot size: 30))		_= 10tal C0	vei	be present, unless disturbed o		
1			·	Hydrophytic		
2			·	Vegetation Present? Yes ✓	No	
		_ = Total Co	ver			
Remarks: (Include photo numbers here or on a separate s	heet.)					

The vegetation consists of wheat stubble and scattered yellow foxtail. The vegetation passes the prevalence index due to dominance of no indicator wheat and facultative foxtail, however the area is upland.

Profile Desc	cription: (Describe	the dept	h needed to docur	nent the i	indicator	or confirm	the absence of in	dicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-20	10YR 3/2	100					FSL		
·		<u> </u>			·		·		
					·		·		
							·		
<sup>1</sup> Type: C=C	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	S=Masked	d Sand Gra	ains.	<sup>2</sup> Location	: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators:							Problematic Hydric Soils <sup>3</sup> :	
Histosol	( )		Sandy (	Gleyed Ma	atrix (S4)		Coast Prairi	e Redox (A16)	
	pipedon (A2)		— Sandy F		,		— Dark Surfac	e (S7)	
Black Histic (A3) Stripped Matrix (S6)					Iron-Manga	nese Masses (F12)			
Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)				•	w Dark Surface (TF12)				
2 cm Muck (A10) Depleted Matrix (F3)				Other (Explain in Remarks)					
	d Below Dark Surface	e (A11)		Dark Surfa					
	ark Surface (A12)				ırface (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and		
-	Aucky Mineral (S1)		Redox I	Depressio	ns (F8)		wetland hydrology must be present,		
	ucky Peat or Peat (S3						unless distu	rbed or problematic.	
	Layer (if observed):								
Type:									
Depth (in	ches):						Hydric Soil Pres	ent? Yes No∕	
Remarks:						<b>C</b> 11			
I he soil	consists of a c	lark fine	e sandy loam	throug	hout th	e profil	e.		
HYDROLO	GY								
Wetland Hy	drology Indicators:								
Primary Indi	cators (minimum of o	ne is requir	ed; check all that ap	oply)			Secondary In	dicators (minimum of two required)	
	Water (A1)		Water-Sta					Soil Cracks (B6)	
-	ater Table (A2)		Aquatic Fa				-	Patterns (B10)	
Saturati	. ,		True Aqua		. ,			on Water Table (C2)	
	larks (B1)		Hydrogen		. ,			Burrows (C8)	
	nt Deposits (B2)			•		ing Roots (		n Visible on Aerial Imagery (C9)	
Drift De	posits (B3)		Presence	of Reduce	ed Iron (C4	4)	Stunted c	or Stressed Plants (D1)	

\_\_\_ Recent Iron Reduction in Tilled Soils (C6)

Thin Muck Surface (C7)

\_\_\_\_ Gauge or Well Data (D9)

Yes \_\_\_\_ No \_ ✓ Depth (inches): \_ Yes \_\_\_\_ No \_ ✓ Depth (inches): \_

Yes \_\_\_\_ No \_\_ Depth (inches): \_\_\_\_

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

Other (Explain in Remarks)

Remarks:

No indicators of wetland hydrology were observed.

\_ Algal Mat or Crust (B4)

\_\_\_\_ Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

Iron Deposits (B5)

Field Observations: Surface Water Present?

Water Table Present? Saturation Present?

(includes capillary fringe)

No 🖌

\_\_\_\_ Geomorphic Position (D2)

\_\_\_\_ FAC-Neutral Test (D5)

Wetland Hydrology Present? Yes \_\_\_\_\_

Project/Site: BitterRoot	City/County: Yell	ow Medicine	Sampling Date: 2016-09-26		
Applicant/Owner: Renewable Energy Systems Americas		State: MN	Sampling Point: w-114n46w5-w01a		
Investigator(s): TK/LEB	Section, Townsh	ip, Range: <u>114N-46W-05</u>			
Landform (hillslope, terrace, etc.): Depression	Local	relief (concave, convex,	none): <u>CC</u>		
Slope (%): <u>0-2%</u> Lat: <u>44.708191</u>	Long: <u>-96.437068</u>	3	Datum: WGS84		
Soil Map Unit Name: Hokans-Svea complex, 1 to 4 percent slop	bes	NWI cl	assification: UPL		
Are climatic / hydrologic conditions on the site typical for this ti	me of year? Yes 🖌	No (If no, expla	in in Remarks.)		
Are Vegetation _ ✓ _, Soil _ ✓ _, or Hydrology sign	nificantly disturbed?	Are "Normal Circumstar	nces" present? Yes No		
Are Vegetation, Soil, or Hydrology nat	urally problematic?	(If needed, explain any a	answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map sh	nowing sampling po	oint locations, trans	sects, important features, etc.		
Hydrophytic Vegetation Present?       Yes _ ✓ _ No _         Hydric Soil Present?       Yes _ ✓ _ No _         Wetland Hydrology Present?       Yes _ ✓ _ No _	within a V	mpled Area Netland? Yes	s No		
Remarks:					

The wetland is a temporarily flooded, row cropped depression in a corn field. Soils and vegetation are significantly disturbed.

	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: <u>30</u> )		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
		= Total Cov		That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
Sapling/Shrub Stratum (Plot size:15)		- 10101 001	CI	Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2.				OBL species 0 x 1 = 0
				FACW species $10 \times 2 = 20$
3				FAC species $30 \times 3 = 90$
4				
5				FACU species $0 \times 4 = 0$
Llorb Strotum (Diot size) 5	0	= Total Cov	er	UPL species $0 \times 5 = 0$
Herb Stratum (Plot size: 5)	20	V		Column Totals: <u>40</u> (A) <u>110</u> (B)
1. <u>Xanthium strumarium</u>		<u>    Y     </u>		
2. <u>Echinochloa crus-galli</u>				Prevalence Index = $B/A = 2.75$
3				Hydrophytic Vegetation Indicators:
4				✓ 1 - Rapid Test for Hydrophytic Vegetation
5				✓ 2 - Dominance Test is >50%
6				$\checkmark$ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
7				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
8				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
9				
10				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: 30 )	40	= Total Cov	er	be present, unless disturbed or problematic.
1				Hydrophytic
2				Vegetation Present? Yes <u>√</u> No
	0	= Total Cov	er	
Remarks: (Include photo numbers here or on a separate s				1
The vegetation consists of cocklebur and barn	vard aras	s The ve	netation	has been disturbed from tilling and cropping
The regulation consists of cookiesul allu same	yara yido	5. INC VC	geration	has been distance norn uning and cropping.

Profile Desc	ription: (Describe t	o the depth	needed to docur	nent the i	ndicator of	or confirm	the absence of in	dicators.)	
Depth	Matrix		Redo						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-20	10YR 2/1	100		. <u></u>			CL		
Hydric Soil I Histosol H Histic Ep Black His Hydroger Stratified 2 cm Mur Depleted Thick Da Sandy M 5 cm Mur	(A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5)	ə (A11)	Sandy C Sandy F Stripped Loamy f Loamy C Deplete Redox D Deplete	Gleyed Ma	trix (S4) ) 66) neral (F1) atrix (F2) F3) ce (F6) rface (F7)		Indicators for P Coast Prairi Dark Surfac Iron-Mangar Very Shallov Other (Expla <sup>3</sup> Indicators of hy wetland hyd	nese Masses (F12) w Dark Surface (TF12)	ıd
Type:									
	hes):						Hydric Soil Pres	ent? Yes 🖌 N	lo
Remarks:	,								

The soil consists of a deep dark A horizon throughout the profile. The soil is significantly disturbed from tilling and cropping. No hydric soil indicators observed due to disturbance but the area is wetland.

### HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all	I that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1) Water	ater-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2) Aqu	uatic Fauna (B13)	Drainage Patterns (B10)
Saturation (A3) True	ue Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1) Hyc	drogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxi	idized Rhizospheres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Pre	esence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Rec	cent Iron Reduction in Tilled Soils (C6)	✓ Geomorphic Position (D2)
Iron Deposits (B5) Thir	in Muck Surface (C7)	✓ FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) Gau	auge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8) Oth	her (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes No De	epth (inches):	
Water Table Present? Yes No De	epth (inches):	
(includes capillary fringe)		Hydrology Present? Yes 🖌 No
Describe Recorded Data (stream gauge, monitoring well,	, aerial photos, previous inspections), if av	ailable:
Remarks:		
The vegetation is located in a low-lying	g depression and passes the	FAC-neutral test.

Project/Site: BitterRoot	City/County: Yellow Me	dicine	Sampling Date: 2016-09-26			
Applicant/Owner: Renewable Energy Systems Americas		State: MN	Sampling Point: w-114n46w5-u01a			
Investigator(s): LEB/TK	Section, Township, Rar	nge: <u>114N-46W-05</u>				
Landform (hillslope, terrace, etc.): Side slope	Local relief (	(concave, convex, i	none): <u>LL</u>			
Slope (%): <u>0-2%</u> Lat: <u>44.708223</u>	Long: <u>-96.437281</u>		Datum: WGS84			
Soil Map Unit Name: Hokans-Svea complex, 1 to 4 percent slo	pes	NWI cl	assification:			
Are climatic / hydrologic conditions on the site typical for this t	ime of year? Yes 🖌 No _	(If no, explai	in in Remarks.)			
Are Vegetation, Soil, or Hydrology sig	nificantly disturbed? Are "	Normal Circumstar	nces" present? Yes No			
Are Vegetation, Soil, or Hydrology nat	urally problematic? (If ne	oblematic? (If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map sl	nowing sampling point lo	ocations, trans	sects, important features, etc.			
Hydrophytic Vegetation Present? Yes No	Is the Sampled	Area				
Hydric Soil Present? Yes <u>No</u>			Yes No √			
Wetland Hydrology Present? Yes <u>No</u>						
Remarks:						
The upland sample point is located in a cropped of	orn field. sliahtly upslope f	rom a small ten	nporarily flooded depression.			

**VEGETATION –** Use scientific names of plants.

	Absolute	Dominant		Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1.		Species?		Number of Dominant Species           That Are OBL, FACW, or FAC:         0         (A)	
23	<u> </u>			Total Number of Dominant Species Across All Strata: (B)	
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B	3)
Sapling/Shrub Stratum (Plot size:15)			ei	Prevalence Index worksheet:	
1				Total % Cover of: Multiply by:	
2				OBL species x 1 =	
3				FACW species $0 x 2 = 0$	
4				FAC species 10 x 3 = 30	
5				FACU species $0 \times 4 = 0$	
		= Total Cov		UPL species $0 \times 5 = 0$	
Herb Stratum (Plot size: 5)		- 10101 000	CI	Column Totals: <u>10</u> (A) <u>30</u> (B)	`
1. <u>Zea mays</u>	80	Y	NI		,
2. Equisetum arvense				Prevalence Index = $B/A = 3.00$	
3				Hydrophytic Vegetation Indicators:	
4				1 - Rapid Test for Hydrophytic Vegetation	
5				2 - Dominance Test is >50%	
6				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
7				4 - Morphological Adaptations <sup>1</sup> (Provide supportin data in Remarks or on a separate sheet)	ıg
9				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
10					
Woody Vine Stratum (Plot size: 30)		= Total Cov	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1 2				Hydrophytic Vegetation	
	0	= Total Cov	er	Present? Yes 🖌 No	
Remarks: (Include photo numbers here or on a separate s		-		1	
				· · · · · · · · · · ·	

The vegetation consists of planted corn with some scattered field horsetail underneath. The vegetation meets the prevalence index due to the presence of facultative horsetail but the area is upland.

Profile Desc	cription: (Describe to the dep	th needed to document the indicator or co	onfirm the	absence of indicators.)				
Depth	Matrix	Redox Features						
(inches)	Color (moist) %	<u>Color (moist)</u> % Type <sup>1</sup> Lo	<u>.oc<sup>2</sup> T</u>	exture Remarks				
0-20	<u>10YR 2/1 100</u>			<u>CL</u>				
	anaantration D Donlation DM	Deduced Matrix, MS=Macked Cond Crains		<sup>2</sup> Location: DL Data Lining M Matrix				
Hydric Soil		=Reduced Matrix, MS=Masked Sand Grains.		<sup>2</sup> Location: PL=Pore Lining, M=Matrix. ndicators for Problematic Hydric Soils <sup>3</sup> :				
-		Sandy Cloyed Matrix (S4)		•				
<u> </u>	pipedon (A2)	Sandy Gleyed Matrix (S4)	_	Coast Prairie Redox (A16)				
	istic (A3)	<ul> <li>Sandy Redox (S5)</li> <li>Stripped Matrix (S6)</li> </ul>	-	— Dark Surface (S7)				
	en Sulfide (A4)	Loamy Mucky Mineral (F1)	-	— Iron-Manganese Masses (F12)				
	d Layers (A5)	Loamy Gleyed Matrix (F2)	-	Very Shallow Dark Surface (TF12)				
2 cm Mu	uck (A10)	Depleted Matrix (F3)	-	Other (Explain in Remarks)				
	d Below Dark Surface (A11)	Redox Dark Surface (F6)						
	ark Surface (A12)	Depleted Dark Surface (F7)		<sup>3</sup> Indicators of hydrophytic vegetation and				
	/lucky Mineral (S1)	Redox Depressions (F8)		wetland hydrology must be present,				
	ucky Peat or Peat (S3) Layer (if observed):			unless disturbed or problematic.				
	ches):		H	ydric Soil Present? Yes No _✓				
Remarks:								
The soil	profile consists of a o	leep dark clay loam.						
HYDROLO	GY							
Wetland Hv	drology Indicators:							
-	cators (minimum of one is requ	red: check all that apply)		Secondary Indicators (minimum of two required)				
	Water (A1)	Water-Stained Leaves (B9)		Surface Soil Cracks (B6)				
	ater Table (A2)	Aquatic Fauna (B13)		Drainage Patterns (B10)				
Saturati		True Aquatic Plants (B14)		Dry-Season Water Table (C2)				
	larks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)				
	nt Deposits (B2)	Oxidized Rhizospheres on Living R	Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
	posits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)				
	at or Crust (B4)	Recent Iron Reduction in Tilled Soi	oils (C6)	Geomorphic Position (D2)				
-	posits (B5)	Thin Muck Surface (C7)	- ( /	FAC-Neutral Test (D5)				
	on Visible on Aerial Imagery (E							

Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)								
Field Observations:								
Surface Water Present?	Yes No _✓	Depth (inches):						
Water Table Present?	Yes No _∡	Depth (inches):						
Saturation Present? (includes capillary fringe)	Yes No _✓	_ Depth (inches):	Wetland Hydrology Present?	Yes No 🖌				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:								
No indicators of wetland hydrology were observed.								

Project/Site: BitterRoot	City/Count	City/County: Yellow Medicine Sampling Dat		
Applicant/Owner: <u>Renewable Energy Systems Americas</u>		State:	MN Sampling Point: w-114n46w35-u01a	
Investigator(s): BJC/JLK	Section, To	ownship, Range: <u>114N-</u>	46W-35	
Landform (hillslope, terrace, etc.): Side slope		Local relief (concave, c	onvex, none): <u>VL</u>	
Slope (%): <u>3-7%</u> Lat: <u>44.638927</u>	Long: <u>-96.</u>	376109	Datum: WGS84	
Soil Map Unit Name: Vallers clay loam, 0 to 2 percent slopes			NWI classification:	
Are climatic / hydrologic conditions on the site typical for this tir	ne of year? Yes _	✓ No (If n	o, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology sign	ificantly disturbed?	Are "Normal Cir	cumstances" present? Yes No	
Are Vegetation, Soil, or Hydrology natu	rally problematic?	(If needed, expl	ain any answers in Remarks.)	
SUMMARY OF FINDINGS – Attach site map sh	owing samplir	ng point locations	, transects, important features, etc.	
Hydrophytic Vegetation Present?       Yes No _         Hydric Soil Present?       Yes No _         Wetland Hydrology Present?       Yes No _	wit	he Sampled Area hin a Wetland?	Yes No∕	
Remarks:	I			
The upland is located in a corn field.				
<b>VEGETATION</b> – Use scientific names of plants.				
A	bsolute Dominan	t Indicator Dominar	ce Test worksheet:	

Tree Streture (Distaire) 20	0/ Cover	Species	Ctotuo			•••		
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1		Species?		Number of Domina That Are OBL, FAC			0	(A)
2				Total Number of Do	ominant			
3				Species Across All			1	(B)
4								
5				Percent of Dominal That Are OBL, FAC			0.00	(A/B)
	0							(,,,,,)
Sapling/Shrub Stratum (Plot size: 15 )				Prevalence Index	workshe	eet:		
1		·		Total % Cover	of:	M	ultiply by:	
2				OBL species	0	x 1 =	0	
3				FACW species	0	_ x 2 =	0	_
4				FAC species	0	_ x 3 =	0	_
5				FACU species	0	x 4 =	0	
		= Total Co		UPL species	0	x 5 =	0	
Herb Stratum (Plot size: 5 )				Column Totals:				
1. <u>Zea mays</u>	90	Y	NI	_		_ ( )		_ ( )
2			<u> </u>	Prevalence Ir	ndex = B	B/A =	0	
3	_			Hydrophytic Veg	etation I	ndicators	8:	
4				1 - Rapid Test	for Hydro	ophytic Ve	egetation	
5				2 - Dominance	Test is a	>50%		
6				3 - Prevalence	Index is	≤3.0 <sup>1</sup>		
7				4 - Morphologi	cal Adap	otations <sup>1</sup> (I	Provide sur	portina
8				data in Ren				
				Problematic H	lydrophy	tic Vegeta	ation <sup>1</sup> (Expla	ain)
9						-		
10		= Total Co		<sup>1</sup> Indicators of hydr	ic soil an	d wetland	l hydrology	must
Woody Vine Stratum (Plot size: 30 )	90		ver	be present, unless				
1								
2.				Hydrophytic Vegetation				
			·	Present?	Yes	N	₀ √	
		= Total Co	ver					
Remarks: (Include photo numbers here or on a separate	aboat )							
	sneet.)							

Profile Desc	ription: (De	escribe t	to the dept	h needed to docun	nent the	indicator	or confirm	the absence of i	indicators.)		
Depth	N	Matrix		Redox Features							
(inches)	Color (m	noist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-12	10YR	2/1	100					SICL			
12-18	10YR	5/1	100					SICL			
			·		·					—	
										_	
<sup>1</sup> Type: C=Co	oncentration,	, D=Depl	etion, RM=	Reduced Matrix, MS	S=Maske	d Sand Gra	ains.	<sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.		
Hydric Soil I			·	· · ·					Problematic Hydric Soils <sup>3</sup> :		
Histosol	(A1)			Sandy C	Bleyed Ma	atrix (S4)		Coast Pra	irie Redox (A16)		
	pipedon (A2)			— Sandy F	· · ·	,		- Dark Surfa	ace (S7)		
Black His Hvdroge	stic (A3) en Sulfide (A4	4)			<ul> <li>Stripped Matrix (S6)</li> <li>Loamy Mucky Mineral (F1)</li> </ul>				Iron-Manganese Masses (F12)		
, 0	d Layers (A5)	,				atrix (F2)		Very Shallow Dark Surface (TF12)			
2 cm Mu	ick (A10)				d Matrix (			Other (Explain in Remarks)			
Depleted	d Below Dark	c Surface	e (A11)	Redox [	Dark Surfa	ace (F6)					
✓ Thick Da		,				urface (F7)			hydrophytic vegetation and		
	Sandy Mucky Mineral (S1) Redox Depressions (F8)					wetland hydrology must be present,					
	icky Peat or							unless dis	sturbed or problematic.		
Restrictive L		,									
Туре:									_		
Depth (inc	ches):							Hydric Soil Pre	esent? Yes 🖌 No	—	
Remarks:											
A 1/1 I		- 11						<b>C</b> 1	10 1 1 1 1 1		

Although hydric soil was observed, lack of hydrology and dominance of healthy corn indicate the area is upland.

### HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2) Aquatic Fauna (B13)	Drainage Patterns (B10)
Saturation (A3) True Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living I	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)	
Field Observations:	
Surface Water Present? Yes No _ ✓ Depth (inches):	
Water Table Present? Yes No _ ✓ Depth (inches):	
Saturation Present? Yes No _ ✓ Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No _
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	tions), if available:
Remarks:	
No indicators of wetland hydrology were observed.	