

APPENDIX VI
WETLAND DATA FORMS

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DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: B. Rosensteel, J. Groton	Date: 15 July 2003 County: Morgan State: AL Quad: Jones Crossroads Watershed: Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PEM1 Transect ID: Plot ID: W1

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Echinochloa crus-galli	Herb	Facw-			
Polygonum punctatum	Herb	Facw+			
Eleocharis obtusca	Herb	Obl			
Cyperus strigosus	Herb	Facw+			
Alisma subcordatum	Herb	Obl			
Cyperus esculentus	Herb	Facw			
Typha angustifolia	Herb	Obl			
Juncus tenuis	Herb	Fac			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-3</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p> <hr/> <p>Remarks: Wide, intermittent stream without defined banks.</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input checked="" type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Melvin silt loam	Drainage Class:	Poorly drained	
Taxonomy (Subgroup):	Typic fluvaquents	Field Observations Confirm Mapped Type?	Yes _____	No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-12	A	10YR 5/2	10YR 6/1 10YR 5/4	10% 5%	Silty clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ x Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ x Listed on Local Hydric Soils List</p> <p>_____ x Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No	_____	Is this Sampling Point Within a Wetland? Yes x No _____
Wetland Hydrology Present?	Yes	x	No	_____	
Hydric Soils Present?	Yes	x	No	_____	

Remarks: Location - Several hundred yards south of the Calpine-Morgan switching station. Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 0.05 acre. The National Wetland Inventory data indicate a PEM1Cx and a PSS/EM1Cd in this area. A wetland was previously identified in this area for the Calpine-Amoco project (Environmental Review Request # 2700), in which the existing 275 ft. wide transmission line right-of-way was constructed. The wetland was described as an "emergent wetland associated with seeps and an intermittent stream in an area of overgrown pasture", dominated by fescue, *Polygonum* sp., *Ludwigia palustris*, *Echinochloa crus-galli*, *Cyperus flavescens*, and saplings of *Celtis occidentalis*.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: B. Rosensteel, J. Groton	Date: 15 July 2003 County: Morgan State: AL Quad: Jones Crossroads Watershed: Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PEM1/PSS1 (marsh) Transect ID: Plot ID: W2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Salix nigra	Shrub	Obl	Scirpus cyperinus	Herb	Obl
Liquidambar styraciflua	Shrub	Fac			
Fraxinus pennsylvanica	Shrub	Facw			
Typha latifolia	Herb	Obl			
Juncus effusus	Herb	Facw+			
Cyperus esculentus	Herb	Facw			
Carex frankii	Herb	Obl			
Andropogon glomeratus	Herb	Facw+			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-10+</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p> <hr/> <p>Remarks:</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Robertsville silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaqualfs	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		10YR 4/1	10YR 4/6	30%	Sandy loam
4-9		10YR 4/2	10YR 4/6	20%	Sandy clay loam
9-15		10YR 4/2	5YR 4/6	40%	Sandy clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p><u> x </u> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____	
Hydric Soils Present?	Yes <u> x </u>	No _____	

Remarks: Estimated acreage in Calpine-Morgan transmission line section of right-of-way is 1.75 acres. The National Wetland Inventory data indicate this area as a palustrine forested/scrub-shrub wetland (PFO/SS1C). It is part of a larger (greater than 50 acres) forested and scrub-shrub wetland complex associated with a Tennessee River embayment.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan	Date: 15 July 2003
Applicant/Owner: TVA	County: Morgan
Investigator: B. Rosensteel, J. Groton	State: AL
	Quad: Jones Crossroads
	Watershed: Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PEM1/PSS1
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot ID: W3

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Salix nigra	Shrub	Obl	Plucchea camphorata	Herb	Facw
Populus deltoides	Shrub	Fac+	Ludwigia peploides	Herb	Obl
Ludwigia peploides var. glabrescens	Herb	Obl	Panicum scoparium	Herb	Facw
Leersia oryzoides	Herb	Obl			
Ludwigia alternifolia	Herb	Obl			
Eleocharis sp.	Herb	Obl			
Scirpus cyperinus	Herb	Obl			
Scirpus cyerinus	Herb	Obl			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>1-6</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p> <hr/> <p>Remarks: The wetland is in an abandoned excavated holding pond in the existing transmission line right-of-way near the Tennessee River. No inlets or outlets were observed.</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators:</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Ooltewah silt loam	Drainage Class:	Imperfectly drained
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-5		2.5Y 6/1	7.5YR 4/6	30%	Silty clay
5-12		2.5Y 5/1	7.5YR 4/6 N 4/0	5% 1%	Silty clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks: The native soil has been excavated and deposited in another location. The described soil is clay fill soil used for pond construction.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland?	Yes <u> x </u>	No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____			
Hydric Soils Present?	Yes <u> x </u>	No _____			

Remarks: Within several hundred feet of the Tennessee River. Estimated acreage in the Calpine-Morgan transmission line section of the right-of-way is 1.06 acres.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: B. Rosensteel, J. Groton	Date: 16 July 2003 County: Limestone State: AL Quad: Tanner Watershed: Pryor Branch, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PEM1/PFO1 Transect ID: Plot ID: W4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Ulmus alata	Canopy	Facu+	Ligustrum sinense	Shrub	Fac
Liquidambar styraciflua	Canopy	Fac+	Ilex decidua	Shrub	Facw-
Quercus nigra	Shrub	Fac	Gelsemium sempervirens	Herb	Fac
Nyssa sylvatica	Sapling/Herb	Fac	Juncus effusus	Herb	Facw+
Fraxinus pennsylvanica	Sapling	Facw+	Microstegium vimineum	Herb	Fac+
Smilax rotundifolia	Vine	Fac			
Toxicodendron radicans	Vine	Fac			
Berchemia scandens	Vine	Facw			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 92%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-12+</u> (in.)</p> <p>Depth to Free Water in Pit: <u>4</u> (in.)</p> <p>Depth to Saturated Soil: <u>4</u> (in.)</p> <hr/> <p>Remarks: The soil sample was taken in a narrow area between the wetland boundary and the beginning of standing water. The majority of the wetland was inundated.</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Melvin silt loam	Drainage Class:	Poorly drained	
Taxonomy (Subgroup):	Typic fluvaquents	Field Observations Confirm Mapped Type?	Yes _____	No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
Sample A					
0-4		10YR 4/3	10YR 5/2	30%	Loam
4-12		10YR 5/2	10YR 5/4	20%	Silty clay loam
Sample B (In standing water)					
0-8		10YR 5/1	10YR 6/3	25%	Silty clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland?	Yes <u> x </u>	No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____			
Hydric Soils Present?	Yes <u> x </u>	No _____			

Remarks: Pryor Branch bottomland in the Swan Creek Wildlife Management Area.

The estimated size of the wetland in the Calpine-Morgan transmission line section of the right-of-way is 2.35 acres, of which approximately 0.30 acres is forested wetland and 2.05 ac is emergent wetland. This is part of a larger (greater than 10 acres) wetland, a part of which is indicated on the National Wetland Inventory.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan	Date: 16 July 2003
Applicant/Owner: TVA	County: Limestone
Investigator: B. Rosensteel, J. Groton	State: AL
	Quad: Tanner
	Watershed: Spring Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PFO1/PSS1
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot ID: W5

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Acer rubrum	Sapling	Fac	Cyperus iria	Herb	Facw
Quercus phellos	Canopy	Facw-	Juncus tenuis	Herb	Fac
Fraxinus pennsylvanica	Sapling	Facw	Ammania coccinea	Herb	Facw+
Nyssa sylvatica	Shrub	Fac			
Berchemia scandens	Vine	Facw			
Boehmeria cylindrica	Herb	Facw+			
Impatiens capensis	Herb	Facw			
Eupatorium perfoliatum	Herb	Facw+			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The documentation point is in the forested section of the wetland. The scrub-shrub portion of the wetland was inundated and not accessible for establishing a documentation point. The dominant species in the scrub-shrub portion include black willow.

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p><input checked="" type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>0-12+</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	
<p>Remarks: The wetland is in the flooded bottomland of Spring Creek upstream of a high railroad bed. There is also a large PEM1/OWH on the opposite side of the railroad tracks, outside of the project area.</p>	

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Drainage slow
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		2.5YR 4/6			Silty clay loam
4-7		10YR 4/1			Silty clay
7-12		10YR 6/1			Silty clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p><u> x </u> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u> No _____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes <u> x </u> No _____	
Hydric Soils Present?	Yes <u> x </u> No _____	

Remarks: Associated with a tributary of Spring Creek immediately downstream of the railroad bed. The approximate size of wetland W5 in the Calpine-Morgan transmission line section of the right-of-way is 2.22 acres, of which approximately 0.675 ac is forested, 0.675 ac is scrub-shrub, and 0.870 ac is emergent (see W5-PEM1 data form for emergent wetland data). It is part of a larger (greater than 10 acres) forested wetland indicated on the National Wetland Inventory.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: B. Rosensteel, J. Groton	Date: 16 July 2003 County: Limestone State: AL Quad: Tanner Watershed: Spring Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PEM1 (wet meadow) Transect ID: Plot ID: W5 (PEM1 section)

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Cephalantus occidentalis	Shrub	Obl	Liquidambar styraciflua	Shrub	Fac+
Rhexia mariana	Herb	Facw+	Cyperus sp.	Herb	Facw or Obl
Dicanthelium scoparium	Herb	Facw			
Juncus effusus	Herb	Facw+			
Juncus sp.	Herb	Fac to Obl			
Carex vulpinoidea	Herb	Obl			
Ludwigia alternifolia	Herb	Obl			
Rhynchospora capitallata	Herb	Obl			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-1</u> (in.)</p> <p>Depth to Free Water in Pit: <u>10</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p> <hr/> <p>Remarks:</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Poorly drained	
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____	No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-7		10YR 5/2			Silty clay loam
7-10		10YR 6/1	7.5YR 4/6 10YR 5/3	5% 5%	Sandy loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ x Listed on Local Hydric Soils List</p> <p>_____ x Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No	_____	Is this Sampling Point Within a Wetland? Yes x No _____
Wetland Hydrology Present?	Yes	x	No	_____	
Hydric Soils Present?	Yes	x	No	_____	

Remarks: This is a wet meadow section of wetland W5. It is on the west side of the PFO1/SS1 in the corner of an agricultural field in the existing transmission line right-of-way. The approximate size of wetland W5 in the Calpine-Morgan transmission line section of the right-of-way is 2.22 acres, of which approximately 0.675 ac is forested, 0.675 ac is scrub-shrub, and 0.870 ac is emergent. It is part of a larger (greater than 10 acres) forested wetland indicated in the National Wetland Inventory.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: B. Rosensteel, J. Groton	Date: 17 July 2003 County: Limestone State: AL Quad: Tanner Watershed: Spring Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PFO1 Transect ID: Plot ID: W6

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Quercus phellos	Canopy	Facw-			
Liquidambar styraciflua	Canopy/Sapling	Fac+			
Quercus alba	Canopy/Sapling	Facu			
Ulmus sp.	Sapling				
Acer rubrum	Sapling	Fac			
Fraxinus pennsylvanica	Sapling/Shrub/ Herb	Facw			
Toxicodendron radicans	Vine/Herb	Fac+			
Vaccinium corymbosum	Shrub	Facw			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 75%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: _____ (in.)</p> <p>Depth to Free Water in Pit: _____ (in.)</p> <p>Depth to Saturated Soil: _____ (in.)</p> <hr/> <p>Remarks:</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-7		10YR 4/1			Clay loam
7-12		10YR 6/1	10YR 5/6	15%	Clay loam
12-16		10YR 5/1			Clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ x Listed on Local Hydric Soils List</p> <p>_____ x Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes	x	No		
Hydric Soils Present?	Yes	x	No		

Remarks: Between railroad tracks to the east and Lucas Ferry Road to the west. The estimated size of the wetland in the Calpine-Morgan transmission line section of the right-of-way is 0.60 acres. It is part of the same wetland area as W5.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan	Date: 17 July 2003
Applicant/Owner: TVA	County: Limestone
Investigator: B. Rosensteel, J. Groton	State: AL
	Quad: Tanner
	Watershed: Spring Creek Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PEM1/PFO1
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot ID: W7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Quercus phellos	Canopy	Facw-	Polygonum sp.	Herb	Facw or Obl
Quercus alba	Canopy	Facu	Boehmeria cylindrica	Herb	Facw+
Liquidambar styraciflua	Canopy/Shrub	Fac+	Alisma subcordatum	Herb	Obl
Acer rubrum	Sapling/Shrub	Fac	Smilax rotundifolia	Vine	Fac
Cephalanthus occidentalis	Shrub	Obl	Lysimachia lanceolata	Herb	Fac
Carex lupulina	Herb	Obl			
Leersia oryzoides	Herb	Obl			
Lycopus virginicus	Herb	Obl			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 92%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>2-8</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	
<p>Remarks: Appears to be an intermittent headwater stream or a spring run that drains old fields and agricultural fields.</p>	

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		10YR 4/2			Silty clay loam
4-8		10YR 6/1	10YR 5/6	25%	Silty clay loam
8-12		10YR 4/1	10YR 5/6	40%	Silty clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland? Yes _____ No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____	
Hydric Soils Present?	Yes <u> x </u>	No _____	

Remarks: Approximate size of wetland in the Calpine-Morgan transmission line section of the right-of-way is 0.105 ac, of which approximately 0.079 ac is emergent wetland and 0.026 ac is forested wetland. It appears to be a part of the same wetland area as W5 and W6.

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-14		N 6/0	10YR 5/8	20%	Silty clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ x Listed on Local Hydric Soils List</p> <p>_____ x Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes	x	No		
Hydric Soils Present?	Yes	x	No		

Remarks: The estimated size of the wetland in the Calpine-Morgan transmission line section of the right-of-way is 2.01 acres.

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silty loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-5		10YR3/4			Silty clay
5-13		10YR 6/2	10YR 5/4	30%	Silty clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p><u> x </u> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<u> x </u>	No	_____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes	<u> x </u>	No	_____	
Hydric Soils Present?	Yes	<u> x </u>	No	_____	

Remarks: The estimated size of the wetland in the Calpine-Morgan transmission line section of the right-of-way is 0.29 acres. It is part of a larger emergent wetland in adjacent parts of the existing right-of-way.

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Abernathy silt loam	Drainage Class:	Well drained
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-8		10YR 5/2	10YR 4/4	25%	Clay loam
8+					Very gravelly clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p>_____ Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p>_____ x Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p>_____ Listed on Local Hydric Soils List</p> <p>_____ Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	x	No		Is this Sampling Point Within a Wetland? Yes _____ No _____
Wetland Hydrology Present?	Yes	x	No		
Hydric Soils Present?	Yes	x	No		

Remarks: East floodplain of Briley Creek a short distance upstream of Vanzille Road.

The estimated size of the wetland in the Calpine-Morgan transmission line section of the existing right-of-way is 0.006 acre. The National Wetland Inventory data indicates a palustrine scrub-shrub wetland in the existing right-of-way and forested wetlands on either side of the right-of-way. However, other than W10, no wetlands were found in the proposed Calpine-Morgan right-of-way in the Briley Creek bottomland.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: J. Groton, E. Keene	Date: 21 July 2003 County: Limestone State: AL Quad: Jones Crossroads Watershed: Wet-Weather Conveyance/Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PEM1/PSS1 Transect ID: Plot ID: W12

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Rosa palustris	Shrub	Obl	Euthamia graminifolia	Herb	Facw-
Salix nigra	Shrub	Obl	Spermelepis divaricata	Herb	Fac-
Cephalanthus occidentalis	Shrub	Obl	Saururus cernuus	Herb	Obl
Cyperus ovularis	Herb	Fac	Leersia oryzoides	Herb	Obl
Typha latifolia	Herb	Obl	Dichanthelium scoparium	Herb	Facw
Lonicera japonica	Herb	Fac-	Onoclea sensibilis	Herb	Facw
Juncus effusus	Herb	Facw+			
Rhexia aristosa	Herb	Obl			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 86%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p> <hr/> <p>Field Observations:</p> <p>Depth of Surface Water: <u>0-1</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>7</u> (in.)</p> <hr/> <p>Remarks: Drainage between cotton fields</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Cumberland silty clay loam	Drainage Class:	Well drained
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____ No <u> x </u>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		10YR 4/3	-	-	Loam
4-10		10YR 5/2	7.5YR 5/6	30%	Silty clay loam
10-15		10YR 4/6	10YR 5/2	20%	Silty clay loam

<p>Hydric Soil Indicators:</p> <p><u> </u> Histosol</p> <p><u> </u> Histic Epipedon</p> <p><u> </u> Sulfidic Odor</p> <p><u> </u> Aquic Moisture Regime</p> <p><u> </u> Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p><u> </u> Concretions</p> <p><u> </u> High Organic Content in Surface Layer in Sandy Soils</p> <p><u> </u> Organic Streaking in Sandy Soils</p> <p><u> </u> Listed on Local Hydric Soils List</p> <p><u> </u> Listed on National Hydric Soils List</p> <p><u> </u> Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No <u> </u>	Is this Sampling Point Within a Wetland? Yes <u> x </u> No <u> </u>
Wetland Hydrology Present?	Yes <u> x </u>	No <u> </u>	
Hydric Soils Present?	Yes <u> x </u>	No <u> </u>	

Remarks: Wet-weather conveyance running west to east across right-of-way east of Cow Ford Road. Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 0.40 acre.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: J. Groton, E. Keene	Date: 21/22 July 2003 County: Limestone State: AL Quad: Jones Crossroads Watershed: Island Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PFO1 Transect ID: Plot ID: W13

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Quercus shumardii	Canopy	Facw-	Microstegium vimineum	Herb	Fac+
Carpinus caroliniana	Canopy	Fac	Polygonum pensylvanicum	Herb	Facw
Quercus phellos	Canopy	Facw-	Carex lupulina	Herb	Obl
Quercus pagodafolia	Canopy	Fac+	Bidens sp	Herb	
Arundinaria gigantea	Shrub	Facw	Parthenocissus quinquefolia	Vine	Fac
Liquidambar styraciflua	Shrub	Fac+	Vitis rotundifolia	Vine	Fac
Ligustrum sinense	Shrub	Fac			
Arisaema dracontium	Herb	Facw			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 93%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input checked="" type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>0-2</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	<p>Remarks:</p>

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Taft silt loam	Drainage Class:	Slow surface and internal drainage		
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes _____	No _____	
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		10YR 4/1	10YR 4/6	5%	Silty loam
4-9		10YR 5/1	10YR 4/5	30%	Sandy clay loam
9-12		10YR 6/1	-	-	Sandy clay with coarse fragments
12+		10YR 4/1	10YR 4/6	20%	Sandy clay
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol			<input type="checkbox"/> Concretions		
<input type="checkbox"/> Histic Epipedon			<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils		
<input type="checkbox"/> Sulfidic Odor			<input type="checkbox"/> Organic Streaking in Sandy Soils		
<input checked="" type="checkbox"/> Aquic Moisture Regime			<input type="checkbox"/> Listed on Local Hydric Soils List		
<input type="checkbox"/> Reducing Conditions			<input type="checkbox"/> Listed on National Hydric Soils List		
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors			<input type="checkbox"/> Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Series of 3 sloughs in floodplain of Island Creek (east bank). Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 0.44 acre.					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan	Date: 22 July 2003
Applicant/Owner: TVA	County: Limestone
Investigator: J. Groton, E. Keene	State: AL
	Quad: Jones Crossroads
	Watershed: Mud Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PFO1/PEM1/PSS1
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot ID: W14

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Fraxinus pennsylvanica	Canopy	Facw	Boehmeria cylindrica	Herb	Facw+
Quercus bicolor	Canopy	Facw+	Lonicera japonica	Herb	Fac-
Acer rubrum	Canopy	Fac	Sagittaria latifolia	Herb	Obl
Cephalanthus occidentalis	Shrub	Obl	Alisma subcordatum	Herb	Obl
Liquidambar styraciflua	Shrub	Fac+	Polygonum pensylvanicum	Herb	Facw
Salix nigra	Shrub	Obl	Aster sp.	Herb	
Rhynchospora corniculata	Herb	Obl	Bidens sp	Herb	
Carex lupulina	Herb	Obl	Parthenocissus quinquefolia	Vine	Fac
Saururus cernuus	Herb	Obl	Campsis radicans	Vine	Fac
Impatiens capensis	Herb	Facw			
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 90%					
Remarks:					

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>0-2</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	
<p>Remarks:</p>	

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Guthrie silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaquults	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		5YR 4/6	-	-	Silty clay loam
4-7		10YR 6/2	10YR 4/4	35%	Clay loam
7-14+		7YR 7/1	10YR 4/6	15%	Clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p><u> x </u> Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p><u> x </u> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____	
Hydric Soils Present?	Yes <u> x </u>	No _____	

Remarks: Large, primarily forested, wetland between Lucas Ferry Road and Settle Road. Emergent and scrub-shrub portions along north edge where new right-of-way abuts with existing right-of-way. Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 2.64 ac of which approximately 2.50 ac is forested wetland and 0.14 ac is emergent wetland. This wetland is part of a larger (greater than 50 acre) forested wetland that is indicated in National Wetland Inventory data.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan	Date: 22 July 2003
Applicant/Owner: TVA	County: Limestone
Investigator: J. Groton, E. Keene	State: AL
	Quad: Jones Crossroads
	Watershed: Mud Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Community ID: PFO1/PEM1
Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Plot ID: W15

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Quercus nigra	Canopy	Fac	Rhexia mariana	Herb	Facw+
Fraxinus pennsylvanica	Canopy/sapling	Facw	Impatiens capensis	Herb	Facw
Quercus phellos	Canopy	Facw+	Sphagnum sp.	Ground	Obl
Acer rubrum	Canopy	Fac	Cyperus ovularis	Herb	Fac
Liquidambar styraciflua	Sapling	Fac+	Dicanthelium scoparium	Herb	Facw
Cornus amomum	Shrub	Facw+	Alisma subcordatum	Herb	Obl
Lindera benzoin	Shrub	Facw	Saururus cernuus	Herb	Obl
Smilax rotundifolia	Vine	Fac	Boehmeria cylindrica	Herb	Facw+
Campsis radicans	Vine	Fac	Eupatorium perfoliatum	Herb	Facw+
Lonicera japonica	Vine	Fac-	Lysimachia lanceolata	Herb	Fac
Berchemia scandens	Vine	Facw	Leersia oryzoides	Herb	Obl

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 99%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input checked="" type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>0-2</u> (in.)</p> <p>Depth to Free Water in Pit: <u>0</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	
<p>Remarks:</p>	

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Melvin silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fluvaquents	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-7		7.5YR 3/4	-	-	Clay loam
7-14		10YR 4/1	-	-	Clay loam

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><input checked="" type="checkbox"/> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><input checked="" type="checkbox"/> Listed on Local Hydric Soils List</p> <p><input checked="" type="checkbox"/> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is this Sampling Point Within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____	
Hydric Soils Present?	Yes _____	No <input checked="" type="checkbox"/>	

Remarks: Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 1.68 ac, of which approximately 1.11 ac is forested wetland and 0.57 ac is emergent wetland.
 This wetland is part of a larger (greater than 50 acre) forested wetland that is indicated in the National Wetland Inventory data.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: Calpine-Morgan Applicant/Owner: TVA Investigator: J. Groton; E. Keene	Date: 22 July 2003 County: Limestone State: AL Quad: Jones Crossroads Watershed: Mud Creek, Tennessee River
Do normal circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential problem area? (If needed, explain on reverse) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Community ID: PFO1 Transect ID: Plot ID: W16

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
Acer rubrum	Canopy/Sapling	Fac	Chasmanthium sessiliflorum	Herb	Fac+
Quercus phellos	Canopy	Facw-			
Fraxinus pennsylvanica	Sapling	Facw			
Quercus bicolor	Canopy	Facw+			
Carpinus caroliniana	Canopy/Sapling	Fac			
Liquidambar styraciflua	Shrub	Fac+			
Boehmeria cylindrica	Herb	Facw+			
Impatiens capensis	Herb	Facw			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

<p>Recorded Data (Describe in Remarks):</p> <p><input type="checkbox"/> Stream, Lake, or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input checked="" type="checkbox"/> Inundated</p> <p><input checked="" type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input checked="" type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input checked="" type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>0-2</u> (in.)</p> <p>Depth to Free Water in Pit: <u>6</u> (in.)</p> <p>Depth to Saturated Soil: <u>0</u> (in.)</p>	
<p>Remarks:</p>	

Calpine's Morgan Energy Center - Provide Interconnection

SOILS

Map Unit Name (Series and Phase):	Robertsville silt loam	Drainage Class:	Poorly drained
Taxonomy (Subgroup):	Typic fragiaqualfs	Field Observations Confirm Mapped Type?	Yes _____ No _____

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast (%)	Texture, Concretions, Structure, etc.
0-4		10YR 5/4	-	-	Silty clay loam
4-7		10YR 5/2	10YR 4/6	10%	Silty clay
7+		10YR 5/2	10YR 5/6	25%	Silty clay

<p>Hydric Soil Indicators:</p> <p>_____ Histosol</p> <p>_____ Histic Epipedon</p> <p>_____ Sulfidic Odor</p> <p><u> x </u> Aquic Moisture Regime</p> <p>_____ Reducing Conditions</p> <p><u> x </u> Gleyed or Low-Chroma Colors</p>	<p>_____ Concretions</p> <p>_____ High Organic Content in Surface Layer in Sandy Soils</p> <p>_____ Organic Streaking in Sandy Soils</p> <p><u> x </u> Listed on Local Hydric Soils List</p> <p><u> x </u> Listed on National Hydric Soils List</p> <p>_____ Other (Explain in Remarks)</p>
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Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <u> x </u>	No _____	Is this Sampling Point Within a Wetland? Yes <u> x </u> No _____
Wetland Hydrology Present?	Yes <u> x </u>	No _____	
Hydric Soils Present?	Yes <u> x </u>	No _____	

Remarks: Estimated acreage in Calpine-Morgan transmission line section of the right-of-way is 0.88 acre.
 This wetland is part of a larger (greater than 50 acre) forested wetland that is indicated in the National Wetland Inventory data.