WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 25-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T318_08**

Investigator(s): AFW | Landform (hillside, terrace, hummocks etc.): Toeslope

Local relief (concave, convex, none): hummocky | Slope: 5.2 % / 3.0 ° | Elevation:

Subregion : Cook Inlet Mountains | Lat.: | Long.: | 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:

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea glauca	25	☑	FACU
2.	Betula neoalaskana	20	☑	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	45		

Sapling/Shrub Stratum — 50% of Total Cover: 22.5 — 20% of Total Cover: 9

1.	Salix pulchra	7	☑	FACW
2.	Spiraea stevenii	7	☑	FACU
3.	Betula neoalaskana	5	☑	FACU
4.	Linnaea borealis	5	☐	FACU
5.	Vaccinium uliginosum	3	☐	FAC
6.	Salix pseudomonticola	3	☐	FAC
7.	Vaccinium vitis-idaea	2	☐	FAC
8.	Ribes triste	1	☐	FAC
9.	Dasiphora fruticosa	1	☐	FAC
10.		0	☐	FAC
	Total Cover:	34		

Herb Stratum — 50% of Total Cover: 17 — 20% of Total Cover: 6.8

1.	Cornus canadensis	10	☑	FACU
2.	Calamagrostis canadensis	7	☑	FAC
3.	Chamaenerion angustifolium	7	☑	FACU
4.	Dryopteris expansa	3	☐	FACU
5.	Gymnocarpium dryopteris	3	☐	FACU
6.	Aconitum delphiniifolium	2	☐	FAC
7.	Mertensia paniculata	1	☐	FACU
8.	Orthilia secunda	1	☐	FACU
9.		0	☐	
10.		0	☐	
	Total Cover:	34		

50% of Total Cover: 17 — 20% of Total Cover: 6.8

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	7	x 2 =	14
FAC Species	19	x 3 =	57
FACU Species	87	x 4 =	348
UPL Species	0	x 5 =	0
Column Totals:	113 (A)		419 (B)

Prevalence Index = B/A = 3.708

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): 0

% Bare Ground: 55

Total Cover of Bryophytes: 40

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

Remarks:

SOIL

Sampling Point: SW15_T318_08

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5		100					Hemic Organics	with buried ash layer
5-9	10YR 4/3	100					Silt Loam	
9-15		100						granite semiangular cobbles, no soil matrix

[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:
soil pit below 10 inches is interlocking stones with little to no fine mineral soil. 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:
heard water trickling underground, however we did not encounter water table in pit.