

### REPORT #2 – USFWS PROJECT #2104 – 0200 SUNOCO LOGISTICS, PENNSYLVANIA PIPELINE PROJECT PHASE 1 BOG TURTLE HABITAT EVALUATIONS

### Cumberland County Pennsylvania

#### **Prepared for:**

Tetra Tech, Inc.
Mr. Preston R. Smith

Manager, Wetlands and Ecological Services Department
Appalachian Basin Oil and Gas Services
661 Anderson Drive Foster Plaza No. 7
Pittsburgh, PA 15220

May 5, 2014

#### Prepared by:

Kevin S. Keat, PWS, Sr. Biologist Bog Turtle Surveyor

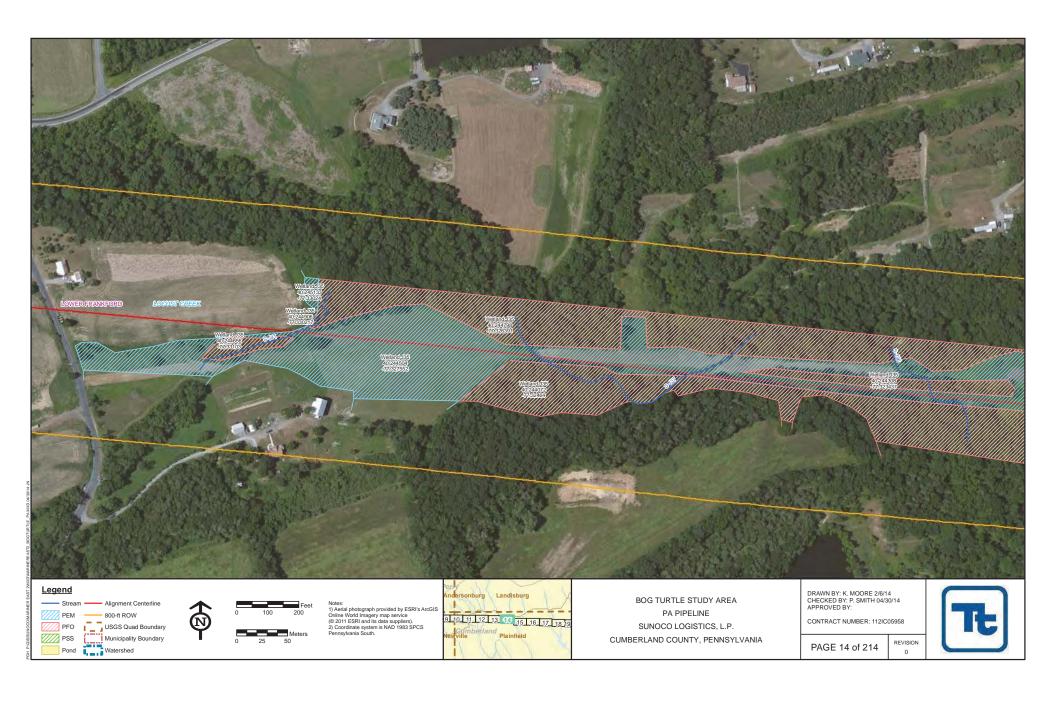
Environmental Consultation Services, Inc.

1095 Mill Road Pen Argyl, PA 18072 Phone: (484) 515-6806 Email: kevinkeat@ptd.net

#### Sunoco Logistics, PA Pipeline Project, Table of Wetlands Meeting All Three Bog Turtle Habitat Criteria, Cumberland, York, Dauphin [Spring Creek Watershed Only], Lebanon, Lancaster, Berks, Chester and Delaware Counties, PA File Updated May 5, 2014

ty			Approx.	Approx.	Bog		Potential Habitat?			USFWS Determination		
County	Township	Wetland	Wetland	Suitable	Turtle	Map *		Agency	Notes	Non-	Phase 2	Assumed
Ö		ID	Size (Acres)	Habitat	Surveyor	Book #	Yes	Review		Habitat	Needed	Occupancy
	Lower Frankford	J35	10+	2.16	Keat	14	<b>√</b>		3 individual core habitat areas: BT1 (0.3 Ac.), BT2 (1.28 Ac.) cow pasture, BT3 (0.58 Ac.) Totaling 2.16 Acres of decent habitat.			
Cumberl and	Lower Frankford	J36	5+	2.39	Keat	13	<b>√</b>		Actively Grazed Cow Pasture with abundant groundwater seeps, grass hummocks and mucky soils - overall good habitat.			
	Lower Frankford	J21	1	0.1	Keat	17	✓		Marginal due to limited size and area of mucky soils and agricultural disturbances			
	Lower Frankford	J27	1.5	0.1	Keat	16	<b>√</b>		Limited to spring seep head and approx. 75 linear ft by 12 ft of mucky rivulet. Remainder of PEM is less than 3 in. muck and the rivulet transitions into an incised channel downstream of this area.			
	Lower Frankford	J28/29	2	0.1	Keat	16	<b>\</b>		PEM opening within wooded ravine between J28/J29. Limited seep influence and limited extent of mucky soils render this marginal habitat.			
	Lower Frankford	i52	1	0.1	Keat	19	<b>√</b>		Limited area of potential habitat in active cow pasture along a single rivulet that becomes more incised downstream.			
	Lower Frankford	J44	5+	0.2	Keat	TBD	<b>✓</b>		Phalaris-dominated, spring-fed rivulet that transitions between seep to incised channel intermittently with a mucky fringe.			
	Lower Frankford	J20	2	0.1	Keat	TBD	<b>√</b>		Phalaris-dominated habitat that may be further reduced in area as the growing season progresses.			

<sup>\*</sup> Maps 04-30-



## USFWS / PFBC Bog Turtle Habitat Evaluation Field Form<sup>1</sup> (revised 06/01/2006)

LOCUST CRK,	
Drainage	

Project/Property Name: TA TRELINE
Project type: 16- DIAMETER PIRELINE FUSTALLATION
Applicant/Landowner Name: SUNDED Logistics, INC.
County: Comberand Quad: Township/Municipality: LOWER FRANK FOR
PNDI# Potential conflict with USFWS species? Y \( \text{ N} \)
ACTION AREA <sup>2</sup> Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? $XY \square N^3$
WETLAND ID: 35 PHOTOS TAKEN: Yes \( \text{No} \) WETLAND SIZE: \( \text{ot} \) acres  Wetland size estimation - If actual acreage is not known at time of investigation, check one: \( \text{o} \) - 0.1 acre \( \text{o} \) 0.1-0.5 acre \( \text{o} \) > 0.5 to <1 acres \( \text{o} \) 1-2 acres \( \text{o} \) 2-4 acres \( \text{o} \) 5+ acres  WETLAND LOCATION: \( \text{Lat } \( \text{Q0} \) 2 4 4 0 5 \( \text{Long } \) Long \( \text{-77} \), 3 2 3 5 3
(approximate center of wetland) GPS Datum (check one):   NAD 27 NAD 83  WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: $9 - 16 - 10$ Time In: $9 - 100$ Time Out: $9 - 1000$ Time Out: $9$
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  none of it – the entire wetland is within the property boundaries (skip next 2 questions)  some of it – acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ all of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)? $\Box$ all of it $\Box$ part of it (at least acres) $\Box$ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y$ $N \Box Unknown$ If yes, <i>could</i> they be potential bog turtle habitat? $\Box Y \Box N \Box Unknown$
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):  EXISTING PHELINE ROW, PFO, Idle Woodland, STREAMS, COW PASTURE
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS 10 PFO 10 POW
Y \( \text{N} \) Are there any signs of disturbance to \( \text{hydrology} \) (ditching, filling, ponds, roads, etc.)? If yes, describe \( \text{N} \) \( \text{N} \) \( \text{N} \) Are there any signs of disturbance to \( \text{vegetation} \) (mowing, pasturing, burning, etc.)? If yes, describe
MOVED Voy,

Project Name	PA PIPELINE-SUNOCO	Logistics	Weiland $133$ (BT1)				
Hydrology  Y   N  Y   N  Y   N  Y   N  Y   N  Y   N  Soils Mapping	Springs or seeps  visible or likely? Watercress present? Yes No Spring houses in or adjacent to wetland?  Saturated soils present? If yes, year-round? Likely Unlikely Unknown Water visible on surface? Check all that apply: Small puddles/depressions (2" deep)  Arivulets (2" deep) Varger pools/ponds (2" deep)  Evidence of flooding? If yes, describe indicators						
	ons confirm mapped type?   YES   NO	Unknown					
Soils - PEM I	Portion of Wetland						
Mucky <sup>4</sup> ?  ▼YES □ NO	How much of it (PEM) is <b>mucky</b> ?  □ <10% □10-29% □ 30-49% □ 50-70% ▼>70%	Mucky soils range in depth from:	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $23-5$ " $6-8$ " $9-11$ " $212$ "				
Non-mucky <sup>6</sup> ? YES □ NO	How much of it (PEM) is <b>non-mucky</b> ?  □ <10% □ 10-29% □ 30-49% □ 50-70% □ >70%		255 - 0-6 - 19-11 - 1212				
Soils - PSS an	d PFO Portions of Wetland						
Mucky⁴?  YES □ NO	How much of it is <b>mucky</b> ?  □ <10% □ 50-70% □ 50-70%	Mucky soils range in depth from:  3 to 12 "	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $3-5$ " $6-8$ " $9-11$ " $212$ "				
Wetland Vegetation (characterize the wetland as a whole)  Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).  Seedges Trushes Skunk cabbage Cattail Sweet flag Jewelweed Sphagnum moss sensitive fern Crice cutgrass Tearthumb Freed canary grass Phragmites Durple loosestrife alder Gogwood Gred maple Willow Doison sumac Multiflora rose Additional dominant species:							
Herptiles  Were any bog turtles observed?   Other herptiles   Observed   previously observed:   HEPRO  Additional Comments/Observations: (use additional sheets if necessary)  CO. 3 Acres Potential HAD. Onces IN Row & Ad. Ash.							
YES NO UNSURE The hydrology criterion for bog turtle habitat is met.  YES NO UNSURE The soils criterion for bog turtle habitat is met.  YES NO UNSURE The vegetation criterion for bog turtle habitat is met.  YES NO UNSURE The vegetation criterion for bog turtle habitat is met.  YES NO UNSURE The vegetation criterion for bog turtle habitat is met.  This wetland is potential bog turtle habitat.							
Investigator's	Name (print) Inve	stigator's Signature	4-16-14				



Wetland J35 (BT1) - Eastern extent of potential BT habitat (BT1), looking westward in existing ROW. 4-16-14



Wetland J35 (BT1) – Eastern extent of potential habitat (BT1), looking eastward in existing ROW.

LOCUST CIK. Drainage

### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form<sup>1</sup>

(revised 06/01/2006)

Project/Property Name: TA TIPELINE
Project type: 16'- DIAMETER PIRELINE TRISTALLATION
Applicant/Landowner Name: SUNDEO LOGISTICS, INC.
County: Combéreand Quad: Township/Municipality: Lower Frankford
PNDI#Potential conflict with USFWS species? Y \( \text{V} \) \( \text{V} \)
,
ACTION AREA <sup>2</sup> Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? XY \( \subseteq N^3 \)
Action area size: Does the Phase I survey include an wetlands in the action area.
WETLAND ID: \( \sum_{35\( \beta \) PHOTOS TAKEN: \( \sum_{98\\ \Bar{\text{No}}} \) WETLAND SIZE: \( \beta \) acres
Wetland size estimation – If actual acreage is not known at time of investigation, check one: $\square < 0.1$ acre $\square 0.1$ -0.5 acre $\square > 0.5$ to $< 1$ acres $\square 1$ -2 acres $\square 2$ -4 acres $\square 5$ + acres $\square 10$ + acres
WETLAND LOCATION: Lat 40,24448 Long -77, 32927
(approximate center of wetland) GPS Datum (check one): $\square$ NAD 27 NAD 83 $\square$ WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: 4-16-14 Time In: \\\ \\ \\ \\ \ \ \ \ \ \ \ \ \ \ \ \
Last precipitation: □ < 24 hours □ 1-7 days □ > 1 week □ unknown Drought conditions? □Y N □ Unknown
How much of this wetland is located off-site (i.e., outside the property boundaries or right-of-way)?
none of it — the entire wetland is within the property boundaries (skip next 2 questions)
some of it – acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?
□ none of it □ all of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)?
□ all of it □ part of it (at least acres) □ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y$ $\Box N$ $\Box$ Unknown
If yes, <i>could</i> they be potential bog turtle habitat? $\Box Y \Box N \Box$ Unknown
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
ACTIVE CON posture, Pipeline ROV sidle HOODEAND, FALLOW fiers
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS PFO PFO POW
☐ Y N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe
Y N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe
Portvely grazed by conttle
′ 0 ′

Project Name	PA PIPELINE-SUNOCO	LOGISTICS	Wetland 35 (BTZ)				
Hydrology  Y   N  Y   N  Y   N  Y   N  Y   N  Y   N  Soils Mapping	Ayes No 3 Seeps Jisible  an Hiccside  ely Unknown  s/depressions (E" deep)						
	ons confirm mapped type?   YES   NO	Unknown					
Soils - PEM F	Portion of Wetland						
Mucky <sup>4</sup> ?	How much of it (PEM) is mucky?	Mucky soils range	Most of the mucky port(s) of				
	□<100/ □10 200/ □20 400/	in depth from:	Most of the mucky part(s) of				
YES NO	□ 50-70% <b>※</b> >70%	3 to 20"	the wetland can be probed <sup>5</sup> :				
Non-mucky <sup>6</sup> ?	How much of it (PEM) is non-mucky?		3-5" □ 6-8" □ 9-11" □ ≥12"				
YES NO	□ <10% 10-29% □ 30-49% □ 50-70% □ >70%						
Soils - PSS an	d PFO Portions of Wetland						
1555		Muoky soils rongs					
Mucky <sup>4</sup> ?	How much of it is <b>mucky</b> ? $\Box$ <10% $\Box$ 10-29% $\Box$ 30-49%	Mucky soils range in depth from:	Most of the mucky part(s) of				
□ YES □ NO	□ 50-70% □ >70%	to'	the wetland can be probed <sup>5</sup> : $\Box$ 3-5" $\Box$ 6-8" $\Box$ 9-11" $\Box$ $\geq$ 12"				
Check (X) if pres	ation (characterize the wetland as a whole sent (≥ 5% areal coverage), and also circle in	f dominant (≥ 20% co					
□ alder □ dogwe	les   skunk cabbage   cattail   sweet fla   rice cutgrass   tearthumb   reed canary ood   red maple   willow   poison summant species:   Pasture Grass   Hou	grass Phragmites	purple loosestrife				
Herptiles Were any bog tur	× /	how many?					
Additional Comments/Observations: (use additional sheets if necessary)  1028 Acres of POTENTIAL BY HAB Present SUBTERRANEAN Oftonels & Several by Uside Sames							
INVESTIGATOR'S OPINION         YES       □ NO       □ UNSURE       The hydrology criterion <sup>8</sup> for bog turtle habitat is met.         YES       □ NO       □ UNSURE       The soils criterion <sup>8</sup> for bog turtle habitat is met.         YES       □ NO       □ UNSURE       The vegetation criterion <sup>8</sup> for bog turtle habitat is met.         YES       □ NO       □ UNSURE       This wetland is potential bog turtle habitat.							
I certify that to the	e best of my knowledge, all of the information	on provided herein is	accurate and complete				
KENNIC	VENT 2	20/1	and complete.				
Investigator's	Name (print)	stigator's Signature	4-16-14				
		Deserve o Digitalui	LIME				



Wetland J35 (BT2) – Standing in cow pasture potential BT habitat (BT2) looking northward at ROW. At least three spring seeps are the major sources of hydrology to this habitat. 4-16-14



Wetland J35 (BT2) – Standing in cow pasture potential BT habitat (BT2) looking eastward at existing ROW. Subterranean tunnels, mucky soils and groundwater seeps make this good potential habitat. 4-16-14

Locust Crk
USFWS / PFBC Bog Turtle Habitat Evaluation Field Form Drainage
Project/Property Name: PA PIPELINE
Project trace
Project type: 16 - DIAMETER PIPELINE FUSTALLATION
Applicant/Landowner Name: SUNDER logistics, INC.
County: Combépland Quad: Township/Municipality: Lower frankford
PNDI#Potential conflict with USFWS species? Y \( \text{D} \) N
ACTION AREA <sup>2</sup>
Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? $XY \square N^3$
WETLAND ID: 33 (B13) PHOTOS TAKEN: Yes □ No WETLAND SIZE: acres  Wetland size estimation – If actual acreage is not known at time of investigation, check one:  □ < 0.1 acre □ 0.1-0.5 acre □ >0.5 to <1 acre □ 1-2 acres □ 2-4 acres □ 5+ acres □ 10+ acres
WETLAND LOCATION: Lat 40.24336 Long -77, 332.66 (approximate center of wetland) GPS Datum (check one): $\square$ NAD 27 $\square$ NAD 83 $\square$ WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: $\square = 10000$ Time Out: $\square = 10000$ Time Out: $\square = 10000$ Last precipitation: $\square = 10000$ Time Out: $\square = 10000$ Unknown Drought conditions? $\square = 10000$ Unknown
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  none of it – the entire wetland is within the property boundaries (skip next 2 questions)  some of it – acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ all of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)? $\Box$ all of it $\Box$ part of it (at least acres) $\Box$ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\square Y \square N \square Unknown$ If yes, <i>could</i> they be potential bog turtle habitat? $\square Y \square N \square Unknown$
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):  tale wood and active dow pasture fallow Fields
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100
Wetland type(s) present and % cover: PEM 100
Y \( \text{N} \) Are there any signs of disturbance to vegetation (moving pasturing burning etc.)? If you describe
Actively 9 razed (morning, pustaring, burning, etc.): 11 yes, describe

Project Name	PA PIPELINE-SUNDED	Logistics	Wetland 335 (con't)					
Hydrology  Y ON  YY ON  YY ON  YY ON  YY ON	Springs or seeps □ <u>visible</u> or □ <u>likely</u> ? Watercress present? □ Yes □ No □ Y ♥ N Spring houses in or adjacent to wetland? Saturated soils present? If yes, year-round? Likely □ Unlikely □ Unknown Water visible on surface? Check all that apply: ▼ small puddles/depressions ( Z " deep)							
	Unit (optional): □ YES □ NO	Unknown						
Soils - PEM I	Portion of Wetland							
Mucky <sup>4</sup> ?  YES □ NO	How much of it (PEM) is <b>mucky</b> ?	Mucky soils range in depth from:	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> :  3-5" □ 6-8" □ 9-11" □ ≥12"					
Non-mucky <sup>6</sup> ?  XYES □ NO	How much of it (PEM) is <b>non-mucky</b> ?  □ <10% □ 10-29% □ 30-49% □ 50-70%		/ 3 3 3 3 3 7 11 3 2 12					
Soils - PSS an	d PFO Portions of Wetland							
Mucky⁴?  ☐ YES ☐ NO	How much of it is <b>mucky</b> ?  □ <10% □ 10-29% □ 30-49%	Mucky soils range in depth from:	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $\square 3-5" \square 6-8" \square 9-11" \square \ge 12"$					
Wetland Vegetation (characterize the wetland as a whole)  Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).  A sedges Arushes  skunk cabbage  cattail  sweet flag  jewelweed  sphagnum moss  purple loosestrife  purple loosestrife  alder  dogwood  red maple  willow  poison sumac  multiflora rose  Additional dominant species:  A divide grazed  Season Humana								
Additional Comments/Observations: (use additional sheets if necessary)  O.58 AC, potential HABITHT Present								
INVESTIGATOR'S OPINION  □ YES □ NO □ UNSURE The hydrology criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The soils criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The information provided herein is accurate and complete.  □ YES □ NO □ UNSURE The hydrology criterion <sup>8</sup> for bog turtle habitat is met.  □ YES □ NO □ UNSURE The information provided herein is accurate and complete.								
Investigator's	14/10/11	estigator's Signature	Data					

### ${\it E}$ nvironmental ${\it C}$ onsultation ${\it S}$ ervices, ${\it I}$ nc.

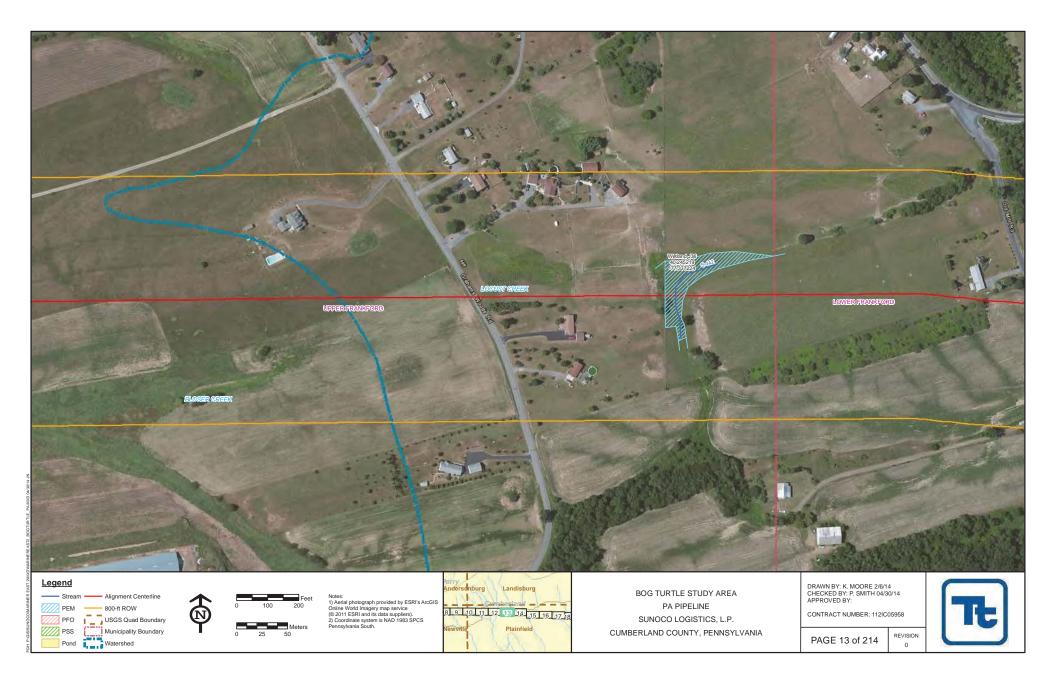


Wetland J35 (BT3) – Standing in cow pasture potential BT habitat (BT3) looking northward.

### $m{E}$ nvironmental $m{C}$ onsultation $m{S}$ ervices, $m{I}$ nc.



Wetland J35 (BT3) – Standing in cow pasture potential BT habitat (BT3) looking eastward. 4-16-14



LOCUST CREEK
DRAINBLE

### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form (revised 06/01/2006)

Project/Property Name: TA TRELINE
Project type: 16- DIAMETER PIPELINE FUSTALLATION
Applicant/Landowner Name: SUNDED LOGISTICS, INC.
County: Combériand Quad: Township/Municipality: UPPER FRANKFORD
PNDI# Potential conflict with USFWS species? Y \( \text{N} \)
/
ACTION AREA <sup>2</sup> Action area size:  Does the Phase 1 survey include all wetlands in the action area? XY \( \subseteq N^3 \)
WETLAND ID: PHOTOS TAKEN: Yes No WETLAND SIZE: 3 dcres Wetland size estimation – If actual acreage is not known at time of investigation, check one:
$\square$ < 0.1 acre $\square$ 0.1-0.5 acre $\square$ >0.5 to <1 acre $\square$ 1-2 acres $\square$ 2-4 acres $\square$ 5+ acres $\square$ 10+ acres
WETLAND LOCATION: Lat 40, 24405 Long -77, 322-53
□ < 0.1 acre □ 0.1-0.5 acre □ >0.5 to <1 acre □ 1-2 acres □ 2-4 acres □ 5+ acres □ 10+ acres  WETLAND LOCATION: Lat $\frac{40.24905}{9}$ Long $\frac{-77.32-53}{9}$ MAD 83 □ WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: 4-16-14 Time In: 1500 Time Out: 1600
Last precipitation: $\square$ < 24 hours $\square$ 1-7 days $\square$ > 1 week $\square$ unknown Drought conditions? $\square$ Y $\square$ N $\square$ Unknown
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  □ none of it − the entire wetland is within the property boundaries (skip next 2 questions)  ∑'some of it − acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)?  All of it  part of it (at least acres)  none of it
Are there any wetlands located off-site and close enough to be affected by this project? YY \( \subseteq N \) Unknown  If yes, could they be potential bog turtle habitat? \( \supseteq Y \) Unknown
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
Agricultural-CATTLE PASTURE, FALLOW FIELDS, Idle Wood/ml
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS PFO PFO POW
Y N Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe
Y IN Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

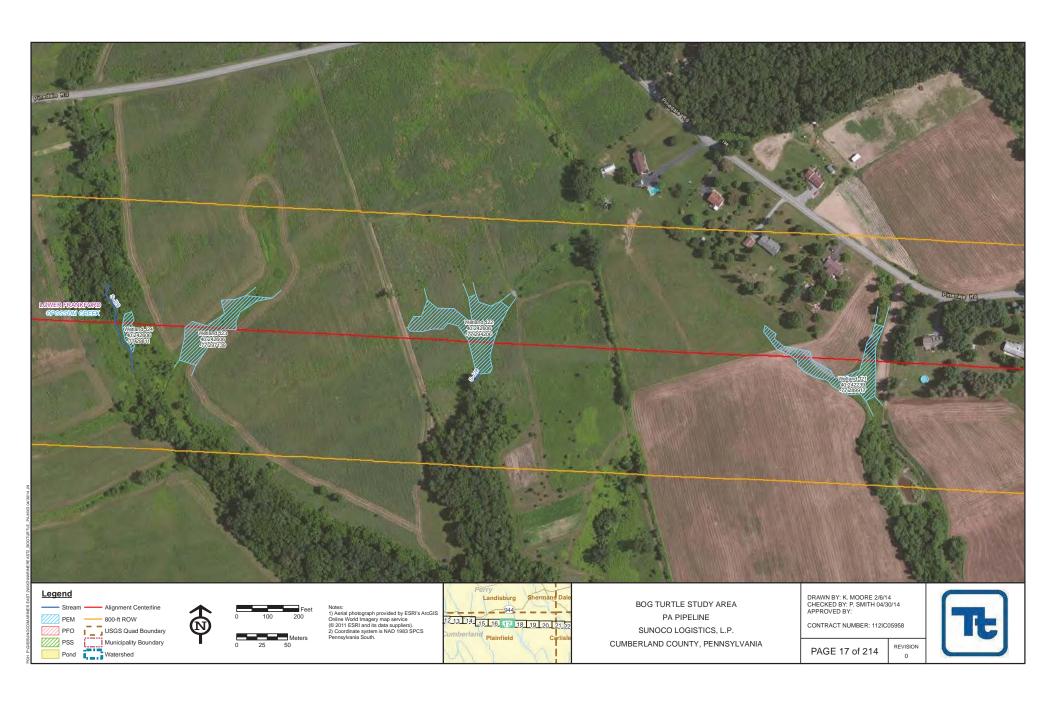
Project Name	PA PIPELINE-SUNOCO	Logistics	Wetland 536 (con't)				
Hydrology  YY   N  Y   N  XY   N  XY   N  XY   N	Hydrology						
	Soils Mapping Unit (optional):  Field observations confirm mapped type?   YES   NO   Unknown						
Soils - PEM	Portion of Wetland						
Mucky <sup>4</sup> ?  YES □ NO  Non-mucky <sup>6</sup> ?  □ YES □ NO	How much of it (PEM) is <b>non-mucky</b> ?	Mucky soils range in depth from:  3 to 12."	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> :  X3-5" □ 6-8" □ 9-11" □ ≥12"				
Soils – PSS ar	nd PFO Portions of Wetland						
Mucky <sup>4</sup> ?  ☐ YES ☐ NO	How much of it is <b>mucky</b> ?	Mucky soils range in depth from: to"	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $\square \ 3-5" \ \square \ 6-8" \ \square \ 9-11" \ \square \ge 12"$				
Wetland Veget Check (X) if pre	ation (characterize the wetland as a wholesent (≥ 5% areal coverage), and also circle i	e) f dominant (≥ 20% co	verage).				
sensitive tern	hes skunk cabbage cattail sweet flatering rice cutgrass tearthumb reed canary rood red maple willow poison sum anant species:	grass Phragmites	□ purple loosestrife				
Herptiles Were any bog tu Other herptiles	ortles observed? □ YES <sup>7</sup> X NO If yes □ observed □ previously observed:						
~ 2.39 _ E A	ACRES OF SUITABLE LETIVELY GRAZED BY C	BT HAG	ITAT IS Present				
¥YES □ NO	YES DO DUNSURE The soils criterion for bog turtle habitat is met.  YES DO DUNSURE The vegetation criterion for bog turtle habitat is met.						
I certify that to th	ne best of my knowledge, all of the informati	on provided herein is	accurate and complete				
KEVIN S Investigator's	KEAT Rent	estigator's Signature	9-16-14 Date				



Wetland J36 – Western limit looking eastward, 2.39 acres of potential BT habitat with hummocks and mucky spring-fed rivulets throughout. Extent of mucky soils may decrease as the growing season progresses. 4-16-14



Wetland J36 – Eastern limit looking westward at grass and soft rush hummocks and spring-fed rivulets. Active cow pasture throughout, keeping vegetation growth/density in check throughout the 2.39 acres of core habitat, 4-16-14.



### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form<sup>1</sup> (revised 06/01/2006)

Opposum Crk, Prainage

(revised 00/01/2000)
Project/Property Name: PA PIPELINE
Project type: 16 - DIAMETER TIPELINE TIBELINE
Applicant/Landowner Name: SUNDEC LOGISTICS, FNC.
County: Combérgand Quad: Township/Municipality: Lower Frankfor
PNDI # Potential conflict with USFWS species? Y \( \text{N} \)
ACTION AREA <sup>2</sup> Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? $XY \square N^3$
WETLAND ID:   PHOTOS TAKEN: Yes □ No WETLAND SIZE:   wetland size estimation – If actual acreage is not known at time of investigation, check one:  □ < 0.1 acre □ 0.1-0.5 acre > 0.5 to < 1 acre □ 1-2 acres □ 2-4 acres □ 5+ acres □ 10+ acres
WETLAND LOCATION: Lat 40,24206 Long -77, 28967 (approximate center of wetland) GPS Datum (check one): NAD 27 NAD 83 WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: $4-23-14$ Time In: $1430$ Time Out: $1530$ Last precipitation: $0 < 24$ hours $0 < 1-7$ days $0 > 1$ week $0$ unknown Drought conditions? $0 < 1-7$ Unknown
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  none of it — the entire wetland is within the property boundaries (skip next 2 questions)  some of it — acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ all of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)? $\Box$ all of it $\Box$ part of it (at least acres) $\Box$ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y \Box N \Box$ Unknown If yes, <i>could</i> they be potential bog turtle habitat? $\Box Y \Box N \Box$ Unknown
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM PSS PFO POW
Y \( \text{N} \) Are there any signs of disturbance to \( \text{hydrology} \) (ditching, filling, ponds, roads, etc.)? If yes, describe \( \text{Y} \) \( \text{N} \) Are there any signs of disturbance to \( \text{vegetation} \) (mowing, pasturing, burning, etc.)? If yes, describe

Project Name	PA PIPELINE-SUNOCO	Logistics	Wetland [con't)				
Hydrology  XY □ N Springs or seeps Visible or □ likely? Watercress present? □ Yes □ No □ Y □ N Spring houses in or adjacent to wetland?							
XY DN	Saturated soils present? If yes, year-round? \( \subseteq \text{Likely} \subseteq \text{Unlikely} \subseteq \text{Unknown} \) Water visible on surface? Check all that apply: \( \subseteq \text{small puddles/depressions} \) (\( \subseteq \text{2} \)" deep)						
Trivulets (2" deep) Alarger pools/ponds (3" deep)  Evidence of flooding? If yes, describe indicators							
	Unit (optional):	Inknown					
Soils - PEM I	Portion of Wetland	,					
Mucky <sup>4</sup> ?	How much of it (PEM) is mucky?	Mucky soils range	Most of the mucky part(s) of				
	□ <10% □10-29% □ 30-49%	in depth from:	the wetland can be probed <sup>5</sup> :				
YES 🗆 NO		3_to_10"	3-5" □ 6-8" □ 9-11" □ ≥12"				
Non-mucky <sup>6</sup> ?							
YES 🗆 NO	□ <10% □10-29% ▼30-49% □ 50-70% □ >70%						
Soils – PSS an	d PFO Portions of Wetland						
Mucky <sup>4</sup> ?	How much of it is <b>mucky</b> ?	Mucky soils range	Most of the mucky part(s) of				
	□ <10% □10-20% □ 30 40%	in depth from:	the wetland can be probed <sup>5</sup> :				
☐ YES ☐ NO	□ 50-70% □ >70%	to"	□ 3-5" □ 6-8" □ 9-11" □ ≥12"				
Wetland Vegetation (characterize the wetland as a whole) Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).  □ sedges □ rushes □ skunk cabbage □ cattail □ sweet flag ☐ jewelweed □ sphagnum moss X sensitive fern □ rice cutgrass ☑ tearthumb ☒ reed canary grass □ Phragmites ☒ purple loosestrife □ alder □ dogwood □ red maple □ willow □ poison sumac □ multiflora rose □ Additional dominant species: ☐ Apares > 5111 TG 16.55							
Herptiles							
Were any bog tu Other herptiles	rtles observed?   YES NO If yes   observed previously observed:   2	, how many?	s in pand downstrem				
Additional Comments/Observations: (use additional sheets if necessary)  Marginal due to limited area of muck & LAND USE Tilled by fields in immediate Vicinity.							
INVESTIGATO	DR'S OPINION	)					
YES DNO	☐ UNSURE The <u>hydrology</u> criterion <sup>8</sup>	for bog turtle habitat i	s met.				
7	YES NO UNSURE The soils criterion for bog turtle habitat is met.						
YES DO DUNSURE The <u>vegetation</u> criterion <sup>8</sup> for bog turtle habitat is met.  YES DO DUNSURE This wetland is potential bog turtle habitat.							
I certify that to th	ne best of my knowledge, all of the informati	ion provided herein is	accurate and complete.				
KEVILLS	KEAT Rent	00/1	4-23-14				
Investigator's		estigator's Signature	Doto				



Wetland J21 – East view looking toward marginally suitable, potential BT habitat. 4-23-14



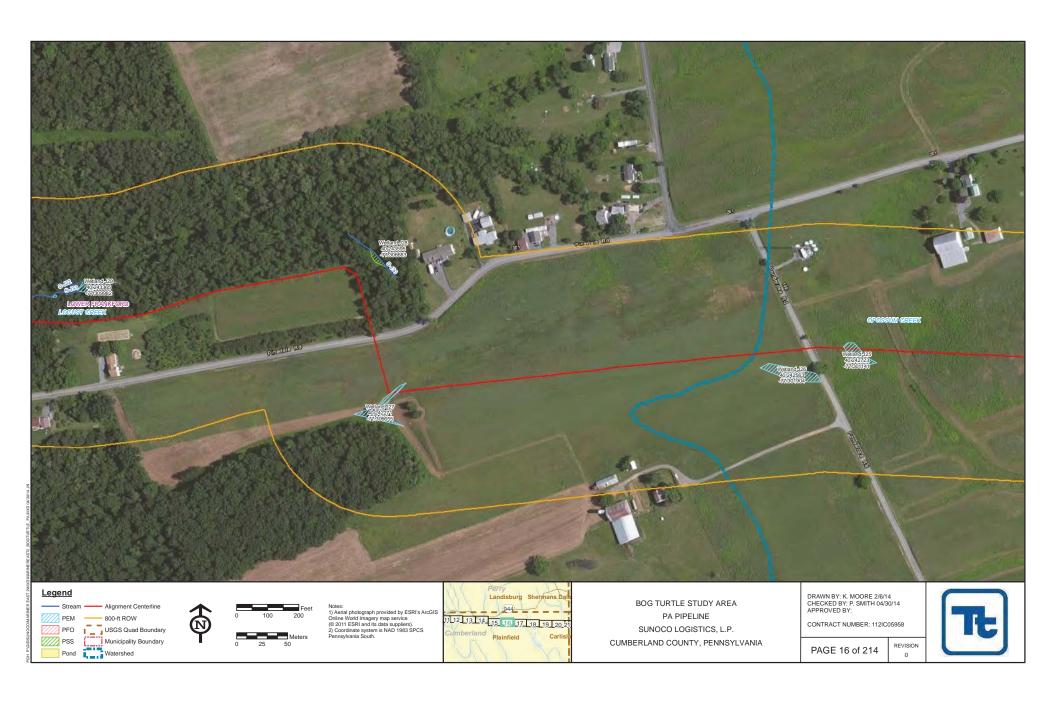
Wetland J21 – Standing in potential habitat looking west. 4-23-14



Wetland J21 – Downgradient side of potential habitat looking north.



Wetland J21 – In potential habitat looking south, very limited in size.



Locust Cit, Prainage

### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form<sup>1</sup> (revised 06/01/2006)

Project/Property Name: PA RELINE
Project type: 16'- DIAMETER PIPELINE FUSTALLATION
Applicant/Landowner Name: SUNDER Logistics, FNC.
County: Combérgand Quad: Township/Municipality: Lower Frankford
PNDI # Potential conflict with USFWS species? Y \( \text{N} \) N
resultation with our we species. If I is it
ACTION AREA <sup>2</sup>
Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? XY \( \subseteq N
WETLAND ID: PHOTOS TAKEN: Yes □ No WETLAND SIZE: acres  Wetland size estimation — If actual acreage is not known at time of investigation, check one:  □ < 0.1 acre □ 0.1-0.5 acre □ > 0.5 to < 1 acres □ 2-4 acres □ 5+ acres □ 10+ acres
WETLAND LOCATION: Lat 40, 24 2 14 Long -77, 30682 (approximate center of wetland) GPS Datum (check one):   NAD 27 NAD 83 WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: $9-23-19$ Time In: $9-23-19$ Time In: $9-23-19$ Time Out: $9-23-19$ Time Out: $9-23-19$ Time Out: $9-23-19$ Time Out: $9-23-19$ Out: $9-23-19$ Time Out: $9-23-19$ Out:
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  □ none of it — the entire wetland is within the property boundaries (skip next 2 questions)  some of it — acres or% of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)?
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y \Box N \Box$ Unknown If yes, <i>could</i> they be potential bog turtle habitat? $\Box Y \Box N \Box$ Unknown
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
As, fields & Idle woodland
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS PFO PFO POW POW POW PSS PFO PFO POW POW PSS PFO PFO POW POW PSS PFO
Y N Are there any signs of disturbance to <i>vegetation</i> (mowing, pasturing, burning, etc.)? If yes, describe

Project Name	PA TIPELINE-SUNDED	Logistics	Wetland (con't)		
Hydrology	- /				
XYON	Springs or seeps <u>visible</u> or □ <u>likely</u> ?	Watercress present?	□ Yes □ No		
DYXN	Spring houses in or adjacent to wetland?				
Y D N	Saturated soils present? If yes, year-round? \( \subseteq \text{Likely} \subseteq \text{Unlikely} \subseteq \text{Unknown} \)				
XYDN	water visible on surface? Check all that at	oply: Xsmall puddles	/depressions ( Z " deep)		
OYAN	rivulets (" deep)	onds (Z" deep)			
	Evidence of mooding? If yes, describe and	icators			
Soils Mapping	Unit (optional):				
Field observation	ons confirm mapped type? $\Box$ YES $\Box$ NO	Unknown			
Soils – PEM P	Portion of Wetland				
	How much of it (PEM) is <b>mucky</b> ?	Mucky soils range	Most of the mucleum aut(a) C		
Mucky <sup>4</sup> ?	E -100/	in depth from:	Most of the mucky part(s) of		
YES NO	□ <10% □10-29% ▼30-49% □ 50-70% □ >70%	3 to 12 "	the wetland can be probed <sup>5</sup> :		
7	How much of it (PEM) is <b>non-mucky</b> ?		3-5" □ 6-8" □ 9-11" □ ≥12"		
Non-mucky <sup>6</sup> ?					
YES NO	□ <10% □10-29% □ 30-49% ■ 50-70% □ >70%				
/	, ,				
Soils - PSS an	d PFO Portions of Wetland				
Mucky <sup>4</sup> ?	How much of it is mucky?	Mucky soils range	Most of the mucky part(s) of		
□ YES □ NO	□ <10% □10-29% □ 30-49%	in depth from:	the wetland can be probed <sup>5</sup> :		
L IES LINO	□ 50-70% □ >70%	to"	□ 3-5" □ 6-8" □ 9-11" □ ≥12"		
Check (X) if pres	ation (characterize the wetland as a wholesent (≥ 5% areal coverage), and also circle in the sent (≥ 5% areal coverage).	f dominant (≥ 20% covered as jewelweed as Phragmites	sphagnum moss		
<u>Herptiles</u>	- 20				
Other herotiles	rtles observed?  \( \text{YES}^7 \) NO If yes \( \text{observed} \) observed:	, how many?	La Company		
Additional Com	ments/Observations: (use additional sheet	s if necessary)			
50,1	Acres pot HAB - Limiter  R'S OPINION  Cuse additional sheet  Acres pot HAB - Limiter  Only Imp	muck, whi	CH 15 Confined To		
scep Head	THYOX . 73 FT. Lines	CIVULET T	HAT IS 6-12' Wide,		
NVESTIGATO	R'S OPINION	rin seep Hea	a feeding vivelet.		
YES DNO	☐ UNSURE The <u>hydrology</u> criterion <sup>8</sup>	for bog turtle habitat is	met. of westland <3 m		
YES NO	☐ UNSURE The soils criterion <sup>8</sup> for bo	g turtle habitat is met.	- Yes But limited I -		
YES NO	UNSURE The <u>vegetation</u> criterion <sup>8</sup>	for bog turtle habitat is	s met.		
YES NO	☐ UNSURE This wetland is potential b	og turtle habitat.	inder of wedlan <3n met.  - Yes But limited to see met.  £75'** Wid  (Turket		
certify that to the	e best of my knowledge, all of the informati	on provided herein is	accurate and complete		
KENNE	KEAT Zul	01/1	1/ 22 161		
Investigator's	- 47KII	Ment Simon Simon	y-0>-17		
mirosugator 5	Inve	estigator's Signature	Date		

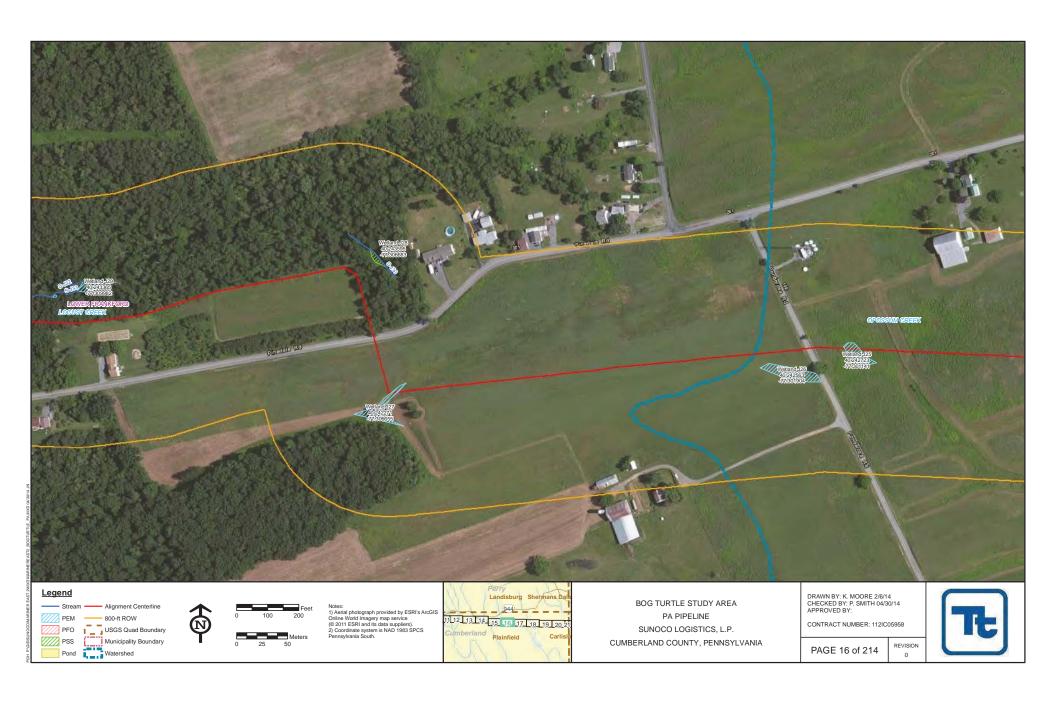
Date



Wetland J27 - Southwest view of marginal potential habitat due to limited size. 4-23-14



Wetland J27 – Standing at spring seep head looking west. 4-23-14



## USFWS / PFBC Bog Turtle Habitat Evaluation Field Form (revised 06/01/2006) LOCUST Crk

Project/Property Name: PA PRELINE
Project type: 16"- DIAMETER PIPELINE FUSTALLATION
Applicant/Landowner Name: Survoce Logistics, Fre.
County: Comberiand Quad: Township/Municipality: L. Frank ford
PNDI # Potential conflict with USFWS species? YY \( \triangle N \)
ACTION AREA <sup>2</sup> Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? XY \( \subset N^3 \)
WETLAND ID: <u>138</u> <u>139</u> PHOTOS TAKEN: ✓ Yes □ No WETLAND SIZE: acres Wetland size estimation – If actual acreage is not known at time of investigation, check one: □ < 0.1 acre □ 0.1-0.5 acre □ > 0.5 to < 1 acre □ 1-2 acres □ 2-4 acres □ 5+ acres □ 10+ acres
WETLAND LOCATION: Lat 40,24387 Long -77,30898 (approximate center of wetland) GPS Datum (check one):   NAD 27 NAD 83 WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: 4-23-19 Time In: 200 Time Out: 1300  Last precipitation: □ < 24 hours □ 1-7 days □ > 1 week □ unknown Drought conditions? □YXN □ Unknown
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  none of it — the entire wetland is within the property boundaries (skip next 2 questions)  some of it — acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)?   □ all of it □ part of it (at least acres) □ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y = V \cap V$
Open PEM Wetland Win Wooded RAVINE Surrounded By As Fille
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM O PSS PFO PFO POW
Are there any signs of disturbance to hydrology (ditching, filling, ponds, roads, etc.)? If yes, describe
Y N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

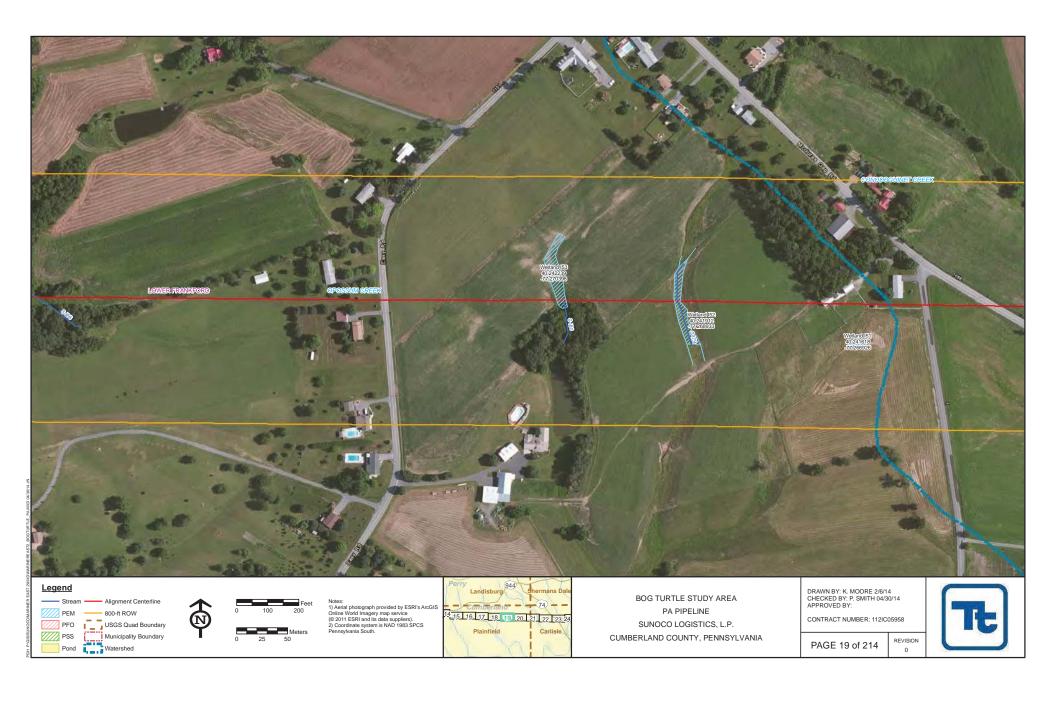
	2. 2	)	Between 129
Project Name	PA PIPELINE-SUNDED	LOGISTICS	Wetland (con't)
Hydrology Y	Springs or seeps \( \subseteq \frac{\visible}{\subseteq} \) or \( \frac{\visible}{\subseteq} \)?  Spring houses in or adjacent to wetland?  Saturated soils present? If yes, year-round  Water visible on surface? Check all that ap  Trivulets (\( \frac{\varphi}{\circ} \) deep) \( \subseteq \subseteq \text{larger pools/po} \)  Evidence of flooding? If yes, describe ind	Watercress present?  Chikely Unlikely Unlikely Small puddlese	□ Yes No
	Unit (optional):ons confirm mapped type? ☐ YES ☐ NO	Unknown	
Soils - PEM I	Portion of Wetland		
Mucky⁴? YES □ NO	How much of it (PEM) is <b>mucky</b> ?  □ <10% □10-29% ▼30-49% □ 50-70% □ >70%	Mucky soils range in depth from:	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> :  2.3-5" □ 6-8" □ 9-11" □ ≥12"
Non-mucky <sup>6</sup> ? ☐ YES NO	How much of it (PEM) is <b>non-mucky</b> ?  □ <10% □10-29% □ 30-49%  ▼50-70% □ >70%		
Soils - PSS an	d PFO Portions of Wetland		
Mucky <sup>4</sup> ?  ☐ YES ☐ NO	How much of it is <b>mucky</b> ?  □ <10% □10-29% □ 30-49% □ 50-70% □ >70%	Mucky soils range in depth from: to"	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $\square 3-5" \square 6-8" \square 9-11" \square \ge 12"$
Check (X) if pre  X sedges □ rush  X sensitive fern	ation (characterize the wetland as a whole sent (≥ 5% areal coverage), and also circle in the sent (≥ 5% ar	f dominant (≥ 20% co	sphagnum moss
Herptiles Were any bog tu Other herptiles	rtles observed? \( \superstack \text{YES}^7 \) \( \superstack \text{NO} \) \( \text{If yes.} \) \( \superstack \text{Observed:} \( \superstack \text{YES}^7 \) \( \superstack \text{NO} \) \( \text{If yes.} \)	, how many?	_
Additional Com	ments/Observations: (use additional sheet Les of morganization of the dessicated later	s if necessary)  mucky so	Season WHICH
INVESTIGATO  YES NO YES NO YES NO YES NO	☐ UNSURE The <u>hydrology</u> criterion <sup>8</sup> f	g turtle habitat is met. for bog turtle habitat is	
I certify that to th	e best of my knowledge, all of the informati	on provided herein is	accurate and complete.
KEVIN S Investigator's	KEAT Rent	stigator's Signature	<u>4-23-19</u> Date



Wetland between J28/29, northeast view. Marginally potential habitat due to minimal muck and spring-fed hydrology.



Wetland between J28/29, southeast view.



### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form<sup>1</sup> (revised 06/01/2006) Project/Property Name: Project type: 16'- DIAMETER PIPELINE INSTALLATION Applicant/Landowner Name: SUNDER Logistics, FNC, Township/Municipality: Lover Frankford County: (UMBÉRIAND Quad: Potential conflict with USFWS species? VY \( \simeg N \) PNDI# **ACTION AREA<sup>2</sup>** Does the Phase 1 survey include <u>all</u> wetlands in the action area? $\times Y \square N^3$ Action area size: WETLAND ID: 152 PHOTOS TAKEN: Yes | No WETLAND SIZE: 20 acres Wetland size estimation – If actual acreage is not known at time of investigation, check one: $\square$ < 0.1 acre $\square$ 0.1-0.5 acre $\Longrightarrow$ 0.5 to <1 acre $\Longrightarrow$ 1-2 acres $\square$ 2-4 acres $\square$ 5+ acres $\square$ 10+ acres WETLAND LOCATION: Lat 40, 2418 | Long -77, 26896 (approximate center of wetland) GPS Datum (check one): NAD 27 NAD 83 WGS 84 SURVEY CONDITIONS & LIMITATIONS How much of this wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)? □ none of it – the entire wetland is within the property boundaries (skip next 2 questions) some of it - \_\_\_\_\_ acres or \_\_\_\_\_\_% of the wetland appears to be located off-site If part of this wetland continues off-site, how much of the off-site portion was surveyed (on foot)? □ none of it | mail of it □ part of it (\_\_\_\_\_% or \_\_\_\_\_ acres of the off-site portion) How much of the off-site portion of this wetland is visible (e.g., from the subject property or from a public road)? □ all of it □ part of it (at least \_\_\_\_\_ acres) × none of it Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y \nearrow N \Box$ Unknown If yes, *could* they be potential bog turtle habitat? $\Box Y \times N \Box$ Unknown Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.): Grazed Cow-pasture & Tale woodland

WETLAND CHARACTERISTICS

		AL IN CA	TIME TO I LIVE	TICS	
Wetland type(s) present and % cover:	PEM	100	□ PSS	□ PFO	□ POW
☐ Y N Are there any signs of distu	rbance to	hydrolo	ogy (ditching, fi	lling, ponds, roa	ds, etc.)? If yes, describ

Y IN Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Project Name	PA PIPELINE-SUNDED	Logistics	Wetland 157 (con't)
Y N XY DN XY DN	Springs or seeps \( \text{visible} \) or \( \text{likely} ? \) Spring houses in or adjacent to wetland? Saturated soils present? If yes, year-round Water visible on surface? Check all that ap \( \text{rivulets} \) \( \text{eep} \) \( \text{larger pools/po} \) Evidence of flooding? If yes, describe independent.	Likely   Unlike	ely 🗆 Unknown
	Unit (optional):	Unknown	
Soils - PEM P	ortion of Wetland		
Mucky⁴? YES □ NO	How much of it (PEM) is <b>mucky</b> ?  □ <10% □ 10-29% □ 30-49%  50-70% □ >70%	Mucky soils range in depth from:  to 0"	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $3-5$ " $\square$ 6-8" $\square$ 9-11" $\square$ $\ge$ 12"
Non-mucky <sup>6</sup> ? YES □ NO	How much of it (PEM) is <b>non-mucky</b> ?  □ <10% □10-29% □ 30-49%  ▼50-70% □ >70%		
Soils – PSS an	d PFO Portions of Wetland		
Mucky⁴?  ☐ YES ☐ NO	How much of it is <b>mucky</b> ?  □ <10% □ 10-29% □ 30-49% □ 50-70% □ >70%	Mucky soils range in depth from: to"	Most of the mucky part(s) of the wetland can be probed <sup>5</sup> : $\square 3-5" \square 6-8" \square 9-11" \square \ge 12"$
Check (X) if pre  sedges rush sensitive fern alder dogw Additional domi  Herptiles Were any bog tu	rtles observed?   YES <sup>7</sup> NO  If yes	ag □ jewelweed □ y grass □ Phragmites nac □ multiflora rose □ Show many?	sphagnum moss    Dipurple loosestrife
Additional Com  Complete Compl	☐ UNSURE The <u>hydrology</u> criterion <sup>8</sup> ☐ UNSURE The <u>soils</u> criterion <sup>8</sup> for both	for bog turtle habitat	•
I certify that to the	ne best of my knowledge, all of the information	tion provided herein is	accurate and complete.



Wetland i52 – North view of one main rivulet and mucky soils. 4-23-14



Wetland i52 – South view. 4-23-14

# USFWS/PFBC Bog Turtle Habitat Evaluation Field Form drainage (revised 06/01/2006)

Project/Property Name: TA RELINE
Project type: 16"- DIAMETER PIPELINE FAISTALLATION
Applicant/Landowner Name: SUNDER Logistics, INC.
County: Comperant Quad: Township/Municipality:
PNDI#Potential conflict with USFWS species? Y \( \text{N} \)
,
ACTION AREA <sup>2</sup> Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? XY \( \subseteq N^2 \)
WETLAND ID: PHOTOS TAKEN: Yes □ No WETLAND SIZE: acres  Wetland size estimation – If actual acreage is not known at time of investigation, check one:  □ < 0.1 acre □ 0.1-0.5 acre □ >0.5 to <1 acre □ 1-2 acres □ 2-4 acres □ 10+ acres
WETLAND LOCATION: Lat 40,24256 Long -77, 26415 (approximate center of wetland) GPS Datum (check one): NAD 27 X NAD 83 WGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey:
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  □ none of it — the entire wetland is within the property boundaries (skip next 2 questions)  some of it — acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the off-site portion was surveyed (on foot)?  none of it  all of it  part of it  acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)?
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y \cap V \cap$
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):  Rolling Topo - Ag Fields & Idle Woodland  WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS PFO PPO POW
☐ Y N Are there any signs of disturbance to <i>hydrology</i> (ditching, filling, ponds, roads, etc.)? If yes, describe
Y D N Are there any signs of disturbance to <i>vegetation</i> (mowing, pasturing, burning, etc.)? If yes, describe

Springs or seeps   visible   visib	544(con't)
Mucky 4?	
Soils - PSS and PFO Portions of Wetland   Mucky soils range   Most of the mucky	
Soils - PSS and PFO Portions of Wetland   Mucky soils range   in depth from:   the wetland can be   in depth from:   to "   3-5" □ 6-8" □ 9-1	n be probed <sup>5</sup> :
Mucky⁴? How much of it is mucky? In depth from: the wetland can be in depth from: the wetland can be in depth from: the wetland can be in depth from: 3-5" □ 6-8" □ 9-1   Wetland Vegetation (characterize the wetland as a whole) Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).   □ sedges □ rushes □ skunk cabbage □ cattail □ sweet flag X jewelweed □ sphagnum moss   ✓ sensitive fern □ rice cutgrass □ tearthumb Treed canary grass □ Phragmites □ purple loosestrife   □ alder □ dogwood □ red maple □ willow □ poison sumac □ multiflora rose □   □ Additional dominant species: □ YES² □ NO If yes, how many? □   Other herptiles □ observed □ previously observed: □   Additional Comments/Observations: (use additional sheets if necessary) □ Additional comments/Observations: □ Additional comments/Observations:	
Mucky?  □ YES □ NO □ 10-29% □ 30-49% in depth from: □ to □ 3-5" □ 6-8" □ 9-1    Wetland Vegetation (characterize the wetland as a whole)   Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).   Sedges □ rushes □ skunk cabbage □ cattail □ sweet flag □ jewelweed □ sphagnum moss □ sensitive fern □ rice cutgrass □ tearthumb □ Areed canary grass □ Phragmites □ purple loosestrife □ alder □ dogwood □ red maple □ willow □ potson sumac □ multiflora rose □ Additional dominant species:    Herptiles   Were any bog turtles observed? □ YES □ NO □ If yes, how many? □ Other herptiles □ observed □ previously observed:    Additional Comments/Observations: (use additional sheets if necessary)   Additional Comments/Observations: (use additional comments/Observations)   Additional Comments/Observations: (use additional comments/Observations)   Additional Comments/Observations   Additional Comments/Observations   Additional Comments/Observations   Additional Comments/Observations   Additional Comments/Observations   Additional Comments/Observations   Additional Com	
Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).  □ sedges □ rushes □ skunk cabbage □ cattail □ sweet flag X jewelweed □ sphagnum moss X sensitive fern □ rice cutgrass □ tearthumb	n be probed <sup>5</sup> :
Limited muck & Apparent episoles of Flooding do	rife
INVESTIGATOR'S OPINION  YES □ NO □ UNSURE  The hydrology criterion <sup>8</sup> for bog turtle habitat is met.  The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  This wetland is potential bog turtle habitat.	of to
I certify that to the best of my knowledge, all of the information provided herein is accurate and completed the completed by	plete. 26-14



Wetland J44 – Marginal habitat limited to one rivulet that transitions to incised channel, west view. 4-26-14



Wetland J44 – Marginal habitat, east view. 4-26-14

### USFWS / PFBC Bog Turtle Habitat Evaluation Field Form (revised 06/01/2006)

1	3	1
Conodo	guine	7
dra	nene	D
Oct of	1	-

(Tevised 00/01/2000)
Project/Property Name: TA PRELINE
Project type: 16'- DIAMETER PIPELINE FASTALLATION
Applicant/Landowner Name: SUNDEC logistics, INC.
County: Combérgar Quad: Township/Municipality:
PNDI # Potential conflict with USFWS species? Y \( \text{Y} \) \( \text{N} \)
ACTION AREA <sup>2</sup>
Action area size: Does the Phase 1 survey include <u>all</u> wetlands in the action area? $XY \square N^3$
WETLAND ID: PHOTOS TAKEN: Yes □ No WETLAND SIZE: acres  Wetland size estimation – If actual acreage is not known at time of investigation, check one:  □ < 0.1 acre □ 0.1-0.5 acre □ > 0.5 to < 1 acre □ 1-2 acres □ 2-4 acres □ 5+ acres □ 10+ acres
WETLAND LOCATION: Lat 40,24188, Long -77,25990 (approximate center of wetland) GPS Datum (check one): NAD 27 X NAD 83 UWGS 84
SURVEY CONDITIONS & LIMITATIONS
Date of survey: $4-26-14$ Time In: $1330$ Time Out: $430$ Last precipitation: $0 < 24$ hours $0 < 1-7$ days $0 > 1$ week $0$ unknown Drought conditions? $0 < 1-7$ Unknown
How much of this wetland is located <i>off-site</i> ( <i>i.e.</i> , outside the property boundaries or right-of-way)?  none of it — the entire wetland is within the property boundaries (skip next 2 questions)  some of it — acres or % of the wetland appears to be located off-site
If part of this wetland continues off-site, how much of the <i>off-site portion</i> was surveyed (on foot)?  □ none of it □ all of it □ part of it (% or acres of the off-site portion)
How much of the <i>off-site portion</i> of this wetland is visible (e.g., from the subject property or from a public road)? $\Box$ all of it $\Box$ part of it (at least acres) $\Box$ none of it
Are there any wetlands located off-site and close enough to be affected by this project? $\Box Y \Box N \Box$ Unknown If yes, <i>could</i> they be potential bog turtle habitat? $\Box Y \Box N \Box$ Unknown
Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
WETLAND CHARACTERISTICS
Wetland type(s) present and % cover: PEM 100 PSS PFO PFO POW
WETLAND CHARACTERISTICS  Wetland type(s) present and % cover: PEM 100 PSS PFO PFO PPOW POW POW PSS PFO PFO PFO POW POW PSS PFO
Y N Are there any signs of disturbance to vegetation (mowing, pasturing, burning, etc.)? If yes, describe

Hydrology  XY	n't)
Soils – PEM Portion of Wetland  Mucky <sup>4</sup> ? How much of it (PEM) is mucky?  YES $\square$ NO  Non-mucky <sup>6</sup> ? How much of it (PEM) is non-mucky?  How much of it (PEM) is non-mucky? $\square < 10\%$ $\square > 70\%$ How much of it (PEM) is non-mucky? $\square < 10\%$ $\square > 10-29\%$	) m
Mucky <sup>4</sup> ? How much of it (PEM) is <b>mucky</b> ? In depth from: $3 \text{ to } 10^{-29\%}  30^{-49\%}$ How much of it (PEM) is <b>non-mucky</b> ? How much of it (PEM) is <b>non-mucky</b> ? How much of it (PEM) is <b>non-mucky</b> ? $3  10^{-29\%}  10^{-29\%}  10^{-29\%}  10^{-49\%}$ Mucky soils range in depth from: $3  10^{-49\%}  10^{-29\%}  10^{-49\%}  10^{-29\%}  10^{-49\%}$ Mucky soils range in depth from: $3  10^{-49\%}  10^{-29\%}  10^{-49\%}  10^{-29\%}  10^{-49\%} $	
YES DNO 550-70% D>70%	d <sup>5</sup> :
30-7070	
Soils – PSS and PFO Portions of Wetland  Mucky soils range in depth from: the wetland can be probed to the wetland as a whole   Wetland Vegetation (characterize the wetland as a whole)  Mucky soils range in depth from: the wetland can be probed to the wetland can be probed to the wetland as a whole)	d <sup>5</sup> :
Check (X) if present (≥ 5% areal coverage), and also circle if dominant (≥ 20% coverage).  □ sedges □ rushes □ skunk cabbage □ cattail □ sweet flag □ jewelweed □ sphagnum moss □ sensitive fern □ rice cutgrass □ tearthumb   reed canary grass □ Phragmites □ purple loosestrife □ alder □ dogwood □ red maple □ willow □ poison sumac □ multiflora rose □ □ □ Additional dominant species: □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	
Were any bog turtles observed?   Other herptiles   observed   previously observed:	
Additional Comments/Observations: (use additional sheets if necessary)	
INVESTIGATOR'S OPINION  YES □ NO □ UNSURE  The hydrology criterion <sup>8</sup> for bog turtle habitat is met.  YES □ NO □ UNSURE  The soils criterion <sup>8</sup> for bog turtle habitat is met.  The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  The vegetation criterion <sup>8</sup> for bog turtle habitat is met.  This wetland is potential bog turtle habitat.	
I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.    KEVIN S. KEAT	4



Wetland J20 – West view of potential habitat. 4-26-14



 $Wetland\ J20-East\ view\ of\ potential\ habitat.\ \ 4\text{-}26\text{-}14$