## WETLAND DETERMINATION DATA FORM - Alaska Region

| Applicant/Owner   Agaka Energy Authority   Agaka Energy Authority   Sampling Point   SW12_T33_02  | Project | /Site: Susitna-Watana Hydroelectric Project     |           | Borough/City:  | Matanusk                    | ka-Susitna Borough Sampling Date: 21-Jun-12      |  |  |  |  |  |  |  |  |  |
|---|---------|---|-----------|--|-----------------------------|--|--|--|--|--|--|--|--|--|--|
| Landform (hillside, terrace, hummocks etc.)   Mountainstope   | Applica | nt/Owner: Alaska Energy Authority               |           |  | Sampling Point: SW12_T33_02 |  |  |  |  |  |  |  |  |  |  |
| Local relief (concave, convex, none): flat:   Slope: % / 12.3 * Elevation: 938   Subregion: Interior Alaska Mountains   | nvestig |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Subregion   Interior Allaska Mountains  | -       |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Are climatichydrologic 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 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 ♥ │ Is the Sampled Area within a Wetland? Yes │ No ♥ ∩ No ♥ │ No ♥ │ No ♥ ∩ No ♥ │ No ♥ ∩  |         | ,   | l at ·    | <br>62 78008644  |                             |  |  |  |  |  |  |  |  |  |  |
| 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 (If no, explain in Remarks.)  SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.  Hydrophytic Vegetation Present? Yes No (If no, explain in Remarks.)  SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.  I sthe Sampled Area within a Wetland? Yes No (If no, explain in Remarks.)  Summary of No (If no, explain in Remarks.)  Are Vegetation Present? Yes (If no, explain in Remarks.)  SUMMARY OF FIRDINGS - Attach site map showing sampling point locations, transects, important features, etc.  I sthe Sampled Area within a Wetland? Yes No (If no, explain in Remarks.)  Is the Sampled Area within a Wetland? Yes No (If no, explain in Remarks.)  No (If no, explain any answers in Remarks.)  No (If no, explain passers? Yes (If no (Red explain any answers in Remarks.)  No (If no, explain any answers in Remarks.)  No (If no, explain any answers in Remarks.)  No (If no explain any answers in Remarks.) | _       |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Are Vegetation  |         |   |           | Vo   | n ( No (                    |  |  |  |  |  |  |  |  |  |  |
| Ave Vegetation  |         |   | •         |  |                             |  |  |  |  |  |  |  |  |  |  |
| SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.    Hydrophytic Vegetation Present?  |         |   | -         | •  |                             | tornal olloanistarioes present:                  |  |  |  |  |  |  |  |  |  |
| Hydrophytic Vegetation Present? Yes No ● Within a Wetland? Yes No ● Wetland Hydrology Present? Yes No ● Within a Wetland? Yes No ● Wetland Hydrology Present? Yes No ● Within a Wetland? Yes No ● Wetland Hydrology Present? Yes No ● Within a Wetland? Yes No ● Within a Wetland? Yes No ● Wetland Hydrology Present? Yes No ● Within a Wetland? Yes No ● No ● No ● Within a Wetland? Yes No ● No   | Ale v   | egetation . , Soil . , or Hydrology . r         | laturally | problematic?   | (if nee                     | eded, explain any answers in Remarks.)           |  |  |  |  |  |  |  |  |  |
| Hydric Soil Present? Wetland Hydrology Present? Yes No ●  Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, of FAC: 3 (A) Total Number of Dominant Species That Are OBL, FACW, of FAC: 42.9% (A/B) Total Factors No Multiply by:  Total Cover: 0  Sapling/Shrub Stratum  50% of Total Cover: 0 20% of Total Cover: 0  1. Empetrum nigrum  50% of Total Cover: 0 20% of Total Cover: 0  1. Empetrum ingrum  50% of Total Cover: 0 20% of Total Cover: 0  Yes Obminance Test worksheet: That are OBL, FACW, of FAC: 3 (A) Total Aurober of Dominant Species That Are OBL, FACW, of FAC: 42.9% (A/B)  Prevalence Index worksheet: Total % Cover of: Multiply by: OBL Species 5 x 2 = 10  FAC Species 29 x 3 = 87  FACU Species 5 x 2 = 10  FAC Species 29 x 3 = 87  FACU Species 20 x 1 = 0  FACU Species 20 x 1 = 0  FACU Species 20 x 1 = 0  FACU  | SUMN    | MARY OF FINDINGS - Attach site map show         | ving sa   | mpling poir  | t locations                 | s, transects, important features, etc.           |  |  |  |  |  |  |  |  |  |
| Within a Wetland?   Yes   No  |         | - Ic the Campled Area                           |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Wetland Hydrology Present?   Yes  |         | Hydric Soil Present? Yes ○ No ●                 |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Nominance Test worksheet:   Number of Dominant Species   That are OBL, FACW, or FAC:   3   (A)  |         | Wetland Hydrology Present? Yes ○ No ●           | l         | V  | vithin a W                  | /etland? res ∪ No ⊛                              |  |  |  |  |  |  |  |  |  |
| Tree Stratum         Absolute % Cover (Status)         Dominant Species (Status)         Indicator (Status)         Dominance Test worksheet:         Number of Dominant Species (That are OBL, FACW, or FAC:   | Rema    | rks: ericaceous/deciduous sub-alpine community. |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Tree Stratum  |         |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Tree Stratum  |         |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Tree Stratum         Absolute % Cover (Status)         Dominant Species (Status)         Indicator (Status)         Dominance Test worksheet:         Number of Dominant Species (That are OBL, FACW, or FAC:   | /EGE    | TATION - Use scientific names of plants. Lis    | st all so | ecies in the   | e plot.                     |  |  |  |  |  |  |  |  |  |  |
| Number of Dominant Species   Number of Dom   |         |   |           |  |                             | Dominance Test worksheet:                        |  |  |  |  |  |  |  |  |  |
| Total Number of Dominant Species Across All Strata:   | Tree    | e Stratum                                       |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Species Across All Strata:   7  | 1.      |   | 0         |  |                             |  |  |  |  |  |  |  |  |  |  |
| 3.   0  | 2.      |   | 0         |  |                             |  |  |  |  |  |  |  |  |  |  |
| Total Cover:  | 3.      |   | 0         |  |                             |  |  |  |  |  |  |  |  |  |  |
| Total Cover:   O   O   O   O   O   O   O   O   O  | 4.      |   | 0         |  |                             |  |  |  |  |  |  |  |  |  |  |
| Total Cover:   0   20% of Total Cover:   20   20% of Total Cover:   20   20% of Total Cover:   20% of Total C   | 5.      |   | 0         |  |                             | Prevalence Index worksheet:                      |  |  |  |  |  |  |  |  |  |
| 1. Empetrum nigrum 1. EmC Species 2.  |         | Total Cover:                                    | 0         | _  |                             |  |  |  |  |  |  |  |  |  |  |
| 2. Vaccinium uliginosum 7   | Sap     | ling/Shrub Stratum 50% of Total Cover:          | 0 20      | % of Total Cove  | er: <u>0</u>                | OBL Species 0 x 1 = 0                            |  |  |  |  |  |  |  |  |  |
| 2. Vaccinium uliginosum 7   | 1.      | Empetrum nigrum                                 | 15        | <b>✓</b>   | FAC                         | FACW Species 5 x 2 = 10                          |  |  |  |  |  |  |  |  |  |
| 3. Vaccinium vitis-idaea  4. Dryas ajanensis  10  ✓ UPL  5. Arctous alpinus  15  ✓ FACU  Rhododendron tomentosum  5  FACU  Rhododendron lapponicum  1  FACU  FACU |         | Vaccinium uliginosum                            | 7         |  | FAC                         | FAC Species <u>29</u> x 3 = <u>87</u>            |  |  |  |  |  |  |  |  |  |
| 4. Dryas ajanensis  10  | 3.      | Vaccinium vitia idada                           | 2         |  | FAC                         | FACU Species <u>26</u> x 4 = <u>104</u>          |  |  |  |  |  |  |  |  |  |
| 6. Rhododendron tomentosum 7. Rhododendron lapponicum 1   | 4.      | Dryge gignoneis                                 | 10        | ✓  | UPL                         | UPL Species <u>11</u> x 5 = <u>55</u>            |  |  |  |  |  |  |  |  |  |
| 6. Rhododendron tomentosum 7. Rhododendron lapponicum 1   | 5.      | Arctous alpinus                                 | 15        | ✓  | FACU                        | Column Totals: 71 (A) 256 (B)                    |  |  |  |  |  |  |  |  |  |
| 7. Rhododendron lapponicum       1       FAC         8. Loiseleuria procumbens       7       FACU         9. Salix arctica       2       FACU         10. Diapensia lapponica       1       UPL         Herb Stratum       50% of Total Cover: 32.5       20% of Total Cover: 13         1. Bistorta plumosa       1       ✓ FACU         2. Anthoxanthum monticola ssp. alpinum       1       ✓ UPL         3. Cornus suecica       1       ✓ FAC         4. Carex concinna       3       ✓ FAC         Plot size (radius, or length x width)       10m  | 6.      | Rhododendron tomentosum                         | 5         |  | FACW                        |  |  |  |  |  |  |  |  |  |  |
| 9. Salix arctica  10. Diapensia lapponica  1  | 7.      | Rhododendron lapponicum                         | _ 1       |  | FAC                         | Prevalence index = B/A = 3.606                   |  |  |  |  |  |  |  |  |  |
| 10. Diapensia lapponica  Total Cover:  65  Herb Stratum  1  | 8.      | Loiseleuria procumbens                          | 7         |  | FACU                        | Hydrophytic Vegetation Indicators:               |  |  |  |  |  |  |  |  |  |
| Total Cover: 65   | 9.      | Salix arctica                                   | _ 2       | _  | FACU                        | Dominance Test is > 50%                          |  |  |  |  |  |  |  |  |  |
| Herb Stratum  50% of Total Cover: 32.5 20% of Total Cover: 13  Remarks or on a separate sheet)  1. Bistorta plumosa  2. Anthoxanthum monticola ssp. alpinum  3. Cornus suecica  4. Carex concinna  50% of Total Cover: 32.5 20% of Total Cover: 13  Problematic Hydrophytic Vegetation 1 (Explain)  1   | 10.     |   |           | _  | UPL                         | Prevalence Index is ≤3.0                         |  |  |  |  |  |  |  |  |  |
| 1. Bistorta plumosa  1. ✓ FACU 2. Anthoxanthum monticola ssp. alpinum 3. Cornus suecica 4. Carex concinna  1. ✓ FACU 2. Problematic Hydrophytic Vegetation (Explain) 3. UPL 4. Carex concinna  1. ✓ FAC 5. FAC 7. FAC 8. FAC 8. Plot size (radius, or length x width) 10m   |         |   | or: 12    | Morphological Adaptations <sup>1</sup> (Provide supporting data in |                             |  |  |  |  |  |  |  |  |  |  |
| 2. Anthoxanthum monticola ssp. alpinum 1  |         | - Condition                                     |           |  |                             | •          |  |  |  |  |  |  |  |  |  |
| 3. Cornus suecica  1 ✓ FAC be present, unless disturbed or problematic.  4. Carex concinna  3 ✓ FAC Plot size (radius, or length x width) 10m   |         | ·   |           | _  |                             |  |  |  |  |  |  |  |  |  |  |
| 4. Carex concinna  3  FAC  Plot size (radius, or length x width)  10m   |         |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| Plot size (radius, or length x width) 10m   |         | 0   | 2         |  |                             | 2. F. 2. Sing amoss distances of problemation    |  |  |  |  |  |  |  |  |  |
| 5.  |         |   | _         | - 🖺  | I AC                        | Plot size (radius, or length x width) <u>10m</u> |  |  |  |  |  |  |  |  |  |
| % Cover of Wetland Bryophytes   |         |   |           | -  |                             |  |  |  |  |  |  |  |  |  |  |
| 6 (Where applicable) 7 0  |         |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| 8 Total Cover of Bryophytes   |         |   |           |  |                             |  |  |  |  |  |  |  |  |  |  |
| 9   |         |   |           |  |                             | Total Cover of Dryophytes                        |  |  |  |  |  |  |  |  |  |
| 10  |         |   | 0         |  |                             | Hydronhytic                                      |  |  |  |  |  |  |  |  |  |
| Total Cover: 6 Vegetation   |         |   | 6         | _  |                             | Vegetation                                       |  |  |  |  |  |  |  |  |  |
| 50% of Total Cover: 3 20% of Total Cover: 1.2 Present? Yes No •   |         | 50% of Total Cover:                             | 3 20      | % of Total Cove  | er: <u>1.2</u>              | Present? Yes ○ No •                              |  |  |  |  |  |  |  |  |  |
| Remarks: trace pedicularis capitata and anemone sp.   | Rem     | arks' trace nedicularis capitata and anomone on |           |  |                             |  |  |  |  |  |  |  |  |  |  |

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SOIL Sampling Point: SW12\_T33\_02

| JUIL  |   |              |               |  |              |                   |                    | Samping  | J Point: SW12_133_02               |  |  |  |
|---|---|--------------|---------------|--|--------------|-------------------|--------------------|--|------------------------------------|--|--|--|
| Profile Descripti   | on: (Describe to  | the depth n  | eeded to docu | iment the indicator or coi             | nfirm the ab | sence of indic    | ators)             |  |                                    |  |  |  |
| Depth Matrix Redox Features   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| (inches)  | Color (moist)   |              | <u>%</u>      | Color (moist)                          | <u>%</u>     | Type <sup>1</sup> | _Loc_ <sup>2</sup> | Texture  | Remarks                            |  |  |  |
| 0-2   |   |              | 100           |  |              |                   |                    | Fibric Organics  | _                                  |  |  |  |
| 2-5   | 2.5YR   | 5+/2         | 100           |  |              |                   |                    | Sandy Loam   |                                    |  |  |  |
| 5-9   | 10R   | 2.5/1        | 90            |  |              |                   |                    | Sandy Loam   | 10% semi-angular gravel            |  |  |  |
| 9-15  | 2.5YR   | 2.5/1        | 90            |  |              |                   |                    | Loamy Sand   | 10% semi-angular gravel            |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| -   | -   |              |               | -                                      | -            |                   |                    | -  |                                    |  |  |  |
| 1 <sub>Type:</sub> C-Cor  |   | -Depletion   | DM-Pedu       | ced Matrix <sup>2</sup> Location       | . DI –Dor    | e Lining PC       | `-Poot Cha         | unnal M-Matrix   |                                    |  |  |  |
|   |   | -Depletion   | . KM=Redu     |  |              | _                 |                    | IIIIei. M=Mauix  |                                    |  |  |  |
| Hydric Soil I   |   |              |               | Indicators for Pr                      |              | 4                 | DIIS:              | ] <b></b>  | . 57 5 11                          |  |  |  |
| l —   | Histel (A1)   |              |               | ☐ Alaska Color Ch<br>☐ Alaska Alpine s |              | -                 |                    | Alaska Gleyed Without H<br>Underlying Layer                                  | lue 5Y or Redder                   |  |  |  |
| Histic Epip   | ` '   |              |               | Alaska Redox V                         |              |                   |                    | Other (Explain in Remar  | ks)                                |  |  |  |
|   | Sulfide (A4)  | `            |               | ☐ Alaska Redux V                       | VIUI 2.51 I  | nue               |                    | Carer (Explain in Remai  |                                    |  |  |  |
| Alaska Gle  | Surface (A12)   | )            |               | <sup>3</sup> One indicator of          | hydrophy     | tic vegetatio     | n, one prin        | nary indicator of wetland l  | hydrology,                         |  |  |  |
| Alaska Gle  |   |              |               | and an appropriat                      | e landscap   | pe position i     | must be pre        | esent  |                                    |  |  |  |
|   | yed Pores (A1   | 5)           |               | 4 Give details of co                   | olor chang   | e in Remark       | s                  |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Restrictive Laye Type:  | er (ir present):  |              |               |  |              |                   |                    | Hydric Soil Present  | :? Yes ○ No •                      |  |  |  |
| Depth (inch   | nes).   |              |               |  |              |                   |                    | nyuric Son Present   | ir fes ○ No ⊚                      |  |  |  |
| , ,   | 103).   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Remarks:  |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| no hydric soil indicators   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| HYDROLO   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Wetland Hydi  |   |              |               |  |              |                   |                    |  | icators (two or more are required) |  |  |  |
| Primary Indica  |   | is sufficien | t)            |  |              |                   |                    |  | ined Leaves (B9)                   |  |  |  |
| Surface W   | . ,   |              |               | ☐ Inundation V                         |              | _                 |                    |  |                                    |  |  |  |
|   | High Water Table (A2)  Sparsely Vegetated Concave Surface (B8)                                      |              |               |  |              |                   |                    | Oxidized Knizospheres along Living Roots (C3)  Presence of Reduced Iron (C4) |                                    |  |  |  |
|   | □ Saturation (A3)     □ Marl Deposits (B15)     □ Water Marks (B1)     □ Hydrogen Sulfide Odor (C1) |              |               |  |              |                   |                    | Salt Deposits (C5)   |                                    |  |  |  |
|   | Sediment Deposits (B2)  Pry-Season Water Table (C2)   |              |               |  |              |                   |                    | Stunted or Stressed Plants (D1)  |                                    |  |  |  |
| Drift Depo  |   |              |               | Other (Explai                          |              |                   |                    | Geomorphic Position (D2)   |                                    |  |  |  |
|   | Algal Mat or Crust (B4)   |              |               |  |              |                   |                    |  | quitard (D3)                       |  |  |  |
|   | ☐ Iron Deposits (B5)  |              |               |  |              |                   |                    | Microtopographic Relief (D4)   |                                    |  |  |  |
| l — ·   | oil Cracks (B6)   |              |               |  |              |                   |                    |  | al Test (D5)                       |  |  |  |
| Field Observa   | ations:   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Surface Water   | Present?  | Yes 🤇        | ○ No •        | Depth (inche                           | s):          |                   |                    |  |                                    |  |  |  |
| Water Table P   | resent?   | Yes 🤇        | No ●          | Depth (inche                           | s):          |                   | Wetlar             | nd Hydrology Preser  | nt? Yes O No 💿                     |  |  |  |
| Saturation Pre  | esent?  | Yes C        | No •          |  | •            |                   |                    |  |                                    |  |  |  |
| (includes capil   | llary fringe)   | res C        | NO            | Depth (inche                           | s):          |                   |                    |  |                                    |  |  |  |
| Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Demodes:  |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Remarks:  |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| no wetland hyd  | Irology indicat   | ors          |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
|   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |
| Ī   |   |              |               |  |              |                   |                    |  |                                    |  |  |  |

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