WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 02-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T149_09**

Investigator(s): SLI, EAC | Landform (hillside, terrace, hummocks etc.): Floodplain

Local relief (concave, convex, none): flat | Slope: 0.0 % / 0.0 ° | Elevation: 666

Subregion : Interior Alaska Mountains | Lat.: 63.387155652 | Long.: -148.485042572 | Datum: WGS84

Soil Map Unit Name: | **NWI classification:** Upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: spruce forest on Nenana River floodplain. mixed flock of boreal chickadees, ruby-crowned kinglet, wilsons warbler.

VEGETATION - Use scientific names of plants. List all species in the plot.

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea glauca	20	☑	FACU
2.	Populus tremuloides	3	☐	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	23		

	Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
	50% of Total Cover: 11.5	20% of Total Cover: 4.6		
1.	Rosa acicularis	0.1	☐	FACU
2.	Shepherdia canadensis	10	☐	FACU
3.	Picea glauca	1	☐	FACU
4.	Vaccinium uliginosum	20	☑	FAC
5.	Betula glandulosa	20	☑	FAC
6.	Salix barclayi	40	☑	FAC
7.	Arctostaphylos rubra	1	☐	FAC
8.	Vaccinium vitis-idaea	7	☐	FAC
9.	Alnus viridis	1	☐	FAC
10.		0	☐	
	Total Cover:	100		

	Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
	50% of Total Cover: 50.05	20% of Total Cover: 20.02		
1.	Arctagrostis latifolia	0.1	☐	FACW
2.	Cornus suecica	7	☐	FAC
3.	Galium boreale	1	☐	FACU
4.	Rubus arcticus ssp. acaulis	15	☑	FAC
5.	Moehringia lateriflora	0.1	☐	FACU
6.	Aconitum delphinifolium	0.1	☐	FAC
7.	Equisetum arvense	15	☑	FAC
8.	Festuca altaica	0.1	☐	FAC
9.	Polemonium acutiflorum	1	☐	FAC
10.	Chamerion angustifolium	0.1	☐	FACU
	Total Cover:	39.5		
	50% of Total Cover: 19.75	20% of Total Cover: 7.9		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0.1	x 2 =	0.200
FAC Species	127.2	x 3 =	381.6
FACU Species	35.3	x 4 =	141.2
UPL Species	0	x 5 =	0
Column Totals:	162.6 (A)		523 (B)

Prevalence Index = B/A = 3.216

Hydrophytic Vegetation Indicators:

☑ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0

☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation [1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Plot size (radius, or length x width) 10m

% Cover of Wetland Bryophytes (Where applicable)

% Bare Ground 30

Total Cover of Bryophytes 60

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: 1% unid herbs.

SOIL

Sampling Point: SW13_T149_09

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR	2.5/1	100						Fibric Organics	
4-9	7.5YR	4/1	80	2.5YR	4/6	20	C	M	Very Fine Sandy Loam	
9-17	10YR	5/1	100						Fine Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix [2] Location: PL=Pore Lining. RC=Root Channel. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol or Histel (A1)
- ☐ Histic Epipedon (A2)
- ☐ Hydrogen Sulfide (A4)
- ☐ Thick Dark Surface (A12)
- ☐ Alaska Gleyed (A13)
- ☐ Alaska Redox (A14)
- ☐ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils:[3]

- ☐ Alaska Color Change (TA4)[4]
- ☐ Alaska Alpine swales (TA5)
- ☐ Alaska Redox With 2.5Y Hue
- ☐ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ☐ Other (Explain in Remarks)

[3] One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present

[4] Give details of color change in Remarks

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:
Horizon 2 redox concentrations are both masses within matrix but also horizontal lenses presumably along cracks or depositional seams. no hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☑ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Other (Explain in Remarks)

Secondary Indicators (two or more are required)

- ☐ Water Stained Leaves (B9)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Salt Deposits (C5)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):
Water Table Present? Yes ○ No ◉ Depth (inches):
Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks: