

**EXHIBIT J****WETLANDS**

OAR 345-021-0010(1)(j)

**TABLE OF CONTENTS**

|  | <b>Page</b> |
|--|-------------|
| J.1 INTRODUCTION .....   | J-1         |
| J.1.1 Wetland Delineation.....   | J-1         |
| J.1.2 Survey Corridor .....  | J-1         |
| J.1.3 Previous Delineations.....   | J-2         |
| J.2 OVERVIEW OF LITERATURE REVIEW AND FIELD STUDY .....                                | J-2         |
| J.2.1 Literature Review.....   | J-2         |
| J.2.2 Field Study .....  | J-3         |
| J.3 DESCRIPTION OF WETLANDS AND OTHER WATERS.....                                      | J-4         |
| J.3.1 Wetlands.....  | J-4         |
| J.3.2 Other Waters.....  | J-6         |
| J.4 EFFECT ON WATERS OF THE STATE/UNITED STATES.....                                   | J-7         |
| J.5 POTENTIAL ADVERSE IMPACTS TO WETLANDS AND OTHER WATERS .....                       | J-9         |
| J.6 EVIDENCE THAT FILL AND REMOVAL PERMIT NEED NOT BE ISSUED.....                      | J-10        |
| J.7 EVIDENCE THAT FILL AND REMOVAL PERMIT CAN BE ISSUED.....                           | J-10        |
| J.8 MITIGATION AND MONITORING PROGRAM FOR IMPACTS TO WETLANDS AND<br>OTHER WATERS..... | J-11        |
| J.8.1 Proposed Mitigation Measures .....   | J-11        |
| J.8.1.1 Avoidance Prior to Construction.....   | J-11        |
| J.8.1.2 Avoidance During Construction .....  | J-11        |
| J.8.2 Proposed Best Management Practices .....   | J-12        |
| J.8.3 Proposed Environmental Training Measures .....                                   | J-12        |
| J.8.4 Proposed Site Certificate Condition .....  | J-12        |

**Tables**

|   |     |
|---|-----|
| J-1 Permanent and Temporary Impacts to Waters of the U.S. and State of Oregon ..... | J-8 |
|---|-----|

**Figures**

|  |
|--|
| J-1 Wetlands and Other Waters Index Map – 1.5-MW Turbine Layout (Maximum Turbine Layout)         |
| J-2 Wetlands and Other Waters; Stream Crossings – 1.5-MW Turbine Layout (Maximum Turbine Layout) |



## Attachments

- J-1 Montague Wind Power Facility Wetlands and Other Waters Delineation Report, Gilliam County, Oregon
- J-2 Montague Wind Power Facility Joint Permit Application [*To be submitted to the Oregon Department of Energy, the U.S. Army Corps of Engineers, and the Oregon Department of State Lands by the end of February 2010*]
- J-3 U.S. Army Corps of Engineers Jurisdictional Determination for the Pebble Springs Wind Power Facility
- J-4 Oregon Department of State Lands Jurisdictional Determination for the Pebble Springs Wind Power Facility
- J-5 Oregon Department of State Lands Jurisdictional Determination for the Leaning Juniper II Wind Power Facility



## J.1 INTRODUCTION

**OAR 345-021-0010(1)(j)** *Information based on literature and field study, as appropriate, about waters of the state or waters of the United States, including:*

Iberdrola Renewables, Inc. (Applicant) proposes to construct the Montague Wind Power Facility (Facility) in Gilliam County, Oregon, with generating capacity of up to 404 megawatts (MW). No more than 269 turbines will be located within the Facility site boundary, depending on the final turbine size and vendor (as further described in Exhibit B, Section B.1.3).

### J.1.1 Wetland Delineation

A wetland and other waters delineation, consisting of a literature review and field study, was conducted to identify potentially jurisdictional wetlands and other waters. The delineation was performed in accordance with the Oregon Removal-Fill Law and Section 404 of the Clean Water Act (CWA). The delineation report (*Montague Wind Power Facility, Gilliam County, Oregon; Wetland and Other Waters Delineation Report*; CH2M HILL, 2010) is included as Attachment J-1 to this document. The report will be submitted to the Oregon Department of State Lands (DSL) in January 2010 for review and approval, and to the U.S. Army Corps of Engineers (USACE) in January 2010 as an attachment to the Joint Permit Application (JPA) (see Attachment 2 to this Exhibit J document for the JPA).

### J.1.2 Survey Corridor

Delineation survey corridors were established around proposed temporary and permanent facilities and construction areas identified in a preliminary layout available at the time the survey began. Figure J-1 shows the survey corridor layered on top of the site boundary to indicate the proportion of site boundary that has already been surveyed. All of the proposed Facility components are located within the survey corridor, with the exception of two small portions of the Alternate 1 transmission line route as shown on Figure J-2a (labeled as “Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction”), a new turbine access road and 2.5-acre staging area as shown on Figure J-2d, and a small portion of the 34.5-kV collector line route as shown on Figure J-2i (which was mapped from existing information). Streams identified in these areas were mapped from existing information and are labeled as “offsite mapped streams.” These areas will be field verified and surveyed prior to construction. The Applicant proposes a site certificate condition to address those wetlands and other waters that have not yet been field-verified and any layout changes that may occur through micro-siting of facilities (see Section J.8.4 for proposed site certificate condition).

Section J.2.1 summarizes the literature review performed as part of the wetlands survey and Section J.2.2 summarizes the field study. Additional details are provided in the wetlands and other waters delineation report (Attachment J-1).



### **J.1.3 Previous Delineations**

Wetland and other waters delineations were previously conducted by CH2M HILL in portions of the Facility site boundary in 2007-2008 for the Pebble Springs Wind Power Facility (Pebble Springs) and in 2009 for the Leaning Juniper II Wind Power Facility amended site boundary (LJF; referred to as LJIB) (Figure J-1 shows the delineation areas for Pebble Springs and LJIB). Six wetlands that were delineated for Pebble Springs are located within the Montague survey corridor (Figure J-2a). USACE determined in 2009 that none of these wetlands are jurisdictional under the Clean Water Act (Attachment J-3). DSL determined in 2008 that four of the wetlands within the survey corridor are jurisdictional under the Removal-Fill Law (Attachment J-4). DSL has not made jurisdictional determinations for the remaining two wetlands. Wetland delineation results for these two wetlands have been incorporated into the Montague wetland and other waters delineation report (Attachment J-1).

Portions of two ephemeral streams delineated for LJIB are located outside the survey corridor but within the Facility site boundary (Figures J-2c, J-2f). DSL determined in 2009 that neither of the ephemeral streams is jurisdictional under the Removal-Fill Law (Attachment J-5).

## **J.2 OVERVIEW OF LITERATURE REVIEW AND FIELD STUDY**

### **J.2.1 Literature Review**

Prior to conducting the field study, the following information was reviewed:

- Addendum to Leaning Juniper II Wind Power Facility, Wetlands and Waters Delineation Report, Gilliam County, Oregon (CH2M HILL, 2009)
- Wetland Delineation Report, Pebble Springs Wind Power Project, Gilliam County, Oregon (CH2M HILL, 2007)
- Wetland Delineation Report, Pebble Springs Wind Power Project: 2008 Addendum, Gilliam County, Oregon (CH2M HILL, 2008)
- DSL concurrence letters dated September 29, 2009, for DSL file WD#09-0252 (Leaning Juniper IIB) and January 10, 2008, for DSL file WD#07-0430 (Pebble Springs)
- USACE jurisdictional determination dated May 29, 2009, for Corps file NWP-2007-925 (Pebble Springs)
- U.S. Geological Survey (USGS) 7.5' topographic maps (digital format)
- USGS 100K National Hydrography Dataset - digital water course data
- Pacific Northwest Hydrography Framework 24K Dataset - digital water course data



- National Wetlands Inventory (NWI) digital data
- SSURGO digital soils data
- Hydric Soils List for Gilliam County (NRCS, 2006)
- Aerial imagery (USDA, 2005)

More than 300 drainages were identified within the survey corridor during the review of existing information for field verification. No other potential wetlands or waters, other than those previously delineated by CH2M HILL for the Pebble Springs Wind Project, were identified from existing information. There were no mapped hydric soils in the delineation survey corridors and there were no NWI-mapped wetlands outside of the identified drainages. No springs were mapped on the USGS maps in the survey<sup>TM</sup> corridors.

## J.2.2 Field Study

Fieldwork was conducted on 18 days between October 12 and December 17, 2009. Each drainage identified from the review of existing information was field-verified to determine whether it contained stream channels, wetlands, or other waters.

Additionally, wetland biologists, in conjunction with cultural resource surveys, walked the entire survey corridor (see Figure J-1 for depiction of survey corridor) to identify isolated wetlands or other waters outside of drainages. USGS-mapped streams (regardless of whether they contained wetlands or other waters) and additional field-verified stream channels were assessed using the Oregon Streamflow Duration Assessment Method to determine if they had ephemeral, intermittent, or perennial flow regimes.

An additional survey corridor was added for an alternate transmission line route as the field study was being completed (Alternate 1 230-kV Transmission Line, Figure J-2a). A preliminary field inspection indicated that seasonal pool wetlands were present in two areas. These areas are marked as “Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction” on Figure J-2a. Prior to construction, the areas will be field-verified and delineated. Results will be provided to ODOE prior to construction. Poles for the transmission line will be located outside the wetland boundaries.

Following the field survey, a 2.5-acre staging area and a portion of a new turbine access road were located outside the survey corridor in tax lot 2600, section 32, T2N, R22E. The access road crosses Eightmile Canyon (stream S202) just downstream from a surveyed reach. The reach where the crossing is located was mapped from existing information and is identified as “Offsite Mapped Streams” on Figure J-2d. Stream characteristics were presumed to be similar to those observed in the stream reach immediately upstream that was field-verified. No evidence of potential wetlands or other waters other than stream S202 was found during the literature review. Prior to construction, the area will be field-verified and delineated.



### J.3 DESCRIPTION OF WETLANDS AND OTHER WATERS

**OAR 345-021-0010(1)(j)(A)** *A description of all areas within the site boundary that might be waters of the state or waters of the United States and a map showing the location of these features.*

Response: Twenty-two potentially jurisdictional wetlands and 26 streams were identified within the field survey corridors. Complete wetland and other waters descriptions, field data, and photographs are provided in the wetland and other waters delineation report in Attachment J-1.

#### J.3.1 Wetlands

Wetland W1 is a 0.26-acre isolated, depressional, palustrine emergent wetland located in a shallow depression in an irrigated hay field immediately east of Eightmile Road in township 1 north, range 22 east, section 8 (T1N, R22E, section 8) (Figure J-2g). The wetland had ponded water and saturated soils. Dominant vegetation was *Polygonum aviculare* (FACW). The wetland boundary was delineated at the edge of the depression and characterized by the limits of soil saturation and a transition from dominant wetland vegetation and bare ground to a predominance of *Festuca idahoensis* (FACU). The wetland's location in an irrigated field suggests the hydrology is augmented by or completely due to irrigation. According to local landowners, well water is the source of the irrigation water. No springs, seeps, or drainages were observed in the vicinity of the wetland.

Wetlands W2A through 2K comprise an approximately 2,000-foot-long series of 11 palustrine emergent, depressional wetlands that total 0.86 acre. They are located in detention basins within the banks of ephemeral stream S202 (Eightmile Canyon), located east of Eightmile Road in section 8, T1N, R22E (Figure J-2g). The detention basins were created by earthen berms constructed across the channel. The source of wetland hydrology appears to be irrigation runoff from the surrounding irrigated hayfields that are irrigated with well water. Most of the basins contained ponded water or saturated soils. Dominant wetland vegetation was *Polygonum aviculare* (FACW). The boundaries of these wetlands were delineated at the toe of the slope of each basin and characterized by a change from dominant wetland vegetation and bare ground to a predominance of *Taraxacum officinale* (FACU) and *Festuca idahoensis* (FACU). There was no evidence that the wetlands receive stream flow regularly. According to local landowners, flow in the channel occurs only every few years following large rain storms or rain on snow events. The stream channel upstream and downstream of the detention basins is dominated with upland vegetation and lacks consistent indicators of regular flow. No springs or seeps were observed in the vicinity of the wetland.

Wetland W3 is a 0.02-acre, isolated, palustrine emergent, depressional wetland located in a small depression approximately 500 feet south of Eightmile Canyon Road in T1N, R22E, section 16 (Figure J-2g). The isolated wetland is sparsely vegetated with *Distichlis spicata* (FACW). A salt crust and cracked soils were observed in portions of the wetland. The wetland boundary was delineated at the depression edge and characterized by a



change in vegetation from dominant wetland vegetation and bare soils to a predominance of *Bromus tectorum* (UPL).

Wetland W4 is a 1.86-acre, palustrine emergent, riverine wetland within the ordinary high water mark of stream S202 (Eightmile Canyon) for approximately one-half mile in T1N, R22E, sections 21 and 22 (Figure J-2g). Dominant vegetation includes *Typha latifolia* (OBL) and *Distichlis spicata* (FACW). The wetland had extensive areas of ponding and saturated soils. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). According to the landowner, wetland hydrology results from springs in the area that discharge year-round.

Wetland W5 is a 0.01-acre, palustrine emergent/scrub-shrub, riverine wetland confined within the ordinary high water mark of stream S202 (Eightmile Canyon) approximately one-half mile west of Mason Davidson Road in T1N, R22E, section 34 (Figure J-2i). Dominant vegetation is *Typha latifolia* (OBL) and *Phalaris arundinacea* (FACW). The wetland had areas of ponding and saturated soils. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). This wetland extends approximately 200 feet north of the survey corridor. No springs or seeps were observed within the vicinity of the wetland. However, the source of wetland hydrology is presumed to be groundwater discharge.

Wetlands W6a is a 0.02-acre, palustrine emergent, riverine wetland confined within the ordinary high water mark of stream S202 (Eightmile Canyon) approximately one-quarter mile southwest of Mason Davidson Road in T1S, R22E, section 2 (Figure J-2i). Dominant vegetation is *Phalaris arundinacea* (FACW). The wetland had a water table within 4 inches of the surface, drainage patterns, drift deposits and other indicators of wetland hydrology. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). No springs or seeps were observed within the vicinity of the wetland. However, the source of wetland hydrology is presumed to be groundwater discharge.

Pebble Springs Wetlands W1G, W1H, W1I, W1J are isolated, palustrine emergent, depressional wetlands ranging in size from less than 0.01 acre to 0.48 acre, located in small depressions in T3N, R21E, section 36 (Figure J-2a). They were previously delineated for Pebble Springs. DSL determined in 2008 that the wetlands are jurisdictional under the Removal-Fill Law (see Attachment J-4). USACE determined in 2009 that none of these wetlands was jurisdictional under the Clean Water Act (see Attachment J-3).

Pebble Springs Wetlands W22 and W23 are isolated, palustrine unconsolidated bottom, depressional wetlands totaling 0.05 acre located in small depressions in T2N, R22E, section 6 (Figure J-2a). The wetlands were delineated in 2008 for Pebble Springs. The wetlands were ponded with bare soils during the 2008 field study. Wetland boundaries were delineated at the depression edges and characterized by transitions from bare,



ponded, or saturated soils to dry soils dominated by *Bromus tectorum* (NOL) and *Chrysothamnus* sp. (NOL). The wetlands were field-verified again during the Montague field study and site conditions had not changed. USACE determined in 2009 that these wetlands were not jurisdictional under the Clean Water Act (see Attachment J-3).

### **J.3.2 Other Waters**

Twenty-six streams were mapped in the survey corridor. Eightmile Canyon (stream S202) is the largest, flowing from south to north along the eastern side of the site boundary (Figures J-2b, J-2d, J-2g, J-2i). Eightmile Canyon drains to Willow Creek, a Columbia River tributary. Eightmile Canyon is ephemeral except for the sections containing wetlands W2A through 2K, W4, W5, and W6A and W6B. The portion of the stream that contains wetlands W2A through 2K appears to have ponding that is artificially maintained through the creation of detention basins to collect irrigation runoff. The stream reach containing wetland W4 has perennial discharge from springs maintaining ponding and saturation in the wetland year-round. Further upstream, the reaches of Eightmile Canyon that contain wetlands W5 and W6A appear to also have perennial groundwater discharge. The channel in the ephemeral reaches of Eightmile Canyon is 15 to 36 feet wide, and characterized by defined banks and a gravel/cobble bed. There was no observed flow and little evidence of recent flow and most of the stream bed was vegetated with upland species such as sagebrush, rabbitbrush and cheatgrass. According to local landowners, flow in the channel occurs only every few years following large rainstorms or rain on snow events.

Stream S214b is an approximately 250-foot intermittent reach of stream S214 that had groundwater discharge (Figure J-2i). The other reaches of S214 are ephemeral. All other mapped streams were ephemeral. None of the ephemeral channels contained flow during the fieldwork. Channel characteristics of the ephemeral streams, other than Eightmile Canyon, were similar. Channels were 2 to 12 feet in width with poorly defined bed and banks and little to no evidence of recent flow. Channels were generally vegetated with upland species such as sagebrush, rabbitbrush, and cheatgrass.

Streams S006 and S007 are along the western edge of the site boundary and are tributaries to Rock Creek, a tributary to the John Day River (Figure J-2e). All of the other mapped streams are tributaries to Eightmile Canyon.

None of the stream reaches within the site boundary provides spawning, rearing, or migration corridors or food-producing areas for fish. There is no fish use in Eightmile Canyon or its tributaries. Eightmile Canyon drains to Willow Creek, which also has no fish use. Streams S006 and S007 are tributaries to Rock Creek. Rock Creek has resident redband trout and is used by summer steelhead for rearing and migration. Stream S006 has no fish use and the portions in the site boundary are over a mile upstream from Rock Creek. Review of aerial photographs suggests stream S006 may not have a continuous channel outside the survey corridor connecting to Rock Creek, but this was not field-verified. The channel of stream S007 becomes undefined more than a mile from Rock Creek, before it leaves the site boundary, and does not have a continuous channel connecting to Rock Creek.



#### J.4 EFFECT ON WATERS OF THE STATE/UNITED STATES

**OAR 345-021-0010(1)(j)(B)** *An analysis of whether construction or operation of the proposed facility would adversely affect any waters of the state, as defined under OAR 141-085-0010 [changed by DSL to 141-085-0510], or waters of the United States, as defined under Section 404 or the Clean Water Act.*

Response: Delineated wetlands and other waters were overlain with proposed facilities and areas of impact were identified (Figures J-2a through J-2i). There are no impacts to wetlands from the proposed facilities. Facility components will be microsituated around wetland boundaries to avoid any temporary or permanent impacts to these waters.

Proposed access roads and underground collector lines cross ephemeral stream channels at 29 locations. None of the ephemeral stream channels with proposed facilities crossings are potentially jurisdictional under the state Removal-Fill Law because ephemeral streams are not included in the definition of waters of the state as defined under OAR 141-085-0510(91). Even if the streams were considered intermittent, they would still not be jurisdictional under state law because only those intermittent streams that provide spawning, rearing, or food-producing areas for food and game fish are jurisdictional, and none of the streams meet these criteria (OAR-141-085-0510(43)). There are no fish populations using the ephemeral streams for spawning or rearing and they are not food-producing areas for downstream waters that do support fish because they are either too far upstream from fish-bearing waters or because they do not have a hydrological connection to fish-bearing waters. The portions of Eightmile Canyon and its tributaries within the site boundary are approximately 8 miles upstream from the Columbia River, the nearest fish-bearing waters, too far to be food-producing. Stream S007 is not a food-producing area for Rock Creek, because it does not have a continuous channel connecting it to Rock Creek. The wetland and other waters delineation report will be submitted to the DSL in January 2010 for review and concurrence with these jurisdictional determinations.

The ephemeral stream channels may be subject to regulation under the CWA if they are determined by USACE to have a significant nexus to traditional navigable waters. A significant nexus exists if the ephemeral streams have more than a speculative or insubstantial effect on the chemical, physical, or biological integrity of the traditional navigable water.

The proposed Facility includes 14 crossings of ephemeral streams for access roads and 15 crossings for underground collector lines. Crossing sites and in-channel impact areas and volumes are in Table J-1. Ten of the access road crossings will be for access roads on private land. The remaining four road crossings will be for improving existing County roads within the County right-of-way. The 15 underground collector line crossings will entail temporary impacts for trench excavation and backfill.

The proposed Facility will also include 13 overhead collector line and 5 overhead transmission line crossings of ephemeral streams. Support poles for these lines will be placed outside of stream channels and there will be no in-channel impacts. The proposed Alternate 1 transmission line route crosses two areas with potentially



jurisdictional seasonal pool wetlands that have not been delineated. These areas are marked as “Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction” on Figure J-2a. The wetlands will be delineated prior to construction and transmission line poles will be placed outside the wetland boundaries.

Table J-1. Permanent and Temporary Impacts to Waters of the U.S. and State of Oregon

| Stream ID                | Activity                             | Channel Length (ft) | Channel Width (ft) | Area (sf)   | Area (ac)     | Removal Depth (ft) | Removal Volume (cy) | Removal Material | Fill Depth (ft) | Fill Volume (cy) | Fill Material |
|--------------------------|--------------------------------------|---------------------|--------------------|-------------|---------------|--------------------|---------------------|------------------|-----------------|------------------|---------------|
| <b>Permanent Impacts</b> |                                      |                     |                    |             |               |                    |                     |                  |                 |                  |               |
| S003-Montague Lane       | Culvert crossing                     | 78                  | 8                  | 624         | 0.0143        | 1.5                | 17.48               | Gravel/silt      | 5.0             | 69.04            | Gravel/riprap |
| S005                     | Culvert crossing                     | 44                  | 2                  | 88          | 0.0020        | 1.5                | 2.22                | Gravel/silt      | 5.0             | 4.89             | Gravel/riprap |
| S007-west                | Culvert crossing                     | 60                  | 10                 | 600         | 0.0138        | 1.5                | 17.04               | Gravel/silt      | 5.0             | 33.33            | Gravel/riprap |
| S007-east                | Culvert crossing                     | 60                  | 12                 | 720         | 0.0165        | 1.5                | 20.44               | Gravel/silt      | 5.0             | 40.00            | Gravel/riprap |
| S008-Eightmile Road      | Culvert crossing                     | 70                  | 12                 | 840         | 0.0193        | 1.5                | 22.67               | Gravel/silt      | 5.0             | 46.67            | Gravel/riprap |
| S010                     | Culvert crossing                     | 60                  | 10                 | 600         | 0.0138        | 1.5                | 17.04               | Gravel/silt      | 5.0             | 33.33            | Gravel/riprap |
| S201                     | Culvert crossing                     | 52                  | 6                  | 312         | 0.0072        | 1.5                | 8.44                | Gravel/silt      | 5.0             | 17.33            | Gravel/riprap |
| S202-north               | Culvert crossing                     | 68                  | 19                 | 1292        | 0.0297        | 1.5                | 38.00               | Gravel/silt      | 5.0             | 71.78            | Gravel/riprap |
| S202-south               | Culvert crossing                     | 60                  | 15                 | 900         | 0.0207        | 1.5                | 25.56               | Gravel/silt      | 5.0             | 50.00            | Gravel/riprap |
| S204-Eightmile Road      | Culvert crossing                     | 70                  | 15                 | 1050        | 0.0241        | 1.5                | 28.33               | Gravel/silt      | 5.0             | 58.33            | Gravel/riprap |
| S204-Tree Lane           | Culvert crossing                     | 70                  | 10                 | 700         | 0.0161        | 1.5                | 18.89               | Gravel/silt      | 5.0             | 38.89            | Gravel/riprap |
| S206                     | Culvert crossing                     | 44                  | 2                  | 88          | 0.0020        | 1.5                | 2.22                | Gravel/silt      | 5.0             | 4.89             | Gravel/riprap |
| S208                     | Culvert crossing                     | 52                  | 5                  | 260         | 0.0060        | 1.5                | 7.04                | Gravel/silt      | 5.0             | 14.44            | Gravel/riprap |
| S214                     | Culvert crossing                     | 52                  | 6                  | 312         | 0.0072        | 1.5                | 8.44                | Gravel/silt      | 5.0             | 17.33            | Gravel/riprap |
| <b>Key Totals</b>        |                                      | <b>840</b>          |                    | <b>8386</b> | <b>0.1925</b> |                    | <b>233.81</b>       |                  |                 | <b>500.26</b>    |               |
| <b>Temporary Impacts</b> |                                      |                     |                    |             |               |                    |                     |                  |                 |                  |               |
| S005                     | Temporary road shoulder <sup>a</sup> | 6                   | 2                  | 12          |               | 1.5                | 0.22                | Gravel/silt      | 5.0             | 0.44             | Gravel        |
| S206                     | Temporary road shoulder <sup>a</sup> | 6                   | 2                  | 12          |               | 1.5                | 0.22                | Gravel/silt      | 5.0             | 0.44             | Gravel        |
| S002                     | Electrical crossing <sup>b</sup>     | 1                   | 5                  | 5           |               | 4.0                | 0.74                | Gravel/silt      | 4.0             | 0.74             | Gravel        |



Table J-1. Permanent and Temporary Impacts to Waters of the U.S. and State of Oregon

| Stream ID            | Activity            | Channel Length (ft) | Channel Width (ft) | Area (sf)   | Area (ac)     | Removal Depth (ft) | Removal Volume (cy) | Removal Material | Fill Depth (ft) | Fill Volume (cy) | Fill Material |
|----------------------|---------------------|---------------------|--------------------|-------------|---------------|--------------------|---------------------|------------------|-----------------|------------------|---------------|
| S004                 | Electrical crossing | 1                   | 10                 | 10          |               | 4.0                | 0.30                | Gravel/silt      | 4.0             | 0.30             | Gravel        |
| S007-west            | Electrical crossing | 1                   | 12                 | 12          |               | 4.0                | 1.48                | Gravel/silt      | 4.0             | 1.48             | Gravel        |
| S007-east            | Electrical crossing | 1                   | 10                 | 10          |               | 4.0                | 1.78                | Gravel/silt      | 4.0             | 1.78             | Gravel        |
| S010                 | Electrical crossing | 1                   | 10                 | 10          |               | 4.0                | 1.48                | Gravel/silt      | 4.0             | 1.48             | Gravel        |
| S201                 | Electrical crossing | 1                   | 6                  | 6           |               | 4.0                | 0.89                | Gravel/silt      | 4.0             | 0.89             | Gravel        |
| S202-1               | Electrical crossing | 1                   | 24                 | 24          |               | 4.0                | 3.56                | Gravel/silt      | 4.0             | 3.56             | Gravel        |
| S202-2               | Electrical crossing | 1                   | 24                 | 24          |               | 4.0                | 3.56                | Gravel/silt      | 4.0             | 3.56             | Gravel        |
| S202-3               | Electrical crossing | 1                   | 24                 | 24          |               | 4.0                | 2.81                | Gravel/silt      | 4.0             | 2.81             | Gravel        |
| S202-4               | Electrical crossing | 1                   | 15                 | 15          |               | 4.0                | 2.22                | Gravel/silt      | 4.0             | 2.22             | Gravel        |
| S202-5               | Electrical crossing | 1                   | 36                 | 36          |               | 4.0                | 5.33                | Gravel/silt      | 4.0             | 5.33             | Gravel        |
| S211                 | Electrical crossing | 1                   | 3                  | 3           |               | 4.0                | 0.44                | Gravel/silt      | 4.0             | 0.44             | Gravel        |
| S212                 | Electrical crossing | 1                   | 6                  | 6           |               | 4.0                | 0.89                | Gravel/silt      | 4.0             | 0.89             | Gravel        |
| S213                 | Electrical crossing | 1                   | 3                  | 3           |               | 4.0                | 0.44                | Gravel/silt      | 4.0             | 0.44             | Gravel        |
| S214                 | Electrical crossing | 1                   | 6                  | 6           |               | 4.0                | 0.89                | Gravel/silt      | 4.0             | 0.89             | Gravel        |
| <b>Key Totals</b>    |                     | <b>27</b>           |                    | <b>205</b>  | <b>0.0047</b> |                    | <b>27.25</b>        |                  |                 | <b>27.69</b>     |               |
| <b>Total Impacts</b> |                     |                     |                    |             |               |                    |                     |                  |                 |                  |               |
| <b>Totals</b>        |                     | <b>867</b>          |                    | <b>8591</b> | <b>0.1972</b> |                    | <b>261.06</b>       |                  |                 | <b>527.98</b>    |               |

<sup>a</sup> New access road crossings that will have less than 50 feet of permanent stream channel impacts will have temporary road shoulders added to provide a temporary 50-foot-wide stream crossing for equipment movement during construction.

<sup>b</sup> Electrical crossings refer to underground collector lines, not overhead.

## J.5 POTENTIAL ADVERSE IMPACTS TO WETLANDS AND OTHER WATERS

**OAR 345-021-0010(1)(j)(C)** *A description of the significance of potential adverse impacts to each feature identified in (A), including the nature and amount of material the applicant would remove from or place in the waters analyzed in (B).*

Response: No adverse impacts to wetlands will occur during Facility construction. All proposed facilities and construction areas will be located outside of delineated wetland boundaries.



Permanent impacts to ephemeral streams are anticipated from installation of access road culvert crossings of channels. Access road crossing impacts will include excavation of channel bed material, culvert placement, and rock and gravel fill placement over the culvert to create a road bed. Culverts will be adequately sized to pass anticipated storm flows. Riprap will be placed at the culvert ends for erosion control. Total in-channel excavation for access road crossings will be 233.81 cubic yards; total fill will be 500.26 cubic yards. A total of 840 feet of stream channel length will be impacted (0.1925 acre).

Temporary road shoulders will include in-channel excavation and fill similar to that for permanent roads. Temporary disturbance for underground collector line crossing impacts will include in-channel excavation of a 1-foot-wide by 4-foot-deep trench, placement of collector lines in the trench, and backfill with gravel to original surface contours. Total temporary in-channel excavation temporary road shoulders and underground collector lines will be 27.25 cubic yards; total fill will be 27.69 cubic yards. A total of 27 feet of stream channel length will be temporarily impacted (0.0047 acre).

Total in-channel impacts to ephemeral streams for permanent and temporary impacts will be 261.06 cubic yards of removal and 527.98 cubic yards of fill and will affect 867 feet of stream length (0.1972 acre).

Further details are provided in the wetland and other waters delineation report and Joint Permit Application (JPA) provided as Attachments J-1 and J-2.

## **J.6 EVIDENCE THAT FILL AND REMOVAL PERMIT NEED NOT BE ISSUED**

**OAR 345-021-0010(1)(j)(D)** *If the proposed facility would not need a removal-fill authorization as described under OAR 141-085-0018 [changed by DSL to 141-085-0540], an explanation of why no such authorization is required for the construction and operation of the proposed facility.*

Response: None of the ephemeral stream channels where access road and underground collector line crossings are proposed are potentially jurisdictional under the Removal-Fill Law because ephemeral streams are not included in the definition of waters of the state and the streams do not meet the criteria for jurisdiction as intermittent streams (see Section J.3).

## **J.7 EVIDENCE THAT FILL AND REMOVAL PERMIT CAN BE ISSUED**

**OAR 345-021-0010(1)(j)(E)** *If the proposed facility would need a removal-fill authorization, information to support a determination by the Council that the Oregon Department of State Lands should issue a removal-fill permit, including information in the form required by the Department of State Lands under OAR Chapter 141 Division 85.*

Response: No removal-fill authorization is required because none of the ephemeral stream channels where access road and underground collector line crossings are proposed are potentially jurisdictional under the Removal-Fill Law because ephemeral streams are not included in the definition of waters of the state and the streams do not meet the criteria for jurisdiction as intermittent streams (see Section J.3).



## **J.8 MITIGATION AND MONITORING PROGRAM FOR IMPACTS TO WETLANDS AND OTHER WATERS**

**OAR 345-021-0010(1)(j)(F)** *A description of proposed actions to mitigate adverse impacts to features identified in (A) and the applicant's proposed monitoring program, if any, for such impacts*

Response: No adverse impacts to wetlands or other waters of the state will occur. Permanent and temporary impacts to ephemeral streams that are potentially waters of the United States will occur from construction of access road crossings and underground collector line crossings.

Alternative layouts with greater potential for stream crossing and wetland impacts were initially considered; however, the currently proposed layout reflects consideration of stream crossings and existing wetlands and was specifically designed to avoid impacts to wetlands and waters to the maximum extent possible while still accomplishing Facility goals.

### **J.8.1 Proposed Mitigation Measures**

Where ephemeral stream impacts were unavoidable, the Facility was designed to minimize impacts. Efforts to avoid and minimize impacts that were incorporated into the initial design are summarized below.

#### **J.8.1.1 Avoidance Prior to Construction**

- Turbine locations, staging areas, and roads located near streams will be sited during micro-siting to minimize the number of stream crossings.
- Existing roads will be used to the maximum extent possible, except where use of such roads would affect wetlands.
- Collector lines will be buried in the temporarily disturbed road shoulder, where feasible, or placed overhead to avoid impacts to wetlands, canyons, or rugged terrain that would prevent the safe use of underground trenching technology.

#### **J.8.1.2 Avoidance During Construction**

The following protective measures will be implemented during construction of the Facility to avoid and minimize impacts.

- The Applicant will use an onsite manager and will require the construction contractors to designate a Field Contact Representative (FCR) to oversee their compliance with protective measures and coordination in accordance with the county and other regulatory agencies.
- Qualified biologists will provide environmental training and environmental monitoring during construction. The qualified biologists will visit the site before site development to flag sensitive resource areas, including wetlands. The qualified



biologist will periodically visit the site during construction to maintain flagging and oversee construction and permit compliance.

### **J.8.2 Proposed Best Management Practices**

The Applicant proposes Best Management Practices (BMPs) to ensure that impacts to the ephemeral streams are avoided to the maximum extent practicable. The BMPs are listed in the National Pollutant Discharge Elimination System (NPDES) 1200-C construction permit (see Attachment I-1 to Exhibit I for NPDES permit application).

### **J.8.3 Proposed Environmental Training Measures**

The following measures will be implemented during Facility construction to avoid impacts:

- The Applicant will develop an environmental awareness course for the construction contractors that will provide information on the sensitive wetland and stream resources present onsite, the exclusion flagging/signing, permit requirements, and other environmental issues.
- Construction site personnel will be required to attend the environmental awareness course in conjunction with hazard and safety training prior to working onsite. The Applicant's construction contractor will maintain a list of onsite construction personnel who have received the training.

### **J.8.4 Proposed Site Certificate Condition**

Additionally, the Applicant proposes that the following site certificate condition similar to Leaning Juniper II site certificate condition 72(e) be included in the site certificate for the Facility to address those wetlands and other waters that have not yet been field-verified and any layout changes that may occur through micrositing of facilities:

*Before beginning construction, the certificate holder shall determine whether any construction disturbance would occur in locations not previously investigated for potential jurisdictional waters as described in the Final Order on the Application. The certificate holder shall conduct a pre-construction investigation to determine whether any jurisdictional waters exist in those locations. The certificate holder shall submit a written report on this pre-construction investigation to the Department of Energy and to the Department of State Lands for approval before beginning construction and shall ensure that construction of the facility would have no impact on any jurisdictional water identified in the report.*



# Figures







**ATTACHMENT J-1**

**Wetlands and Other Waters Delineation Report**







**ATTACHMENT J-2**

**Joint Permit Application for the  
Montague Wind Power Facility**

*To be submitted to the Oregon Department of Energy, the U.S. Army Corps of Engineers, and  
the Oregon Department of State Lands by the end of February 2010*







**ATTACHMENT J-3**

**U.S. Army Corps of Engineers Jurisdictional  
Determination for the Pebble Springs  
Wind Power Facility**







**ATTACHMENT J-4**

**Oregon Department of State Lands Jurisdictional  
Determination for the Pebble Springs  
Wind Power Facility**



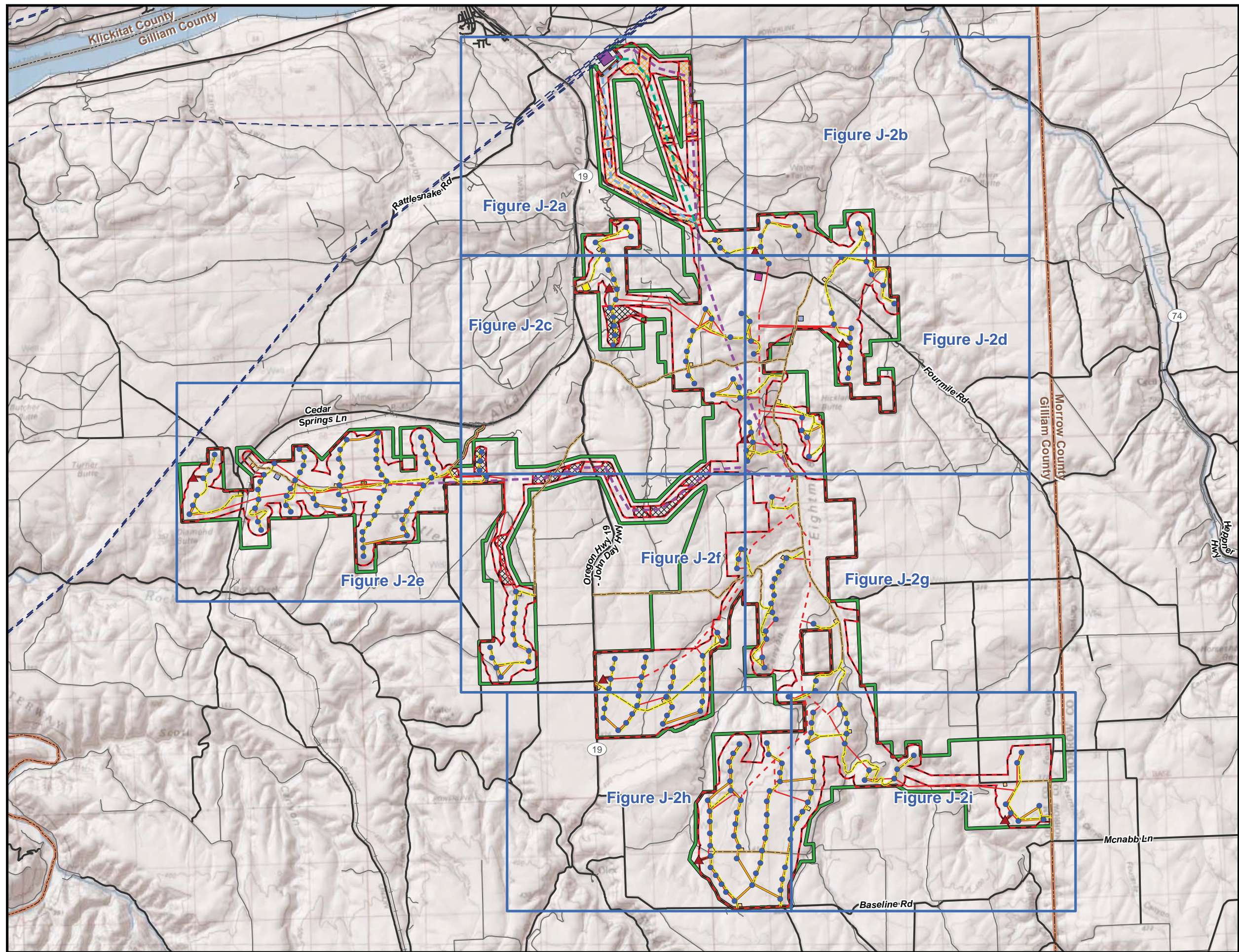




**ATTACHMENT J-5**

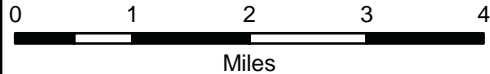
**Oregon Department of State Lands Jurisdictional  
Determination for the Leaning Juniper II  
Wind Power Facility**



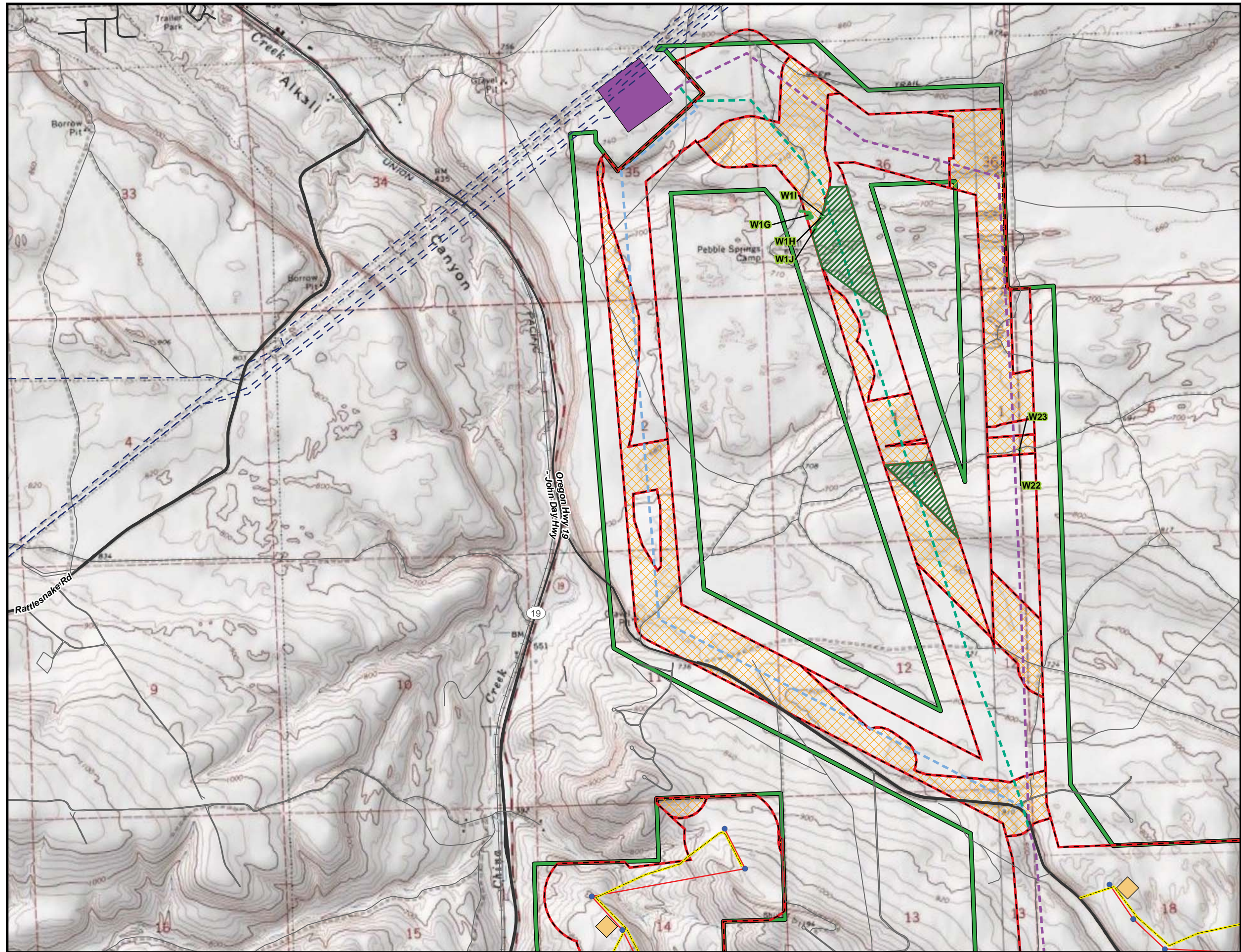


**Figure J-1**  
**Wetlands and Other Waters**  
**Index Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
*Montague Wind Power Facility*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities**
- Proposed Turbine
- ▲ Proposed Met Tower
- ↘ Proposed New Turbine Road
- ↘ Proposed New Met Tower Road
- ↘ Proposed Improved Road
- Proposed 5-Acre Facility Collector Substation
- Proposed 10-Acre O&M Facility and Staging Area
- Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
- Proposed Crane Path
- Proposed 2.5-Acre Staging Area
- Proposed 5-Acre Staging Area
- Proposed Underground 34.5-kV Line
- Proposed Overhead 34.5-kV Line
- Proposed 230-kV Transmission Line
- Alternate 1 230-kV Transmission Line
- Alternate 2 230-kV Transmission Line
- Existing Facilities**
- Existing Transmission Line
- ↘ Public Road
- ↘ Private Road
- ↘ Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary
- State Boundary

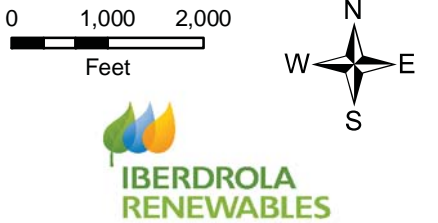




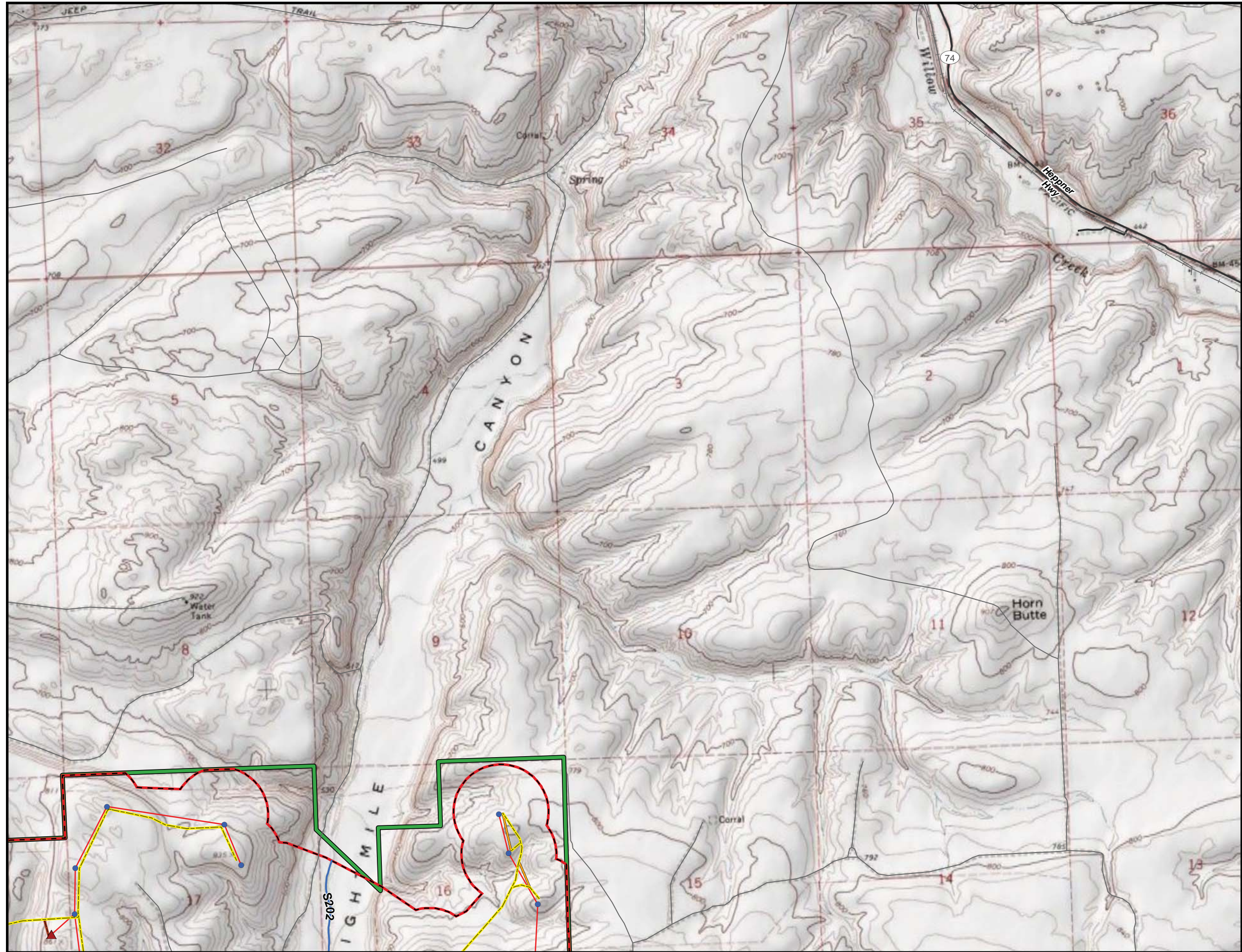


**Figure J-2a**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

- Stream Crossing
- Overhead Crossing - No Impact
- CH2M HILL Field-Verified Stream
- Offsite Mapped Stream
- Streams Previously Delineated for LJIB
- Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- CH2M Mapped Wetland
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - Proposed Met Tower
  - Proposed New Turbine Road
  - Proposed New Met Tower Road
  - Proposed Improved Road
  - Proposed 5-Acre Facility Collector Substation
  - Proposed 10-Acre O&M Facility and Staging Area
  - Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - Proposed Crane Path
  - Proposed 2.5-Acre Staging Area
  - Proposed 5-Acre Staging Area
  - Proposed Underground 34.5-kV Line
  - Proposed Overhead 34.5-kV Line
  - Proposed 230-kV Transmission Line
  - Alternate 1 230-kV Transmission Line
  - Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - Existing Transmission Line
  - Public Road
  - Private Road
  - Major Railroad Line
  - BPA Slatt Interconnection Substation

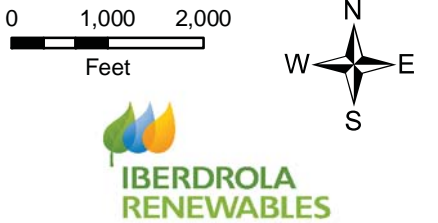




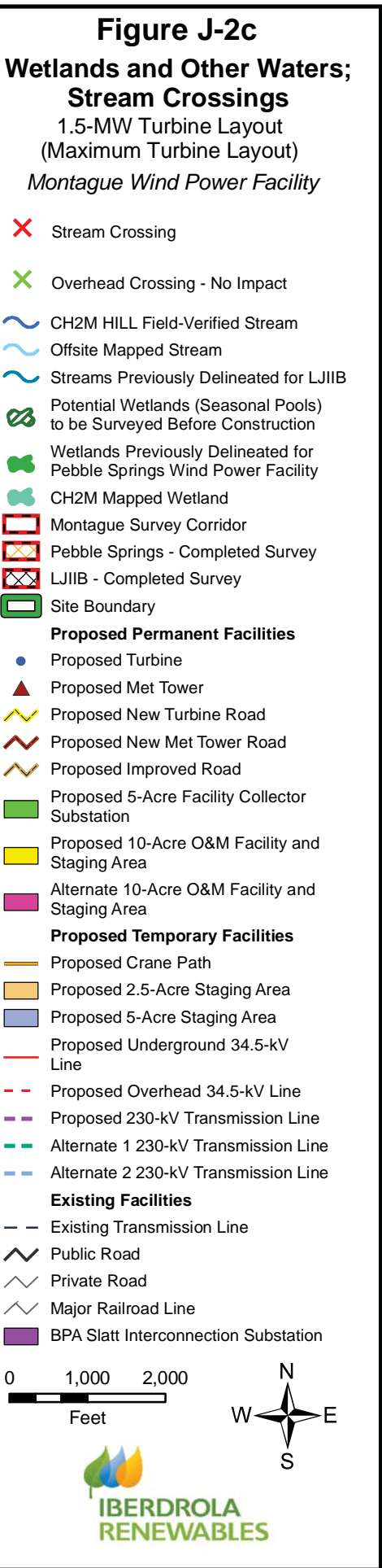
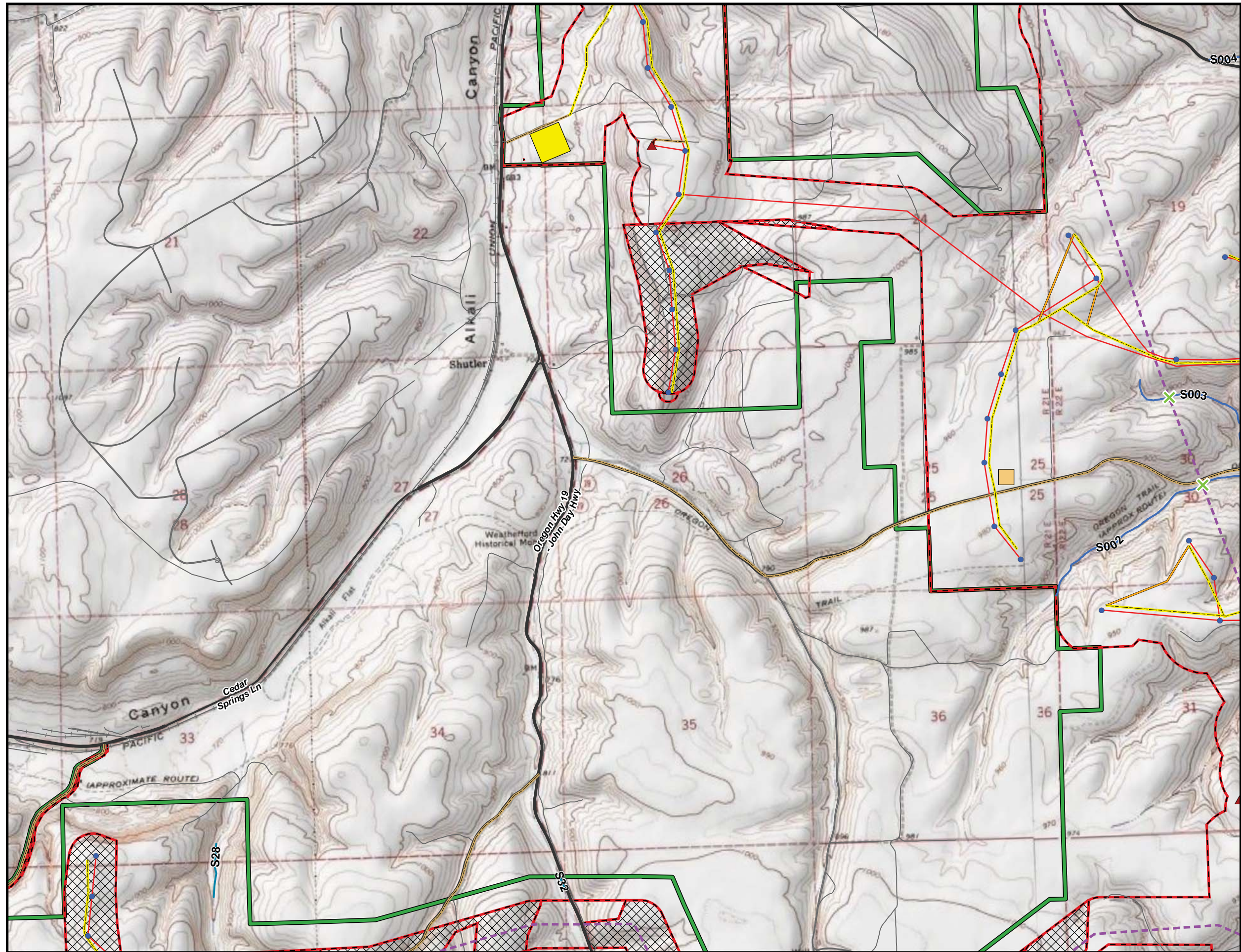


**Figure J-2b**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

- ✕ Stream Crossing
- ✕ Overhead Crossing - No Impact
- ~ CH2M HILL Field-Verified Stream
- ~ Offsite Mapped Stream
- ~ Streams Previously Delineated for LJIB
- ~ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ~ Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- ~ CH2M Mapped Wetland
- ~ Montague Survey Corridor
- ~ Pebble Springs - Completed Survey
- ~ LJIB - Completed Survey
- ~ Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - ▲ Proposed Met Tower
  - ~ Proposed New Turbine Road
  - ~ Proposed New Met Tower Road
  - ~ Proposed Improved Road
  - ~ Proposed 5-Acre Facility Collector Substation
  - ~ Proposed 10-Acre O&M Facility and Staging Area
  - ~ Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - ~ Proposed Crane Path
  - ~ Proposed 2.5-Acre Staging Area
  - ~ Proposed 5-Acre Staging Area
  - ~ Proposed Underground 34.5-kV Line
  - ~ Proposed Overhead 34.5-kV Line
  - ~ Proposed 230-kV Transmission Line
  - ~ Alternate 1 230-kV Transmission Line
  - ~ Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - ~ Existing Transmission Line
  - ~ Public Road
  - ~ Private Road
  - ~ Major Railroad Line
  - ~ BPA Slatt Interconnection Substation



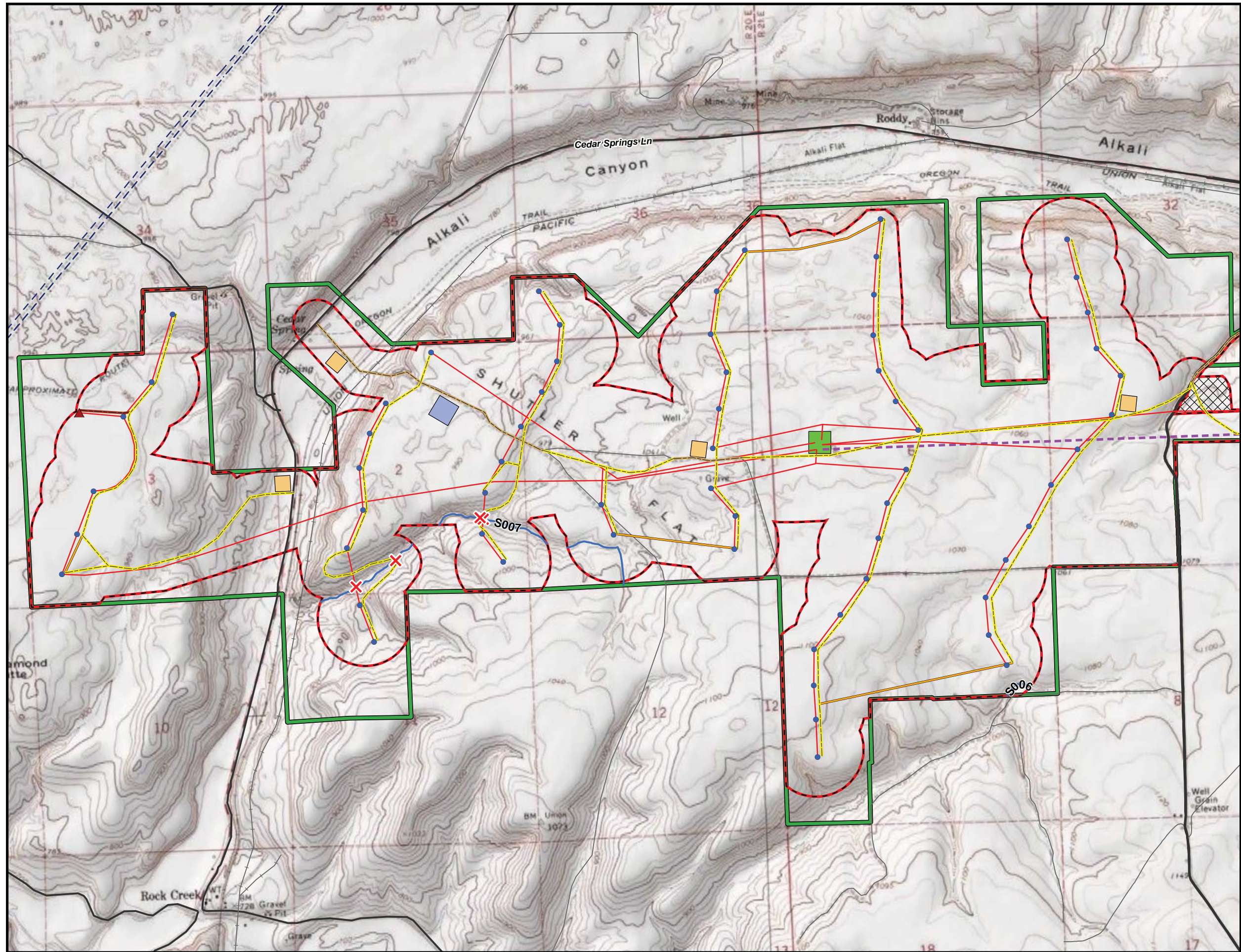






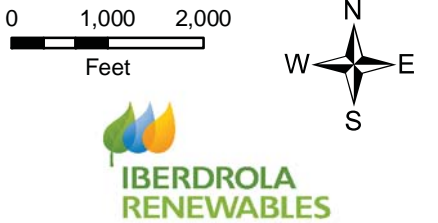




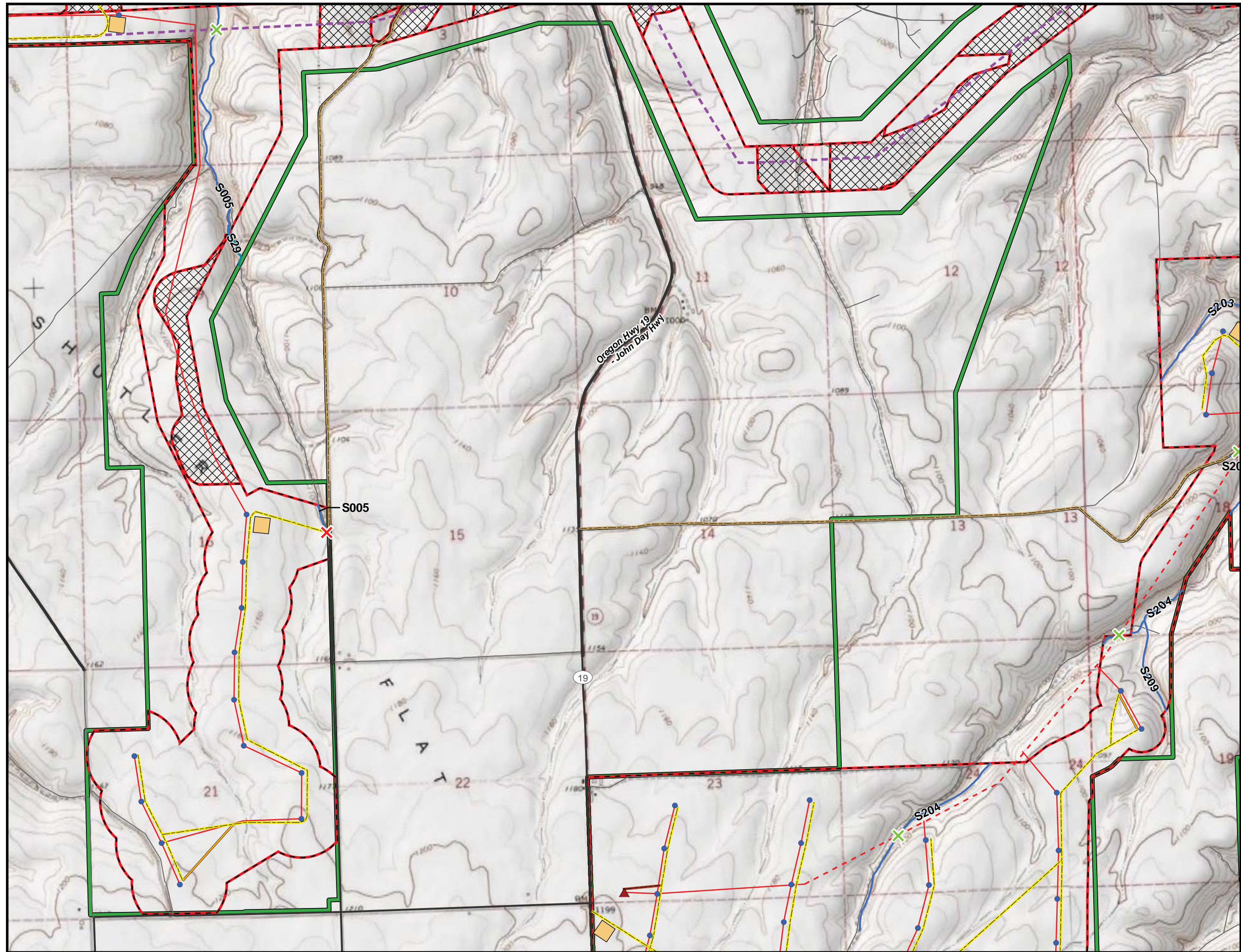


**Figure J-2e**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

- ✕ Stream Crossing
- ✕ Overhead Crossing - No Impact
- ~ CH2M HILL Field-Verified Stream
- ~ Offsite Mapped Stream
- ~ Streams Previously Delineated for LJIB
- ~ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ~ Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- ~ CH2M Mapped Wetland
- ~ Montague Survey Corridor
- ~ Pebble Springs - Completed Survey
- ~ LJIB - Completed Survey
- ~ Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - ▲ Proposed Met Tower
  - ~ Proposed New Turbine Road
  - ~ Proposed New Met Tower Road
  - ~ Proposed Improved Road
  - ~ Proposed 5-Acre Facility Collector Substation
  - ~ Proposed 10-Acre O&M Facility and Staging Area
  - ~ Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - ~ Proposed Crane Path
  - ~ Proposed 2.5-Acre Staging Area
  - ~ Proposed 5-Acre Staging Area
  - ~ Proposed Underground 34.5-kV Line
  - ~ Proposed Overhead 34.5-kV Line
  - ~ Proposed 230-kV Transmission Line
  - ~ Alternate 1 230-kV Transmission Line
  - ~ Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - ~ Existing Transmission Line
  - ~ Public Road
  - ~ Private Road
  - ~ Major Railroad Line
  - ~ BPA Slatt Interconnection Substation

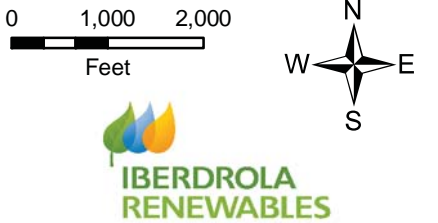




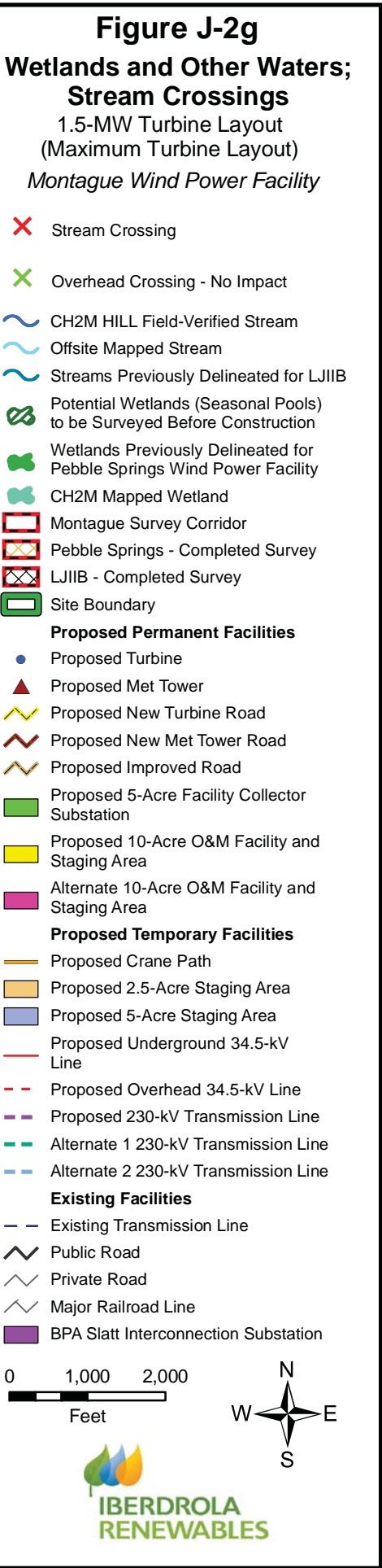
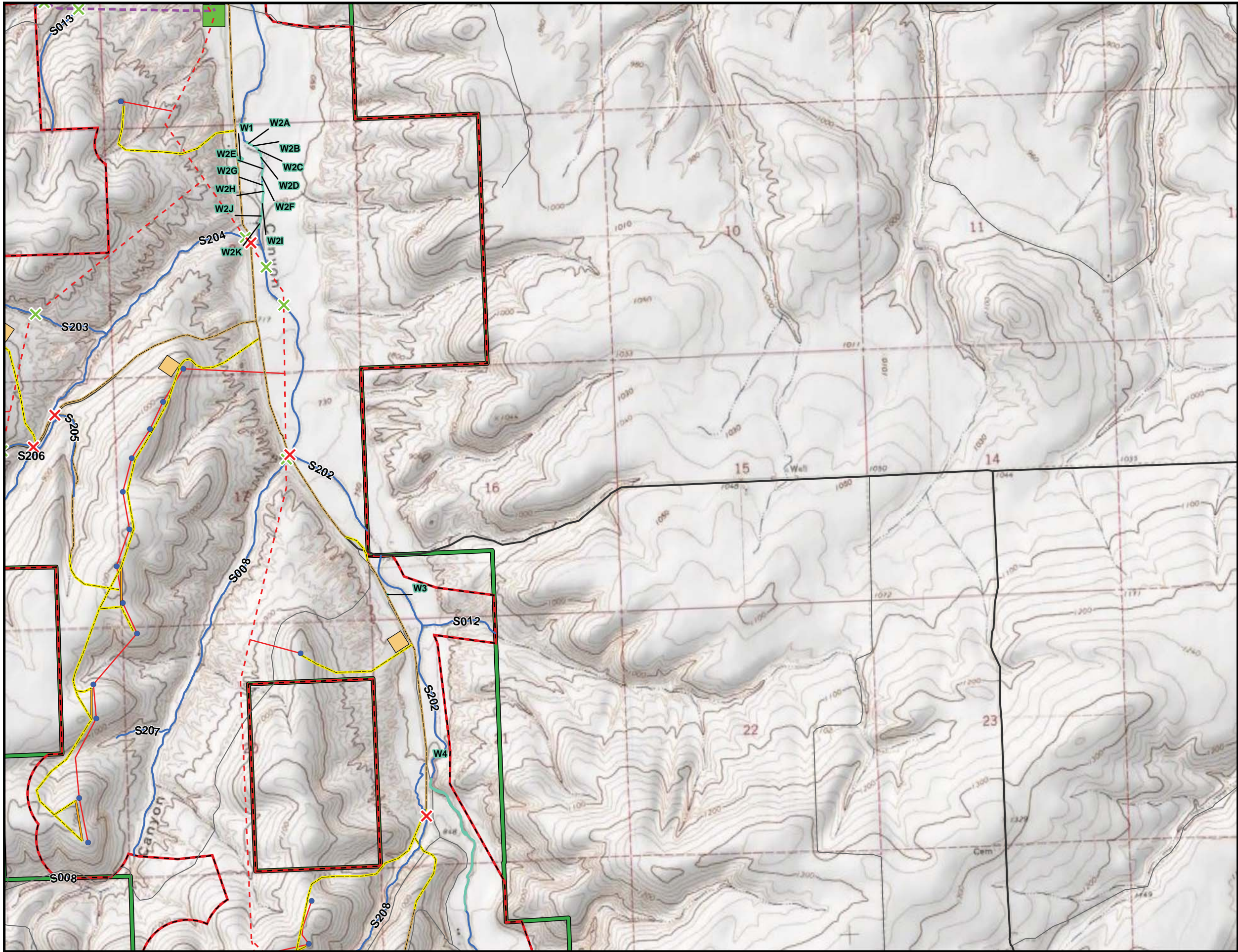


**Figure J-2f**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

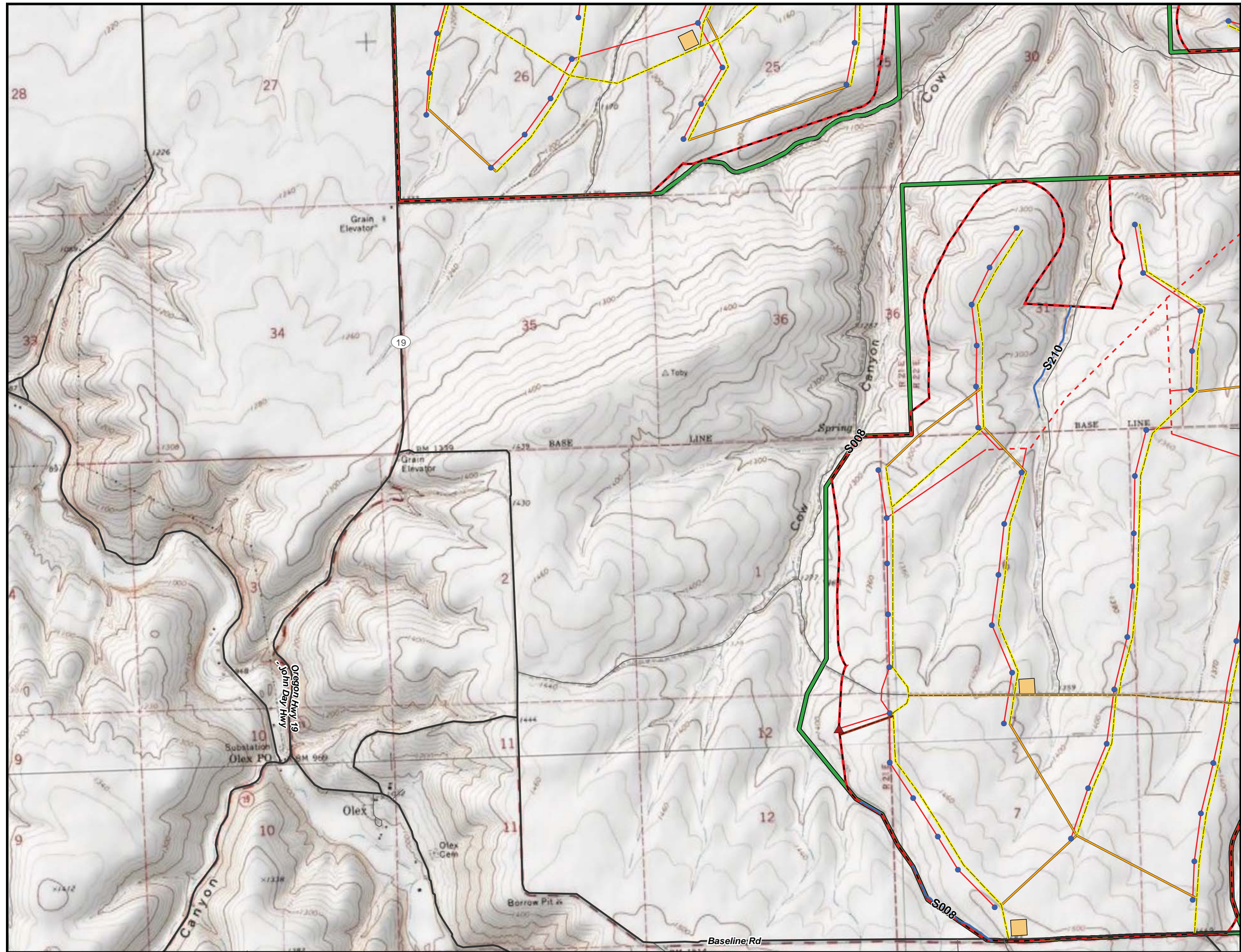
- ✕ Stream Crossing
- ✕ Overhead Crossing - No Impact
- ~ CH2M HILL Field-Verified Stream
- ~ Offsite Mapped Stream
- ~ Streams Previously Delineated for LJIB
- ~ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ~ Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- ~ CH2M Mapped Wetland
- ~ Montague Survey Corridor
- ~ Pebble Springs - Completed Survey
- ~ LJIB - Completed Survey
- ~ Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - ▲ Proposed Met Tower
  - ~ Proposed New Turbine Road
  - ~ Proposed New Met Tower Road
  - ~ Proposed Improved Road
  - ~ Proposed 5-Acre Facility Collector Substation
  - ~ Proposed 10-Acre O&M Facility and Staging Area
  - ~ Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - ~ Proposed Crane Path
  - ~ Proposed 2.5-Acre Staging Area
  - ~ Proposed 5-Acre Staging Area
  - ~ Proposed Underground 34.5-kV Line
  - ~ Proposed Overhead 34.5-kV Line
  - ~ Proposed 230-kV Transmission Line
  - ~ Alternate 1 230-kV Transmission Line
  - ~ Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - ~ Existing Transmission Line
  - ~ Public Road
  - ~ Private Road
  - ~ Major Railroad Line
  - ~ BPA Slatt Interconnection Substation





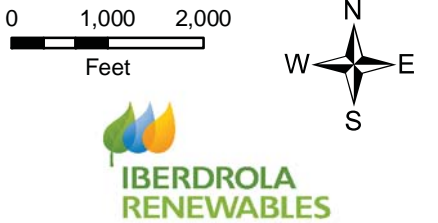




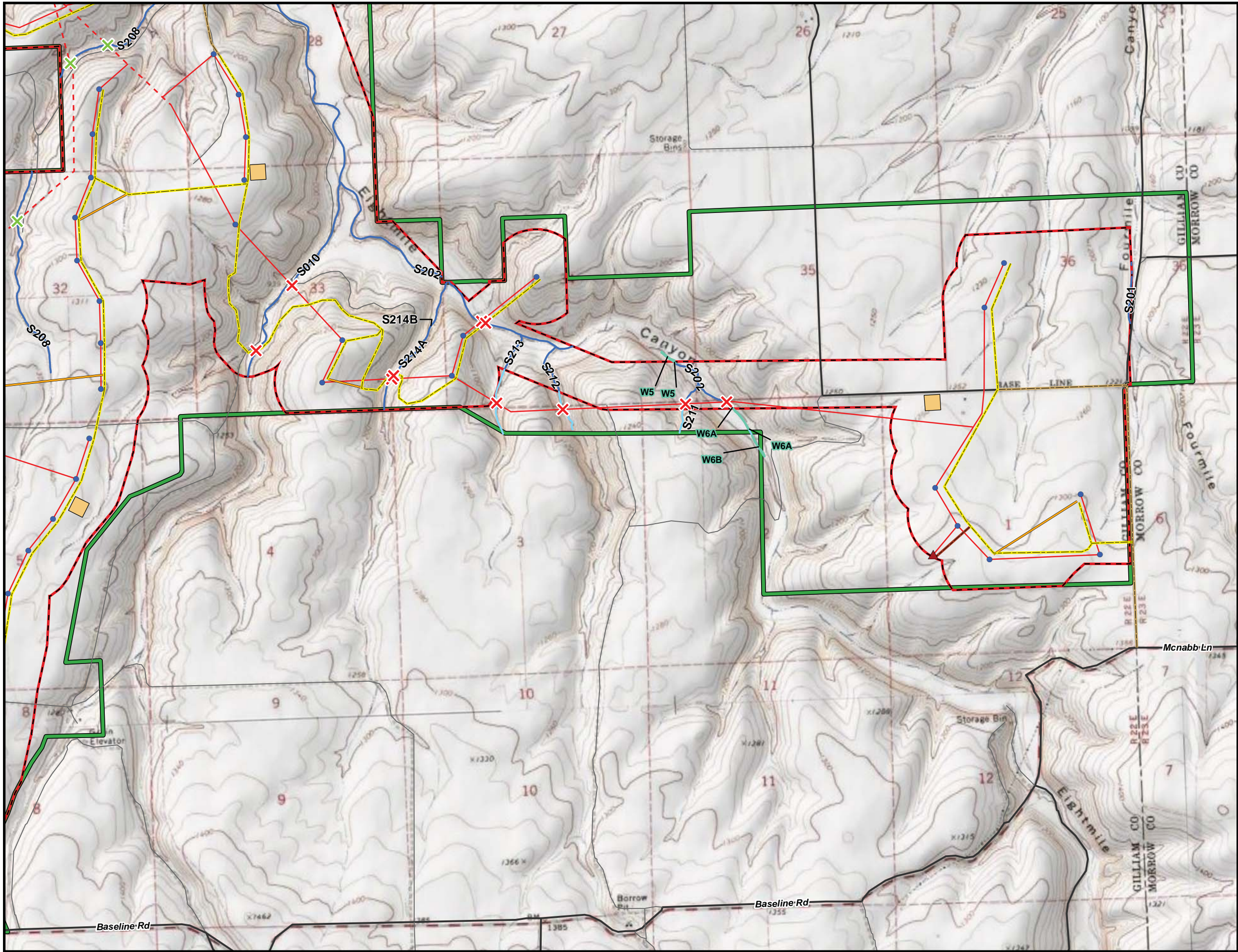


**Figure J-2h**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

- ✕ Stream Crossing
- ✕ Overhead Crossing - No Impact
- ~ CH2M HILL Field-Verified Stream
- ~ Offsite Mapped Stream
- ~ Streams Previously Delineated for LJIB
- ⊗ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ⊗ Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- ⊗ CH2M Mapped Wetland
- ▭ Montague Survey Corridor
- ▭ Pebble Springs - Completed Survey
- ▭ LJIB - Completed Survey
- ▭ Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - ▲ Proposed Met Tower
  - ~ Proposed New Turbine Road
  - ~ Proposed New Met Tower Road
  - ~ Proposed Improved Road
  - ▭ Proposed 5-Acre Facility Collector Substation
  - ▭ Proposed 10-Acre O&M Facility and Staging Area
  - ▭ Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - ~ Proposed Crane Path
  - ▭ Proposed 2.5-Acre Staging Area
  - ▭ Proposed 5-Acre Staging Area
  - ~ Proposed Underground 34.5-kV Line
  - Proposed Overhead 34.5-kV Line
  - Proposed 230-kV Transmission Line
  - Alternate 1 230-kV Transmission Line
  - Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - Existing Transmission Line
  - ~ Public Road
  - ~ Private Road
  - ~ Major Railroad Line
  - ▭ BPA Slatt Interconnection Substation







**Figure J-2i**  
**Wetlands and Other Waters;**  
**Stream Crossings**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*

✕ Stream Crossing

✕ Overhead Crossing - No Impact

CH2M HILL Field-Verified Stream

Offsite Mapped Stream

Streams Previously Delineated for LJIB

Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction

Wetlands Previously Delineated for Pebble Springs Wind Power Facility

CH2M Mapped Wetland

Montague Survey Corridor

Pebble Springs - Completed Survey

LJIB - Completed Survey

Site Boundary

**Proposed Permanent Facilities**

Proposed Turbine

Proposed Met Tower

Proposed New Turbine Road

Proposed New Met Tower Road

Proposed Improved Road

Proposed 5-Acre Facility Collector Substation

Proposed 10-Acre O&M Facility and Staging Area

Alternate 10-Acre O&M Facility and Staging Area

**Proposed Temporary Facilities**

Proposed Crane Path

Proposed 2.5-Acre Staging Area

Proposed 5-Acre Staging Area

Proposed Underground 34.5-kV Line

Proposed Overhead 34.5-kV Line

Proposed 230-kV Transmission Line

Alternate 1 230-kV Transmission Line

Alternate 2 230-kV Transmission Line

**Existing Facilities**

Existing Transmission Line

Public Road

Private Road

Major Railroad Line

BPA Slatt Interconnection Substation

01,0002,000

Feet

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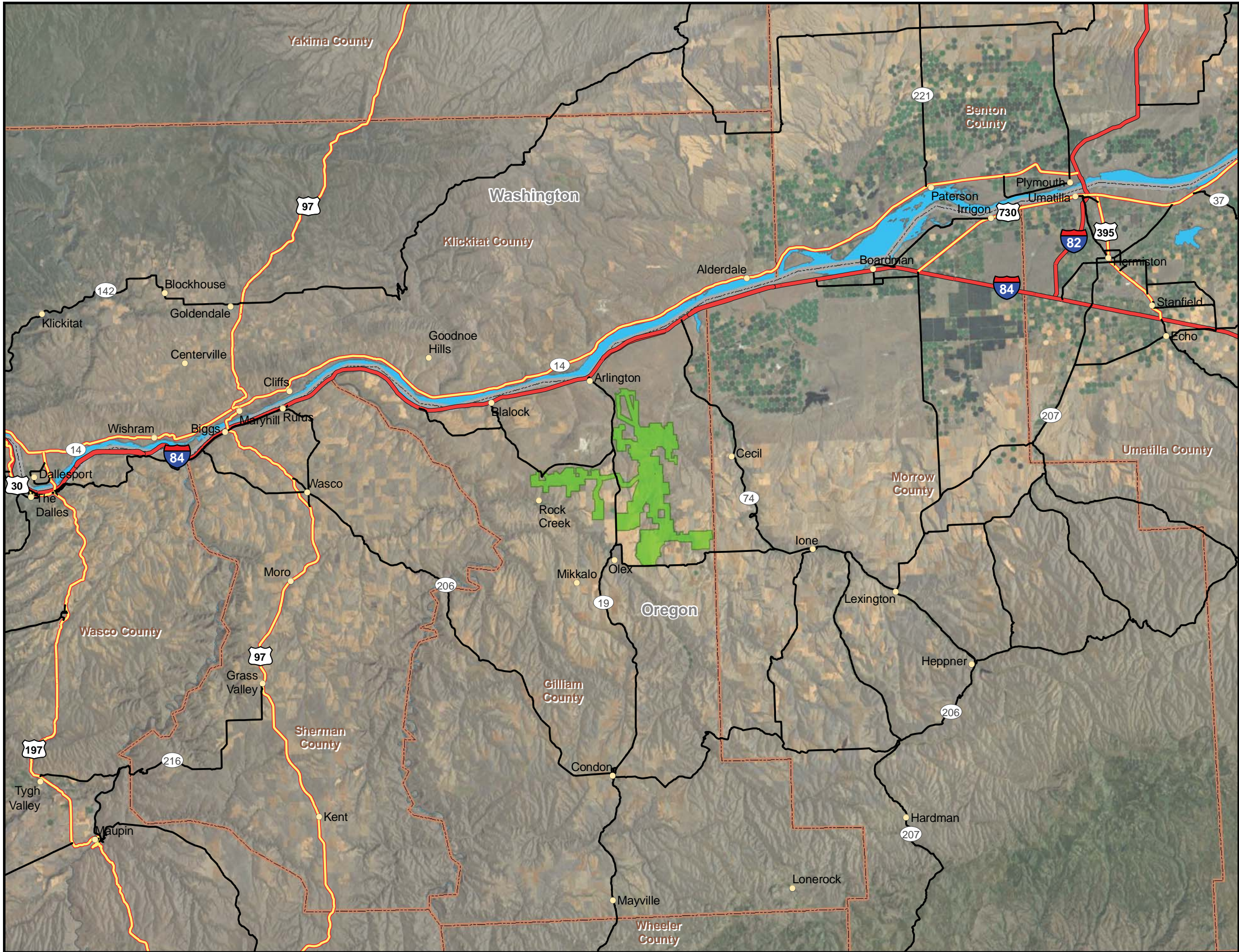
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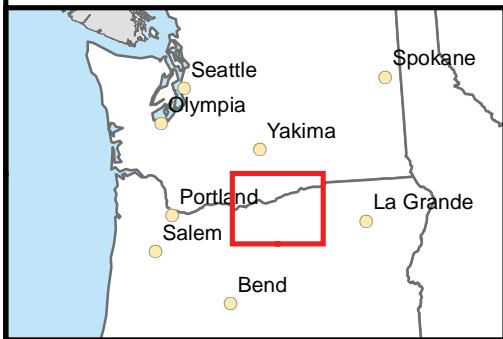


**Figure 1**  
**Location Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

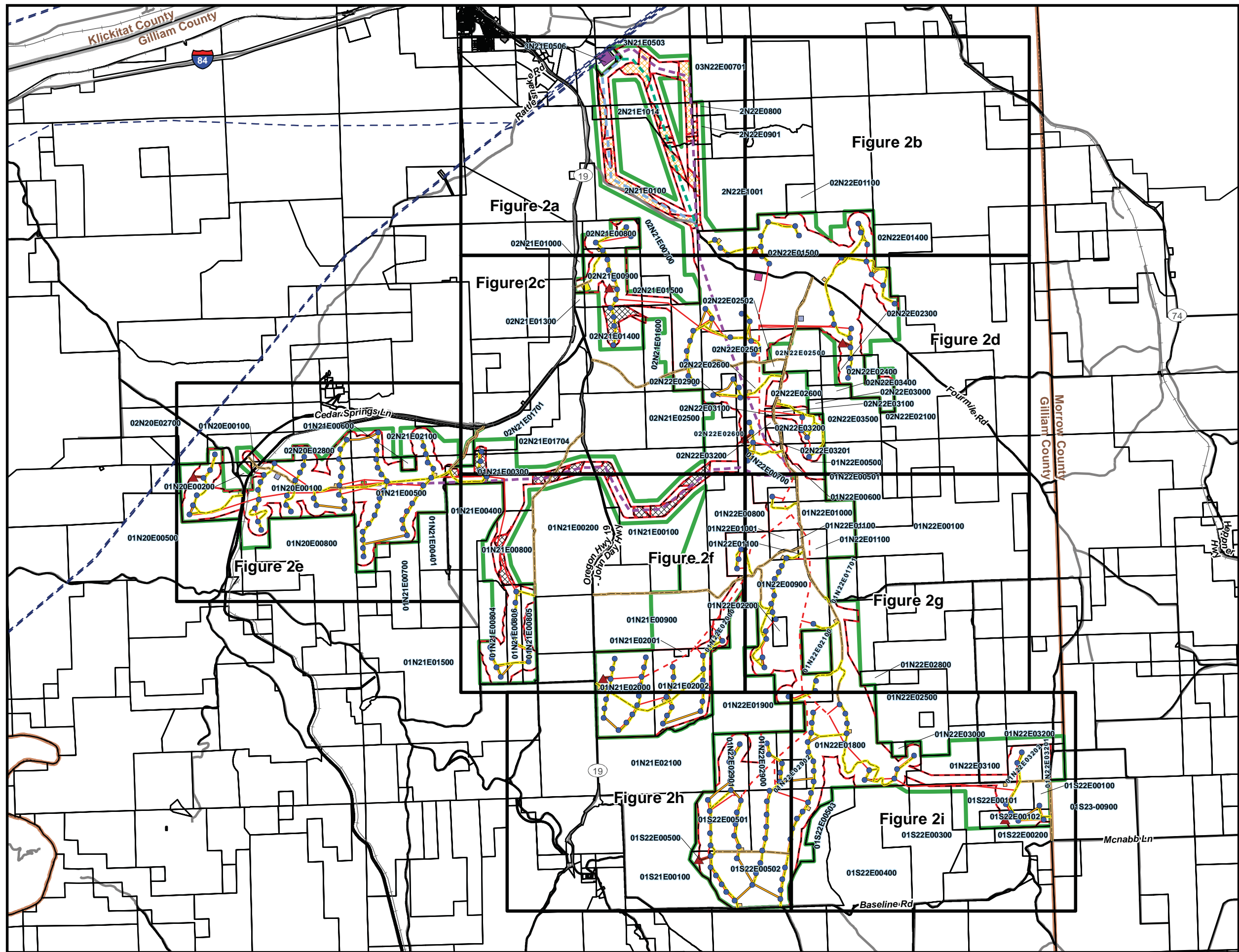
- City
- Limited Access
- Highway
- Secondary Road
- Site Boundary
- County Boundary
- State Boundary
- River



0 2 4 6 8  
Miles



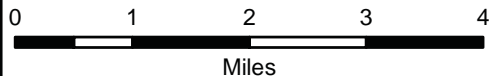




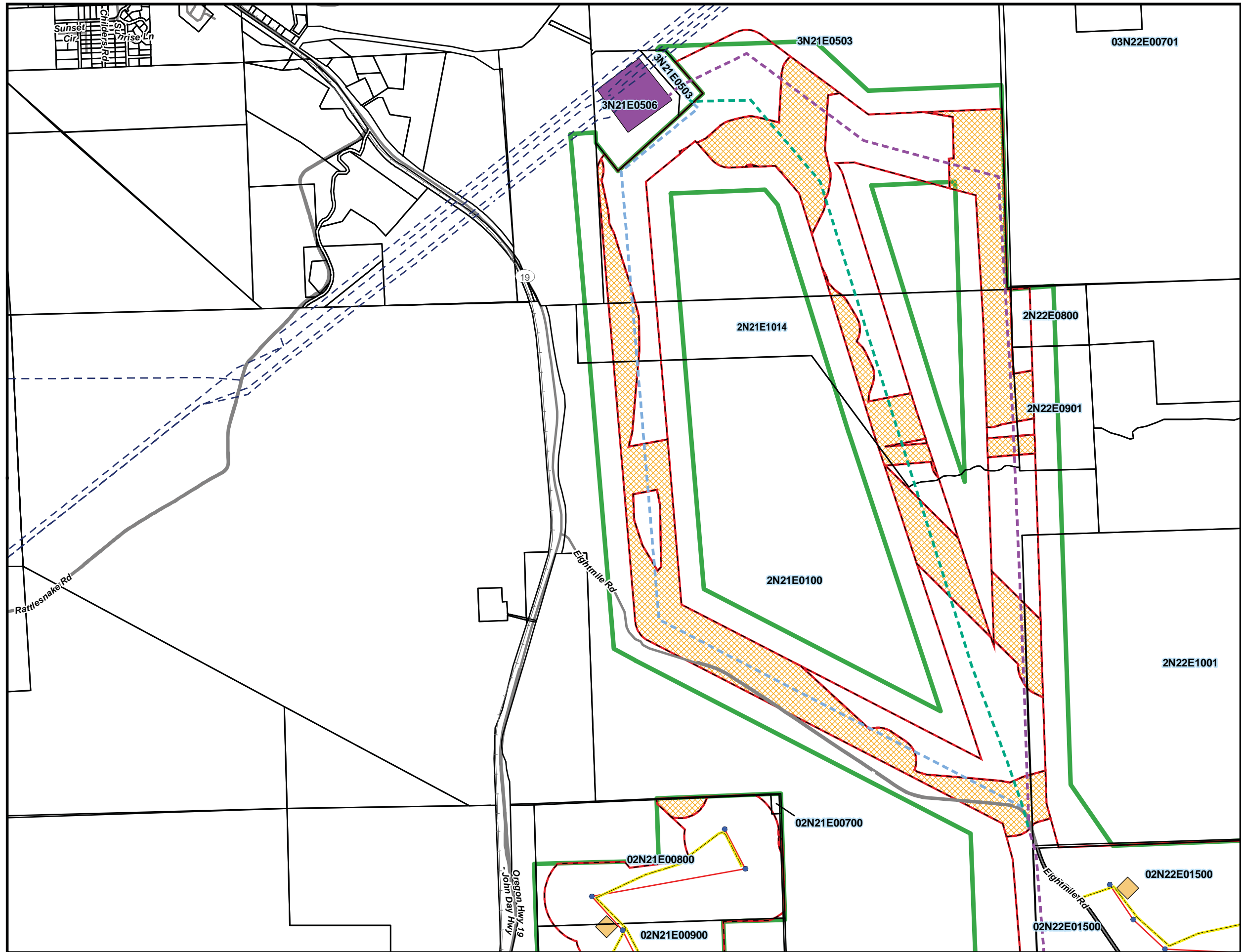
**Figure 2**  
**Tax Lot Index Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
 Montague Wind Power Facility  
 Wetland Delineation Report

- Index Grid
- Property Line (03N22E00701)
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities**
  - Proposed Turbine
  - Proposed Met Tower
  - Proposed New Turbine Road
  - Proposed New Met Tower Road
  - Proposed Improved Road
  - Proposed 5-Acre Facility Collector Substation
  - Proposed 10-Acre O&M Facility and Staging Area
  - Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities**
  - Proposed Crane Path
  - Proposed 2.5-Acre Staging Area
  - Proposed 5-Acre Staging Area
  - Proposed Underground 34.5-kV Line
  - Proposed Overhead 34.5-kV Line
  - Preferred 230-kV Transmission Line
  - Alternate 1 230-kV Transmission Line
  - Alternate 2 230-kV Transmission Line
- Existing Facilities**
  - Existing Transmission Line
  - Public Road
  - Major Railroad Line
  - BPA Slatt Interconnection Substation
  - County Boundary
  - State Boundary

Sources:  
 1. Gilliam County, 2008  
 2. Morrow County, 2008

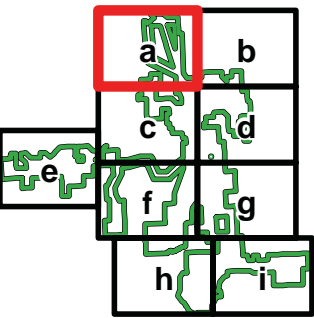
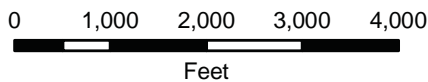




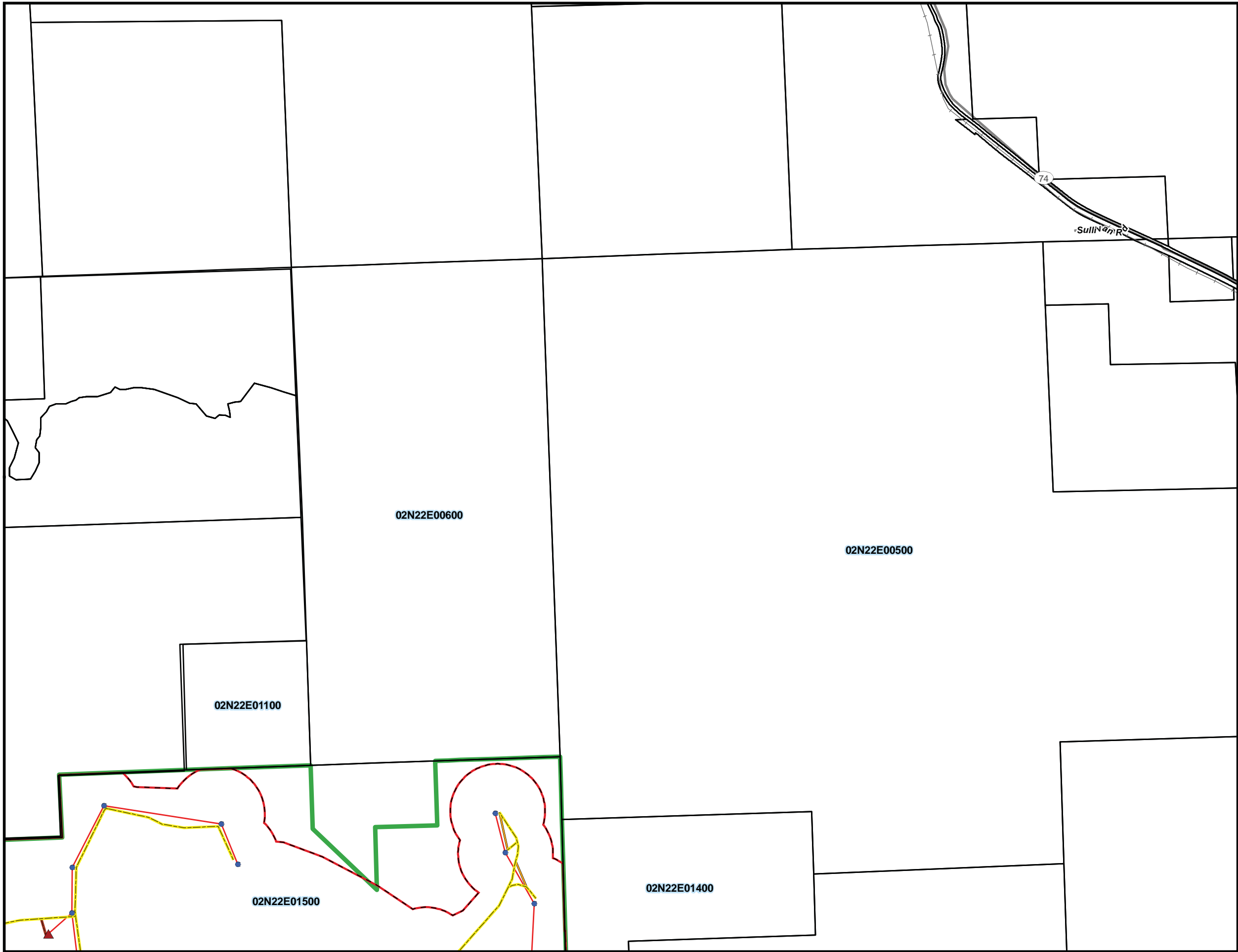


**Figure 2a**  
**Tax Lot Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Property Line (03N22E00701)
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities
- Proposed Turbine
- Proposed Met Tower
- Proposed New Turbine Road
- Proposed New Met Tower Road
- Proposed Improved Road
- Proposed 5-Acre Facility Collector
- Substation
- Proposed 10-Acre O&M Facility and Staging Area
- Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2.5-Acre Staging Area
- Proposed 5-Acre Staging Area
- Proposed Underground 34.5-kV Line
- Proposed Overhead 34.5-kV Line
- Preferred 230-kV Transmission Line
- Alternate 1 230-kV Transmission Line
- Alternate 2 230-kV Transmission Line
- Existing Facilities
- Public Road
- Major Railroad Line
- Existing Transmission Line
- BPA Slatt Interconnection Substation

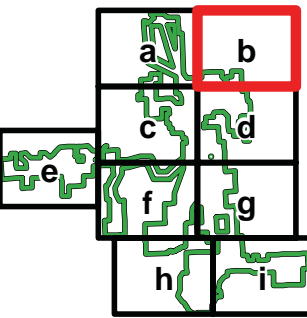
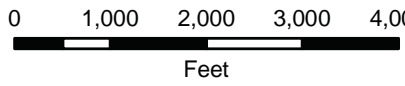






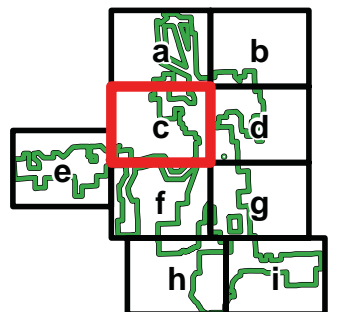
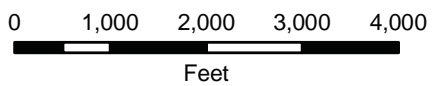
**Figure 2b**  
**Tax Lot Map**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Property Line (03N22E00701)
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities
  - Proposed Turbine
  - Proposed Met Tower
  - Proposed New Turbine Road
  - Proposed New Met Tower Road
  - Proposed Improved Road
  - Proposed 5-Acre Facility Collector
  - Substation
  - Proposed 10-Acre O&M Facility and Staging Area
  - Alternate 10-Acre O&M Facility and Staging Area
  - Proposed Temporary Facilities
  - Proposed Crane Path
  - Proposed 2.5-Acre Staging Area
  - Proposed 5-Acre Staging Area
  - Proposed Underground 34.5-kV Line
  - Proposed Overhead 34.5-kV Line
  - Preferred 230-kV Transmission Line
  - Alternate 1 230-kV Transmission Line
  - Alternate 2 230-kV Transmission Line
- Existing Facilities
  - Public Road
  - Major Railroad Line
  - Existing Transmission Line
  - BPA Slatt Interconnection Substation

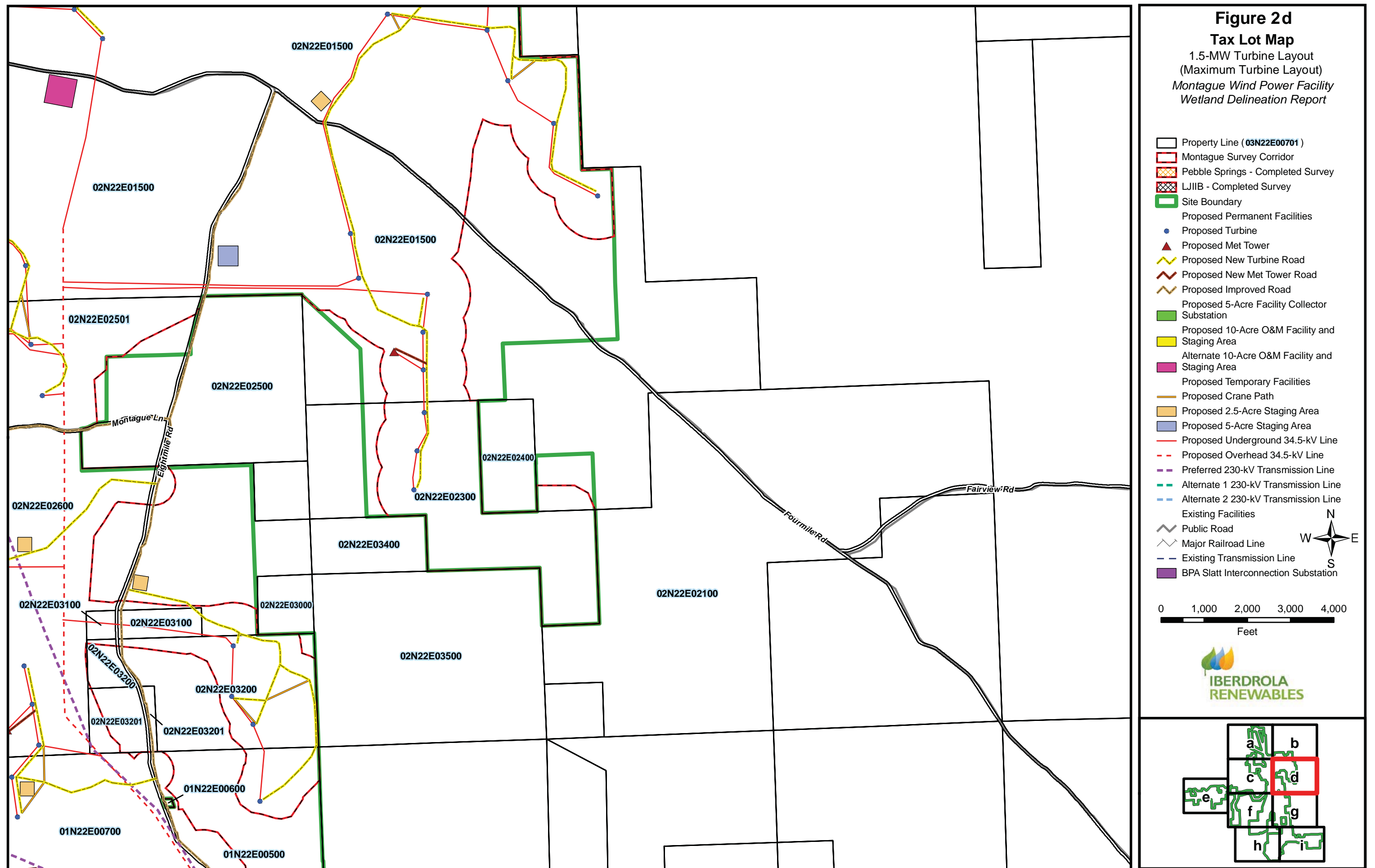




Property Line (03N22E00701)  
 Montague Survey Corridor  
 Pebble Springs - Completed Survey  
 LJIB - Completed Survey  
 Site Boundary  
 Proposed Permanent Facilities  
 Proposed Turbine  
 Proposed Met Tower  
 Proposed New Turbine Road  
 Proposed New Met Tower Road  
 Proposed Improved Road  
 Proposed 5-Acre Facility Collector Substation  
 Proposed 10-Acre O&M Facility and Staging Area  
 Alternate 10-Acre O&M Facility and Staging Area  
 Proposed Temporary Facilities  
 Proposed Crane Path  
 Proposed 2.5-Acre Staging Area  
 Proposed 5-Acre Staging Area  
 Proposed Underground 34.5-kV Line  
 Proposed Overhead 34.5-kV Line  
 Preferred 230-kV Transmission Line  
 Alternate 1 230-kV Transmission Line  
 Alternate 2 230-kV Transmission Line  
 Existing Facilities  
 Public Road  
 Major Railroad Line  
 Existing Transmission Line  
 BPA Slatt Interconnection Substation

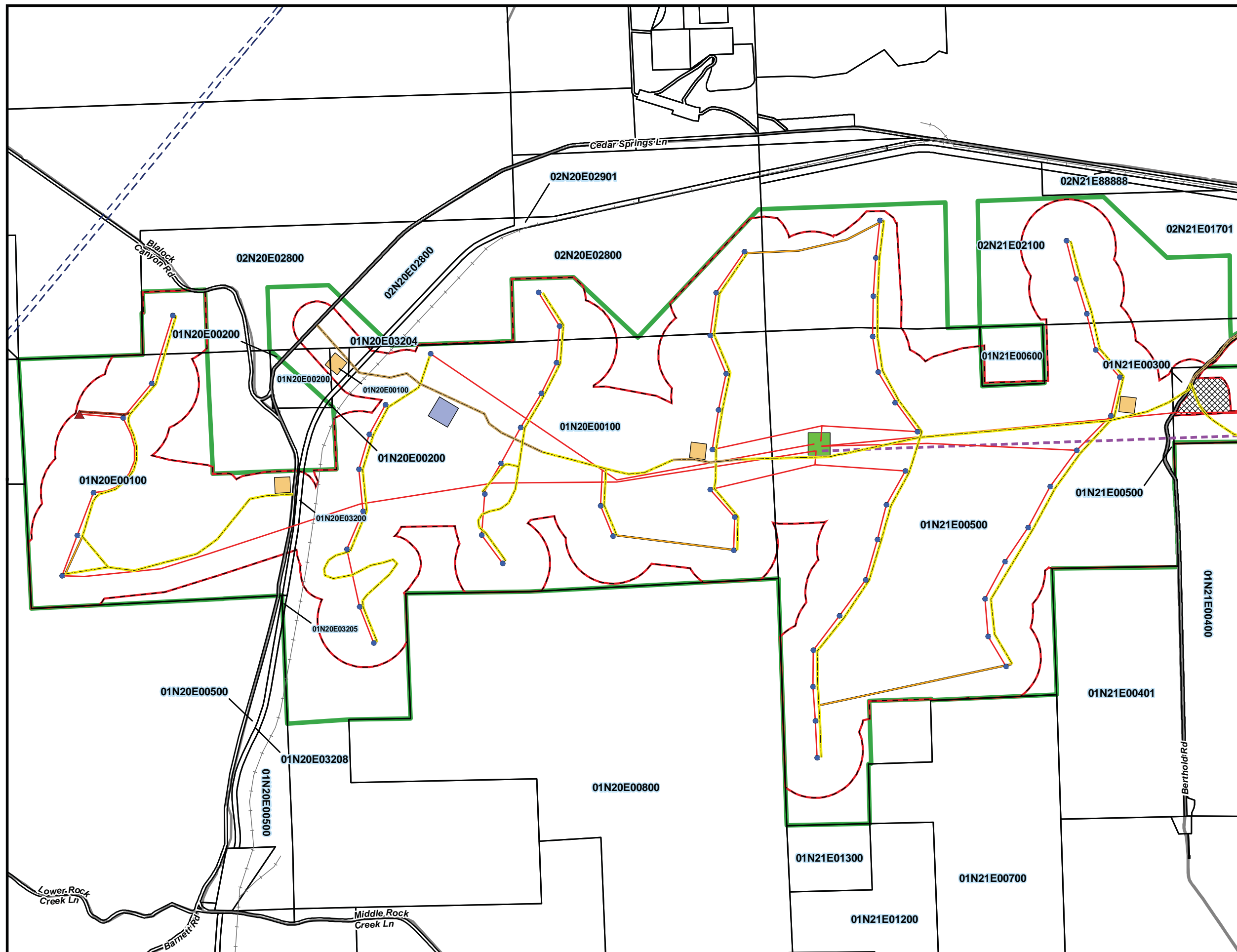




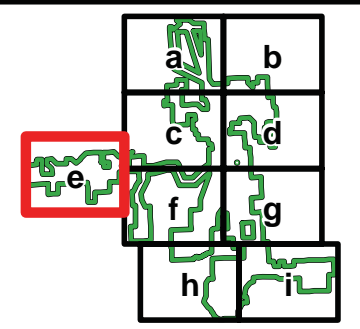
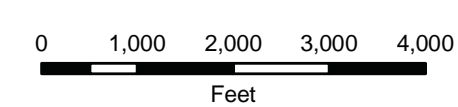




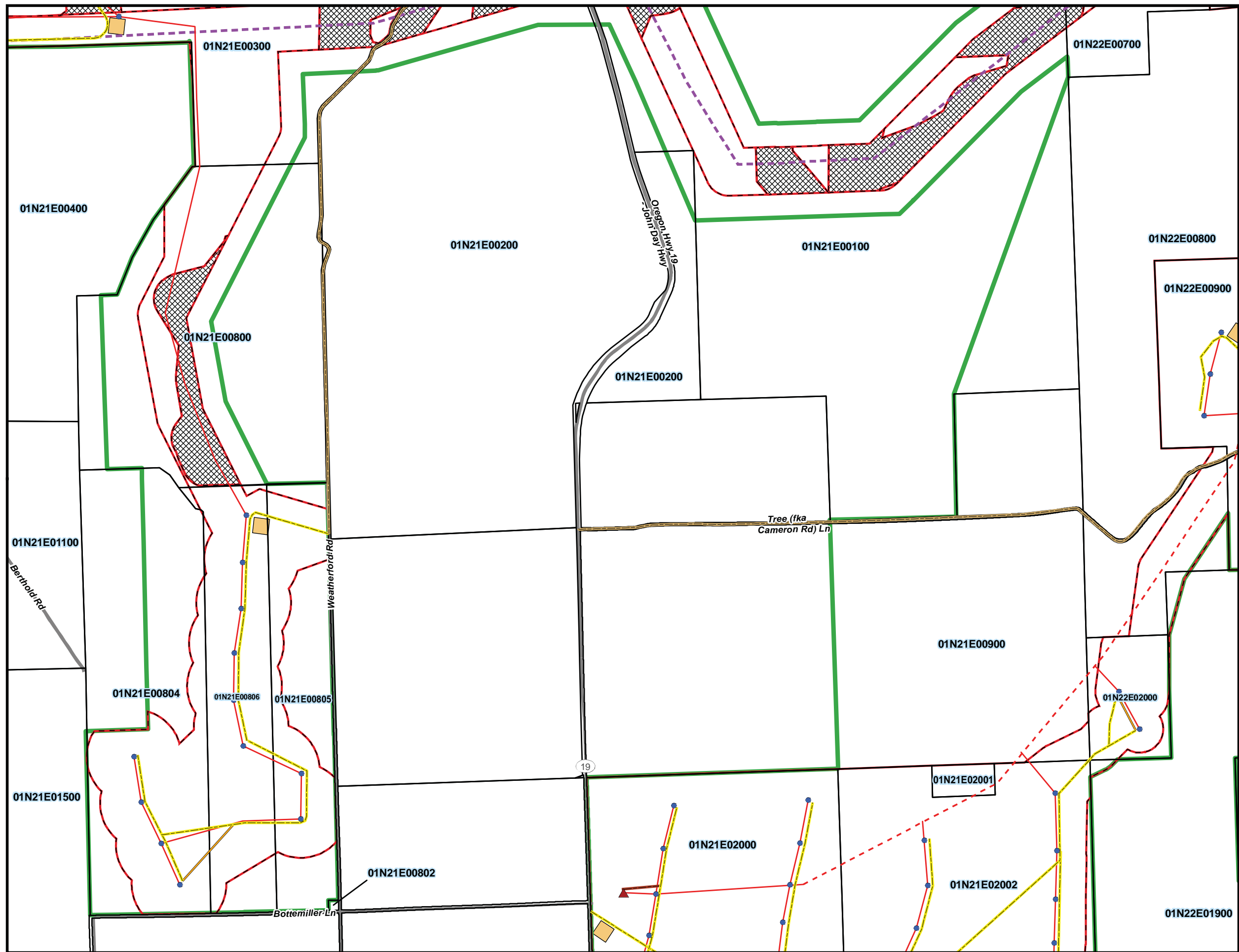
**Figure 2e**  
**Tax Lot Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*



- Property Line ( 03N22E00701 )
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities
- Proposed Turbine
- ▲ Proposed Met Tower
- ~ Proposed New Turbine Road
- ~ Proposed New Met Tower Road
- ~ Proposed Improved Road
- ~ Proposed 5-Acre Facility Collector
- Substation
- Proposed 10-Acre O&M Facility and Staging Area
- Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2.5-Acre Staging Area
- Proposed 5-Acre Staging Area
- Proposed Underground 34.5-kV Line
- - Proposed Overhead 34.5-kV Line
- Preferred 230-kV Transmission Line
- Alternate 1 230-kV Transmission Line
- - Alternate 2 230-kV Transmission Line
- Existing Facilities
- Public Road
- Major Railroad Line
- - Existing Transmission Line
- BPA Slatt Interconnection Substation



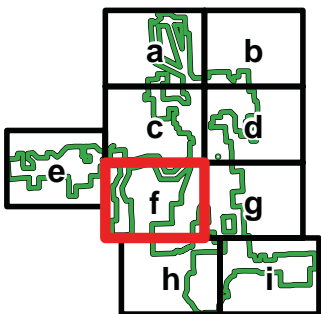




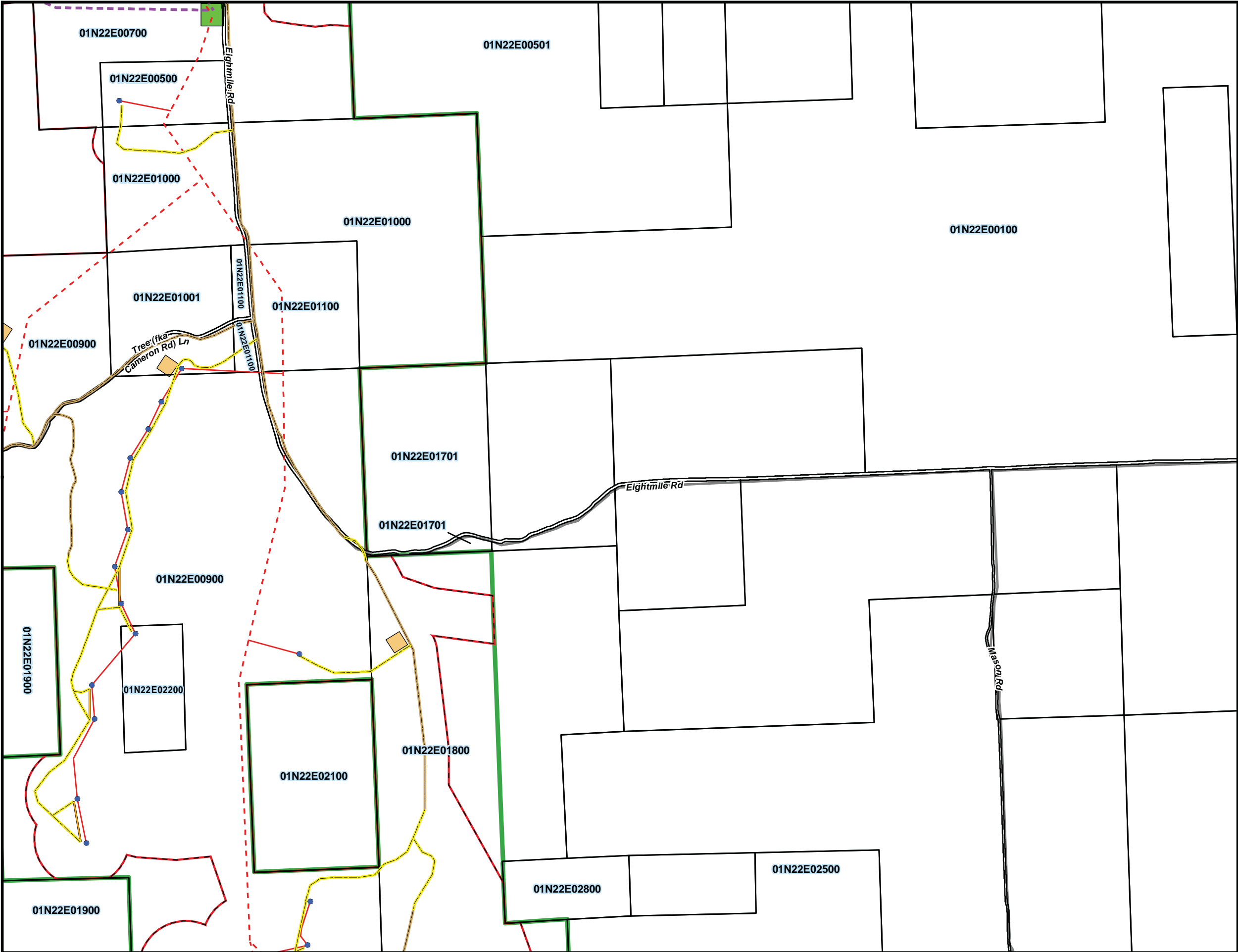
**Figure 2f**  
**Tax Lot Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Property Line (03N22E00701)
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities
- Proposed Turbine
- Proposed Met Tower
- Proposed New Turbine Road
- Proposed New Met Tower Road
- Proposed Improved Road
- Proposed 5-Acre Facility Collector
- Substation
- Proposed 10-Acre O&M Facility and Staging Area
- Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2.5-Acre Staging Area
- Proposed 5-Acre Staging Area
- Proposed Underground 34.5-kV Line
- Proposed Overhead 34.5-kV Line
- Preferred 230-kV Transmission Line
- Alternate 1 230-kV Transmission Line
- Alternate 2 230-kV Transmission Line
- Existing Facilities
- Public Road
- Major Railroad Line
- Existing Transmission Line
- BPA Slatt Interconnection Substation

0 1,000 2,000 3,000 4,000  
 Feet







**Figure 2g**  
**Tax Lot Map**  
1.5-MW Turbine Layout  
(Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

Property Line ( 03N22E00701 )

Montague Survey Corridor

Pebble Springs - Completed Survey

LJIB - Completed Survey

Site Boundary

Proposed Permanent Facilities

Proposed Turbine

Proposed Met Tower

Proposed New Turbine Road

Proposed New Met Tower Road

Proposed Improved Road

Proposed 5-Acre Facility Collector

Substation

Proposed 10-Acre O&M Facility and Staging Area

Alternate 10-Acre O&M Facility and Staging Area

Proposed Temporary Facilities

Proposed Crane Path

Proposed 2.5-Acre Staging Area

Proposed 5-Acre Staging Area

Proposed Underground 34.5-kV Line

Proposed Overhead 34.5-kV Line

Preferred 230-kV Transmission Line

Alternate 1 230-kV Transmission Line

Alternate 2 230-kV Transmission Line

Existing Facilities

Public Road

Major Railroad Line

Existing Transmission Line

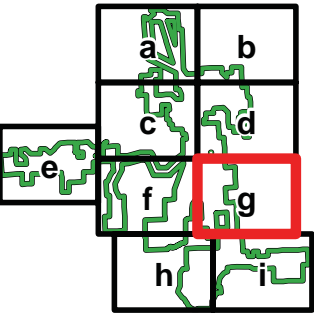
BPA Slatt Interconnection Substation

N  
W  
E  
S

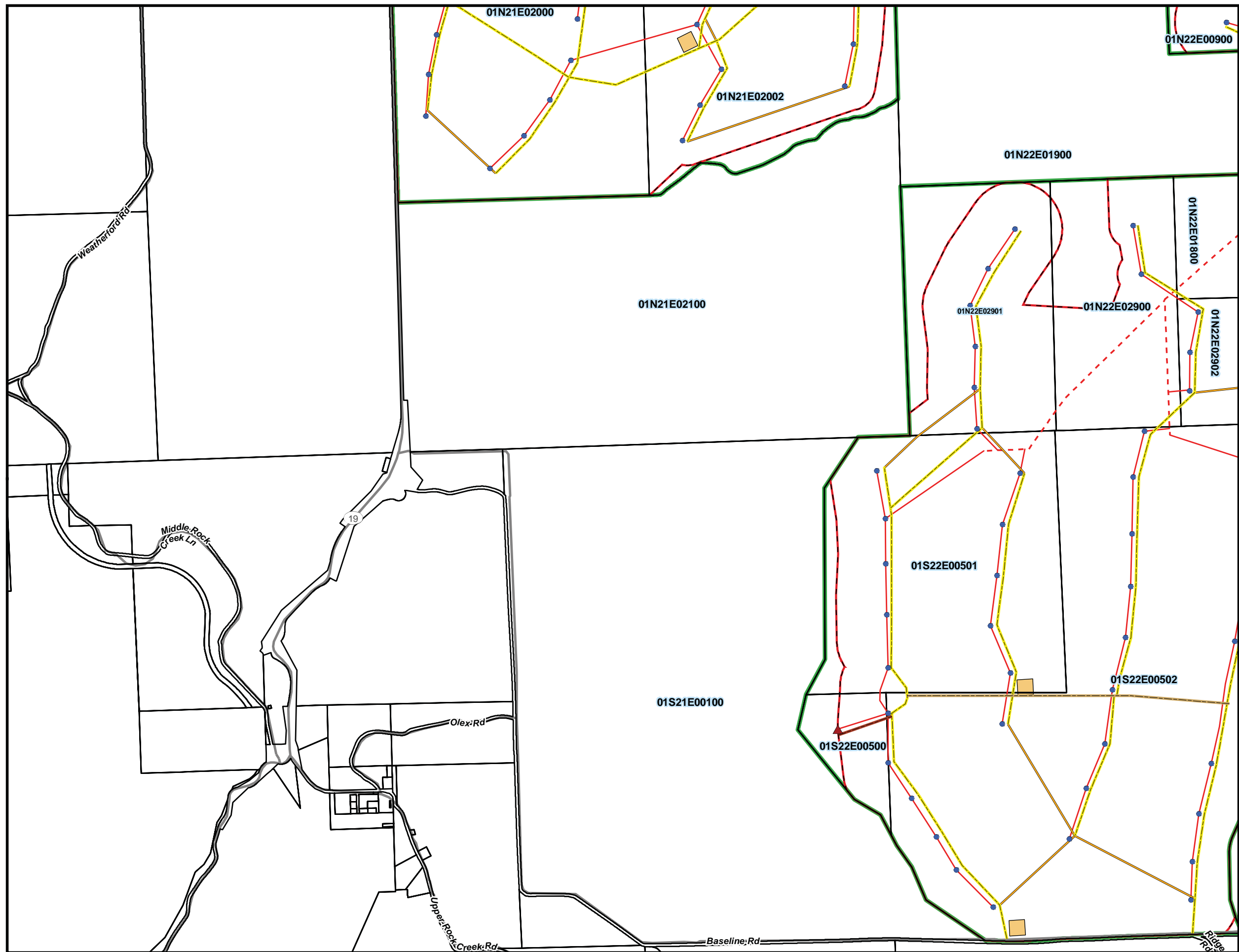
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Feet

IBERDROLA  
RENEWABLES



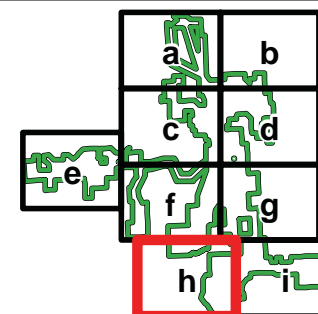




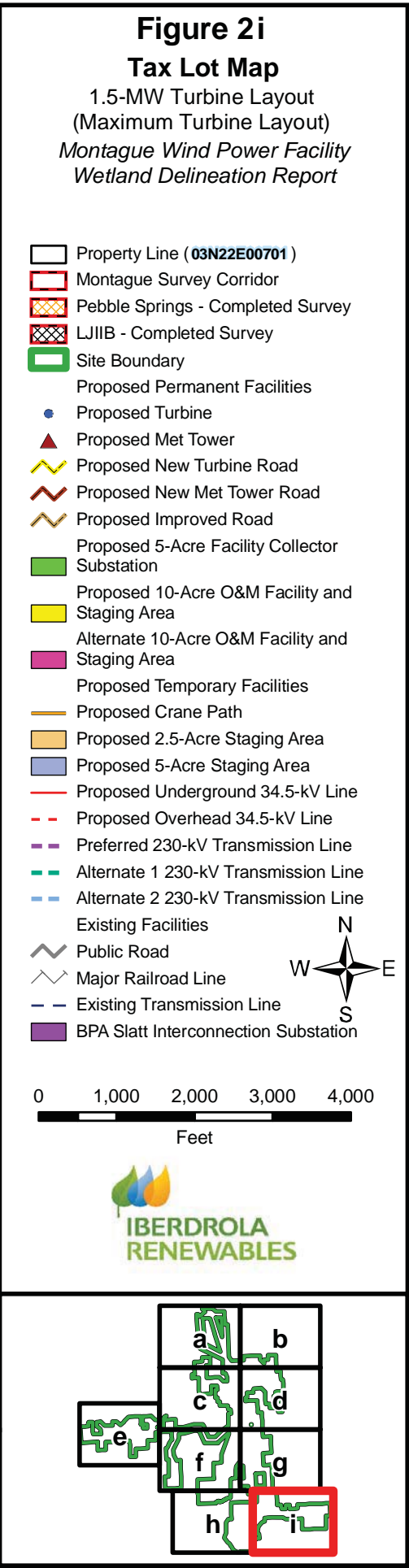
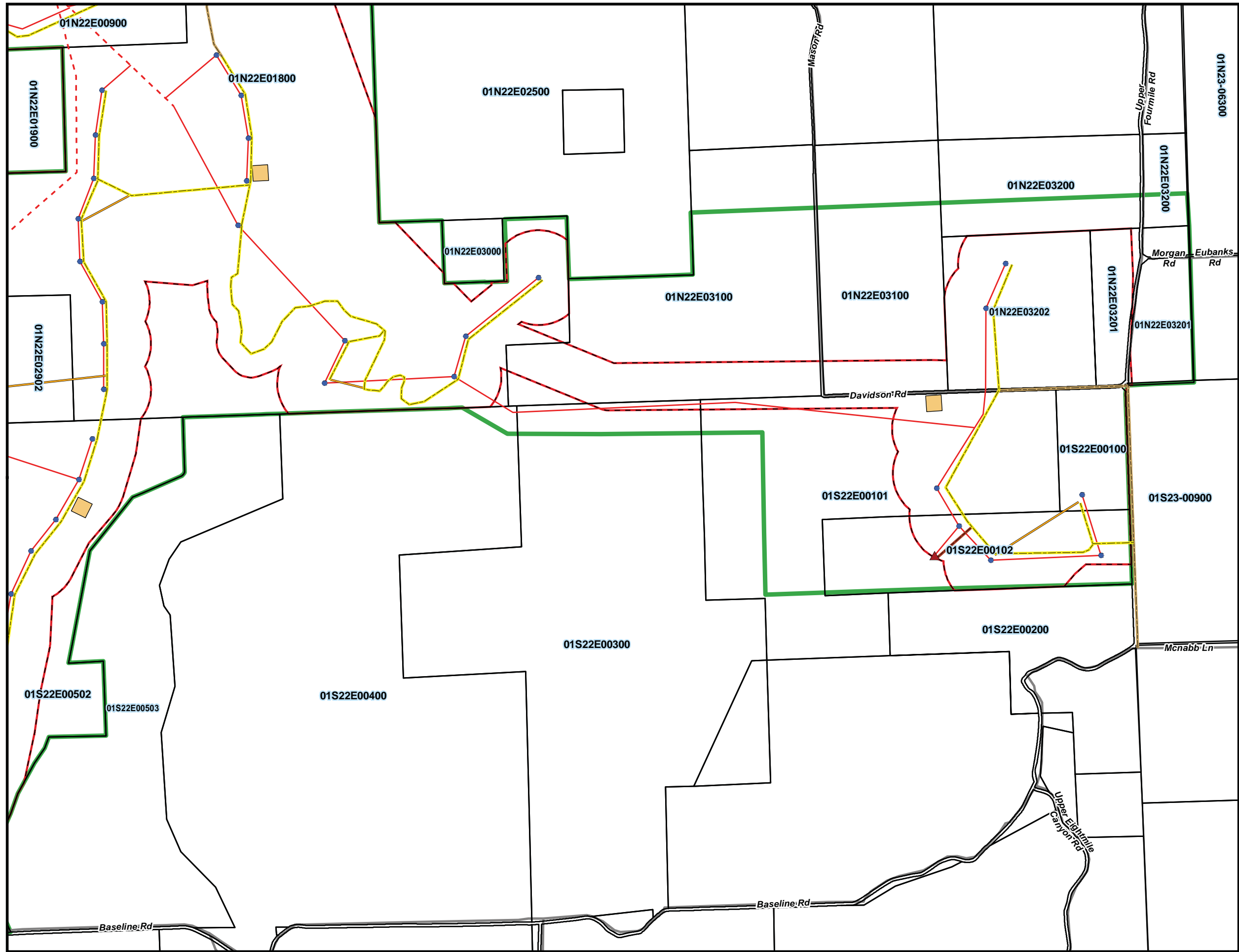
**Figure 2h**  
**Tax Lot Map**  
 1.5-MW Turbine Layout  
 (Maximum Turbine Layout)  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Property Line ( 03N22E00701 )
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Site Boundary
- Proposed Permanent Facilities
- Proposed Turbine
- ▲ Proposed Met Tower
- ~ Proposed New Turbine Road
- ~ Proposed New Met Tower Road
- ~ Proposed Improved Road
- Proposed 5-Acre Facility Collector Substation
- Proposed 10-Acre O&M Facility and Staging Area
- Alternate 10-Acre O&M Facility and Staging Area
- Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2.5-Acre Staging Area
- Proposed 5-Acre Staging Area
- Proposed Underground 34.5-kV Line
- - Proposed Overhead 34.5-kV Line
- Preferred 230-kV Transmission Line
- - Alternate 1 230-kV Transmission Line
- - Alternate 2 230-kV Transmission Line
- Existing Facilities
- ~ Public Road
- ~ Major Railroad Line
- - Existing Transmission Line
- BPA Slatt Interconnection Substation

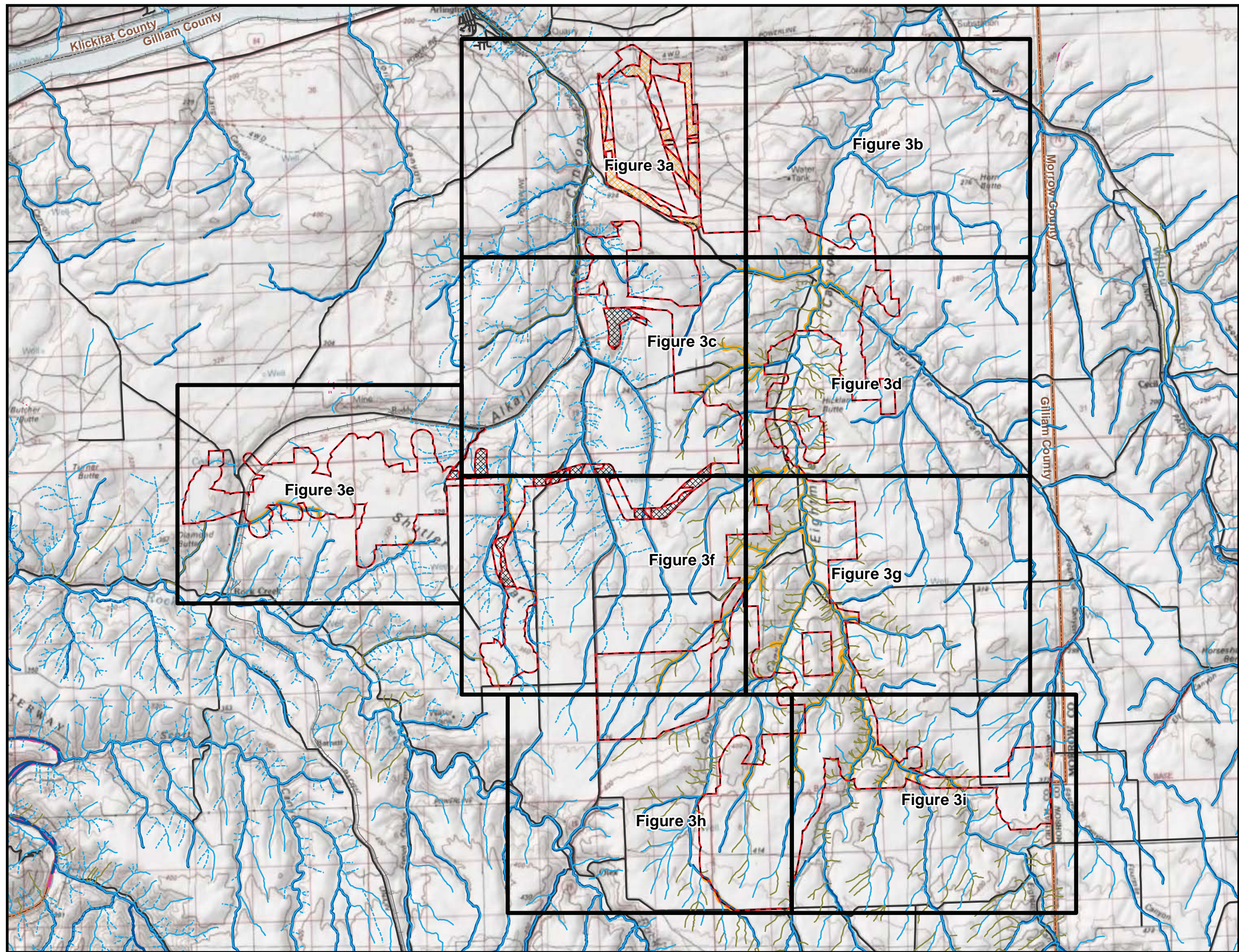
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 Feet







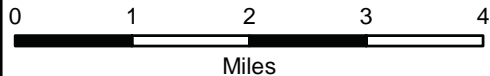




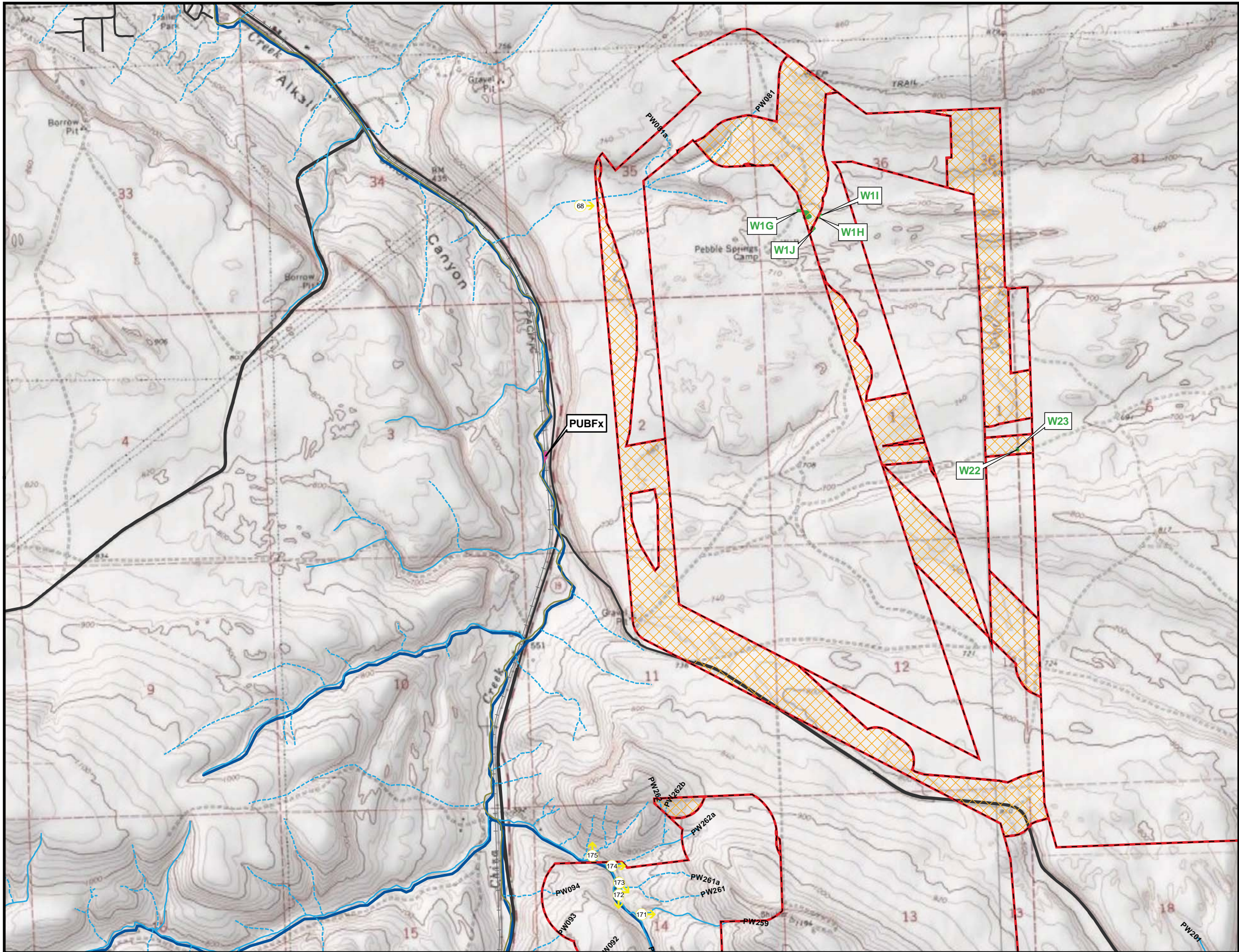
**Figure 3**  
**Potential Wetlands**  
**and Other Waters Index Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- State Boundary
- County Boundary
- Public Road
- Major Railroad Line

Sources:  
 1. PNWHF 24K  
 (Pacific Northwest Hydrography Framework)  
 2. USGS/EPA 100K NHD  
 (National Hydrography Dataset)  
 3. USFWS National Wetlands Inventory  
 4. USDA Soil Survey Geographic Database



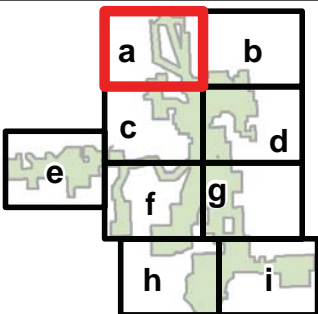
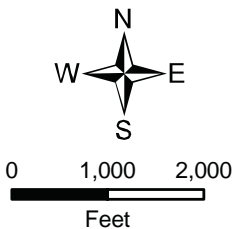




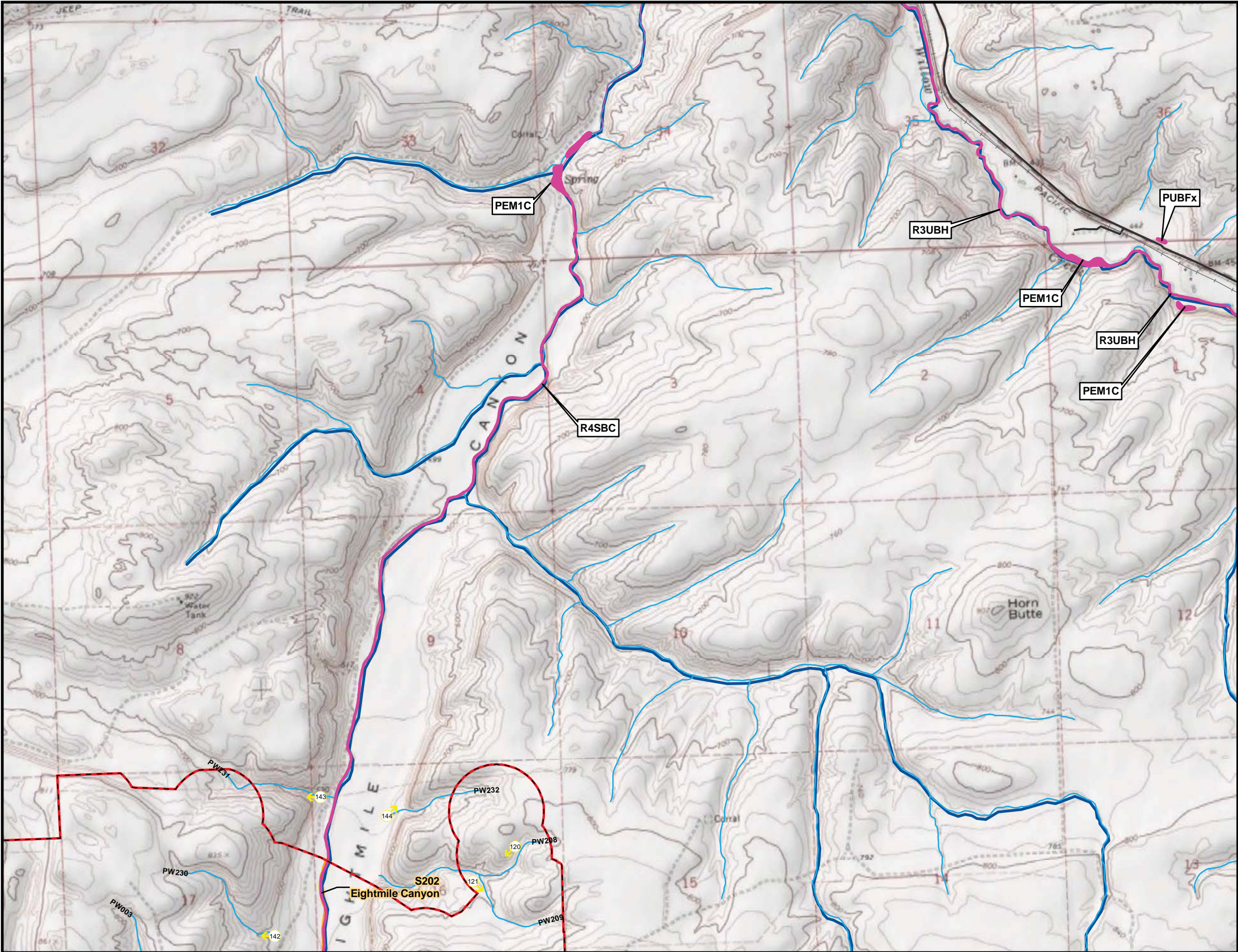
**Figure 3a**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Potential Water Photo Point
- Stream Photo Point
- Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



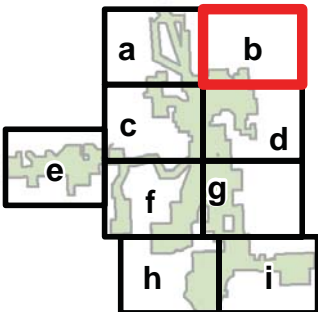
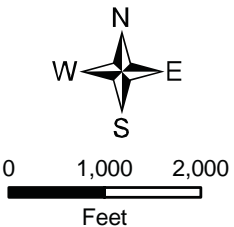




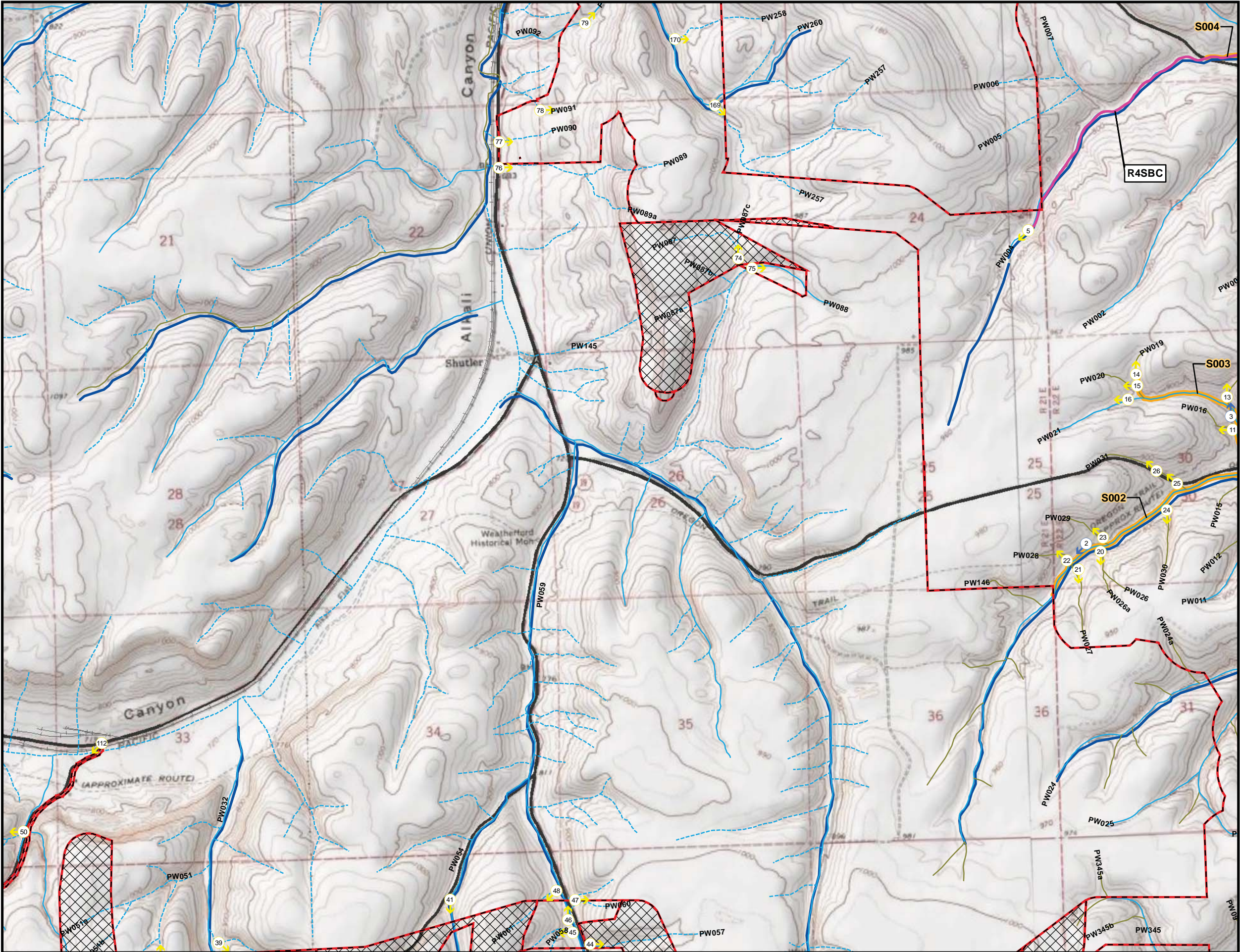
**Figure 3b**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- ① Potential Water Photo Point
- ② Stream Photo Point
- ③ Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



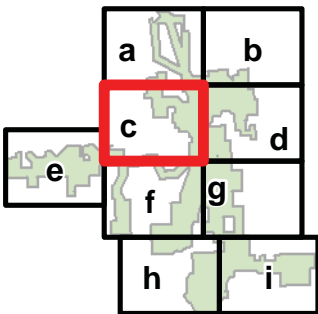
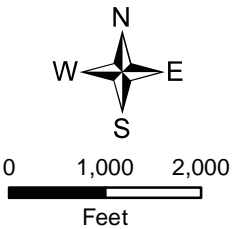




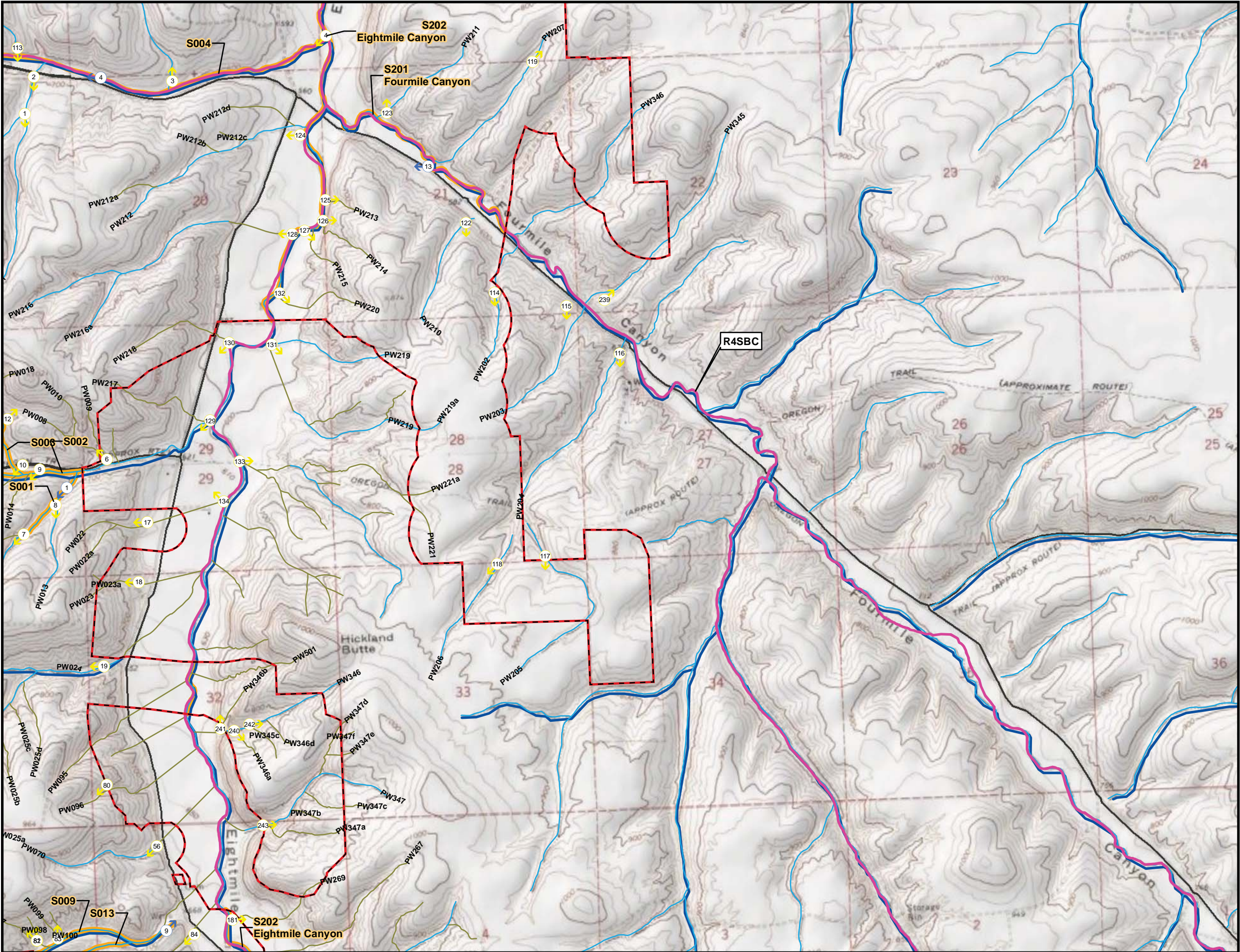
**Figure 3c**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Potential Water Photo Point
- Stream Photo Point
- Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



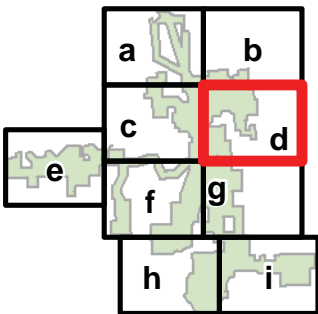
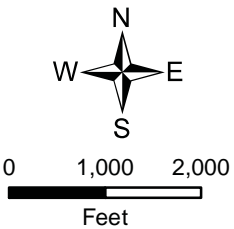




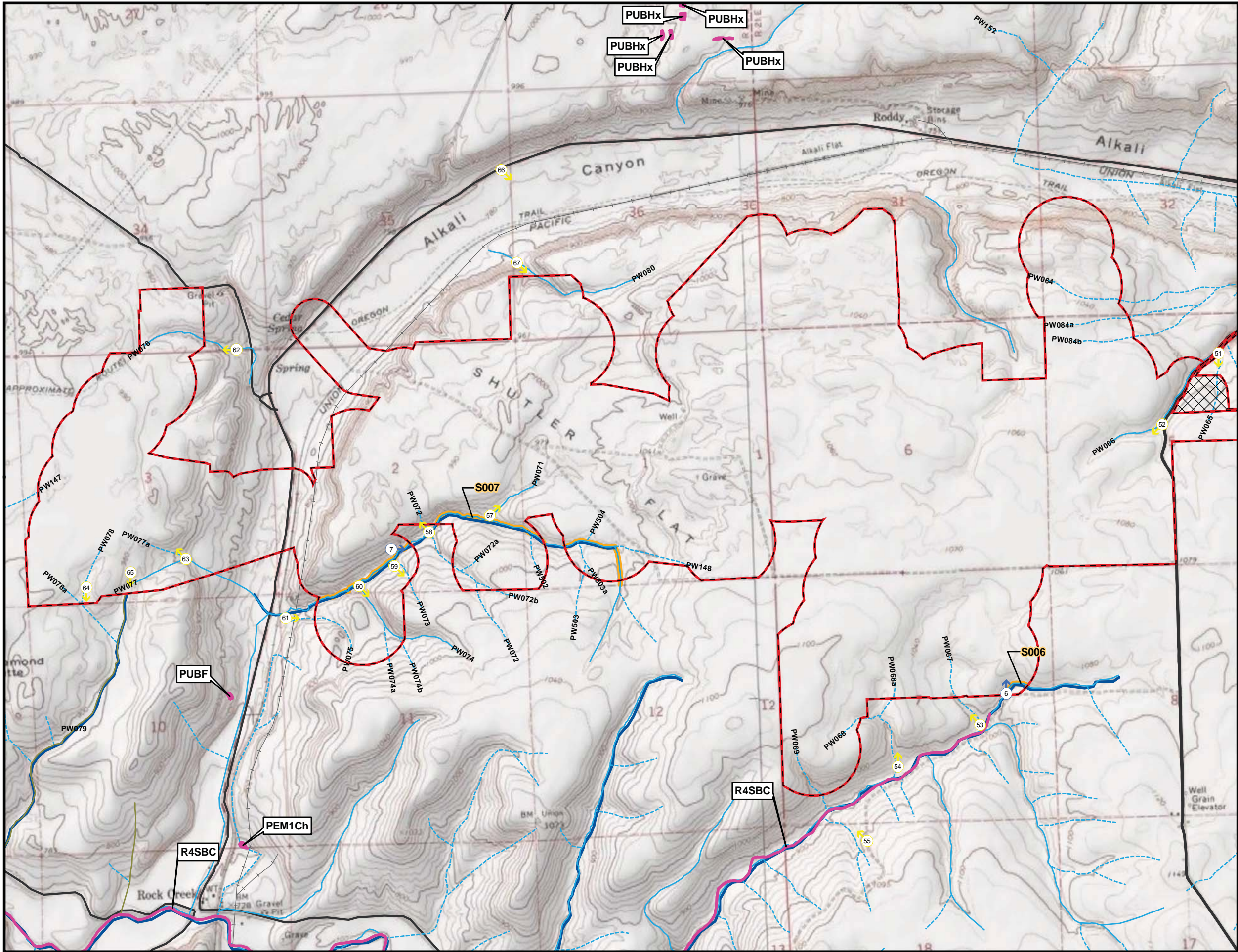
**Figure 3d**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- ① Potential Water Photo Point
- ② Stream Photo Point
- ③ Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



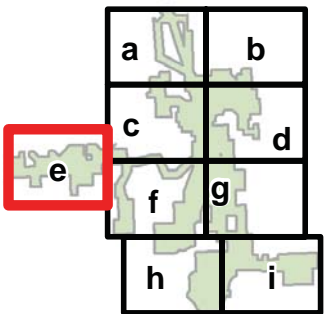
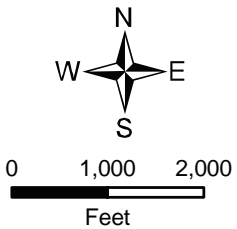




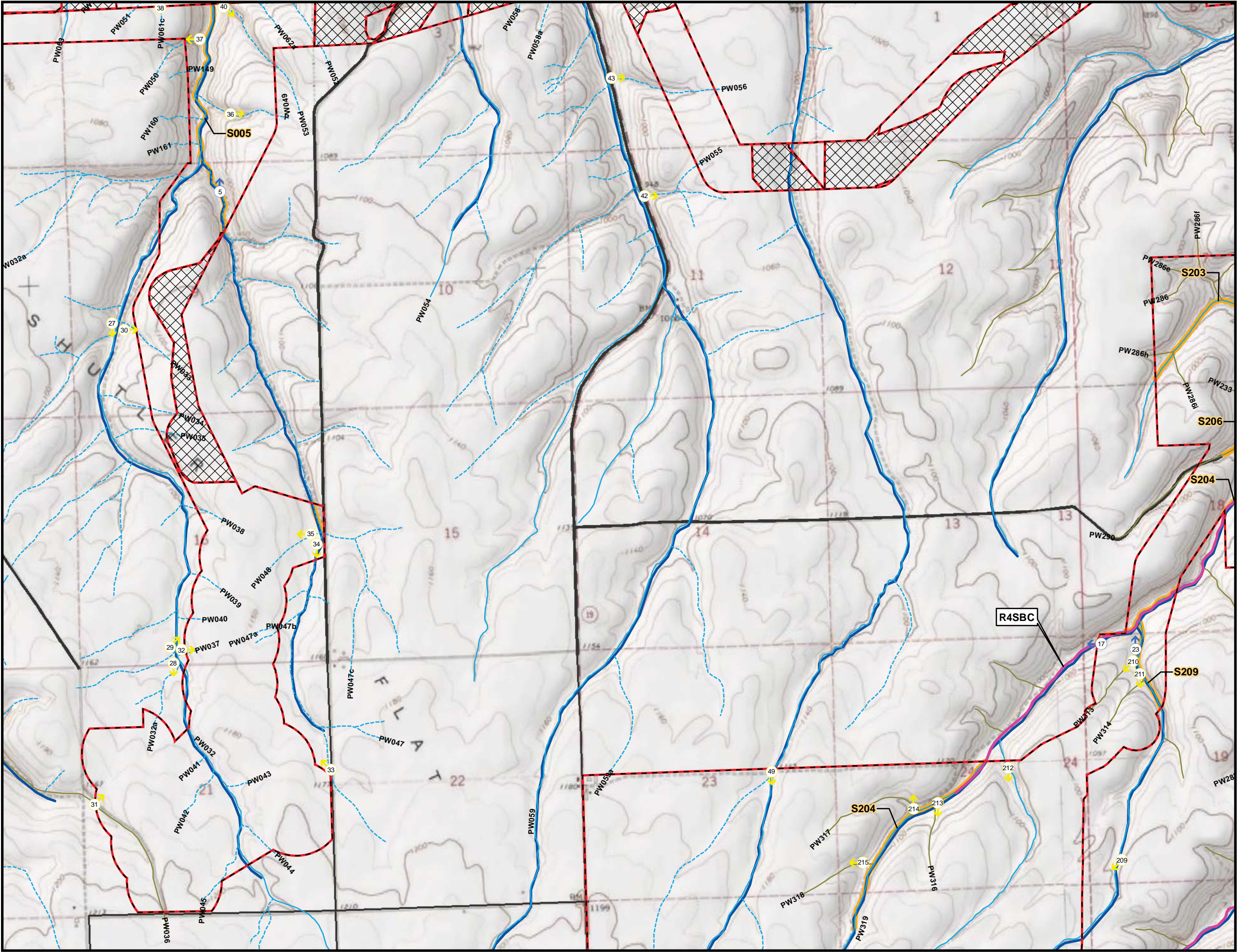
**Figure 3e**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Potential Water Photo Point
- Stream Photo Point
- Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



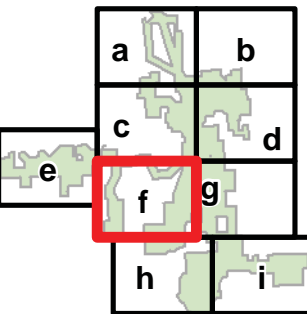
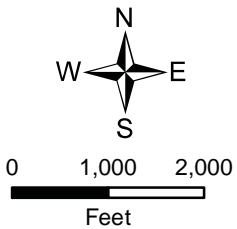




**Figure 3f**  
**Potential Wetlands**  
**and Other Waters Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- ① Potential Water Photo Point
- ② Stream Photo Point
- ③ Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

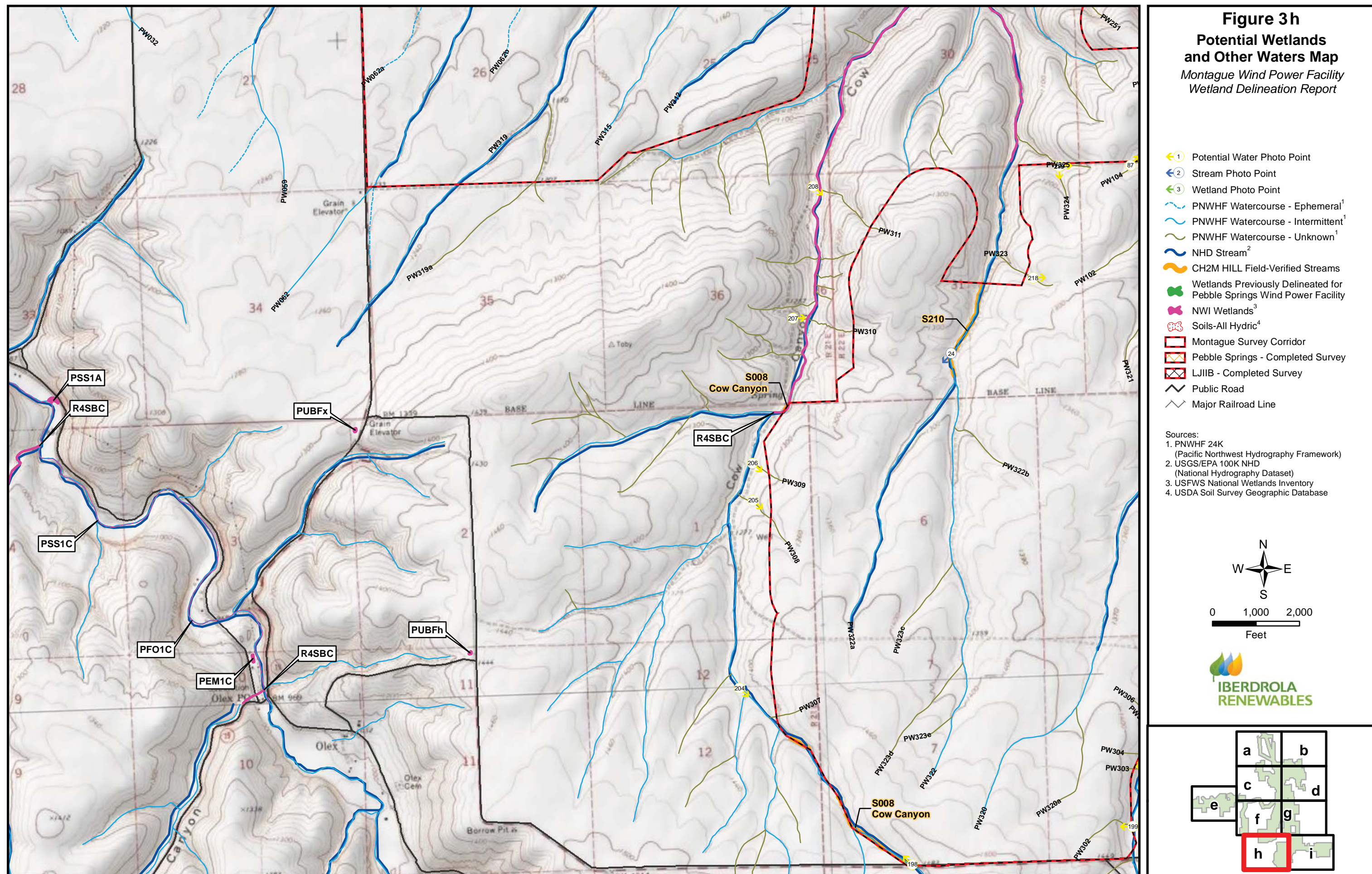
Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database



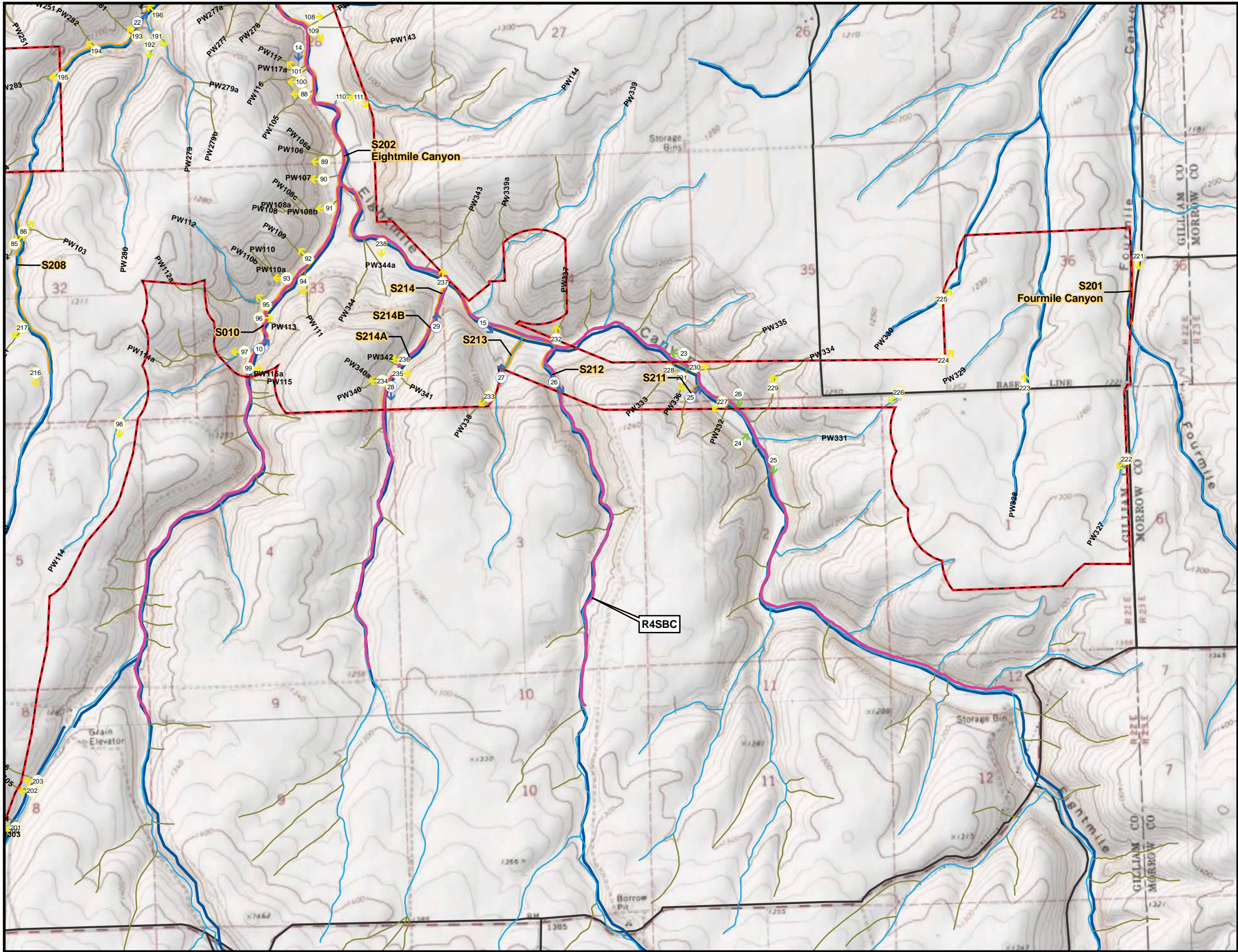








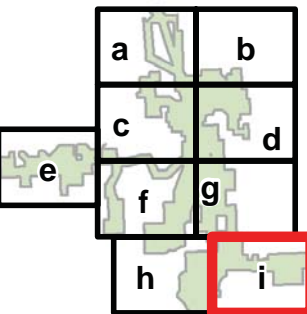
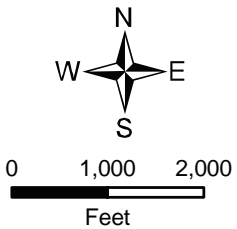




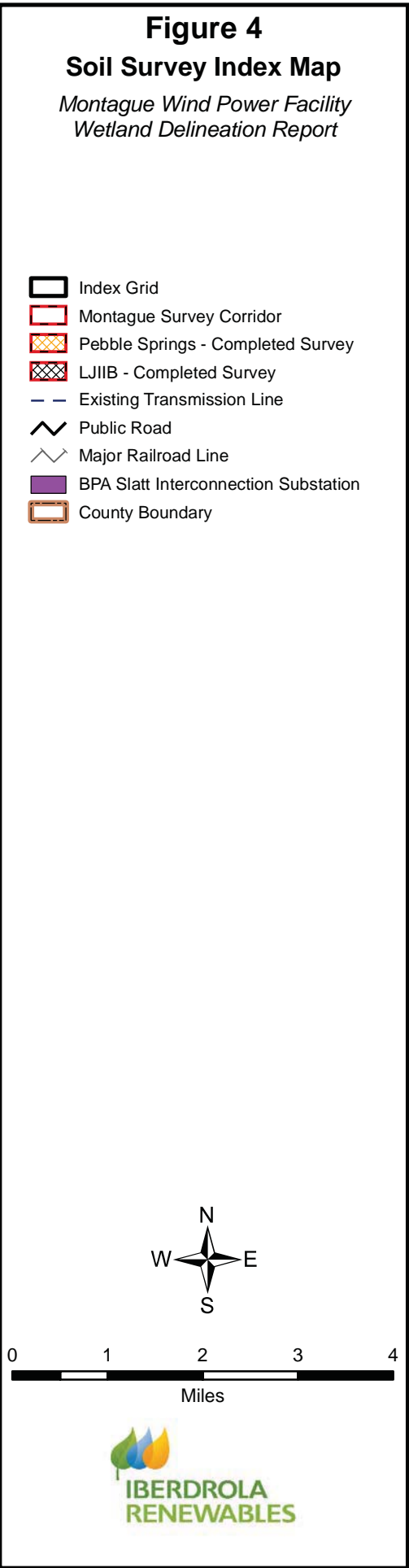
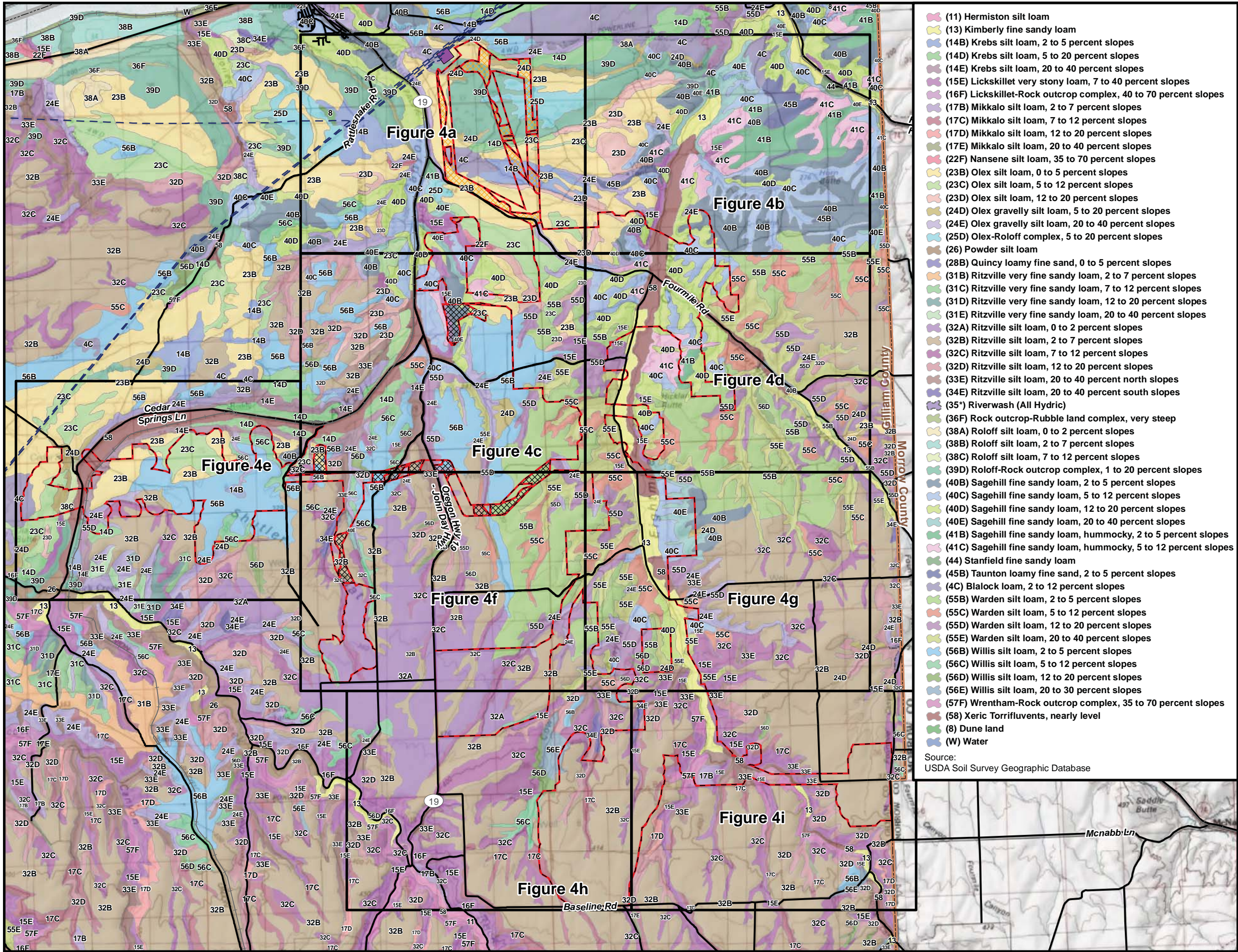
**Figure 3i**  
**Potential Wetlands  
and Other Waters Map**  
*Montague Wind Power Facility  
Wetland Delineation Report*

- ① Potential Water Photo Point
- ② Stream Photo Point
- ③ Wetland Photo Point
- PNWHF Watercourse - Ephemeral<sup>1</sup>
- PNWHF Watercourse - Intermittent<sup>1</sup>
- PNWHF Watercourse - Unknown<sup>1</sup>
- NHD Stream<sup>2</sup>
- CH2M HILL Field-Verified Streams
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- NWI Wetlands<sup>3</sup>
- Soils-All Hydric<sup>4</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line

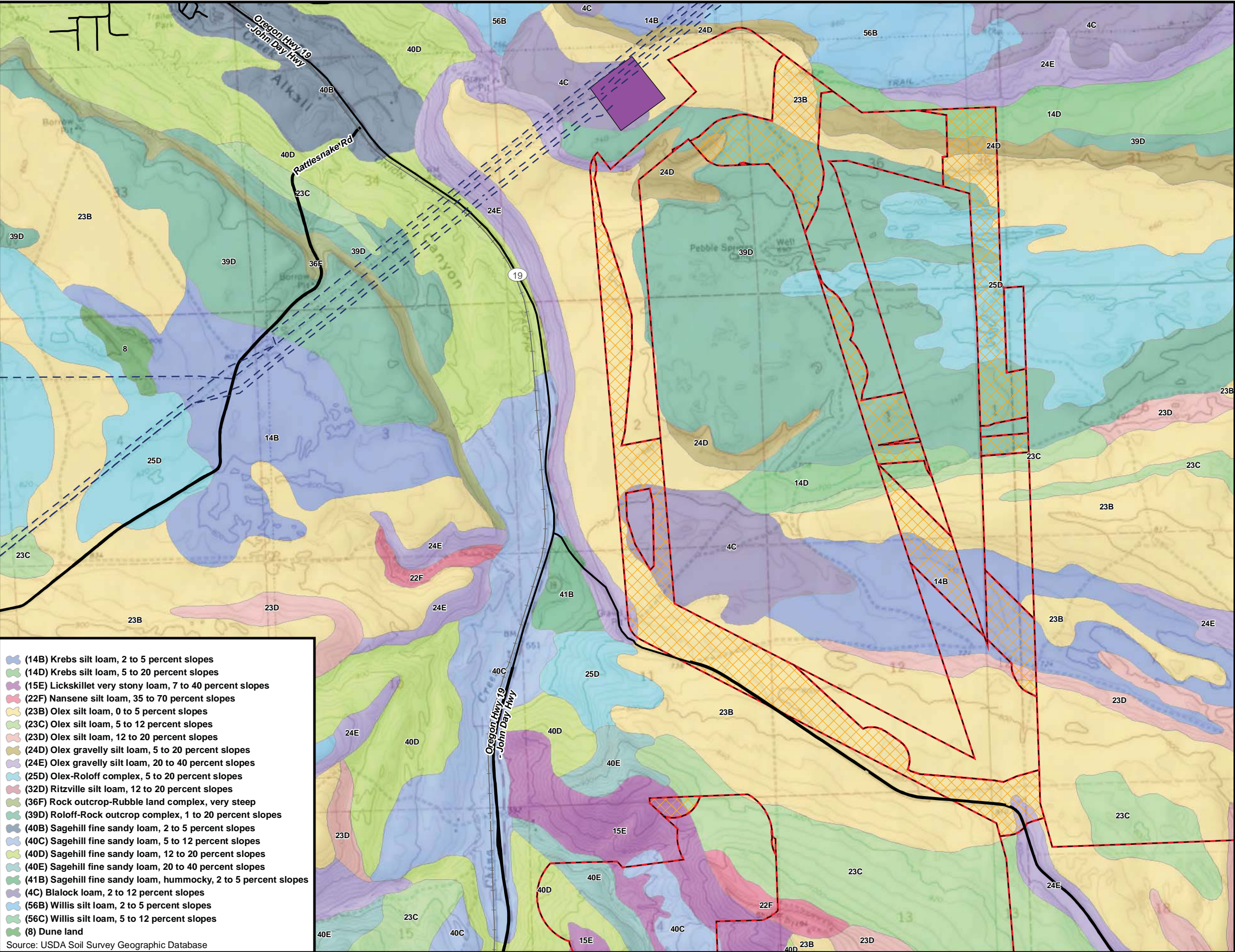
Sources:  
1. PNWHF 24K  
(Pacific Northwest Hydrography Framework)  
2. USGS/EPA 100K NHD  
(National Hydrography Dataset)  
3. USFWS National Wetlands Inventory  
4. USDA Soil Survey Geographic Database





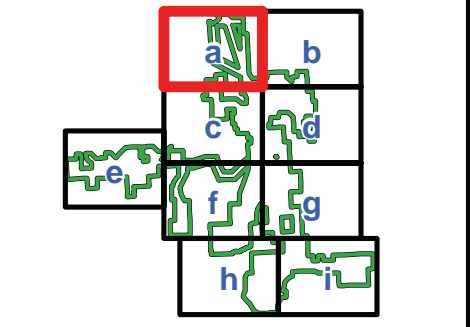
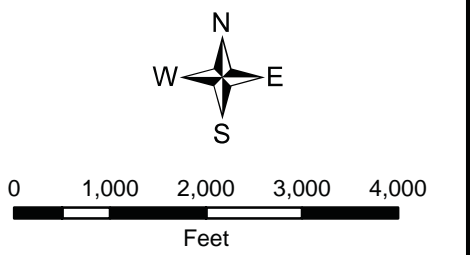






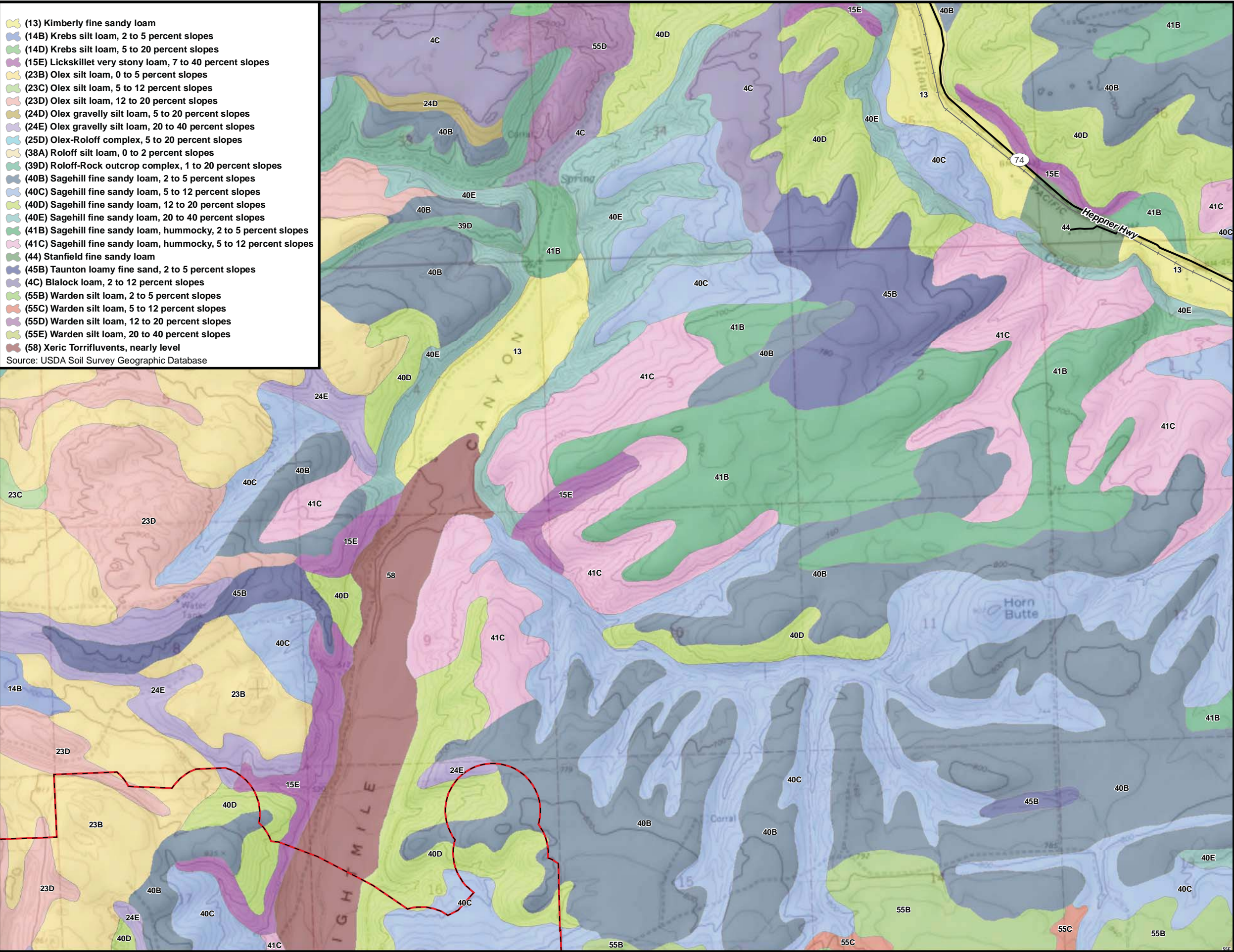
**Figure 4a**  
**Soil Survey Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Montague Survey Corridor
- Pebble Springs - Completed Survey
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary



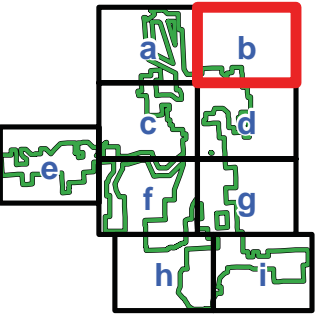
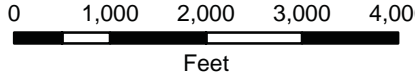


- (13) Kimberly fine sandy loam
  - (14B) Krebs silt loam, 2 to 5 percent slopes
  - (14D) Krebs silt loam, 5 to 20 percent slopes
  - (15E) Licksillet very stony loam, 7 to 40 percent slopes
  - (23B) Olex silt loam, 0 to 5 percent slopes
  - (23C) Olex silt loam, 5 to 12 percent slopes
  - (23D) Olex silt loam, 12 to 20 percent slopes
  - (24D) Olex gravelly silt loam, 5 to 20 percent slopes
  - (24E) Olex gravelly silt loam, 20 to 40 percent slopes
  - (25D) Olex-Roloff complex, 5 to 20 percent slopes
  - (38A) Roloff silt loam, 0 to 2 percent slopes
  - (39D) Roloff-Rock outcrop complex, 1 to 20 percent slopes
  - (40B) Sagehill fine sandy loam, 2 to 5 percent slopes
  - (40C) Sagehill fine sandy loam, 5 to 12 percent slopes
  - (40D) Sagehill fine sandy loam, 12 to 20 percent slopes
  - (40E) Sagehill fine sandy loam, 20 to 40 percent slopes
  - (41B) Sagehill fine sandy loam, hummocky, 2 to 5 percent slopes
  - (41C) Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes
  - (44) Stanfield fine sandy loam
  - (45B) Taunton loamy fine sand, 2 to 5 percent slopes
  - (4C) Blalock loam, 2 to 12 percent slopes
  - (55B) Warden silt loam, 2 to 5 percent slopes
  - (55C) Warden silt loam, 5 to 12 percent slopes
  - (55D) Warden silt loam, 12 to 20 percent slopes
  - (55E) Warden silt loam, 20 to 40 percent slopes
  - (58) Xeric Torrifluvents, nearly level
- Source: USDA Soil Survey Geographic Database



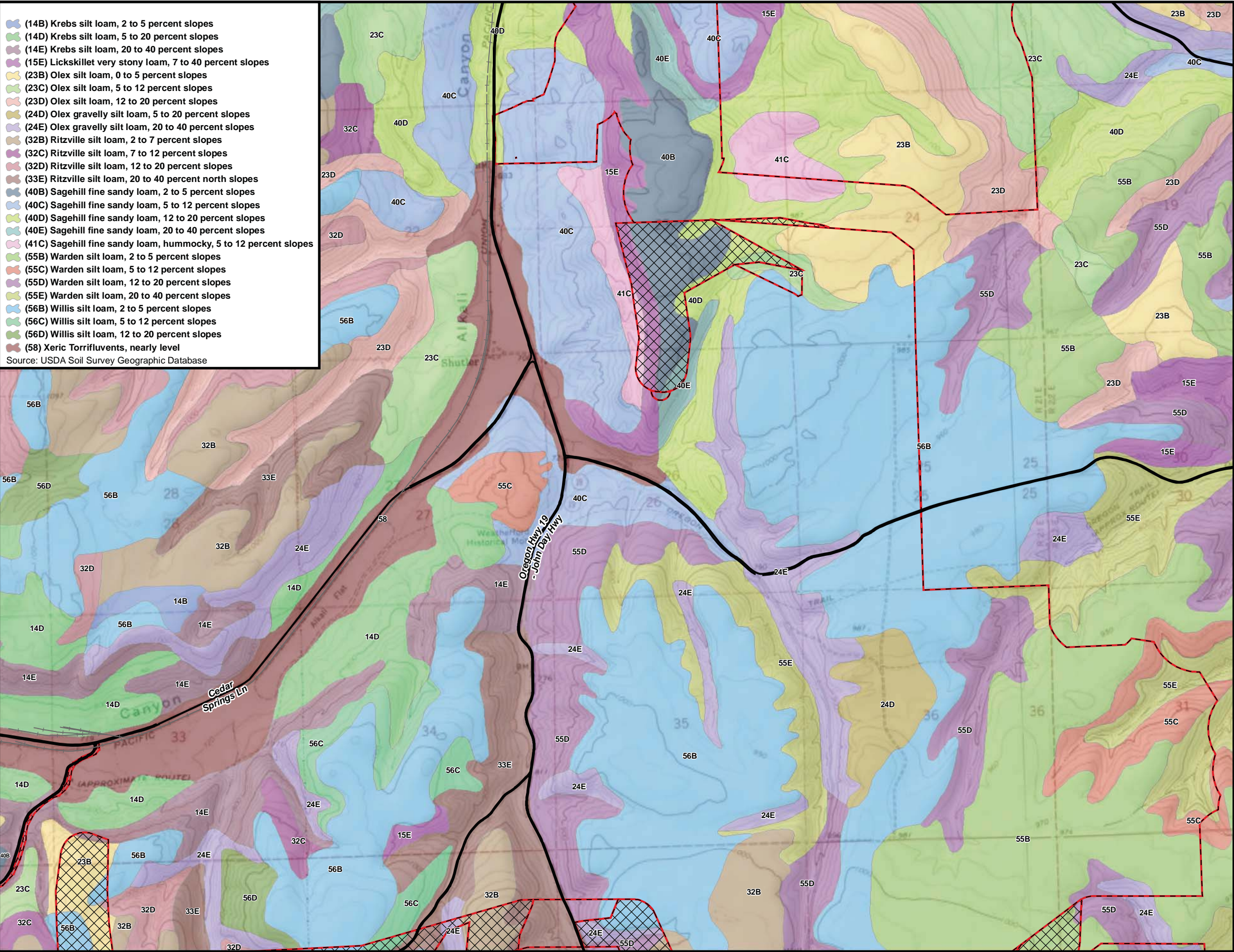
**Figure 4b**  
**Soil Survey Map**  
*Montague Wind Power Facility  
Wetland Delineation Report*

- Montague Survey Corridor
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary





- (14B) Krebs silt loam, 2 to 5 percent slopes
  - (14D) Krebs silt loam, 5 to 20 percent slopes
  - (14E) Krebs silt loam, 20 to 40 percent slopes
  - (15E) Licksillet very stony loam, 7 to 40 percent slopes
  - (23B) Olex silt loam, 0 to 5 percent slopes
  - (23C) Olex silt loam, 5 to 12 percent slopes
  - (23D) Olex silt loam, 12 to 20 percent slopes
  - (24D) Olex gravelly silt loam, 5 to 20 percent slopes
  - (24E) Olex gravelly silt loam, 20 to 40 percent slopes
  - (32B) Ritzville silt loam, 2 to 7 percent slopes
  - (32C) Ritzville silt loam, 7 to 12 percent slopes
  - (32D) Ritzville silt loam, 12 to 20 percent slopes
  - (33E) Ritzville silt loam, 20 to 40 percent north slopes
  - (40B) Sagehill fine sandy loam, 2 to 5 percent slopes
  - (40C) Sagehill fine sandy loam, 5 to 12 percent slopes
  - (40D) Sagehill fine sandy loam, 12 to 20 percent slopes
  - (40E) Sagehill fine sandy loam, 20 to 40 percent slopes
  - (41C) Sagehill fine sandy loam, hummocky, 5 to 12 percent slopes
  - (55B) Warden silt loam, 2 to 5 percent slopes
  - (55C) Warden silt loam, 5 to 12 percent slopes
  - (55D) Warden silt loam, 12 to 20 percent slopes
  - (55E) Warden silt loam, 20 to 40 percent slopes
  - (56B) Willis silt loam, 2 to 5 percent slopes
  - (56C) Willis silt loam, 5 to 12 percent slopes
  - (56D) Willis silt loam, 12 to 20 percent slopes
  - (58) Xeric Torrifluvents, nearly level
- Source: USDA Soil Survey Geographic Database

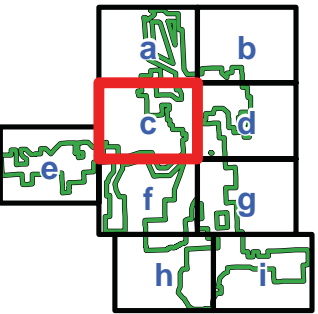


**Figure 4c**  
**Soil Survey Map**  
*Montague Wind Power Facility  
Wetland Delineation Report*

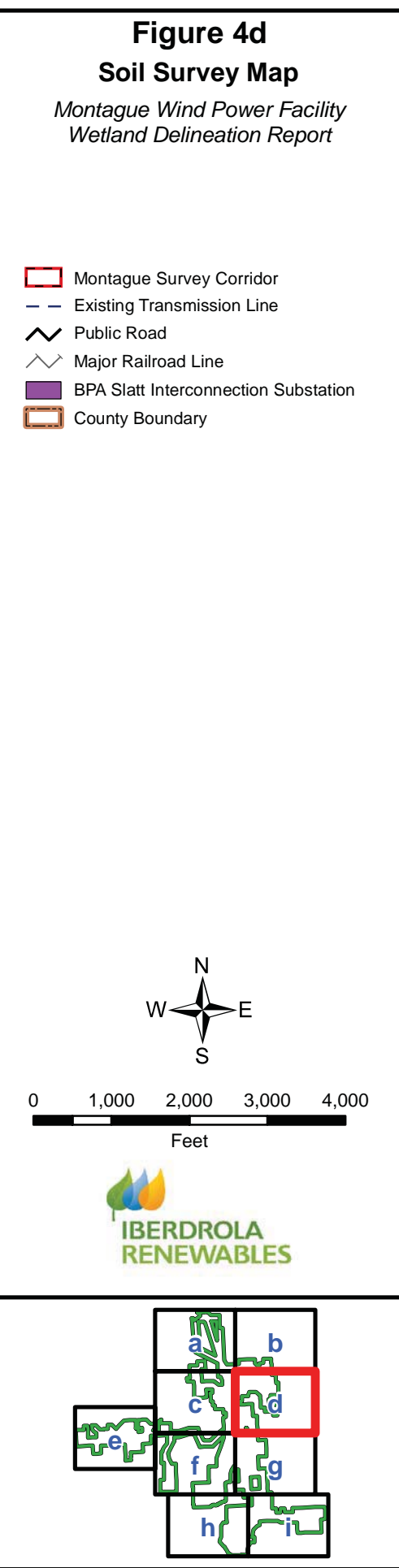
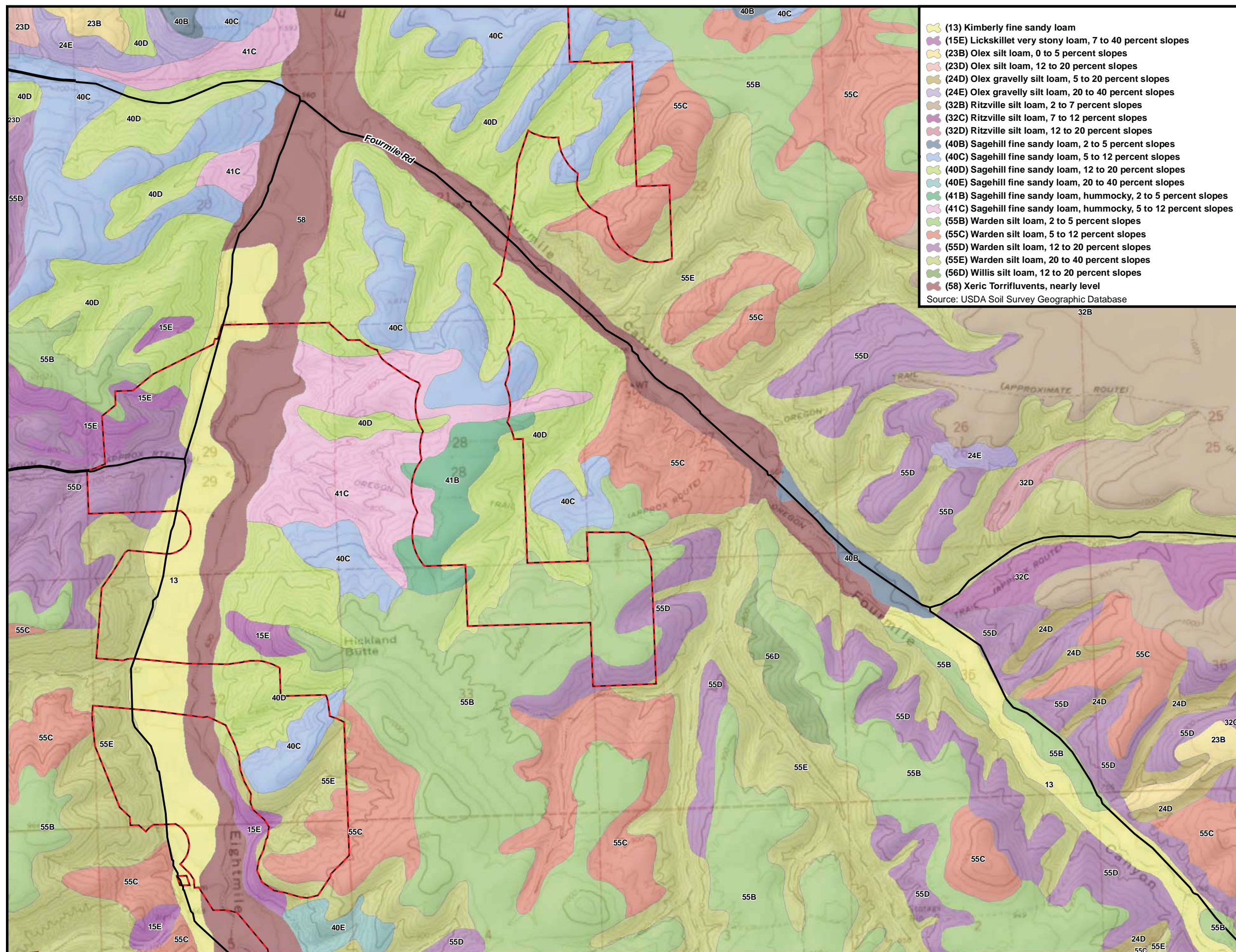
- Montague Survey Corridor
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary



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Feet



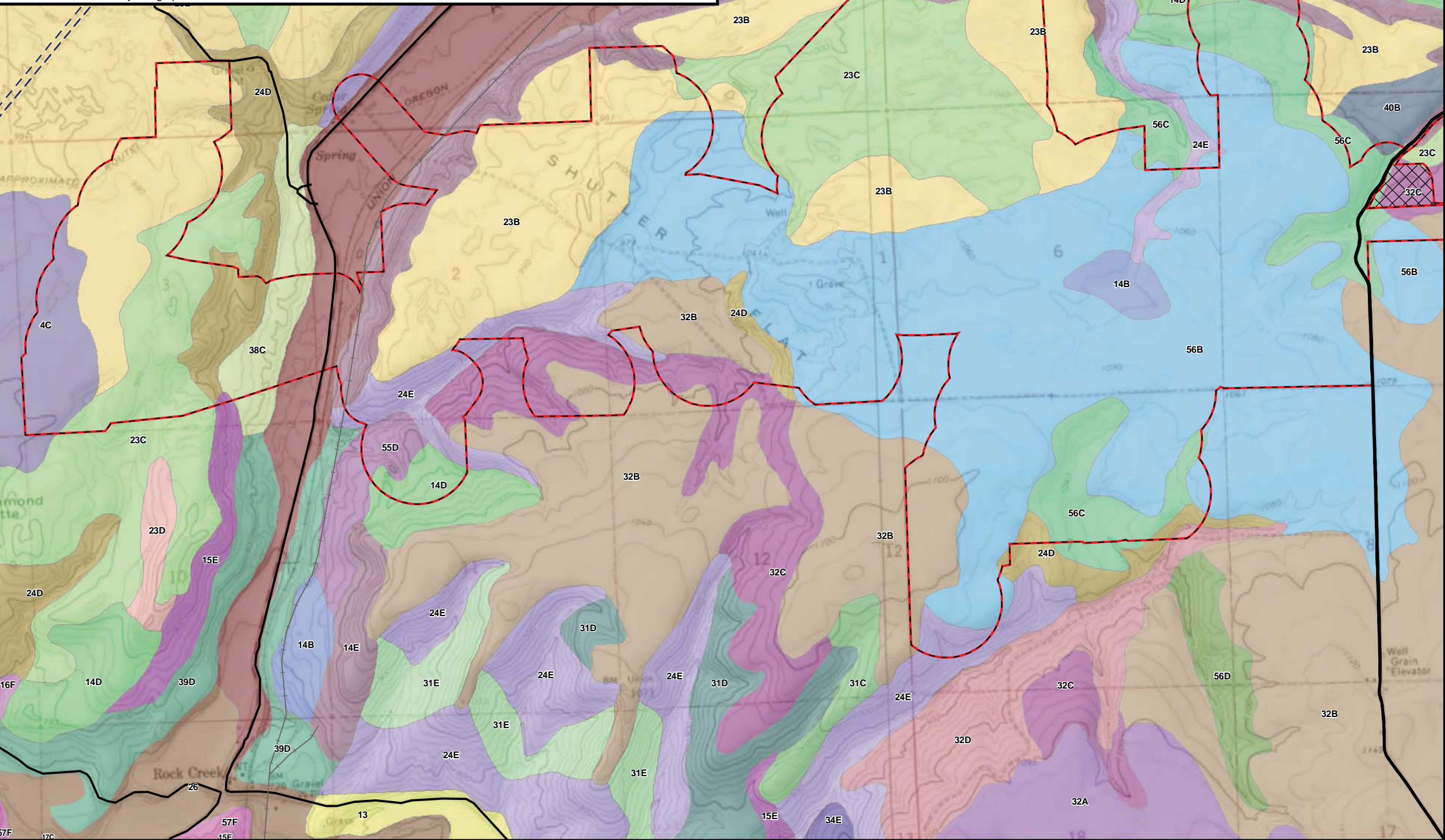






- |  |  |
|--|--|
| (13) Kimberly fine sandy loam                                  | (32A) Ritzville silt loam, 0 to 2 percent slopes             |
| (14B) Krebs silt loam, 2 to 5 percent slopes                   | (32B) Ritzville silt loam, 2 to 7 percent slopes             |
| (14D) Krebs silt loam, 5 to 20 percent slopes                  | (32C) Ritzville silt loam, 7 to 12 percent slopes            |
| (14E) Krebs silt loam, 20 to 40 percent slopes                 | (32D) Ritzville silt loam, 12 to 20 percent slopes           |
| (15E) Licksillet very stony loam, 7 to 40 percent slopes       | (34E) Ritzville silt loam, 20 to 40 percent south slopes     |
| (16F) Licksillet-Rock outcrop complex, 40 to 70 percent slopes | (38C) Roloff silt loam, 7 to 12 percent slopes               |
| (17C) Mikkalo silt loam, 7 to 12 percent slopes                | (39D) Roloff-Rock outcrop complex, 1 to 20 percent slopes    |
| (23B) Olex silt loam, 0 to 5 percent slopes                    | (40B) Sagehill fine sandy loam, 2 to 5 percent slopes        |
| (23C) Olex silt loam, 5 to 12 percent slopes                   | (4C) Blalock loam, 2 to 12 percent slopes                    |
| (23D) Olex silt loam, 12 to 20 percent slopes                  | (55D) Warden silt loam, 12 to 20 percent slopes              |
| (24D) Olex gravelly silt loam, 5 to 20 percent slopes          | (56B) Willis silt loam, 2 to 5 percent slopes                |
| (24E) Olex gravelly silt loam, 20 to 40 percent slopes         | (56C) Willis silt loam, 5 to 12 percent slopes               |
| (26) Powder silt loam  | (56D) Willis silt loam, 12 to 20 percent slopes              |
| (31C) Ritzville very fine sandy loam, 7 to 12 percent slopes   | (57F) Wrentham-Rock outcrop complex, 35 to 70 percent slopes |
| (31D) Ritzville very fine sandy loam, 12 to 20 percent slopes  | (58) Xeric Torrifluvents, nearly level                       |
| (31E) Ritzville very fine sandy loam, 20 to 40 percent slopes  |  |

Source: USDA Soil Survey Geographic Database

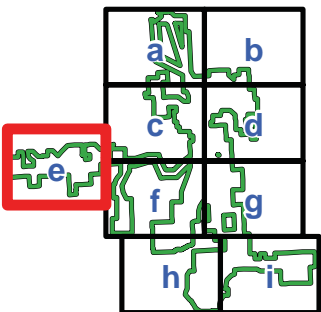


**Figure 4e**  
**Soil Survey Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

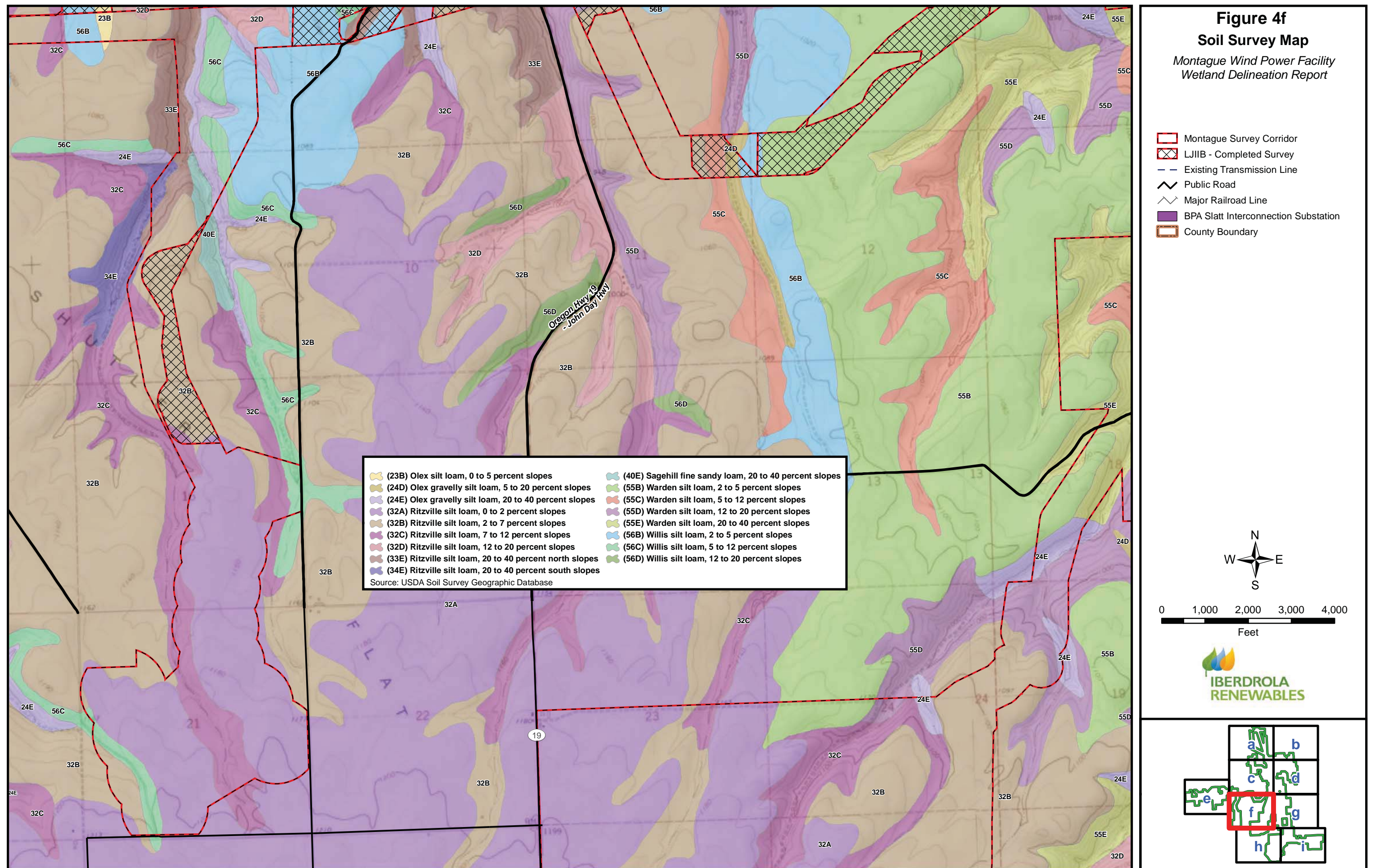
- Montague Survey Corridor
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary



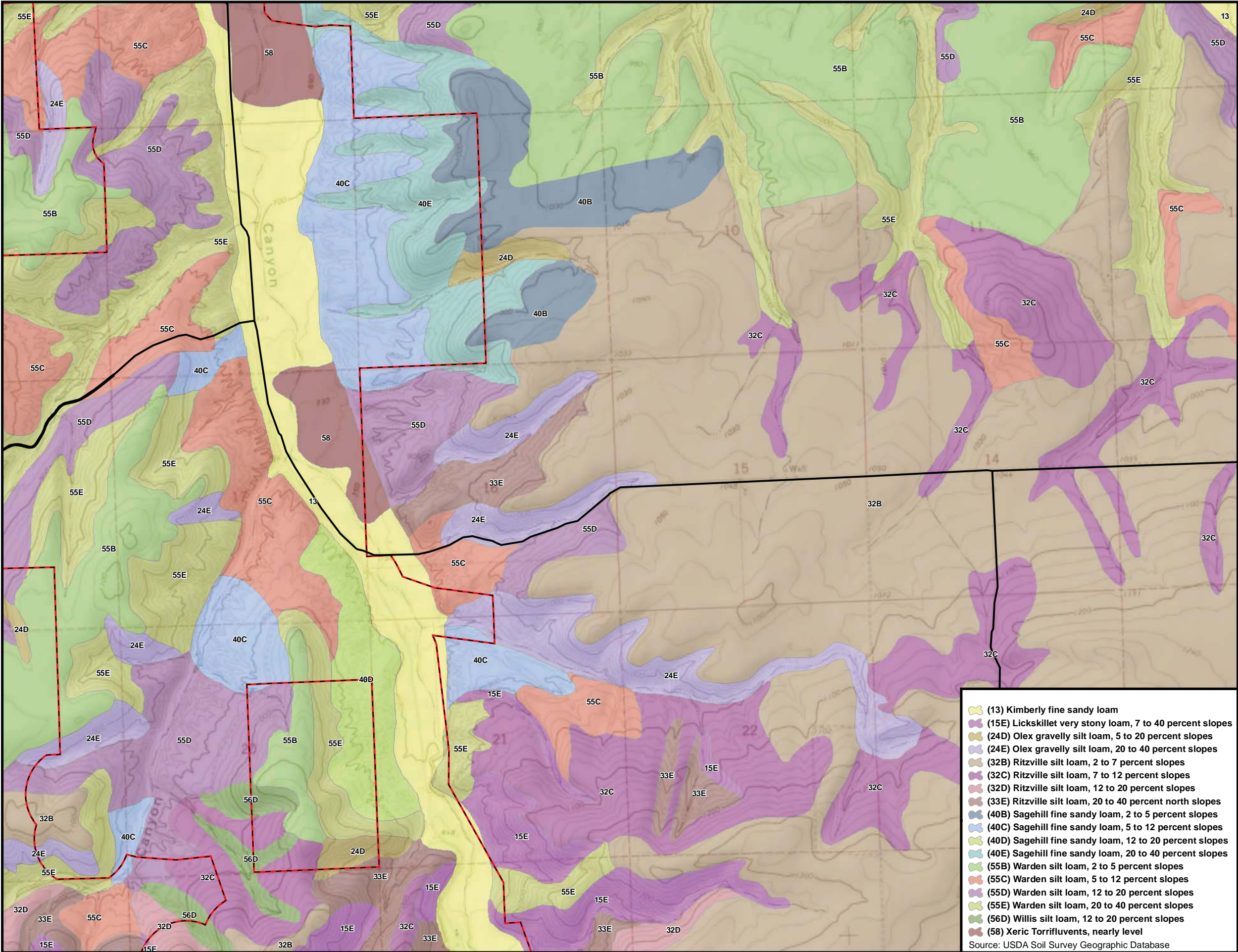
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Feet





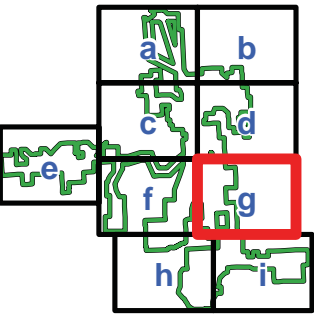
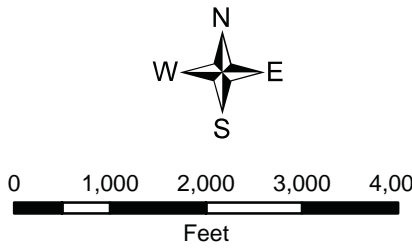






**Figure 4g**  
**Soil Survey Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

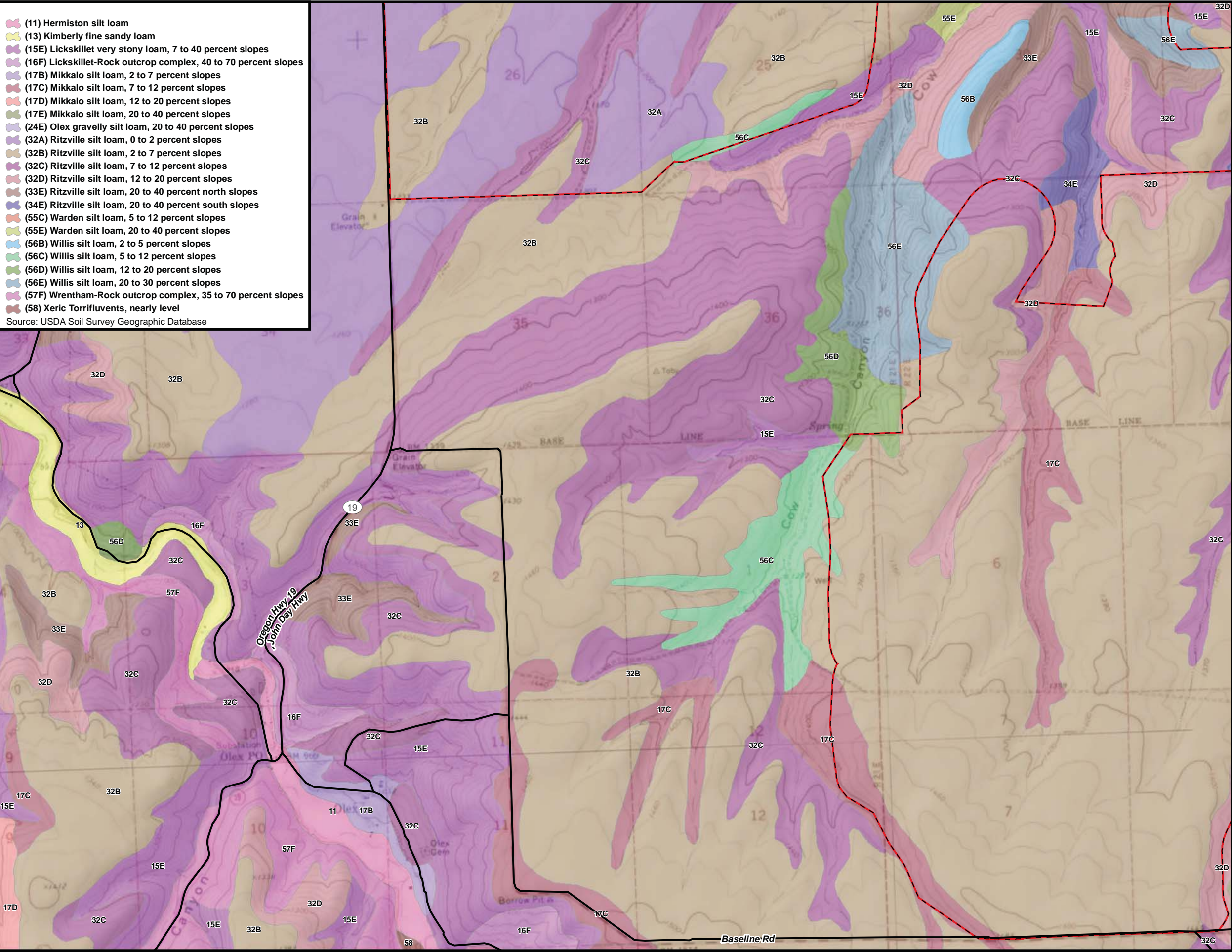
- Montague Survey Corridor
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary



- (13) Kimberly fine sandy loam
  - (15E) Licksillet very stony loam, 7 to 40 percent slopes
  - (24D) Olex gravelly silt loam, 5 to 20 percent slopes
  - (24E) Olex gravelly silt loam, 20 to 40 percent slopes
  - (32B) Ritzville silt loam, 2 to 7 percent slopes
  - (32C) Ritzville silt loam, 7 to 12 percent slopes
  - (32D) Ritzville silt loam, 12 to 20 percent slopes
  - (33E) Ritzville silt loam, 20 to 40 percent north slopes
  - (40B) Sagehill fine sandy loam, 2 to 5 percent slopes
  - (40C) Sagehill fine sandy loam, 5 to 12 percent slopes
  - (40D) Sagehill fine sandy loam, 12 to 20 percent slopes
  - (40E) Sagehill fine sandy loam, 20 to 40 percent slopes
  - (55B) Warden silt loam, 2 to 5 percent slopes
  - (55C) Warden silt loam, 5 to 12 percent slopes
  - (55D) Warden silt loam, 12 to 20 percent slopes
  - (55E) Warden silt loam, 20 to 40 percent slopes
  - (56D) Willis silt loam, 12 to 20 percent slopes
  - (58) Xeric Torrifluvents, nearly level
- Source: USDA Soil Survey Geographic Database

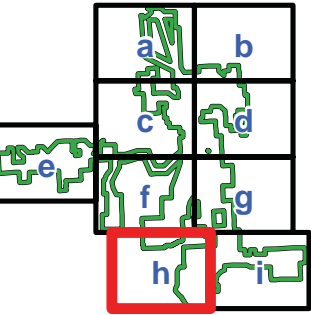
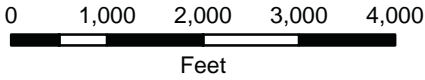


- (11) Hermiston silt loam
  - (13) Kimberly fine sandy loam
  - (15E) Licksillet very stony loam, 7 to 40 percent slopes
  - (16F) Licksillet-Rock outcrop complex, 40 to 70 percent slopes
  - (17B) Mikkalo silt loam, 2 to 7 percent slopes
  - (17C) Mikkalo silt loam, 7 to 12 percent slopes
  - (17D) Mikkalo silt loam, 12 to 20 percent slopes
  - (17E) Mikkalo silt loam, 20 to 40 percent slopes
  - (24E) Olex gravelly silt loam, 20 to 40 percent slopes
  - (32A) Ritzville silt loam, 0 to 2 percent slopes
  - (32B) Ritzville silt loam, 2 to 7 percent slopes
  - (32C) Ritzville silt loam, 7 to 12 percent slopes
  - (32D) Ritzville silt loam, 12 to 20 percent slopes
  - (33E) Ritzville silt loam, 20 to 40 percent north slopes
  - (34E) Ritzville silt loam, 20 to 40 percent south slopes
  - (55C) Warden silt loam, 5 to 12 percent slopes
  - (55E) Warden silt loam, 20 to 40 percent slopes
  - (56B) Willis silt loam, 2 to 5 percent slopes
  - (56C) Willis silt loam, 5 to 12 percent slopes
  - (56D) Willis silt loam, 12 to 20 percent slopes
  - (56E) Willis silt loam, 20 to 30 percent slopes
  - (57F) Wrentham-Rock outcrop complex, 35 to 70 percent slopes
  - (58) Xeric Torrifluvents, nearly level
- Source: USDA Soil Survey Geographic Database

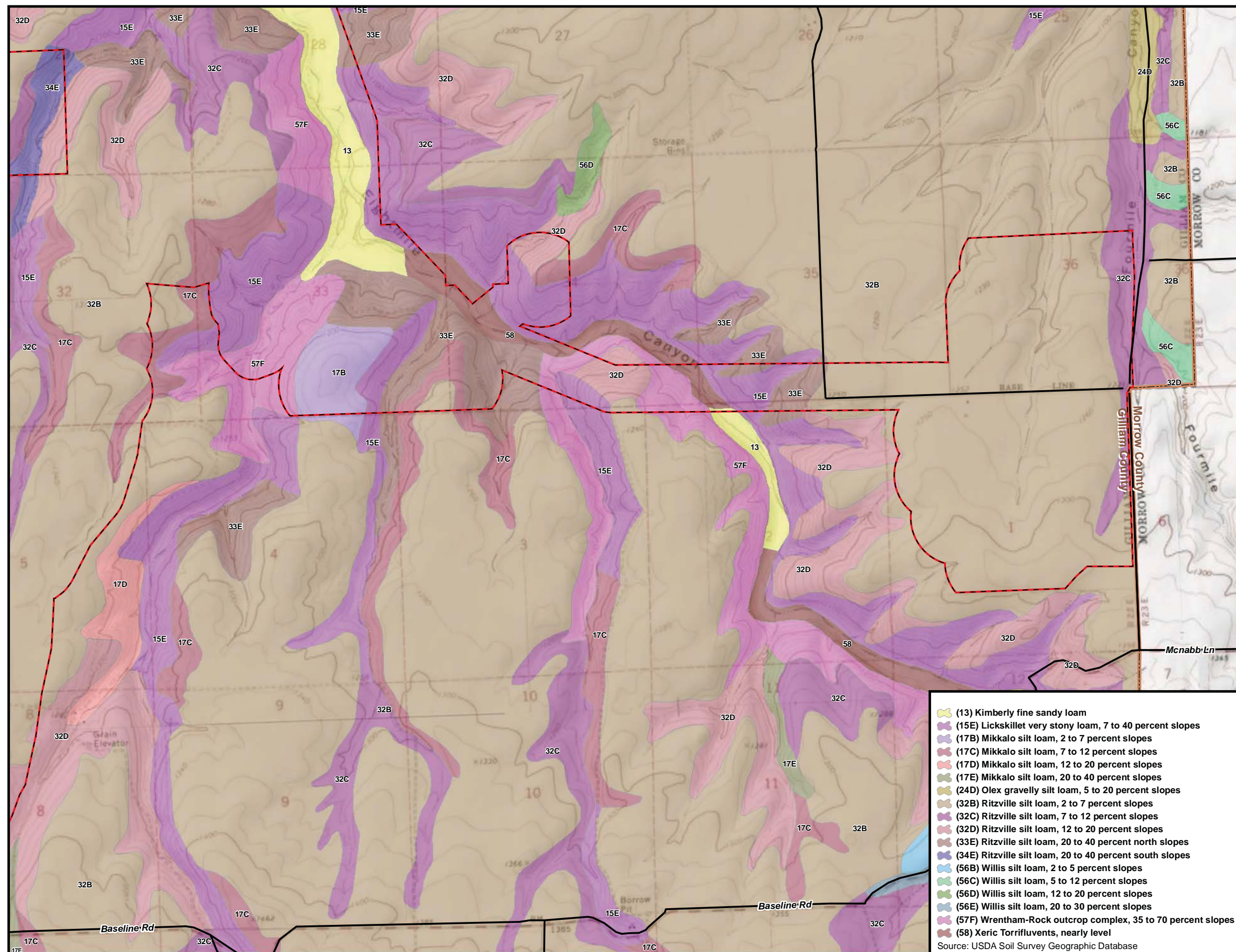


**Figure 4h**  
**Soil Survey Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*







- Montague Survey Corridor
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

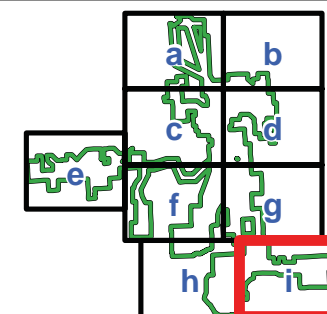




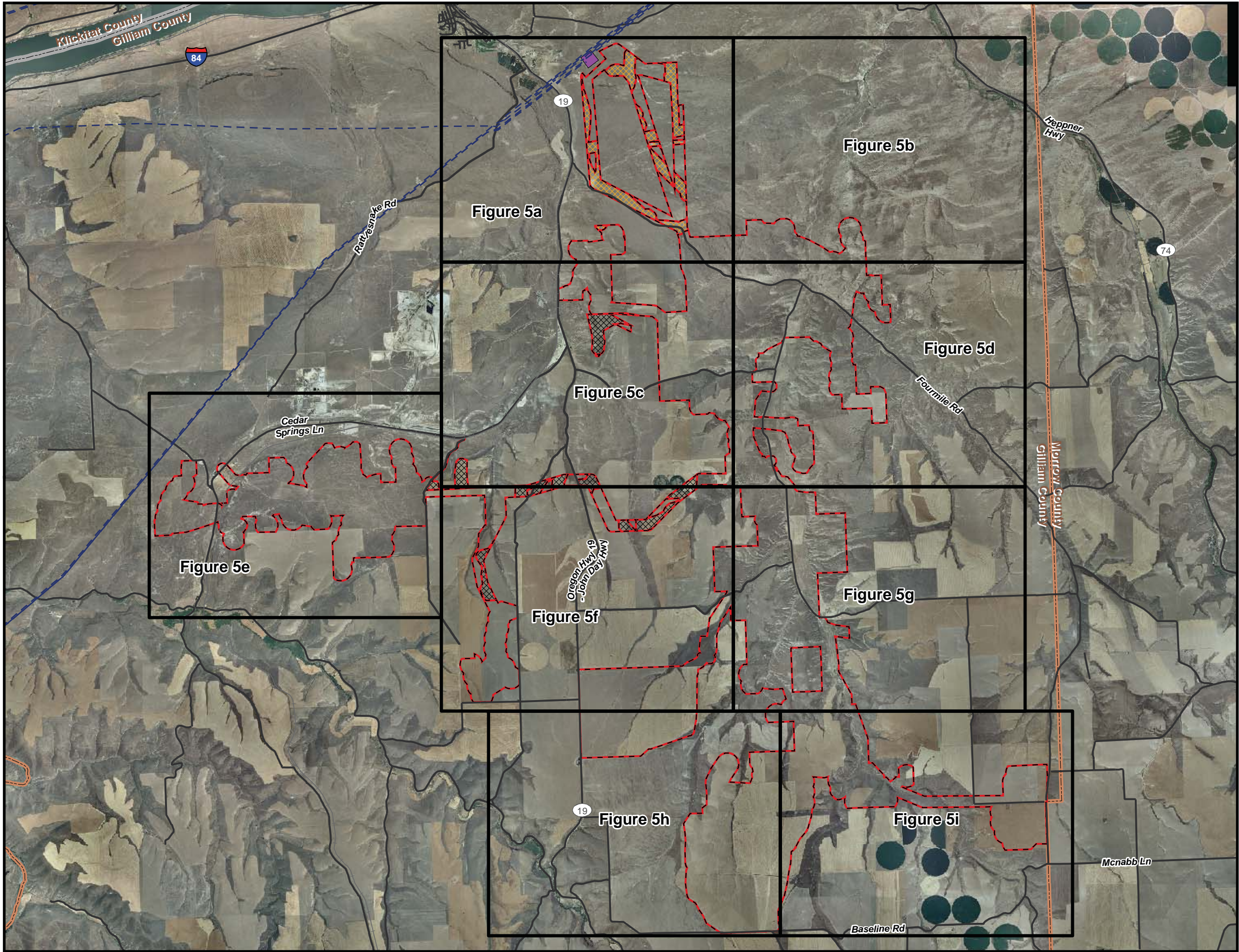


**Figure 4i**  
**Soil Survey Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

-  Montague Survey Corridor
-  Existing Transmission Line
-  Public Road
-  Major Railroad Line
-  BPA Slatt Interconnection Substation
-  County Boundary



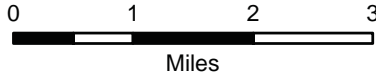




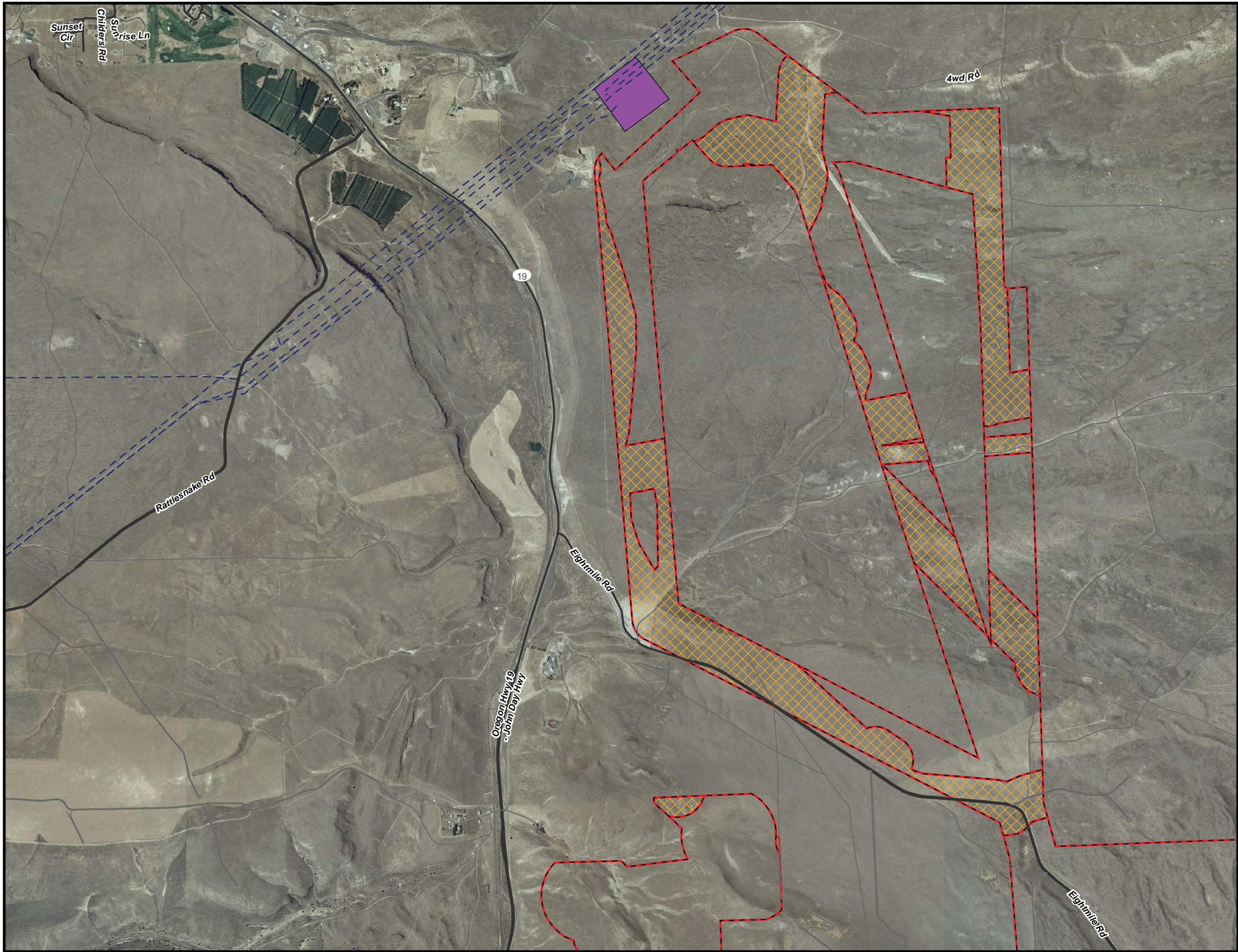
**Figure 5**  
**Aerial Photograph Index Map**  
 Montague Wind Power Facility  
 Wetland Delineation Report

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

Source:  
 1. Aerial Photograph: 2005 USDA



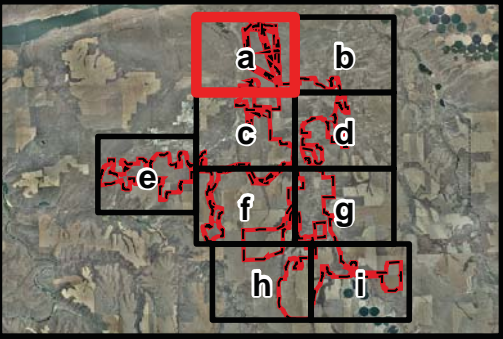
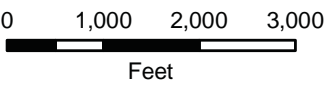




**Figure 5a**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIIIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary











Source:  
1. Aerial Photograph: 2005 USDA



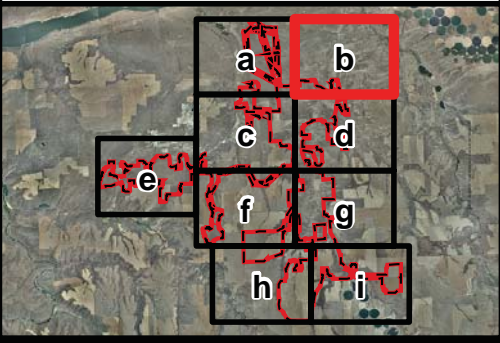
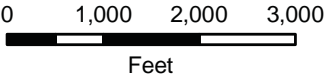




**Figure 5b**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

-  Index Grid
-  Montague Survey Corridor
-  Pebble Springs - Completed Survey
-  LJHIB - Completed Survey
-  Existing Transmission Line
-  Public Road
-  Private Road
-  Major Railroad Line
-  BPA Slatt Interconnection Substation
-  County Boundary

Source:  
1. Aerial Photograph: 2005 USDA



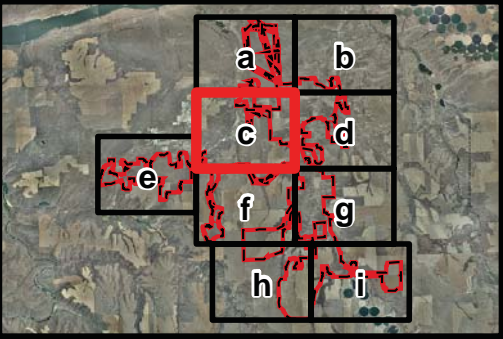
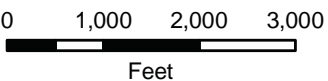




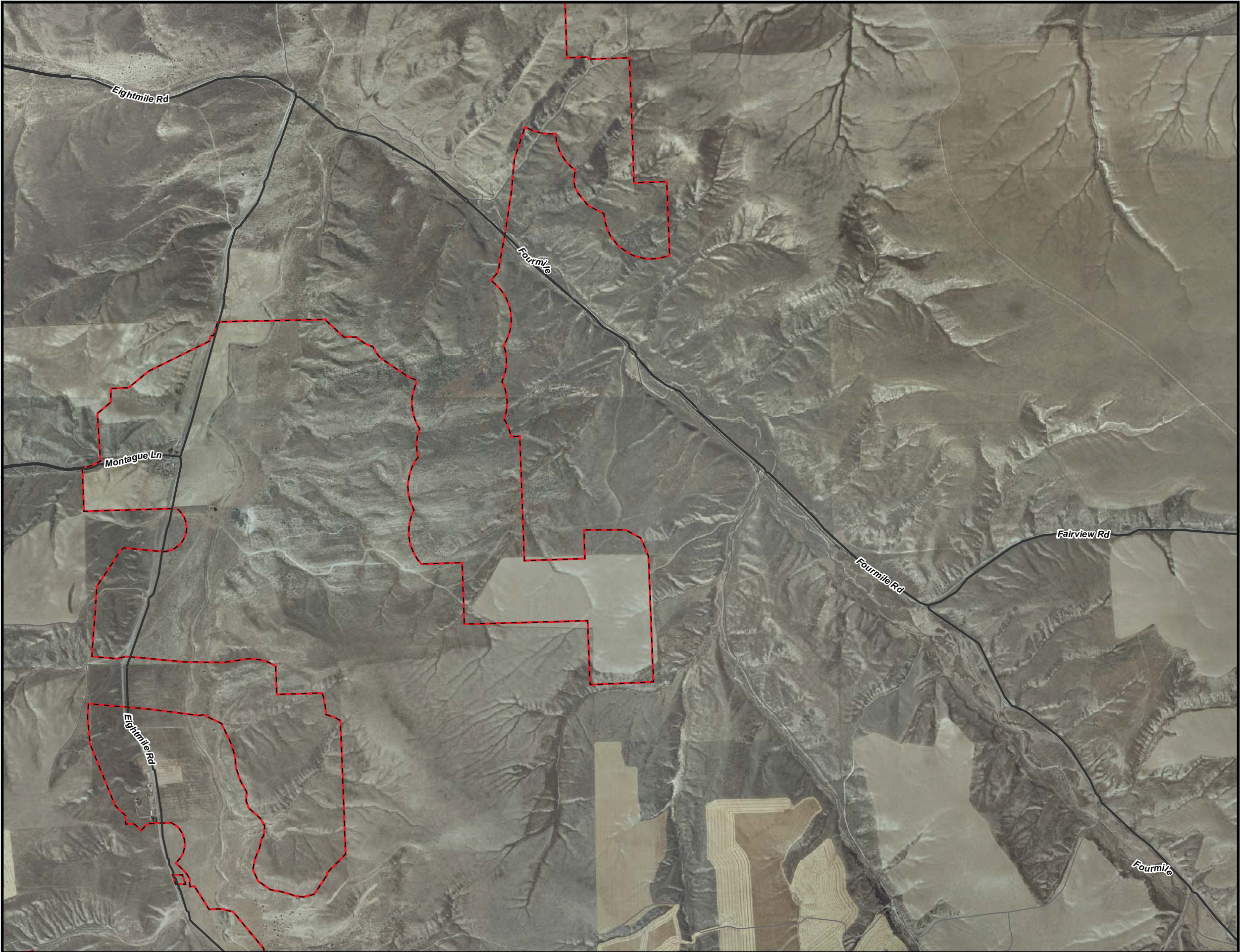
**Figure 5c**  
**Aerial Photograph Map**  
*Montague Wind Power Facility  
Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIIIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

Source:  
1. Aerial Photograph: 2005 USDA







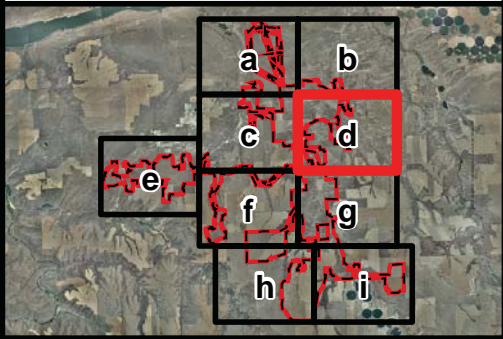
**Figure 5d**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

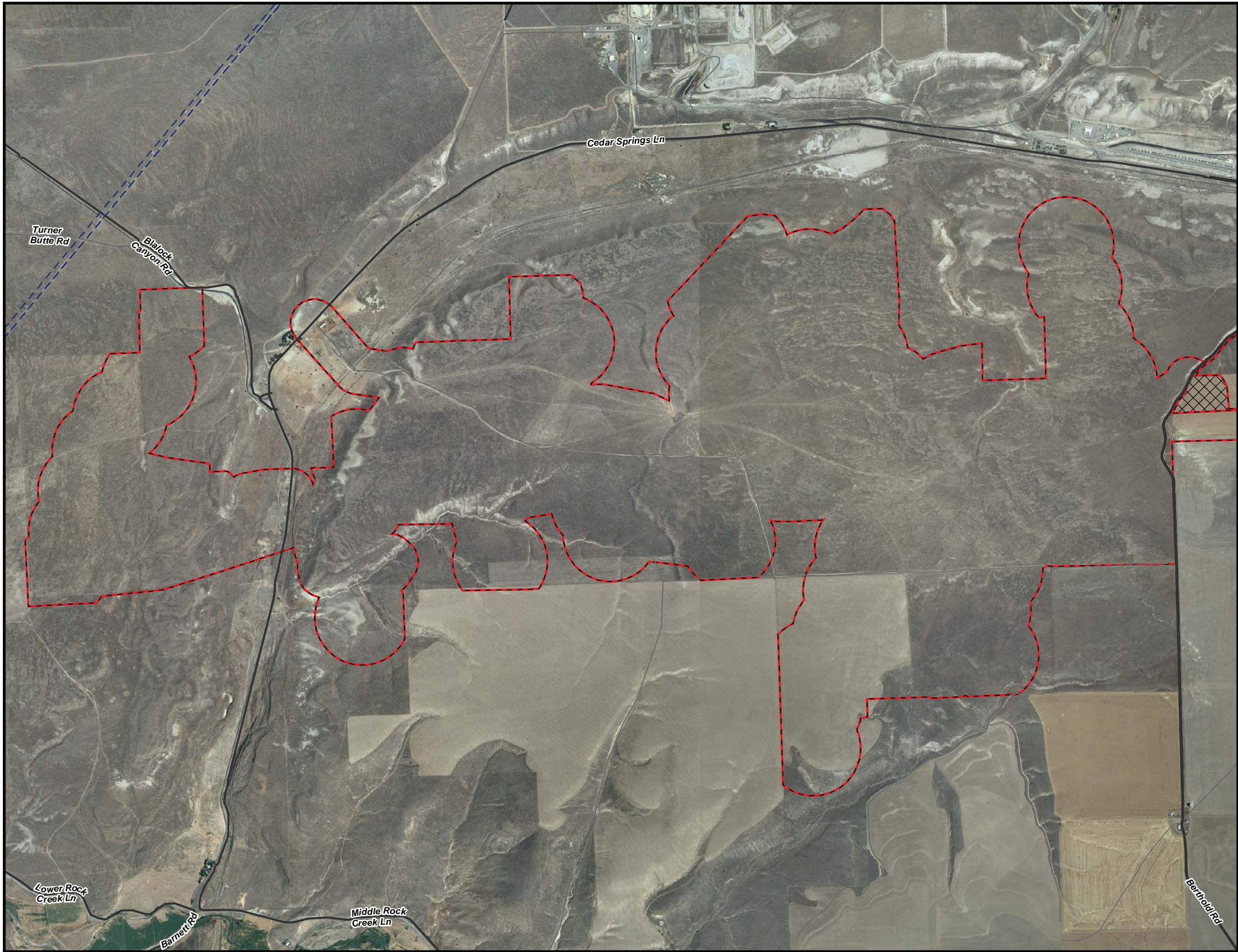
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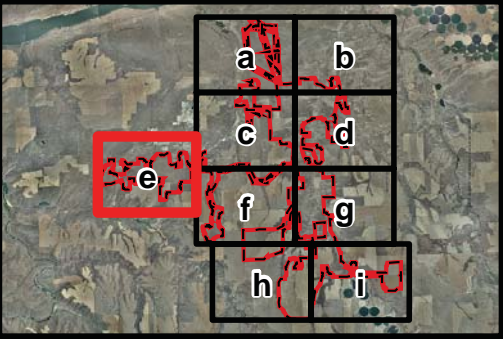
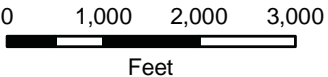




**Figure 5e**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJHIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

Source:  
1. Aerial Photograph: 2005 USDA







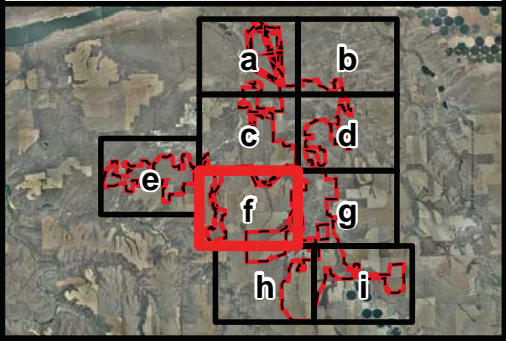
**Figure 5f**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

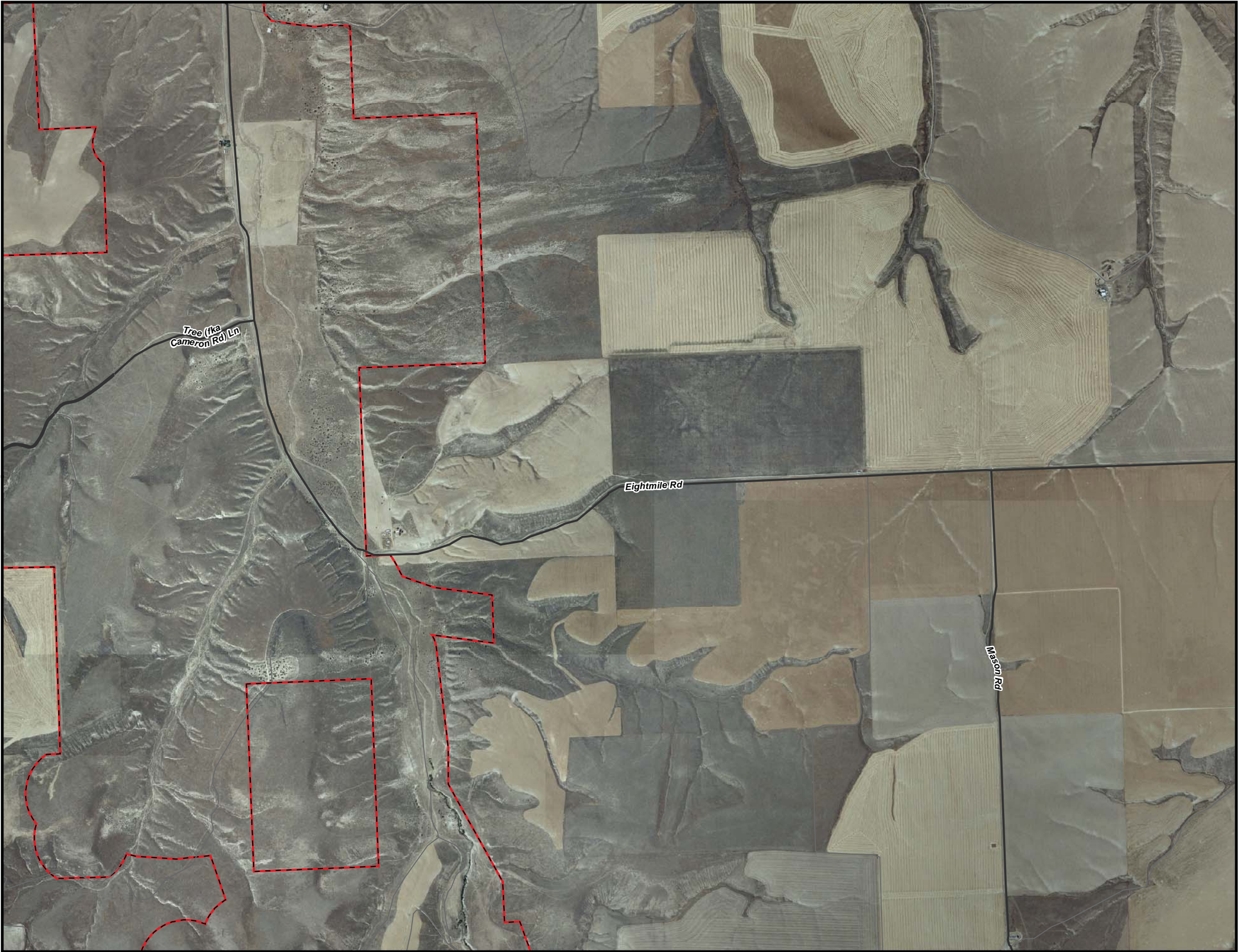
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Feet



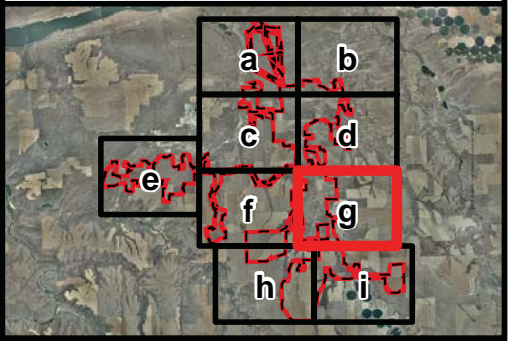
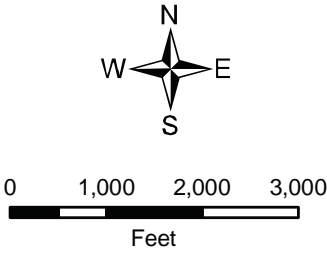




**Figure 5g**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

Source:  
1. Aerial Photograph: 2005 USDA



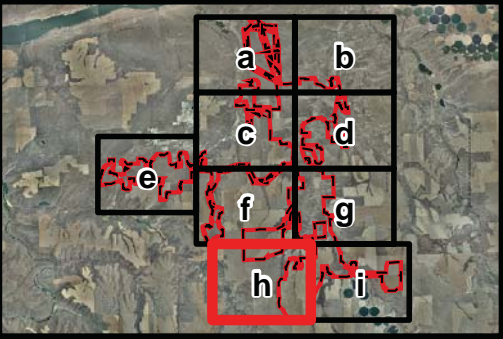
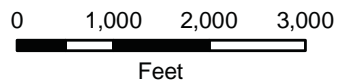




**Figure 5h**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIIIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

Source:  
1. Aerial Photograph: 2005 USDA







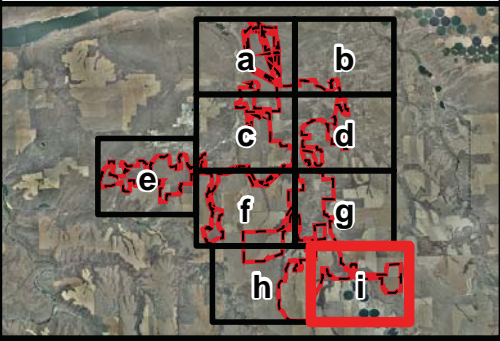
**Figure 5i**  
**Aerial Photograph Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Existing Transmission Line
- Public Road
- Private Road
- Major Railroad Line
- BPA Slatt Interconnection Substation
- County Boundary

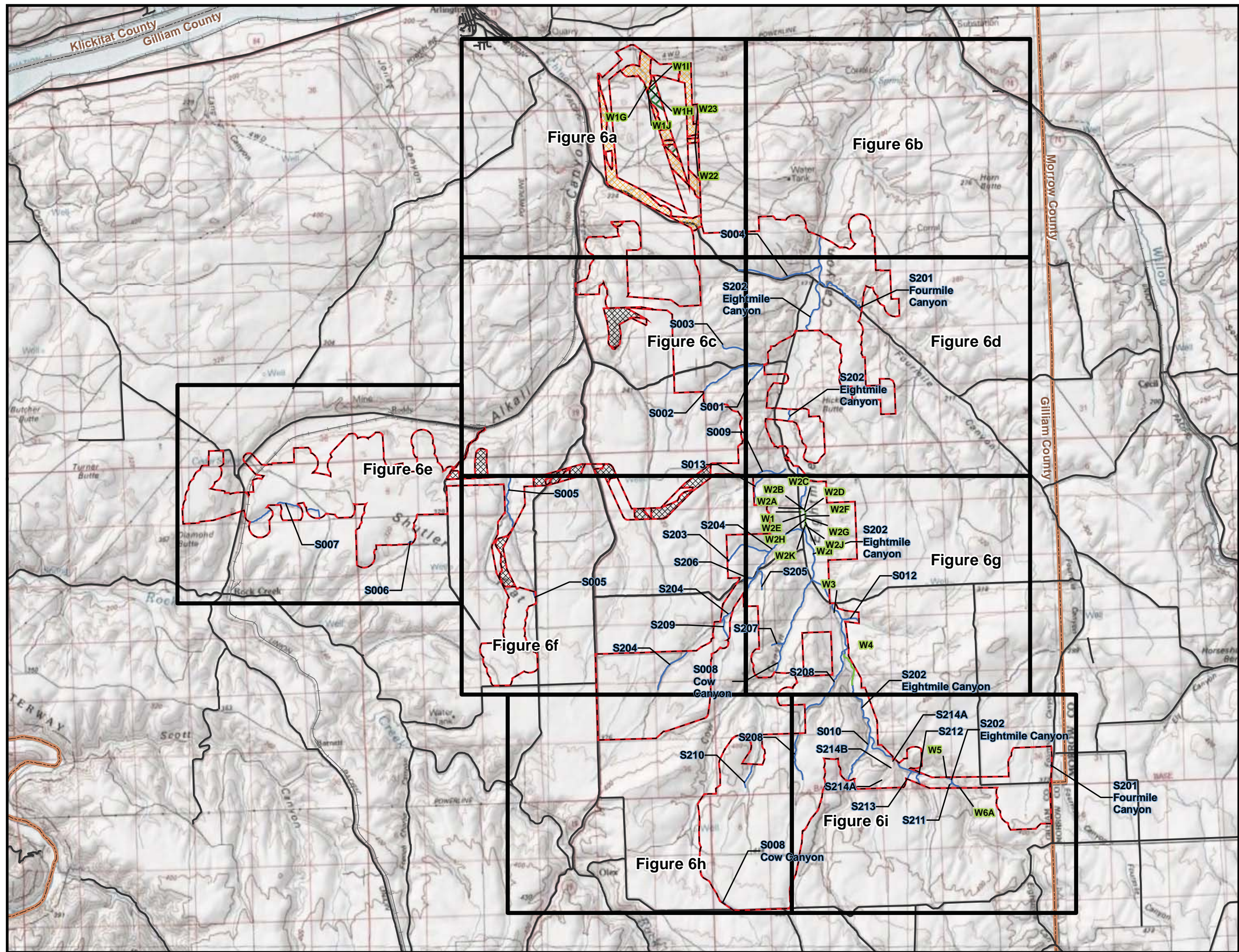
Source:  
1. Aerial Photograph: 2005 USDA



0 1,000 2,000 3,000  
Feet





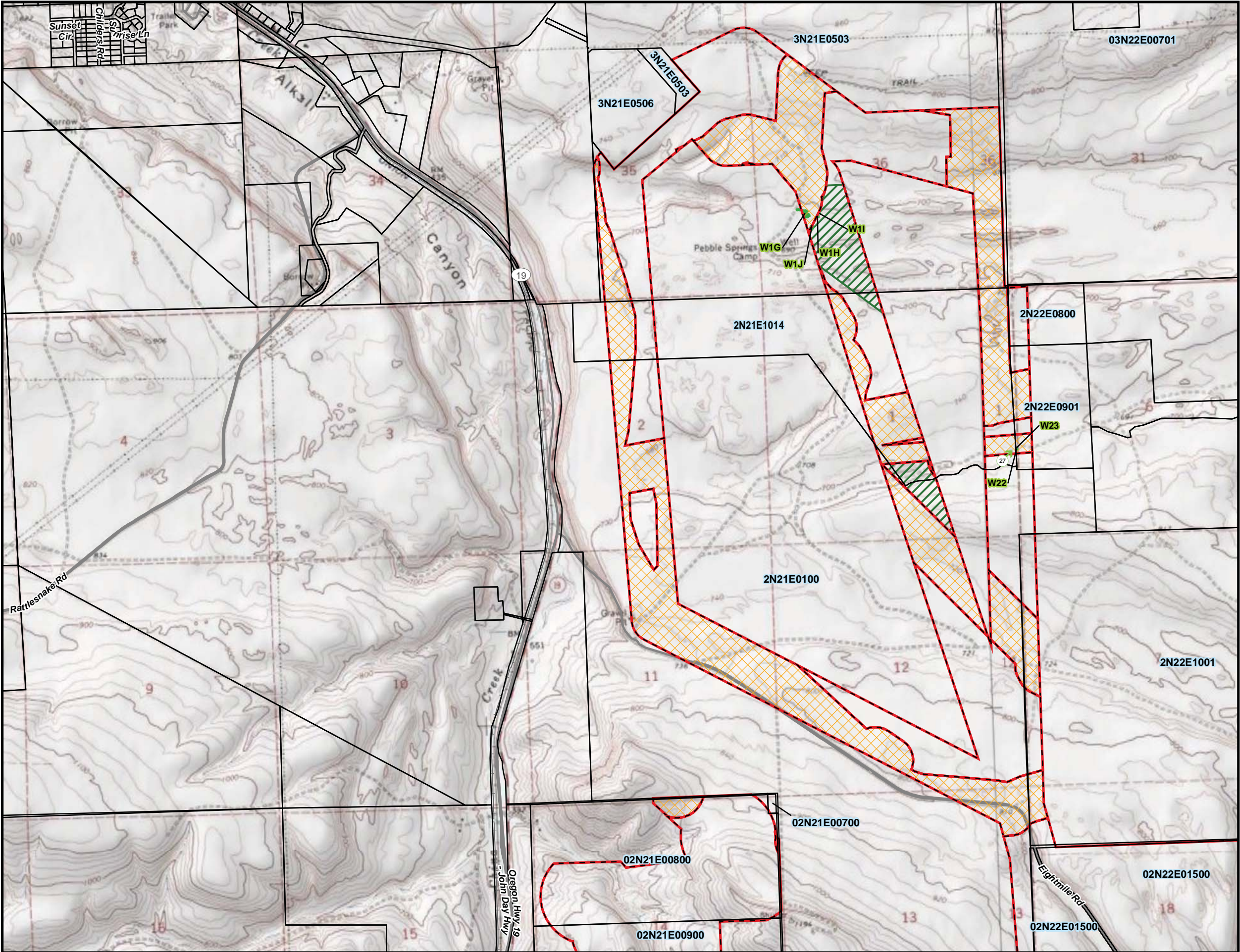


**Figure 6**  
**Wetland Delineation**  
**Index Map**  
 Montague Wind Power Facility  
 Wetland Delineation Report

- Index Grid
- CH2M HILL Field-Verified Stream
- Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility
- CH2M Mapped Wetland
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line
- State Boundary
- County Boundary



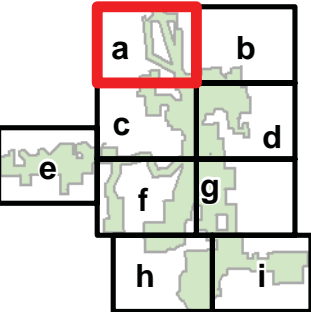
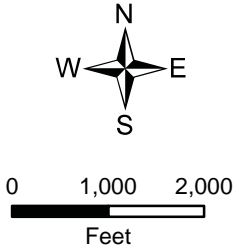




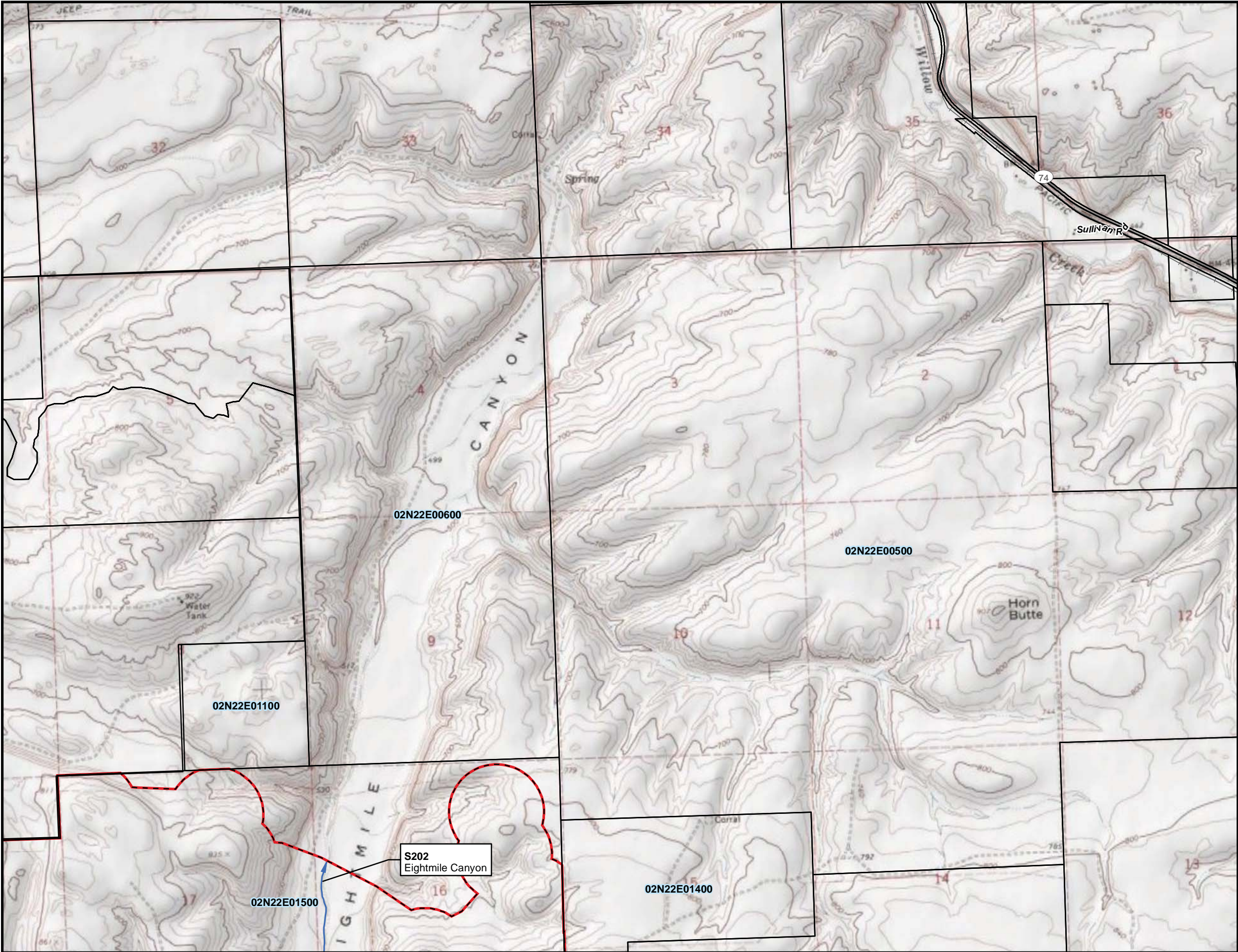
**Figure 6a**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ☞ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ☞ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ☞ CH2M Mapped Wetland<sup>1</sup>
- ☞ CH2M HILL Field-Verified Stream<sup>2</sup>
- ▨ Montague Survey Corridor
- ▨ Pebble Springs - Completed Survey
- ▨ LJIB - Completed Survey
- ▭ Property Line ( 03N22E00701 )<sup>3</sup>
- ≡ Public Road
- ≡ Major Railroad Line

Notes:  
1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.  
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.  
3. Source: 2008 Gilliam/Morrow County.







**Figure 6b**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

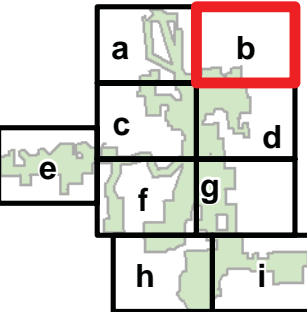
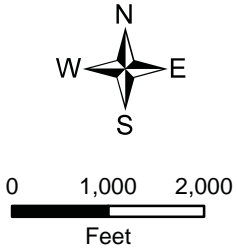
- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ∞ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ✕ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ✕ CH2M Mapped Wetland<sup>1</sup>
- ~ CH2M HILL Field-Verified Stream<sup>2</sup>
- ▭ Montague Survey Corridor
- ▭ Pebble Springs - Completed Survey
- ▭ LJIB - Completed Survey
- ▭ Property Line ( 03N22E00701 )<sup>3</sup>
- ≡ Public Road
- ≡ Major Railroad Line

Notes:

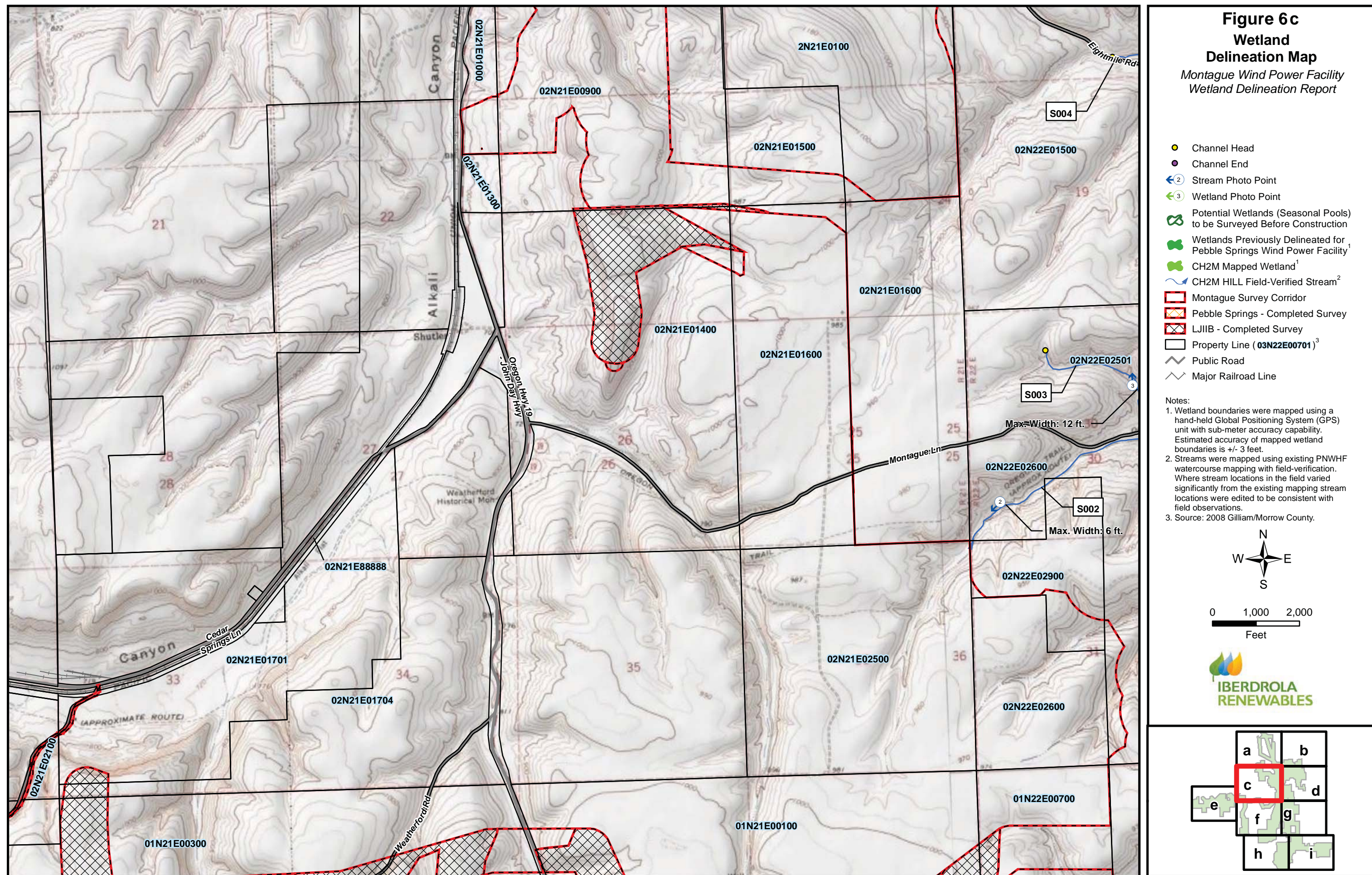
1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.

2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.

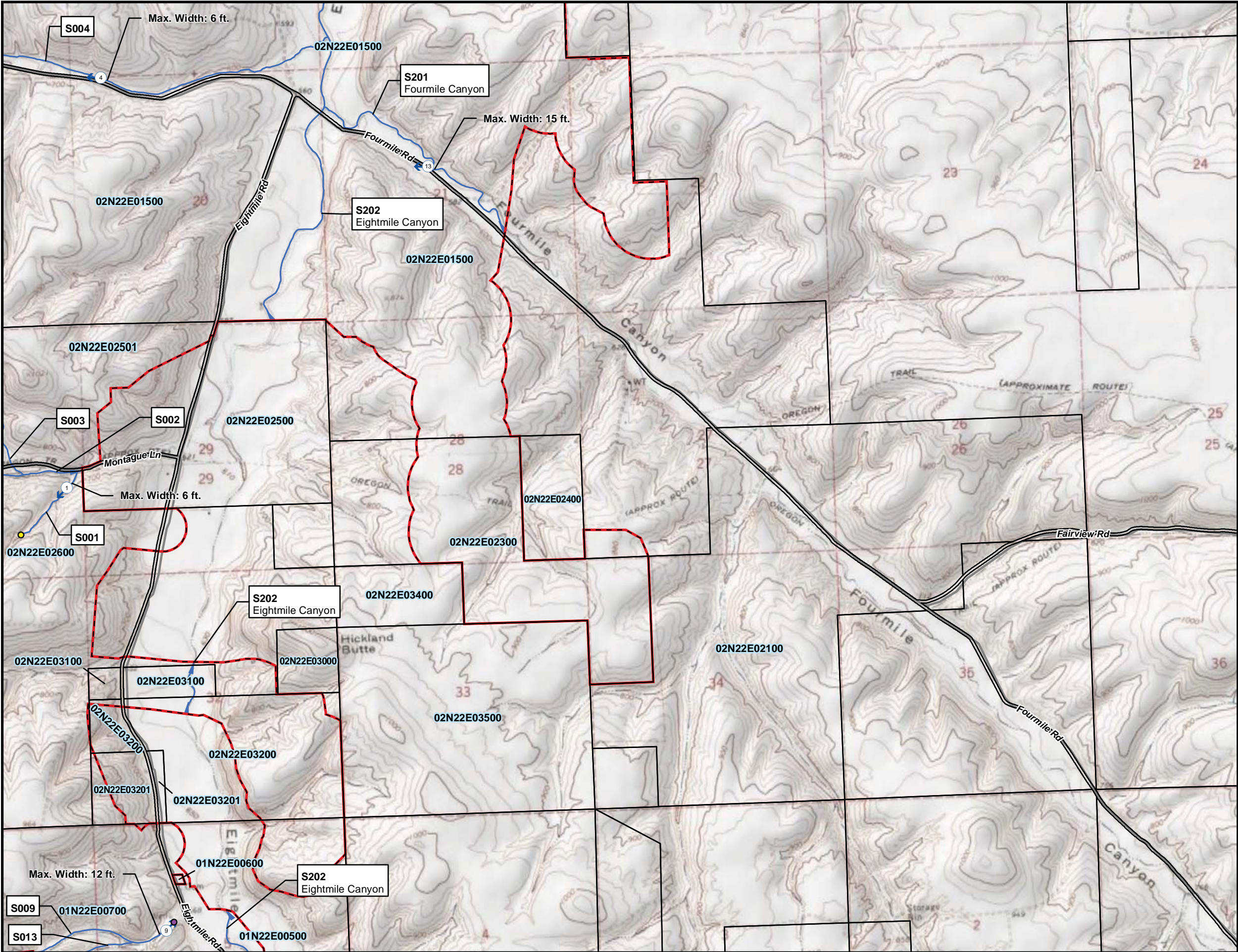
3. Source: 2008 Gilliam/Morrow County.







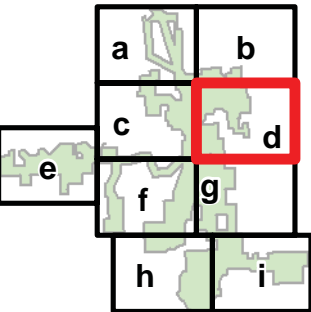
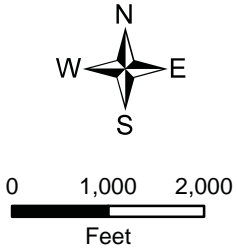




**Figure 6d**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

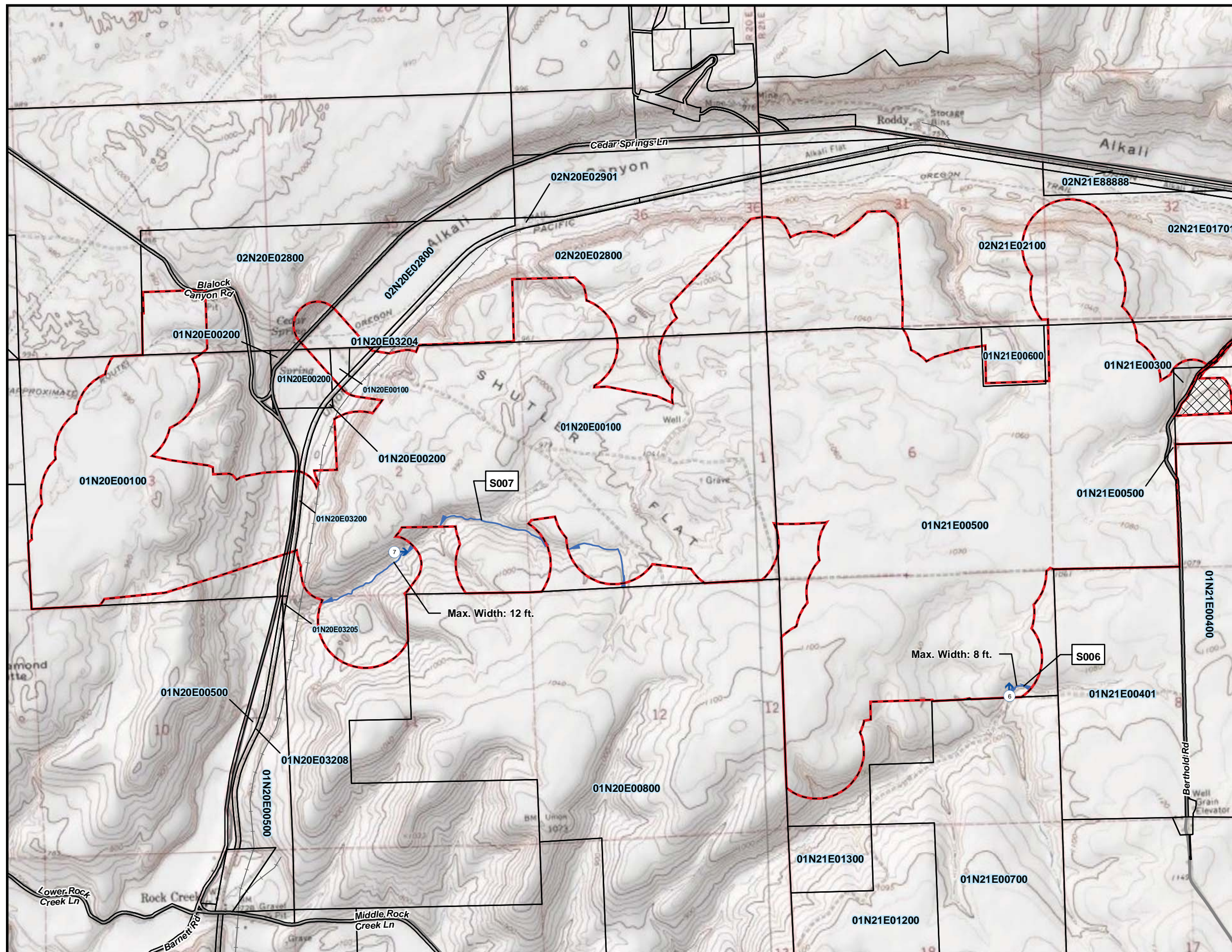
- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ⊕ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ⊕ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ⊕ CH2M Mapped Wetland<sup>1</sup>
- ⊕ CH2M HILL Field-Verified Stream<sup>2</sup>
- ▭ Montague Survey Corridor
- ▭ Pebble Springs - Completed Survey
- ▭ LJIB - Completed Survey
- ▭ Property Line ( 03N22E00701 )<sup>3</sup>
- ≡ Public Road
- ≡ Major Railroad Line

Notes:  
1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.  
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.  
3. Source: 2008 Gilliam/Morrow County.





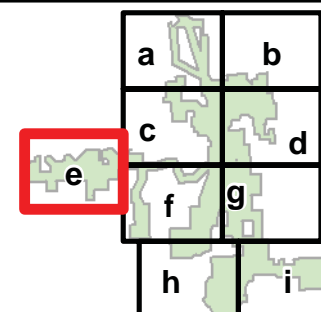
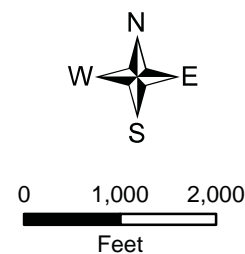
**Figure 6e**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*



- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ⊕ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ⊕ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ⊕ CH2M Mapped Wetland<sup>1</sup>
- ⊕ CH2M HILL Field-Verified Stream<sup>2</sup>
- ▭ Montague Survey Corridor
- ▭ Pebble Springs - Completed Survey
- ▭ LJIB - Completed Survey
- ▭ Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

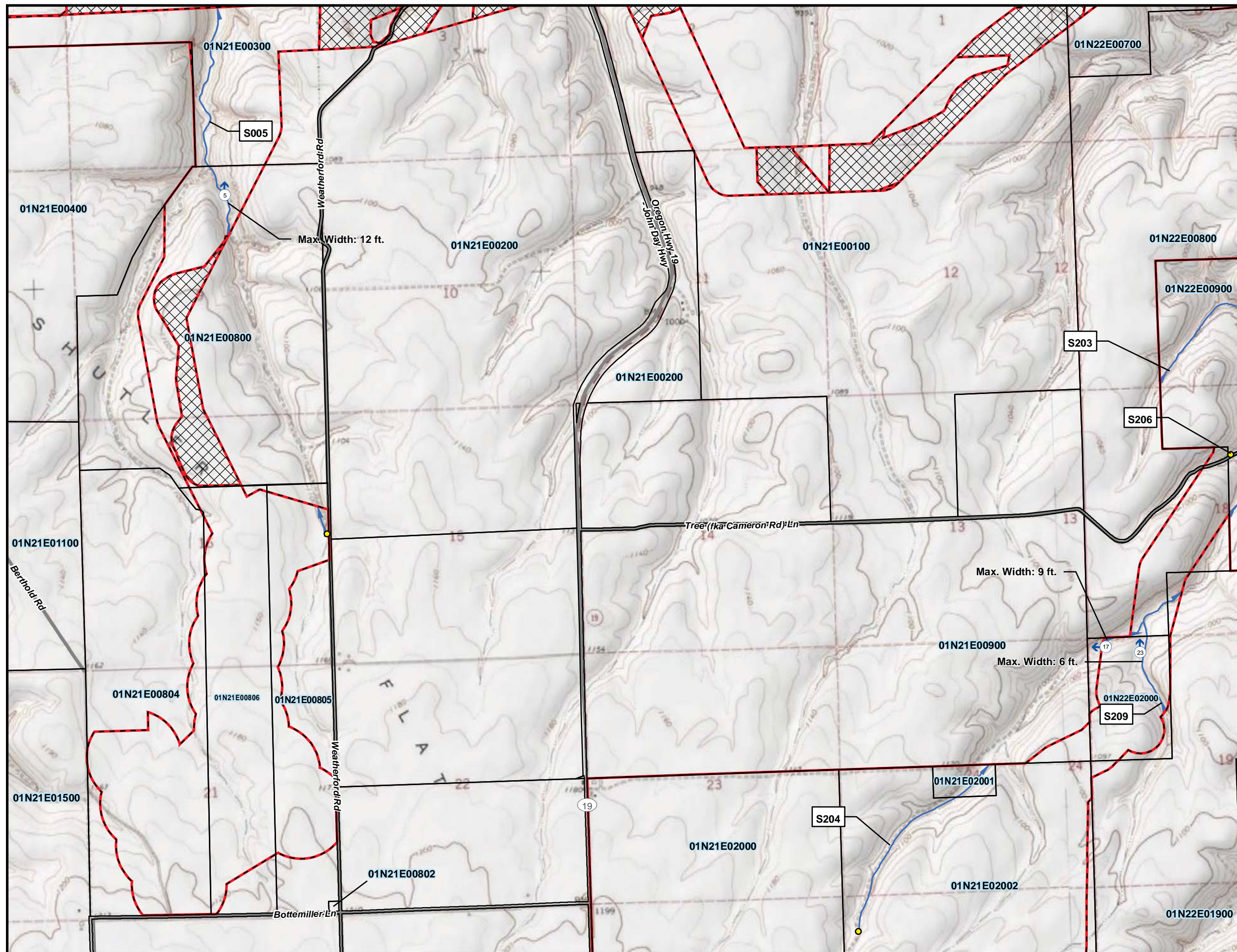
Notes:

1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
3. Source: 2008 Gilliam/Morrow County.





**Figure 6f**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*



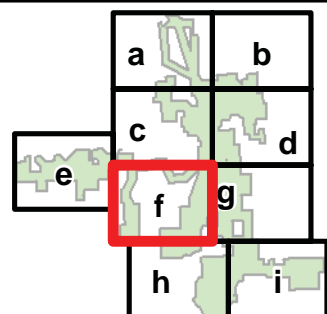
- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ⊕ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ⊕ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ⊕ CH2M Mapped Wetland<sup>1</sup>
- ⊕ CH2M HILL Field-Verified Stream<sup>2</sup>
- ▭ Montague Survey Corridor
- ▭ Pebble Springs - Completed Survey
- ▭ LJIB - Completed Survey
- ▭ Property Line (03N22E00701)<sup>3</sup>
- ≡ Public Road
- ≡ Major Railroad Line

Notes:

1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
3. Source: 2008 Gilliam/Morrow County.

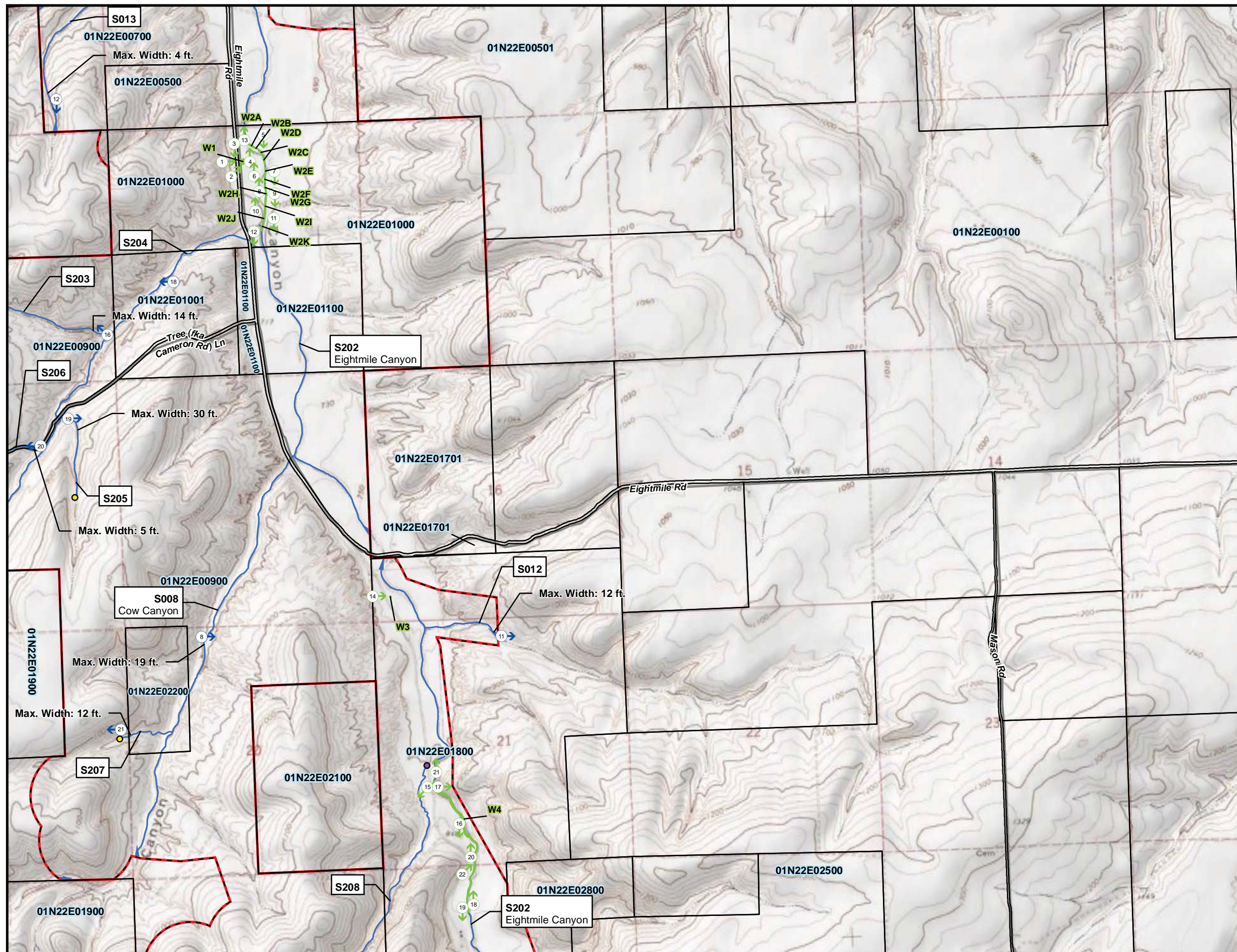


0 1,000 2,000  
 Feet





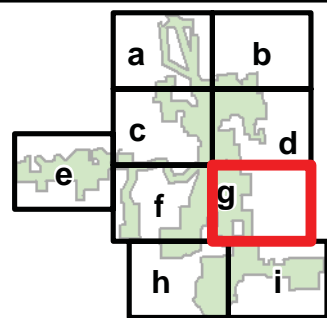
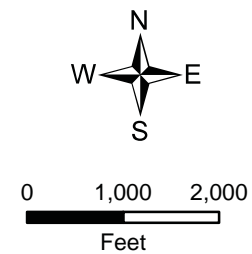
**Figure 6g**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*



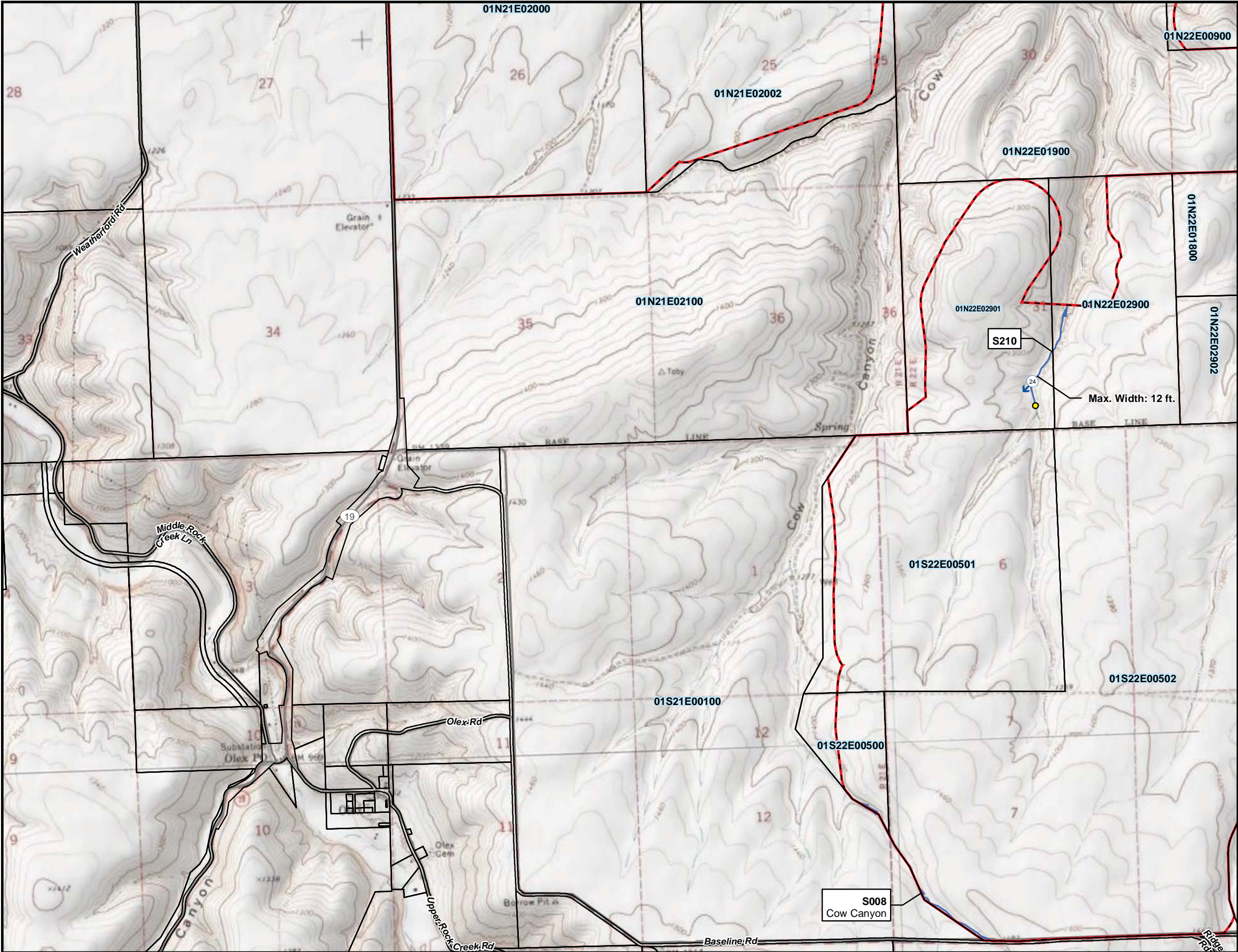
- Channel Head
- Channel End
- Stream Photo Point
- Wetland Photo Point
- Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M Mapped Wetland<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:

- Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
- Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
- Source: 2008 Gilliam/Morrow County.



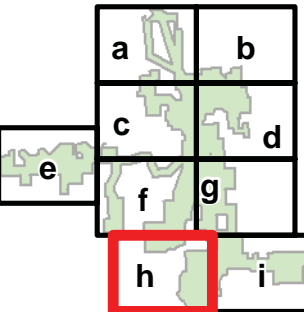
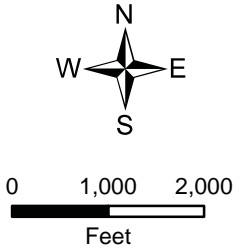




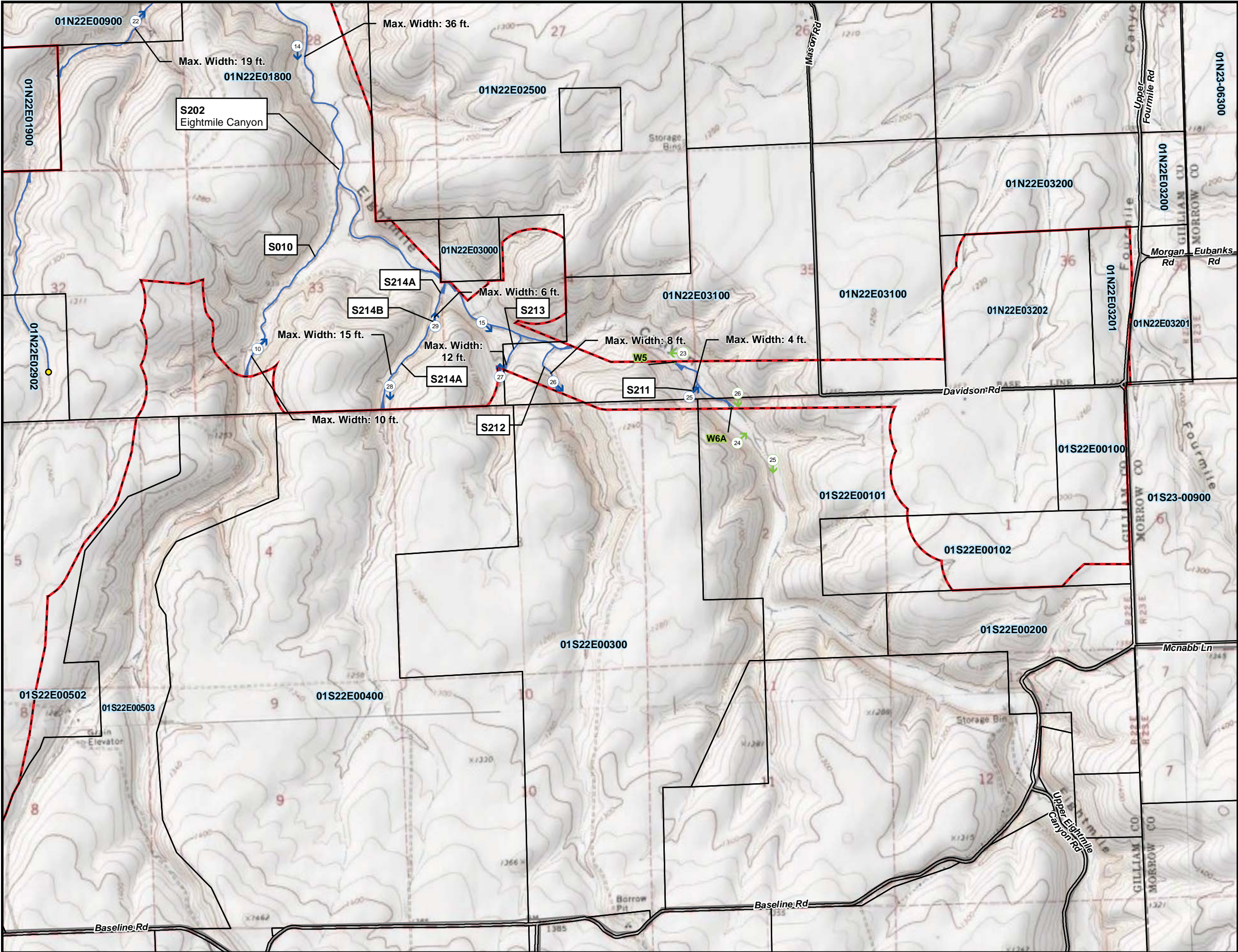
**Figure 6h**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Channel Head
- Channel End
- ② Stream Photo Point
- ③ Wetland Photo Point
- ∞ Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- ✚ Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- ✚ CH2M Mapped Wetland<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- ▭ Montague Survey Corridor
- ▨ Pebble Springs - Completed Survey
- ▨ LJIB - Completed Survey
- ▭ Property Line (03N22E00701)<sup>3</sup>
- ≡ Public Road
- ≡ Major Railroad Line

Notes:  
1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.  
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.  
3. Source: 2008 Gilliam/Morrow County.



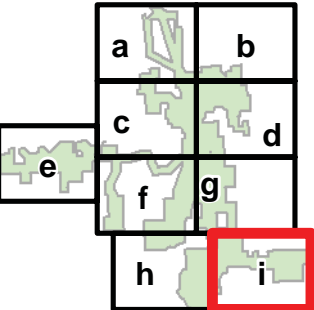
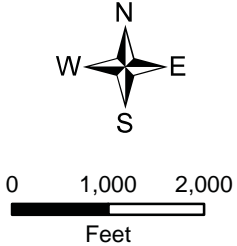




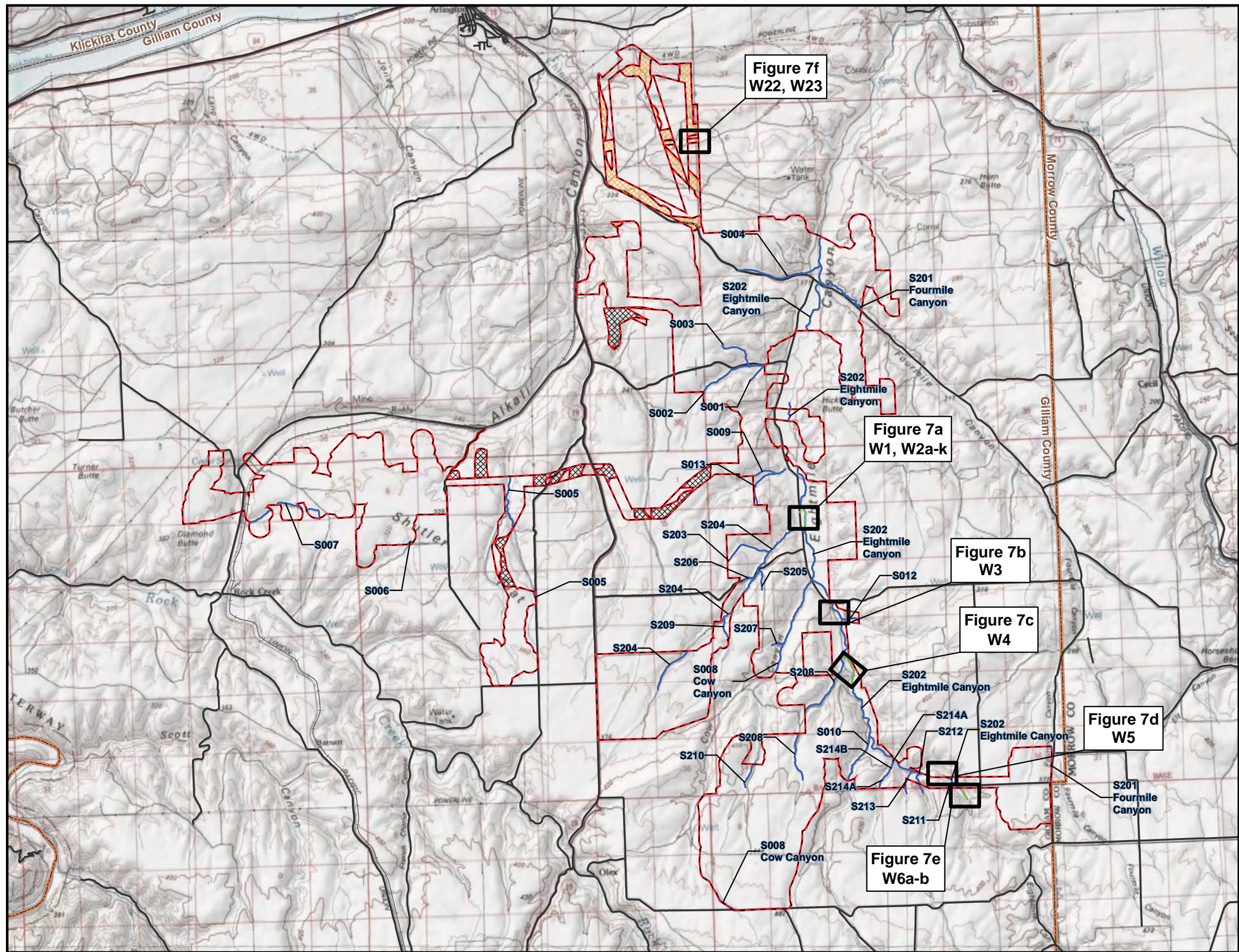
**Figure 6i**  
**Wetland**  
**Delineation Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Channel Head
- Channel End
- Stream Photo Point
- Wetland Photo Point
- Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M Mapped Wetland<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:  
1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.  
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.  
3. Source: 2008 Gilliam/Morrow County.





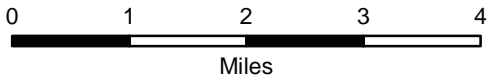


**Figure 7**  
**Wetland Boundary and**  
**Sample Plots Index Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Index Grid
- CH2M HILL Mapped Wetland<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Public Road
- Major Railroad Line
- State Boundary
- County Boundary

Notes:

1. Wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.





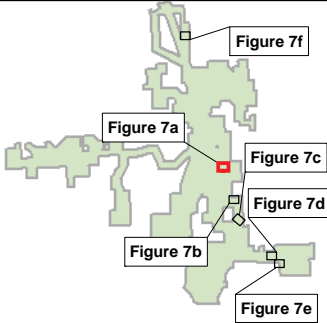
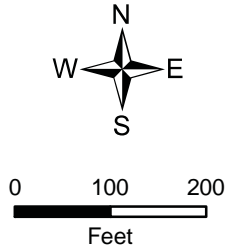


**Figure 7a**  
**Wetland Boundary and Sample Plots Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Wetland Sample Plot<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Stream Photo Point
- Wetland Photo Point
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M HILL Mapped Wetland<sup>1</sup>
- Wetland Extends Beyond Survey Corridor
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:

- Wetland boundaries and wetland sample plot locations were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
- Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
- Source: 2009 Gilliam County
- Aerial Photograph: 2005 USDA



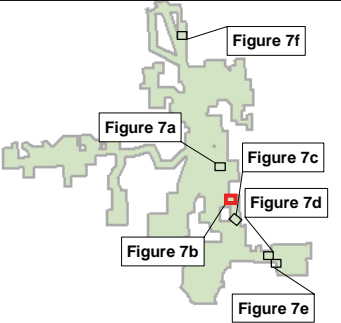
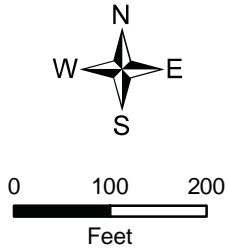




**Figure 7b**  
**Wetland Boundary and Sample Plots Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Wetland Sample Plot<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Stream Photo Point
- Wetland Photo Point
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M HILL Mapped Wetland<sup>1</sup>
- Wetland Extends Beyond Survey Corridor
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

- Notes:
1. Wetland boundaries and wetland sample plot locations were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
  2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
  3. Source: 2009 Gilliam County
  4. Aerial Photograph: 2005 USDA







**Figure 7c**  
**Wetland Boundary and Sample Plots Map**

*Montague Wind Power Facility  
Wetland Delineation Report*

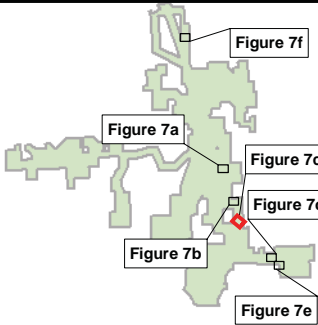
- Wetland Sample Plot<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- ② Stream Photo Point
- ③ Wetland Photo Point
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M HILL Mapped Wetland<sup>1</sup>
- Wetland Extends Beyond Survey Corridor
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:

1. Wetland boundaries and wetland sample plot locations were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
3. Source: 2009 Gilliam County
4. Aerial Photograph: 2005 USDA



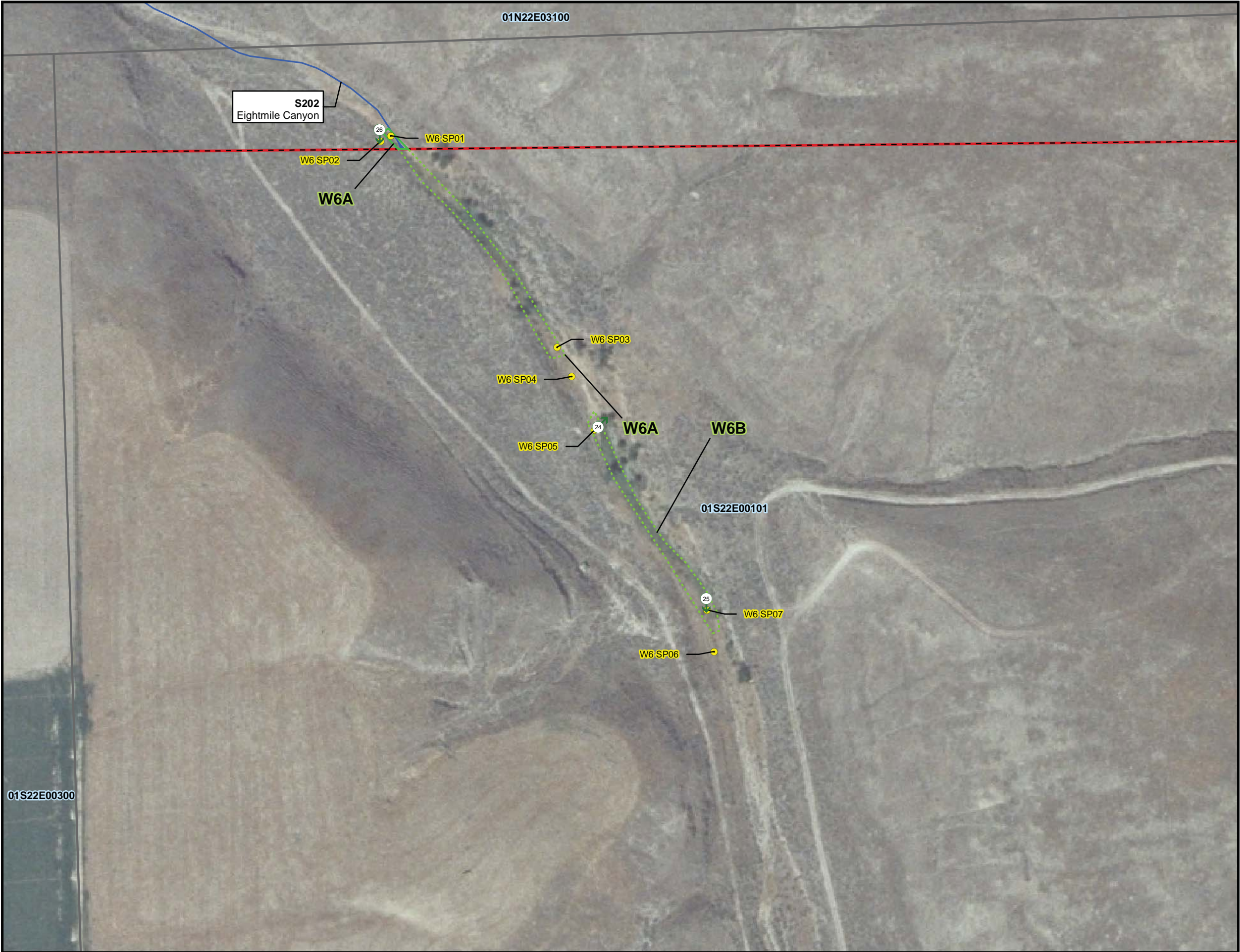
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Feet









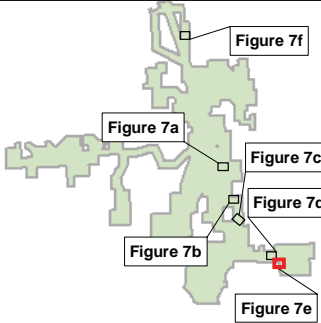
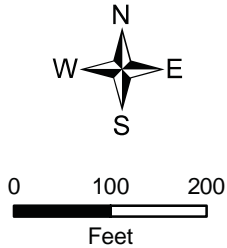


**Figure 7e**  
**Wetland Boundary and Sample Plots Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

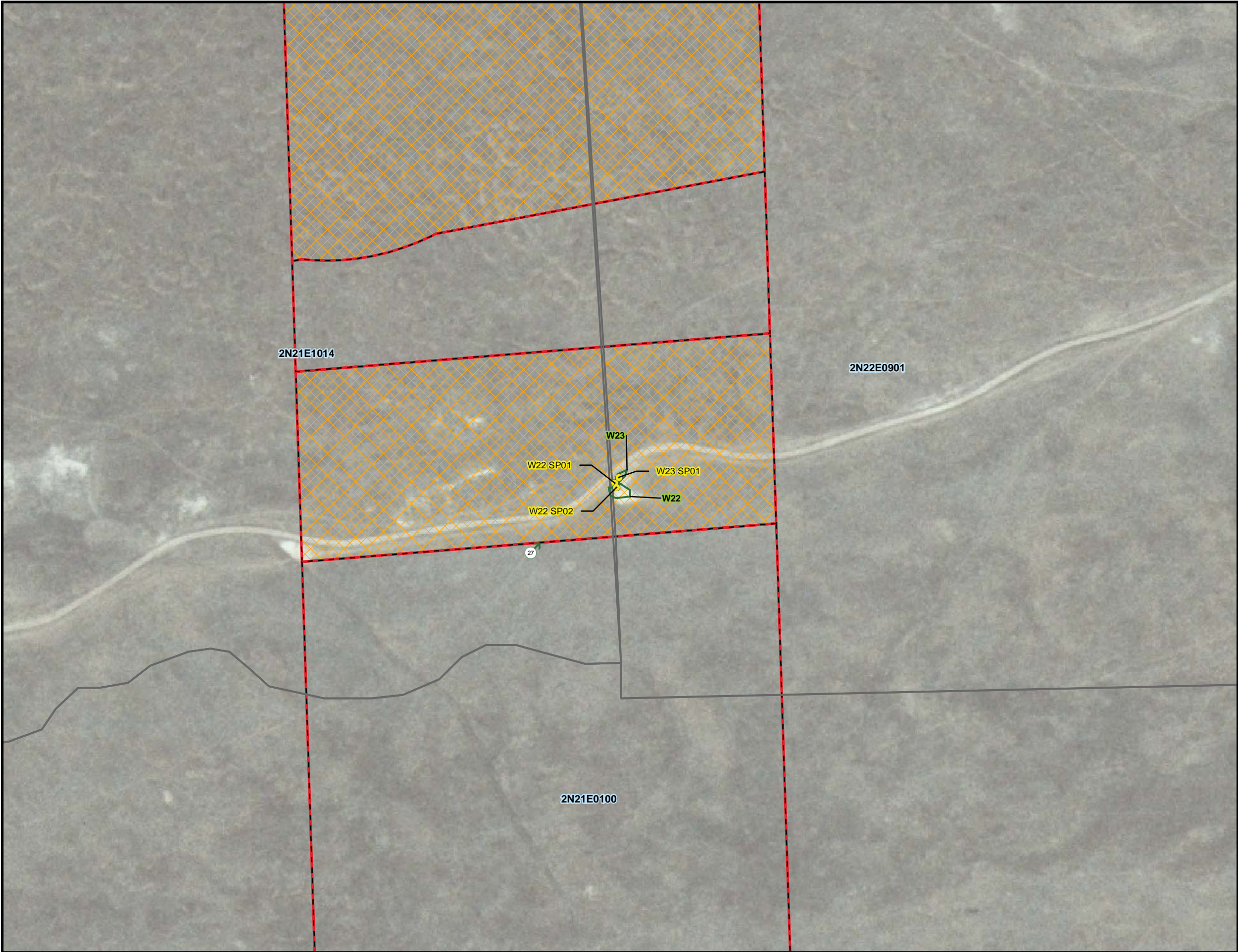
- Wetland Sample Plot<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Stream Photo Point
- Wetland Photo Point
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M HILL Mapped Wetland<sup>1</sup>
- Wetland Extends Beyond Survey Corridor
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIBB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:

- Wetland boundaries and wetland sample plot locations were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
- Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
- Source: 2009 Gilliam County
- Aerial Photograph: 2005 USDA





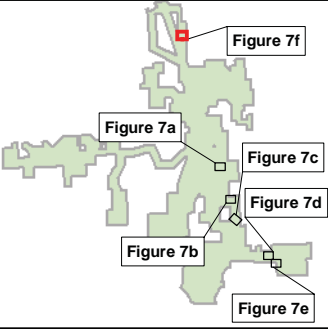
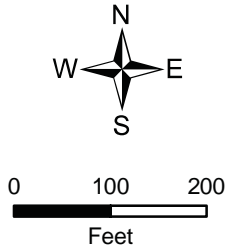


**Figure 7f**  
**Wetland Boundary and Sample Plots Map**  
*Montague Wind Power Facility*  
*Wetland Delineation Report*

- Wetland Sample Plot<sup>1</sup>
- CH2M HILL Field-Verified Stream<sup>2</sup>
- Stream Photo Point
- Wetland Photo Point
- Wetlands Previously Delineated for Pebble Springs Wind Power Facility<sup>1</sup>
- CH2M HILL Mapped Wetland<sup>1</sup>
- Wetland Extends Beyond Survey Corridor
- Montague Survey Corridor
- Pebble Springs - Completed Survey
- LJIB - Completed Survey
- Property Line (03N22E00701)<sup>3</sup>
- Public Road
- Major Railroad Line

Notes:

1. Wetland boundaries and wetland sample plot locations were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is +/- 3 feet.
2. Streams were mapped using existing PNWHF watercourse mapping with field-verification. Where stream locations in the field varied significantly from the existing mapping stream locations were edited to be consistent with field observations.
3. Source: 2009 Gilliam County
4. Aerial Photograph: 2005 USDA





Appendix D1. Oregon Streamflow Duration Assessment Method (OSDAM) Data Forms

|       |        |       |
|-------|--------|-------|
| PW001 | PW223  | S001  |
| PW002 | PW227  | S002  |
| PW003 | PW229  | S003  |
| PW004 | PW230  | S004  |
| PW013 | PW231  | S005  |
| PW023 | PW232  | S006  |
| PW024 | PW237  | S007  |
| PW032 | PW238  | S008  |
| PW043 | PW239  | S009  |
| PW054 | PW240  | S010  |
| PW059 | PW245  | S012  |
| PW062 | PW247  | S013  |
| PW063 | PW248  | S201  |
| PW066 | PW259  | S202a |
| PW071 | PW260  | S202b |
| PW074 | PW262  | S202c |
| PW076 | PW268  | S202d |
| PW080 | PW279  | S203  |
| PW088 | PW280  | S204  |
| PW092 | PW286  | S205  |
| PW112 | PW287  | S206  |
| PW114 | PW312  | S207  |
| PW202 | PW315  | S208  |
| PW203 | PW319  | S209  |
| PW204 | PW320  | S210  |
| PW205 | PW322a | S211  |
| PW206 | PW327  | S212  |
| PW207 | PW328  | S213  |
| PW208 | PW329  | S214a |
| PW209 | PW330  | S214b |
| PW210 | PW331  |       |
| PW211 | PW339  |       |
| PW212 | PW346  |       |
| PW216 | PW347  |       |
| PW219 |        |       |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|   |  |   |                                       |   |                                       |                              |
|---|--|---|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Joel Shaich  |                                       |   |                                       |                              |
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |   |                                       |                              |
| Address    Gilliam County (see map)   |  | Date 10/12/2009   |                                       |   |                                       |                              |
| Waterway Name    PW001  |  | Coordinates at  | Lat.    45.64533982    N              |   |                                       |                              |
| Reach Boundaries    > 30 m  |  | downstream end<br>(ddd.mm.ss)   | Long.    120.1049984    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)    5%                           | Channel Width (m)   | 1 *                                   |   |                                       |                              |
| Observed Hydrology: <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | Absent  | Weak                                  |   |                                       |                              |
|   |  | Moderate  | Strong                                |   |                                       |                              |
| <b>Geomorphology</b>  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|   | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|   | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  |   |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>  |  |   |                                       | 0                                       |                                       |                              |
| <b>Biology</b>  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                  |                                       |   |                                       |                              |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|   | <b>BIOLOGY SUBTOTAL:</b>                             |   |                                       |   | 1.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |  | <b>★ TOTAL SCORE:</b>   |                                       | 3.5                                     |                                       |                              |
|   |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW001

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Upland vegetated swale. Did not observe drainage patterns.

\*No ordinary high water (OHW) mark observed.

Photo: PW001



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                              |
|--|--|--|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/12/09  |                                       |  |                                       |                              |
| Waterway Name    PW002   |  | Coordinates at   | Lat.    45.64745916    N              |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.1041582    W             |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    9                            | Channel Width (m)  | 1*                                    |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 4                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                      |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW002

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 2



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/12/09  |                                       |   |                                       |  |
| Waterway Name    PW003   |  | Coordinates at   | Lat.    45.64693626    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0927585    W             |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 1*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2                                     |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW003

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 3



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |
|--|--|--|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |  |  | Date 10/12/2009  |
| Waterway Name    PW004   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.64922283    N<br>Long.    120.0800308    W  |
| Reach Boundaries    30m  |  |  |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*   |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | 3.5  |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0   |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | 0  |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | 1.0  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  |
|  |  | 4.5  |  |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW004

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a partially cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 004



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |   |  |                                       |                              |
|--|--|---|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich  |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/09   |   |  |                                       |                              |
| Waterway Name    PW013   |  | Coordinates at Lat.    45.62282647    N   |   |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end Long.    -120.1035571    W<br>(ddd.mm.ss)  |   |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)    1*   |   |  |                                       |                              |
| Observed Hydrology:  |  |   |   |  |                                       |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |   |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |   |  |                                       |                              |
|  |  | <b>Absent      Weak      Moderate      Strong</b>   |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |   | 1.5                                    |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |   | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                                |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |   |   |  | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |   | 2.5                                    |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW013

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 8   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/09  |                                       |   |                                       |                              |
| Waterway Name    PW023   |  | Coordinates at   | Lat.    45.61810499    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0970145    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                       |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW023

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 18



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/09  |                                       |   |                                       |                              |
| Waterway Name    PW024   |  | Coordinates at   | Lat.    45.62077339    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1199602    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW024

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 19



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/14/09  |                                       |   |                                       |  |
| Waterway Name    PW032   |  | Coordinates at   | Lat.    45.58094147    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.20205    W              |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2                                     |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW032

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 27



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/15/09  |                                       |   |                                       |                              |
| Waterway Name    PW043   |  | Coordinates at   | Lat.    45.5545433    N               |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1859849    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW043

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale in a wheat field.

\* No ordinary high water (OHW) mark observed.

Photo: None taken.



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/15/09  |                                       |   |                                       |                              |
| Waterway Name    PW054   |  | Coordinates at   | Lat.    45.60171022    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1739026    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW054

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 41



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/15/09  |                                       |   |                                       |                              |
| Waterway Name    PW059   |  | Coordinates at   | Lat.    45.60009627    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1636442    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    2                            | Channel Width (m)  | 1 *                                   |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 6                                       |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW059

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a partially cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 46



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                               |
|--|--|--|---------------------------------------|---|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 12/3/09   |                                       |   |                                       |                               |
| Waterway Name    PW062   |  | Coordinates at   | Lat.    45.55353449    N              |   |                                       |                               |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1497784    W            |   |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)  | 1*                                    |   |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                               |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |   |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0.5                                   |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2                                       |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW062

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a partially cropped upland with little or no swale.

\* No ordinary high water (OHW) mark observed.

Photo #: 49



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/15/09  |                                       |   |                                       |                              |
| Waterway Name    PW063   |  | Coordinates at   | Lat.    45.60648602    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2087138    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                       |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW063

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 50



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/15/09  |                                       |   |                                       |                              |
| Waterway Name    PW066   |  | Coordinates at   | Lat.    45.59817078    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2171142    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.25   | Channel Gradient (%)    2                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW066

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 52



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/20/09  |                                       |   |                                       |                              |
| Waterway Name    PW071   |  | Coordinates at   | Lat.    45.59427625    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2726707    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW071

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 57



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/20/09  |                                       |   |                                       |                              |
| Waterway Name    PW074   |  | Coordinates at   | Lat.    45.59042319    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2836337    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 1.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW074

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 60



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/20/09  |                                       |   |                                       |                              |
| Waterway Name    PW076   |  | Coordinates at   | Lat.    45.60433297    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2930719    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    5                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW076

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 62  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/21/09  |                                       |   |                                       |                              |
| Waterway Name    PW080   |  | Coordinates at   | Lat.    45.60880025    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.2697535    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW080

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 66



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                              |
|--|--|--|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/27/09  |                                       |  |                                       |                              |
| Waterway Name    PW088   |  | Coordinates at   | Lat.    45.63748301    N              |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1472548    W            |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 2*                                    |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                      |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:**

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 75



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |
|--|--|--|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |  | Date 10/27/09  |  |
| Waterway Name    PW092   |  | Coordinates at Lat.    45.6519681    N   |  |
| Reach Boundaries    30m  |  | downstream end Long.    -120.1602661    W<br>(ddd.mm.ss)   |  |
| Precipitation w/in 48 hours (cm)    0.08   | Channel Gradient (%)    4                            | Channel Width (m)    1*  |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3  |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | 2.5  |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0   |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | 0  |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | 1  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  |
|  |  | 3.5  |  |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW092

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 79



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/27/09  |                                       |   |                                       |                              |
| Waterway Name    PW112   |  | Coordinates at   | Lat.    45.52384887    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0750713    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    5                            | Channel Width (m)  | 2*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 4.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW112

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| <p>Area is an upland vegetated swale.</p> <p>* No ordinary high water (OHW) mark observed.</p> <p>Photo 95</p>  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 11/3/09   |                                       |   |                                       |  |
| Waterway Name    PW114   |  | Coordinates at   | Lat.    45.52133498    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0766264    W            |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 2*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW114

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 97  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/12/2009  |   |   |                                       |                              |
| Waterway Name    PW202   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.63404675    N<br>Long.    120.0669557    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    20                           | Channel Width (m)    1*  |   |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW202

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 114



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |                                       |   |                                       |                              |
| Waterway Name    PW203   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.63312423    N              |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.0610886    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    8                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |                                       |   |                                       |                              |
|  |  | <b>Absent</b>  | <b>Weak</b>                           |   |                                       |                              |
|  |  | <b>Moderate</b>  | <b>Strong</b>                         |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW203

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area varies between an upland vegetated swale and upland.   |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 115   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |                                       |   |                                       |  |
| Waterway Name    PW204   |  | Coordinates at   | Lat.    45.63028524    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0568357    W             |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    18                           | Channel Width (m)  | 1*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0                                     |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW204

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area varies between an upland vegetated swale and upland.   |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 116   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |
|--|--|--|---|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |
| Address    Gilliam County (see map)  |  |  | Date 10/13/2009                           |
| Waterway Name    PW205   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat. 45.61875011 N<br>Long. 120.0635891 W |
| Reach Boundaries    30m  |  |  |   |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    5                            | Channel Width (m)  | 1*  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"></div> <div style="width: 45%; text-align: center;"> <b>Absent    Weak    Moderate    Strong</b> </div> </div>   |   |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 4. Erosional Features                                | <input type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
|  | 5. Depositional Features                             | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | 4  |   |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0   |   |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |   |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | 0  |   |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |   |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | 1   |
| <b>★ TOTAL SCORE:</b>  |  | 5  |   |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW205

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

Disturbance to vegetation and soils appears to be a result of heavy grazing and fire.

\* No ordinary high water (OHW) mark observed.

Photo 117



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |
|--|--|--|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |  |
| Waterway Name    PW206   |  | Coordinates at   | Lat.    45.61840553    N   |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0675348    W  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)  | 1*   |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | 4  |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0   |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | 0  |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | 1  |
| <b>★ TOTAL SCORE:</b>  |  | 5  |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW206

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

Disturbance to vegetation and soils appears to be a result of heavy grazing and fire.

\* No ordinary high water (OHW) mark observed.

Photo 118



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/13/2009                                       |   |                                       |                              |
| Waterway Name    PW207   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.64729085    N<br>Long.    120.0631207    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    10                           | Channel Width (m)  | 1*  |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 1.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW207

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland vegetated swale and upland.

\* No ordinary high water (OHW) mark observed.

Photo 119



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |                                       |   |                                       |                              |
| Waterway Name    PW208   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.648594    N                |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.073507    W              |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    10                           | Channel Width (m)    1*  |                                       |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |                                       |   |                                       |                              |
|  |  | <b>Absent</b>  | <b>Weak</b>                           |   |                                       |                              |
|  |  | <b>Moderate</b>  | <b>Strong</b>                         |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW208

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area varies between upland vegetated swale and upland.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 120   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Forrest Parsons   |  |   |                                       |                              |        |
|---|--|--|--|---|---------------------------------------|------------------------------|--------|
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |   |                                       |                              |        |
| Address    Gilliam County (see map)   |  | Date 10/13/2009  |  |   |                                       |                              |        |
| Waterway Name    PW209  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.645894    N<br>Long.    120.073507    W |   |                                       |                              |        |
| Reach Boundaries    30m   |  |  |  |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)    12                           | Channel Width (m)    1*  |  |   |                                       |                              |        |
| Observed Hydrology: <input checked="" type="checkbox"/> Water Absent <input type="checkbox"/> No surface flow but at least one pool present |  | <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow  |  |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Absent</th> <th style="width: 15%;">Weak</th> <th style="width: 15%;">Moderate</th> <th style="width: 15%;">Strong</th> </tr> </table> |  | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent  | Weak   | Moderate   | Strong   |   |                                       |                              |        |
| Geomorphology   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                         | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|   | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0              | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
| GEOMORPHOLOGY SUBTOTAL:   |  |  |  | 2.5                                     |                                       |                              |        |
| Hydrology   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                         | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| HYDROLOGY SUBTOTAL:   |  |  |  | 0                                       |                                       |                              |        |
| Biology   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |   |                                       |                              |        |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                         | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |        |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
| BIOLOGY SUBTOTAL:   |  |  |  | 1                                       |                                       |                              |        |
| Single Indicators: <input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates      |  | ★ TOTAL SCORE:   |  | 3.5                                     |                                       |                              |        |
|   |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |  |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW209

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between an upland vegetated swale and upland.

\* No ordinary high water (OHW) mark observed.

Photo 121



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |                                       |   |                                       |                              |
| Waterway Name    PW210   |  | Coordinates at   | Lat.    45.63813217    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0690825    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    17                           | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW210

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland vegetated swale. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 122



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |   |   |                                       |                              |
|--|--|---|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/13/2009   |   |   |                                       |                              |
| Waterway Name    PW211   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.64464615    N<br>Long.    120.0752381    W |   |                                       |                              |
| Reach Boundaries    30m  |  |   |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    18                           | Channel Width (m)    1*   |   |   |                                       |                              |
| Observed Hydrology:  |  |   |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |   |   |                                       |                              |
|  |  | <b>Absent</b>   | <b>Weak</b>   |   |                                       |                              |
|  |  | <b>Moderate</b>   | <b>Strong</b>   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |   | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5   |   |   |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                                |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2                            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |   |   |   | 1                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |   | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW211

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland vegetated swale. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 123



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |  |                                       |                              |
|--|--|--|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |  |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/13/2009                           |  |                                       |                              |
| Waterway Name    PW212   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat. 45.64353115 N<br>Long. 120.0824436 W |  |                                       |                              |
| Reach Boundaries    30m  |  |  |   |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    15                           | Channel Width (m)  | 1*  |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0     | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0     | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1     | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 1                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |  | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 1                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW212

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 124



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |  |                                       |                              |
|--|--|--|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |  |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/13/2009                           |  |                                       |                              |
| Waterway Name    PW216   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat. 45.63785475 N<br>Long. 120.0833881 W |  |                                       |                              |
| Reach Boundaries    30m  |  |  |   |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    14                           | Channel Width (m)  | 1*  |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0     | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0     | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1     | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 1                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5              | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |  | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 1                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW216

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 128



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/14/2009  |                                       |   |                                       |                              |
| Waterway Name    PW219/219a  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.63152254    N              |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.0853902    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    13                           | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                       |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW219

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between a upland vegetated swale and upland.

\* No ordinary high water (OHW) mark observed.

Photo 131



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                               |
|--|--|--|---------------------------------------|---|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 10/14/2009  |                                       |   |                                       |                               |
| Waterway Name    PW223   |  | Coordinates at   | Lat.    45.5874829    N               |   |                                       |                               |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0887374    W             |   |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    12                           | Channel Width (m)  | 1*                                    |   |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                               |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |   |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4                                       |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW223

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland in agricultural area and upland vegetated swale in hills.

\* No ordinary high water (OHW) mark observed.

Photo 135



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |        |
|---|--|--|---|---|---------------------------------------|------------------------------|--------|
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |        |
| Address    Gilliam County (see map)   |  | Date 10/14/2009  |   |   |                                       |                              |        |
| Waterway Name    PW227  |  | Coordinates at   | Lat.    45.58137251    N                |   |                                       |                              |        |
| Reach Boundaries    30m   |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.096661    W               |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)    7                            | Channel Width (m)    1*  |   |   |                                       |                              |        |
| Observed Hydrology: <input checked="" type="checkbox"/> Water Absent <input type="checkbox"/> No surface flow but at least one pool present <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow |  | "Dry Channel"    "Wet Channel"   |   |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">Absent</th> <th style="width: 25%;">Weak</th> <th style="width: 25%;">Moderate</th> <th style="width: 25%;">Strong</th> </tr> </table>               |   | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent  | Weak   | Moderate   | Strong                                  |   |                                       |                              |        |
| <b>Geomorphology</b>  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|   | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  |  |   | 3.0                                     |                                       |                              |        |
| <b>Hydrology</b>  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| <b>HYDROLOGY SUBTOTAL:</b>  |  |  |   | 0                                       |                                       |                              |        |
| <b>Biology</b>  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |        |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |        |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 1.0                                   |                              |        |
| Single Indicators: <input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |  | <b>★ TOTAL SCORE:</b>  |   | 4.0                                     |                                       |                              |        |
|   |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator<br>Perennial <input type="checkbox"/> Total Score ≥ 25 |   |   |                                       |                              |        |
| Note: Scoring scale is reversed for indicators marked with ▼.   |  |  |   |   |                                       |                              |        |



**Waterway Name:** PW227

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 139



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |  |   |                                       |                              |
|--|--|---|--|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |  |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |  |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/14/2009   |  |   |                                       |                              |
| Waterway Name    PW229   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat. 45.58365176 N<br>Long. 120.090767 W |   |                                       |                              |
| Reach Boundaries    30m  |  |   |  |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)    1*   |  |   |                                       |                              |
| Observed Hydrology: <span style="margin-left: 20px;">“Dry Channel”</span>  |  | <span style="margin-left: 20px;">“Wet Channel”</span>   |  |   |                                       |                              |
| <input checked="" type="checkbox"/> Water Absent <input type="checkbox"/> No surface flow but at least one pool present                          |  | <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow   |  |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |  |   |                                       |                              |
|  |  | <b>Absent</b>   | <b>Weak</b>                              |   |                                       |                              |
|  |  | <b>Moderate</b>   | <b>Strong</b>                            |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0               | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0    | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |  | <b>2.5</b>                              |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1               | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |  | <b>0</b>                                |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None  |  |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2               | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5             | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1               | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |   |  |   | <b>1</b>                              |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>   |  | <b>3.5</b>                              |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>  |  |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator<br><b>Perennial</b> <input type="checkbox"/> Total Score ≥ 25 |  |   |                                       |                              |
| Note: Scoring scale is reversed for indicators marked with ▼.  |  |   |  |   |                                       |                              |



**Waterway Name:** PW229

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a upland vegetated swale. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 141



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/20/2009  |                                       |   |                                       |                              |
| Waterway Name    PW230   |  | Coordinates at   | Lat.    45.65222342    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.084037    W              |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    18                           | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW230

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 142



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |
|--|--|--|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |  | Date 10/20/2009  |  |
| Waterway Name    PW231   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.66014338    N<br>Long.    120.0798868    W  |
| Reach Boundaries    30m  |  |  |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    12                           | Channel Width (m)    1*  |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | 1  |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0   |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | 0  |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 0   |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | 0  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b> 1  |  |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW231

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 143



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                              |
|--|--|--|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/20/2009  |                                       |  |                                       |                              |
| Waterway Name    PW232   |  | Coordinates at   | Lat.    45.6589162    N               |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0744715    W             |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    10                           | Channel Width (m)  | 1*                                    |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |  | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 1                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW232

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is upland. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 144



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/21/2009  |                                       |   |                                       |                              |
| Waterway Name    PW237   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.57895006    N              |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.0869238    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    6                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4                                       |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW237

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland in agricultural area and upland vegetated swale in hills.

\* No ordinary high water (OHW) mark observed.

Photo 149



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/21/2009  |                                       |   |                                       |  |
| Waterway Name    PW238   |  | Coordinates at   | Lat.    45.57513213    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0858321    W             |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1                                     |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW238

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland and upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 150



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/21/2009                                       |   |                                       |                              |
| Waterway Name    PW239   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.57513571    N<br>Long.    120.0858529    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    11                           | Channel Width (m)  | 1*  |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 4                                       |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW239

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies from upland to upland vegetated swale in hills.

\* No ordinary high water (OHW) mark observed.

Photo 151



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                              |
|--|--|--|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/21/2009  |                                       |  |                                       |                              |
| Waterway Name    PW240   |  | Coordinates at   | Lat.    45.56755169    N              |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.082147    W             |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)  | 1*                                    |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |                                       |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.0                                    |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |  | 1.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.0                                    |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW240

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 152



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/22/2009  |                                       |   |                                       |                              |
| Waterway Name    PW245   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.55913257    N              |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.0954217    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)   | 0.08   | Channel Gradient (%)   | 10                                    |   |                                       |                              |
|  |  | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  | <div style="display: flex; justify-content: space-around;"> <div> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |                                       |   |                                       |                              |
|  | <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   |  | <b>Absent</b>  | <b>Weak</b>                           | <b>Moderate</b>                         | <b>Strong</b>                         |                              |
|  | 1. Continuous Bed and Bank   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences  | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting  | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features  | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features   |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | <b>3.5</b>                              |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)  | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼  | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank  | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | <b>0</b>                                |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed   | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼   | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent  | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only)   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)  | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>   |  |                                       |   | <b>0</b>                              |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | <b>3.5</b>                              |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                          |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW245

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland vegetated swale and upland.

\* No ordinary high water (OHW) mark observed.

Photo 157



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |  |
|--|--|--|---------------------------------------|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/21/2009  |                                       |   |                                       |  |
| Waterway Name    PW247   |  | Coordinates at   | Lat.    45.55842717    N              |   |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0949315    W             |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    8                            | Channel Width (m)  | 1*                                    |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                       |                                       |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW247

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland and upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 159



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/22/2009  |   |   |                                       |                              |
| Waterway Name    PW248   |  | Coordinates at   | Lat.    45.55155381    N                |   |                                       |                              |
| Reach Boundaries    1 mile   |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0992082    W               |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)  | 1*                                      |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 4                                       |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 2                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 6                                       |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW248

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is channelized (see photo) for a ~50 foot section immediately uphill from confluence with S008. Uphill from this section, the area varies between upland and an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 160



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |                                       |  |                                       |                              |
|--|--|---|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/27/2009   |                                       |  |                                       |                              |
| Waterway Name    PW259   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.65528662    N              |  |                                       |                              |
| Reach Boundaries    30m  |  |   | Long.    120.1555339    W             |  |                                       |                              |
| Precipitation w/in 48 hours (cm)   | 0.08   | Channel Gradient (%)  | 20                                    |  |                                       |                              |
|  |  | Channel Width (m)   | 1*                                    |  |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">“Dry Channel”</p> <p>Observed Hydrology:    <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present</p> </div> <div style="width: 48%;"> <p style="text-align: center;">“Wet Channel”</p> <p><input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow</p> </div> </div> |  |   |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 24%;">Absent</div> <div style="width: 24%;">Weak</div> <div style="width: 24%;">Moderate</div> <div style="width: 24%;">Strong</div> </div> |                                       |  |                                       |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |                                       | 1                                      |                                       |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |                                       | 0                                      |                                       |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None  |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2            | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |                                       | 0                                      |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |                                       | 1                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                 |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW259

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland vegetated swale and upland area without a swale.

\* No ordinary high water (OHW) mark observed.

Photo 171



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |  |                                       |                              |
|--|--|--|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/27/2009  |   |  |                                       |                              |
| Waterway Name    PW260   |  | Coordinates at   | Lat.    45.65667106    N                |  |                                       |                              |
| Reach Boundaries    1 mile   |  | downstream end<br>(ddd.mm.ss)  | Long.    120.1577773    W               |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.08   | Channel Gradient (%)    12                           | Channel Width (m)  | 1                                       |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 3.5                                    |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |  | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 5                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW260

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a combination of upland vegetated swale, periodic channel, and upland.

Channel width based on average width in areas where drainage patterns were present.

Photos 172



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                              |
|--|--|--|---------------------------------------|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/27/2009  |                                       |  |                                       |                              |
| Waterway Name    PW262   |  | Coordinates at   | Lat.    45.65812212    N              |  |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.1578296    W             |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.08   | Channel Gradient (%)    20                           | Channel Width (m)  | 1*                                    |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 1                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW262

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale. Unvegetated area is a result of cattle grazing.

\* No ordinary high water mark (OHW) observed.

Photo 174



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/27/2009                                       |   |                                       |                              |
| Waterway Name    PW268   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.59486776    N<br>Long.    120.0887555    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.08   | Channel Gradient (%)    18                           | Channel Width (m)  | 1*  |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 20%;">Absent</div> <div style="width: 20%;">Weak</div> <div style="width: 20%;">Moderate</div> <div style="width: 20%;">Strong</div> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 2.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW268

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area varies between upland and upland vegetated swale. Did not observe drainage patterns.

\* No ordinary high water (OHW) mark observed.

Photo 180



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |  |
|--|--|--|---------------------------------------|--|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |  |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |  |
| Address    Gilliam County (see map)  |  | Date 10/29/2009  |                                       |  |                                       |  |
| Waterway Name    PW279   |  | Coordinates at   | Lat.    45.53960194    N              |  |                                       |  |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0832731    W             |  |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    12                           | Channel Width (m)  | 2*                                    |  |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |  |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 5                                      |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5       | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 0 |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |  | 0                                     |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5                                      |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW279

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 191   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/29/2009  |                                       |   |                                       |                              |
| Waterway Name    PW280   |  | Coordinates at   | Lat.    45.53915108    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0837311    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    12                           | Channel Width (m)  | 2*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 4                                       |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW279

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 192



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                               |
|--|--|--|---------------------------------------|---|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 10/14/2009  |                                       |   |                                       |                               |
| Waterway Name    PW286   |  | Coordinates at   | Lat.    45.57778866    N              |   |                                       |                               |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    120.1020642    W             |   |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)  | 1*                                    |   |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                               |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5                                       |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW286

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo: Stream photo 16 [Photo shows headcut of S203 (biologist). PW286 is uphill from that point.]



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |  |                                       |                              |
|--|--|--|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |  |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 10/21/2009                                       |  |                                       |                              |
| Waterway Name    PW287   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.56874568    N<br>Long.    120.1051618    W |  |                                       |                              |
| Reach Boundaries    1 mile   |  |  |   |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    6                            | Channel Width (m)    1*  |   |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 4                                      |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                      |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |  | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 5.5                                    |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW287

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo: Stream photo 16 (PW286 is area in photo uphill from S205 head/biologist).



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |   |                                       |                              |
|--|--|--|--|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |   |                                       |                              |
| Address    Gilliam County (see map)  |  |  | Date 12/2/2009   |   |                                       |                              |
| Waterway Name    PW312   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.54770632    N<br>Long.    -120.1212291    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |  |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 1*   |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |  |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                  | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                             | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                  | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |  | 2.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                             | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |  | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |  |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                             | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |  |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  | 4.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW312

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is a partially cropped upland vegetated swale.   |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 209   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/2/09   |                                       |   |                                       |                              |
| Waterway Name    PW315   |  | Coordinates at   | Lat.    45.55325482    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1303068    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW315

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 212



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/2/2009   |                                       |   |                                       |                              |
| Waterway Name    PW319   |  | Coordinates at   | Lat.    45.54487262    N              |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1436883    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 4.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW319

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a partially cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo: See stream photo #30 (S204 head)



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |                                       |   |                                       |                              |
| Waterway Name    PW320   |  | Coordinates at   | Lat.    45.5220939    N               |   |                                       |                              |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0933404    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*                                    |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW320

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a partially cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo 216



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                               |
|--|--|--|---------------------------------------|---|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |                                       |   |                                       |                               |
| Waterway Name    PW322a  |  | Coordinates at   | Lat.    45.52035905    N              |   |                                       |                               |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.1136764    W            |   |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)  | 1*                                    |   |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                               |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |   |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 5.0                                     |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW322a

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo: Head of Stream 210 (#24)



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |        |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|--------|
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |        |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |                                       |   |                                       |                              |        |
| Waterway Name    PW327   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat. 45.51397 N<br>Long. 120.00677 W  |   |                                       |                              |        |
| Reach Boundaries    30m  |  |  |                                       |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)    1*  |                                       |   |                                       |                              |        |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <table style="width: 100%; text-align: center;"> <tr> <th style="width: 25%;">Absent</th> <th style="width: 25%;">Weak</th> <th style="width: 25%;">Moderate</th> <th style="width: 25%;">Strong</th> </tr> </table>   |                                       | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent   | Weak   | Moderate   | Strong                                |   |                                       |                              |        |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2.5                                     |                                       |                              |        |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |        |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |        |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |        |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.0                                   |                              |        |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                     |                                       |                              |        |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW327

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 222



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |  |                                       |                               |
|--|--|--|---------------------------------------|--|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |  |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |  |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |                                       |  |                                       |                               |
| Waterway Name    PW328   |  | Coordinates at   | Lat.    45.52274427    N              |  |                                       |                               |
| Reach Boundaries    30m  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0195503    W            |  |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)  | 1*                                    |  |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |  |                                       |                               |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">Absent</div> <div style="width: 15%;">Weak</div> <div style="width: 15%;">Moderate</div> <div style="width: 15%;">Strong</div> </div>  |                                       |  |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 2                                      |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                      |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75    | <input type="checkbox"/> OBL 1.5       | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |  | 1.5                                   |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 3.5                                    |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |  |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW328

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an cropped upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 223   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |   |                                       |                              |
|--|--|--|--|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |  |   |                                       |                              |
| Waterway Name    PW329   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.52143    N<br>Long.    120.01661    W |   |                                       |                              |
| Reach Boundaries    30m  |  |  |  |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)    1*  |  |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |  |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                       | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0            | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |  | 1.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |  | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                       | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |  |   | 1.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  | 2.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW329

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 224



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility   |   | Evaluator    Forrest Parsons  |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|--|---|---|---------------------------------------|--|---------------------------------------|------------------------------|----------|--------|----------------------|----------------------------|----------------------------|---------------------------------------|----------------------------|----------------------------|---|---------------------------------------|----------------------------|----------------------------|----------------------------|---|---------------------------------------|----------------------------|----------------------------|----------------------------|-----------------------|--|---------------------------------------|------------------------------|----------------------------|------------------------------|--------------------------|---------------------------------------|----------------------------|----------------------------|----------------------------|--------------|----------------------------|---------------------------------------|----------------------------|----------------------------|--------------------------------|---------------------------------------|------------------------------|----------------------------|------------------------------|--------------------------------|--|--|---|--|------------------|--|---------------------------------------|----------------------------|----------------------------|----------------------------|---------------------------------------|---------------------------------------|----------------------------|----------------------------|----------------------------|---|------------------------------|----------------------------|------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------|----------------------------|------------------------------|---|--|--|--|--|----------------------------|--|--|---|--|
|  |   | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| Address    Gilliam County (see map)  |   | Date 12/3/2009  |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| Waterway Name    PW330   |   | Coordinates at  | Lat.    45.52274427    N              |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| Reach Boundaries    30m  |   | downstream end<br>(ddd.mm.ss)   | Long.    -120.0195503    W            |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    6                         | Channel Width (m)   | 1*                                    |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| Observed Hydrology:  |   | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div>  |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |   | <div style="display: flex; justify-content: space-between;"> <div style="width: 100%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 10%;">Absent</th> <th style="width: 10%;">Weak</th> <th style="width: 10%;">Moderate</th> <th style="width: 10%;">Strong</th> </tr> </thead> <tbody> <tr> <td rowspan="7" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;"><b>Geomorphology</b></td> <td>1. Continuous Bed and Bank</td> <td><input type="checkbox"/> 0</td> <td><input checked="" type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> <td><input type="checkbox"/> 3</td> </tr> <tr> <td>2. 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Sinuosity</td> <td><input type="checkbox"/> 0</td> <td><input checked="" type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> <td><input type="checkbox"/> 3</td> </tr> <tr> <td>7. Headcuts And Grade Controls</td> <td><input checked="" type="checkbox"/> 0</td> <td><input type="checkbox"/> 0.5</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 1.5</td> </tr> <tr> <td colspan="3" style="text-align: right;"><b>GEOMORPHOLOGY SUBTOTAL:</b></td> <td colspan="2" style="text-align: center; border: 1px solid black;">2</td> </tr> </tbody> </table> </div> <div style="width: 100%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;"><b>Hydrology</b></td> <td>8. Groundwater (Wet) / Hyporheic (Dry)</td> <td><input checked="" type="checkbox"/> 0</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> <td><input type="checkbox"/> 3</td> </tr> <tr> <td>9. Springs And Seeps (Note Locations)</td> <td><input checked="" type="checkbox"/> 0</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> <td><input type="checkbox"/> 3</td> </tr> <tr> <td>10. Evenly Disbursed Leaf Litter / Loose Debris ▼</td> <td><input type="checkbox"/> 1.5</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 0.5</td> <td><input checked="" type="checkbox"/> 0</td> </tr> <tr> <td>11. Debris Piles And Wrack Lines</td> <td><input checked="" type="checkbox"/> 0</td> <td><input type="checkbox"/> 0.5</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 1.5</td> </tr> <tr> <td>12. Redoximorphic Features In Toe Of Bank</td> <td colspan="2"><input checked="" type="checkbox"/> Absent = 0</td> <td colspan="2"><input type="checkbox"/> Present = 1.5</td> </tr> <tr> <td colspan="3" style="text-align: right;"><b>HYDROLOGY SUBTOTAL:</b></td> <td colspan="2" style="text-align: center; border: 1px solid black;">0</td> </tr> </tbody> </table> </div> </div> |                                       |  | Absent                                | Weak                         | Moderate | Strong | <b>Geomorphology</b> | 1. Continuous Bed and Bank | <input type="checkbox"/> 0 | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 2. In-channel Structure / Organized Sequences | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 3. Soil texture or stream substrate sorting | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 4. Erosional Features | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1 | <input type="checkbox"/> 1.5 | 5. Depositional Features | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 6. Sinuosity | <input type="checkbox"/> 0 | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 7. Headcuts And Grade Controls | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1 | <input type="checkbox"/> 1.5 | <b>GEOMORPHOLOGY SUBTOTAL:</b> |  |  | 2 |  | <b>Hydrology</b> | 8. Groundwater (Wet) / Hyporheic (Dry) | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 9. Springs And Seeps (Note Locations) | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼ | <input type="checkbox"/> 1.5 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0.5 | <input checked="" type="checkbox"/> 0 | 11. Debris Piles And Wrack Lines | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1 | <input type="checkbox"/> 1.5 | 12. Redoximorphic Features In Toe Of Bank | <input checked="" type="checkbox"/> Absent = 0 |  | <input type="checkbox"/> Present = 1.5 |  | <b>HYDROLOGY SUBTOTAL:</b> |  |  | 0 |  |
|  | Absent  | Weak  | Moderate                              | Strong                                 |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                        | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 2. In-channel Structure / Organized Sequences     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 3. Soil texture or stream substrate sorting       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 4. Erosional Features                             | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 5. Depositional Features                          |   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 6. Sinuosity                                      | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 7. Headcuts And Grade Controls                    | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |   |   | 2                                     |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 9. Springs And Seeps (Note Locations)             | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼ | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 11. Debris Piles And Wrack Lines                  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  | 12. Redoximorphic Features In Toe Of Bank         | <input checked="" type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5 |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |   |   | 0                                     |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>Biology</b>   |   | 13. Wetland Plants In / Near Streambed <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼ <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 15. Streamer Mosses And Algal Mats <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3  |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 17. Macroinvertebrates <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 18. Amphibians <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 19. Fish <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 20. Lichen Line (Arid Regions and Alpine Areas Only) <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 21. Riparian Corridor (Arid Regions Only) <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3  |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>BIOLOGY SUBTOTAL:</b>   |   | 1.5   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |   | <b>★ TOTAL SCORE:</b>   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | 3.5   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |
|  |   | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |                                       |  |                                       |                              |          |        |                      |                            |                            |                                       |                            |                            |   |                                       |                            |                            |                            |   |                                       |                            |                            |                            |                       |  |                                       |                              |                            |                              |                          |                                       |                            |                            |                            |              |                            |                                       |                            |                            |                                |                                       |                              |                            |                              |                                |  |  |   |  |                  |  |                                       |                            |                            |                            |                                       |                                       |                            |                            |                            |   |                              |                            |                              |                                       |                                  |                                       |                              |                            |                              |   |  |  |  |  |                            |  |  |   |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW330

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Area is an cropped upland vegetated swale.  |   |
| * No ordinary high water (OHW) mark observed.   |   |
| Photo 225   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |  |   |                                       |                              |
|--|--|---|--|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |  |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |  |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/3/2009  |  |   |                                       |                              |
| Waterway Name    PW331   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.51810    N<br>Long.    120.02703    W |   |                                       |                              |
| Reach Boundaries    30m  |  |   |  |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)    1*   |  |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">“Dry Channel”</p> <p>Observed Hydrology:    <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present</p> </div> <div style="width: 48%;"> <p style="text-align: center;">“Wet Channel”</p> <p><input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow</p> </div> </div> |  |   |  |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 22%;">Absent</div> <div style="width: 22%;">Weak</div> <div style="width: 22%;">Moderate</div> <div style="width: 22%;">Strong</div> </div> |  |   |                                       |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0                       | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0            | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |  | 2.5                                     |                                       |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |  | 0                                       |                                       |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None  |  |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2                       | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |  | 1.0                                     |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |  | 3.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                 |  |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW331

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is a cropped upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 226



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |   |                                       |  |
|--|--|--|--|---|---------------------------------------|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |   |                                       |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |   |                                       |  |
| Address    Gilliam County (see map)  |  |  | Date 12/4/2009                                   |   |                                       |  |
| Waterway Name    PW339   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.52511    N<br>Long.    -120.0719    W |   |                                       |  |
| Reach Boundaries    30m  |  |  |  |   |                                       |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)  | 1*   |   |                                       |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |                                       |  |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |  |   |                                       |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                       | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5             |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0            | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3               |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                       | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |  |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |  | 4.5                                     |                                       |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                       | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5  |                                       |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |  | 0                                       |                                       |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input type="checkbox"/> FACW 0.75               | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input checked="" type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                       | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                     | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                       | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |  |   | 1.0                                   |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  | 5.5                                     |                                       |  |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |   |                                       |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW339

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/17/2009  |   |   |                                       |                              |
| Waterway Name    PW346   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.59844    N                   |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    -120.0903    W                 |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.89   | Channel Gradient (%)    10                           | Channel Width (m)    1*  |   |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 100px;">Absent</div> <div style="width: 100px;">Weak</div> <div style="width: 100px;">Moderate</div> <div style="width: 100px;">Strong</div> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 5.0                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 1.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 6.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW346

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 242



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|   |  |   |   |
|---|--|---|---|
| Project # / Name    Montague Wind Power Facility                                    |  | Evaluator    Forrest Parsons  |   |
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training |   |
| Address    Gilliam County (see map)   |  | Date 12/17/2009   |   |
| Waterway Name    PW347  |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.59844    N   |
| Reach Boundaries    30m   |  |   | Long.    -120.0903    W   |
| Precipitation w/in 48 hours (cm)  | 0.89   | Channel Gradient (%)  | 10  |
|   |  | Channel Width (m)   | 1*  |
| Observed Hydrology:   | “Dry Channel”  |   | “Wet Channel”   |
|   | <input checked="" type="checkbox"/> Water Absent     | <input type="checkbox"/> No surface flow but at least one pool present                                      | <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”) |  | <b>Absent</b>   | <b>Weak</b>   |
|   |  | <b>Moderate</b>   | <b>Strong</b>   |
| Geomorphology   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 4. Erosional Features                                | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5   |
|   | 5. Depositional Features                             | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5   |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  | 3.0   |   |
| Hydrology   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1  |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5  |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  | <input type="checkbox"/> Present = 1.5  |
| <b>HYDROLOGY SUBTOTAL:</b>  |  | 0   |   |
| Biology   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5  | <input type="checkbox"/> FACW 0.75  |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2  |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5  |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5  |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5  |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1  |
|   | <b>BIOLOGY SUBTOTAL:</b>                             |   | 1.0   |
| Single Indicators:  | <input type="checkbox"/> Fish                        | <b>★ TOTAL SCORE:</b> 4.0   |   |
|   | <input type="checkbox"/> Amphibians                  |   |   |
|   | <input type="checkbox"/> Macroinvertebrates          | <b>Flow Duration (select only one)</b>  |   |
|   |  | Ephemeral <input checked="" type="checkbox"/> Total Score < 13  |   |
|   |  | Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                           |   |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** PW347

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Area is an upland vegetated swale.

\* No ordinary high water (OHW) mark observed.

Photo # 243



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County  |  | Date 10/13/09  |   |   |                                       |                              |
| Waterway Name    S001  |  | Coordinates at Lat.    45.62348325    N  |   |   |                                       |                              |
| Reach Boundaries    105 m  |  | downstream end Long.    -120.1027725    W<br>(ddd.mm.ss)   |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)                                 | Channel Width (m)    3   |   |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0              | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | <b>8.5</b>                              |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0            |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0  |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | <b>0.5</b>                              |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | <b>1.0</b>                            |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | <b>10.0</b>                             |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S001

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photos 1  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County  |  | Date 10/13/09  |                                       |   |                                       |                              |
| Waterway Name    S002  |  | Coordinates at Lat.    45.64745916    N  |                                       |   |                                       |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.1041582    W<br>(ddd.mm.ss)   |                                       |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)                                 | Channel Width (m)  | 2                                     |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent      Weak      Moderate      Strong</b> </div> </div>   |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 3.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0            |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0.5                                     |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 6.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S002

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   | Channelized along road.   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 2   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |  |                                       |                              |
|--|--|--|---|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |   |  |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |  |                                       |                              |
| Address    Gilliam County  |  | Date 10/13/09  |   |  |                                       |                              |
| Waterway Name    S003  |  | Coordinates at Lat.    45.62506906    N  |   |  |                                       |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.1070024    W<br>(ddd.mm.ss)   |   |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)                                 | Channel Width (m)  | 4                                       |  |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |  |                                       |                              |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"></div> <div style="width: 60%; text-align: center;"> <b>Absent    Weak    Moderate    Strong</b> </div> </div>   |   |  |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 8.5                                    |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0.5           | <input type="checkbox"/> 0            |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 1.0                                    |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |  |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 1             | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |  | 2.0                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 11.5                                   |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S003

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   | First quarter mile of stream channelized.   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input checked="" type="checkbox"/> Natural or Anthropogenic Disturbance  |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 3   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County  |  | Date 10/13/09  |   |   |                                       |                              |
| Waterway Name    S004  |  | Coordinates at Lat.    45.64922283    N  |   |   |                                       |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.0800308    W<br>(ddd.mm.ss)   |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.89   | Channel Gradient (%)                                 | Channel Width (m)    2   |   |   |                                       |                              |
| Observed Hydrology:  |  |  |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |  |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |  |   |   |                                       |                              |
|  |  | <b>Absent      Weak      Moderate      Strong</b>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 3.0                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0                                     |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |   | 3.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |   |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S004

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. . |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 4   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |  |
|--|--|--|--|--|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |  |  |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |  |
| Address    Gilliam County  |  | Date 10/15/09  |  |  |
| Waterway Name    S005  |  | Coordinates at Lat.    45.58815266    N  |  |  |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.1934519    W<br>(ddd.mm.ss)   |  |  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    4                            | Channel Width (m)    4   |  |  |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |  |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"></div> <div style="width: 45%; text-align: center;"> <b>Absent    Weak    Moderate    Strong</b> </div> </div>   |  |  |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 1.5 |  |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |  |
|  | 6. Sinuosity   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |  |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  | <b>7.5</b>   |  |  |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 0   |  |  |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |  |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5  |  |  |
| <b>HYDROLOGY SUBTOTAL:</b>   |  | <b>0.5</b>   |  |  |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |  |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 0   |  |  |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |  |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |  |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |  |  |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |  |  |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  | <b>1.0</b>   |  |
| <b>★ TOTAL SCORE:</b>  |  | <b>9.0</b>   |  |  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S005

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance.                 |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   | Channelized stream, farm runs through small gully that the stream is in. Portions of channel are in road. |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input checked="" type="checkbox"/> Natural or Anthropogenic Disturbance  |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 5   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Joel Shaich   |   |   |                                       |                              |        |
|---|--|--|---|---|---------------------------------------|------------------------------|--------|
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |        |
| Address    Gilliam County   |  | Date 10/15/09  |   |   |                                       |                              |        |
| Waterway Name    S006   |  | Coordinates at Lat.    45.58296678    N  |   |   |                                       |                              |        |
| Reach Boundaries    100 m   |  | downstream end Long.    -120.2307087    W<br>(ddd.mm.ss)   |   |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0.25  | Channel Gradient (%)    4                            | Channel Width (m)    2   |   |   |                                       |                              |        |
| Observed Hydrology: <input checked="" type="checkbox"/> Water Absent <input type="checkbox"/> No surface flow but at least one pool present |  | <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow  |   |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">Absent</th> <th style="width: 25%;">Weak</th> <th style="width: 25%;">Moderate</th> <th style="width: 25%;">Strong</th> </tr> </table> |   | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent  | Weak   | Moderate   | Strong                                  |   |                                       |                              |        |
| <b>Geomorphology</b>  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|   | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  |  |   | 5.0                                     |                                       |                              |        |
| <b>Hydrology</b>  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| <b>HYDROLOGY SUBTOTAL:</b>  |  |  |   | 0                                       |                                       |                              |        |
| <b>Biology</b>  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                                       |                              |        |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |        |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 1.0                                   |                              |        |
| Single Indicators: <input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates      |  | <b>★ TOTAL SCORE:</b>  |   | 6.0                                     |                                       |                              |        |
|   |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |   |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S006

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 6   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County  |  | Date 10/20/09  |   |   |                                       |                              |
| Waterway Name    S007  |  | Coordinates at Lat.    45.59197961    N  |   |   |                                       |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.2808063    W<br>(ddd.mm.ss)   |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)    3   |   |   |                                       |                              |
| Observed Hydrology:  |  |  |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |  |   |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |  |   |   |                                       |                              |
|  |  | <div style="display: flex; justify-content: space-between; font-weight: bold;"> <span>Absent</span> <span>Weak</span> <span>Moderate</span> <span>Strong</span> </div>                 |   |   |                                       |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| GEOMORPHOLOGY SUBTOTAL:  |  |  |   | 5.0                                     |                                       |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input checked="" type="checkbox"/> 1.5  | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 0            |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| HYDROLOGY SUBTOTAL:  |  |  |   | 1.5                                     |                                       |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None           |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | BIOLOGY SUBTOTAL:                                    |  |   |   | 0                                     |                              |
| Single Indicators:<br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |  | ★ TOTAL SCORE:   |   | 6.5                                     |                                       |                              |
|  |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S007

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 7   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |                                       |   |                              |                              |
|--|--|---|---------------------------------------|---|------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich  |                                       |   |                              |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |   |                              |                              |
| Address    Gilliam County  |  | Date 10/21/09   |                                       |   |                              |                              |
| Waterway Name    S008  |  | Coordinates at Lat.    45.57059353    N   |                                       |   |                              |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.0869194    W<br>(ddd.mm.ss)  |                                       |   |                              |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)    3  |                                       |   |                              |                              |
| Observed Hydrology:  |  |   |                                       |   |                              |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |                                       |   |                              |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |                                       |   |                              |                              |
|  |  | <b>Absent      Weak      Moderate      Strong</b>   |                                       |   |                              |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3   |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1   | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2   | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |                                       | 4.5                                     |                              |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0   |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5  |                              |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |                                       | 0.5                                     |                              |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                                |                                       |   |                              |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0   |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |   |                                       |   | 1                            |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |                                       | 6.0                                     |                              |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |                                       |   |                              |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S008

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 8   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |                                       |   |                                       |                              |
|--|--|---|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich  |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |   |                                       |                              |
| Address    Gilliam County  |  | Date 10/27/09   |                                       |   |                                       |                              |
| Waterway Name    S009  |  | Coordinates at Lat.    45.5968406    N  |                                       |   |                                       |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.1061564    W<br>(ddd.mm.ss)  |                                       |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.08   | Channel Gradient (%)    2                            | Channel Width (m)    2  |                                       |   |                                       |                              |
| Observed Hydrology:  |  |   |                                       |   |                                       |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow </div> </div> |  |   |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |                                       |   |                                       |                              |
|  |  | <b>Absent</b>   | <b>Weak</b>                           |   |                                       |                              |
|  |  | <b>Moderate</b>   | <b>Strong</b>                         |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |                                       | <b>3.5</b>                              |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5   |                                       |   |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |                                       | <b>0</b>                                |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                                |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |                                       | <b>0</b>                                |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |                                       | <b>3.5</b>                              |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S009

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 9   |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |   |   |                              |                              |
|--|--|---|---|---|------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich  |   |   |                              |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |   |                              |                              |
| Address    Gilliam County  |  | Date 11/3/09  |   |   |                              |                              |
| Waterway Name    S010  |  | Coordinates at Lat.    45.52129236    N   |   |   |                              |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.0759803    W<br>(ddd.mm.ss)  |   |   |                              |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)    3  |   |   |                              |                              |
| Observed Hydrology:  |  |   |   |   |                              |                              |
| <div style="display: flex; justify-content: space-around;"> <div> <p style="text-align: center;">“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div> <p style="text-align: center;">“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |   |   |   |                              |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  |   |   |   |                              |                              |
|  |  | <div style="display: flex; justify-content: space-between; font-weight: bold;"> <span>Absent</span> <span>Weak</span> <span>Moderate</span> <span>Strong</span> </div>                                      |   |   |                              |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3   |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1   | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2   | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
| GEOMORPHOLOGY SUBTOTAL:  |  |   |   | 6.0                                     |                              |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0   |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |   | <input type="checkbox"/> Present = 1.5  |                              |                              |
| HYDROLOGY SUBTOTAL:  |  |   |   | 0.5                                     |                              |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None                                |   |   |                              |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0   |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | BIOLOGY SUBTOTAL:                                    |   |   |   | 2.0                          |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | ★ TOTAL SCORE:  |   | 8.5                                     |                              |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |   |                              |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S010

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 10  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Joel Shaich   |                                       |   |                                       |                              |        |
|---|--|--|---------------------------------------|---|---------------------------------------|------------------------------|--------|
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |        |
| Address    Gilliam County   |  | Date 11/3/09   |                                       |   |                                       |                              |        |
| Waterway Name    S012   |  | Coordinates at Lat.    45.55927641    N  |                                       |   |                                       |                              |        |
| Reach Boundaries    100 m   |  | downstream end Long.    -120.0699656    W<br>(ddd.mm.ss)   |                                       |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)    3                            | Channel Width (m)    4   |                                       |   |                                       |                              |        |
| Observed Hydrology: <input checked="" type="checkbox"/> Water Absent <input type="checkbox"/> No surface flow but at least one pool present |  | <input type="checkbox"/> Surface flow present but not spatially continuous <input type="checkbox"/> Continuous surface flow  |                                       |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">Absent</th> <th style="width: 25%;">Weak</th> <th style="width: 25%;">Moderate</th> <th style="width: 25%;">Strong</th> </tr> </table> |                                       | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent  | Weak   | Moderate   | Strong                                |   |                                       |                              |        |
| <b>Geomorphology</b>  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|   | 5. Depositional Features                             |  | <input type="checkbox"/> 0            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3   |        |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  |  |                                       | 8.5                                     |                                       |                              |        |
| <b>Hydrology</b>  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0            |                              |        |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| <b>HYDROLOGY SUBTOTAL:</b>  |  |  |                                       | 0.5                                     |                                       |                              |        |
| <b>Biology</b>  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |                                       |   |                                       |                              |        |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |        |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.0                                   |                              |        |
| Single Indicators: <input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates      |  | <b>★ TOTAL SCORE:</b>  |                                       | 10.0                                    |                                       |                              |        |
|   |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |                                       |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S012

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 11  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                              |                              |
|--|--|--|---|---|------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Joel Shaich   |   |   |                              |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                              |                              |
| Address    Gilliam County  |  | Date 11/5/09   |   |   |                              |                              |
| Waterway Name    S013  |  | Coordinates at Lat.    45.59694882    N  |   |   |                              |                              |
| Reach Boundaries    100 m  |  | downstream end Long.    -120.1023723    W<br>(ddd.mm.ss)   |   |   |                              |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)                                 | Channel Width (m)  | 1                                       |   |                              |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                              |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |   |                              |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3   |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1   | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2   | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 4.0                                     |                              |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 0   |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                              |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0.5                                     |                              |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input checked="" type="checkbox"/> None   |   |   |                              |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0   |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5 |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 2.0                          |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 6.5                                     |                              |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                              |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S013

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 12  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/12/2009  |                                       |   |                                       |                              |
| Waterway Name    S201  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.64147349    N              |   |                                       |                              |
| Reach Boundaries    1 mile   |  |  | Long.    120.0720183    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    2                            | Channel Width (m)    3   |                                       |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |                                       |   |                                       |                              |
|  |  | <b>Absent</b>  | <b>Weak</b>                           |   |                                       |                              |
|  |  | <b>Moderate</b>  | <b>Strong</b>                         |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 3 |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 8.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 1.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |                                       | 10                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:**

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Stream width varied between 1 and 5 meters but averaged 3 throughout reach.

Photo 13



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                               |
|--|--|--|---|---|---------------------------------------|-------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                               |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                               |
| Address    Gilliam County (see map)  |  | Date 10/13/2009  |   |   |                                       |                               |
| Waterway Name    S202a   |  | Coordinates at   | Lat.    45.64558073    N                      |   |                                       |                               |
| Reach Boundaries    1 mile   |  | downstream end<br>(ddd.mm.ss)  | Long.    120.0803241    W                     |   |                                       |                               |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)  | 5   |   |                                       |                               |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input type="checkbox"/> Water Absent    <input checked="" type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |   |   |                                       |                               |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)   |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |   |   |                                       |                               |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                    | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                               |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1         | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                    | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5  |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0                    | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3    |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                    | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                               |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                  | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 8.5                                     |                                       |                               |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                    | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                               |
|  | 11. Debris Piles And Wrack Lines                     | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5                  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5          |                               |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                               |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 1                                       |                                       |                               |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5   | <input checked="" type="checkbox"/> FACW 0.75 | <input type="checkbox"/> OBL 1.5        | <input type="checkbox"/> SAV 2        | <input type="checkbox"/> None |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                    | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                               |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                  | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                  | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                  | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                               |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                    | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                               |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0.75                                  |                               |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |   | 10.25                                   |                                       |                               |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |   |   |                                       |                               |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S202e

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☒ Other:

Describe situation. For disturbed streams, note extent, type, and history of disturbance. Observed disturbance in various places throughout entire reach include apparent mining excavations, detention basins, and heavy grazing.

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

S202 was surveyed throughout most of its 10 mile reach within the project study area. This OSDAM form applies to the area north (downstream) of the intermittent portion (S202c) of the channel.

Photos 14 and 15



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |   |   |                                       |                              |
|--|--|---|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/28/2009   |   |   |                                       |                              |
| Waterway Name    S202b   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.54604377    N                |   |                                       |                              |
| Reach Boundaries    100m   |  |   | Long.    120.0735543    W               |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)    2  |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">“Dry Channel”</p> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> </div> <div style="width: 48%;"> <p style="text-align: center;">“Wet Channel”</p> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Surface flow present but not spatially continuous             <input checked="" type="checkbox"/> Continuous surface flow           </div> </div> </div> |  |   |   |   |                                       |                              |
| <input checked="" type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)   |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 22%;">Absent</div> <div style="width: 22%;">Weak</div> <div style="width: 22%;">Moderate</div> <div style="width: 22%;">Strong</div> </div> |   |   |                                       |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                        | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |   | 6.0   |                                       |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2                        | <input checked="" type="checkbox"/> 3 |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2                        | <input checked="" type="checkbox"/> 3 |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0.5                      | <input type="checkbox"/> 0            |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0   |   | <input checked="" type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |   | 9.0   |                                       |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input checked="" type="checkbox"/> SAV 2 <input type="checkbox"/> None  |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input checked="" type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1                        | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |   | 12.5  |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input checked="" type="checkbox"/> Macroinvertebrates  |  | <b>★ TOTAL SCORE:</b>   |   | 27.5  |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                            |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☒ Total Score  $\geq 25$



**Waterway Name:** S202b

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance. Stream reach heavily impacted by cattle.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☒ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Form completed based on perennial reach of S202

Spring(s) located at head of reach.

Photos 14 and 15



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|   |  |   |   |   |                                       |                              |
|---|--|---|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Forrest Parsons  |   |   |                                       |                              |
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |   |                                       |                              |
| Address    Gilliam County (see map)   |  | Date 10/29/2009   |   |   |                                       |                              |
| Waterway Name    S202c (Wetland W205)   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.54424052    N<br>Long.    120.0741447    W |   |                                       |                              |
| Reach Boundaries    200m  |  |   |   |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)    1                            | Channel Width (m)    5  |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input checked="" type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 50%;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |   |   |   |                                       |                              |
|   |  | <b>Absent</b>   | <b>Weak</b>   |   |                                       |                              |
|   |  | <b>Moderate</b>   | <b>Strong</b>   |   |                                       |                              |
| <b>Geomorphology</b>  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 2. In-channel Structure / Organized Sequences        | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|   | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1                        | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|   | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5               | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>  |  |   |   | <b>4.0</b>  |                                       |                              |
| <b>Hydrology</b>  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2                        | <input checked="" type="checkbox"/> 3 |                              |
|   | 9. Springs And Seeps (Note Locations)                | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5                      | <input checked="" type="checkbox"/> 0 |                              |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0   |   | <input checked="" type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>  |  |   |   | <b>6.5</b>  |                                       |                              |
| <b>Biology</b>  | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input checked="" type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None                                |   |   |                                       |                              |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input checked="" type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input type="checkbox"/> 1                        | <input type="checkbox"/> 0            |                              |
|   | 15. Streamer Mosses And Algal Mats                   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5               | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 18. Amphibians                                       | <input type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input checked="" type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>  |  |   |   | <b>9</b>  |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input checked="" type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |   | <b>19.5</b>                                       |                                       |                              |
|   |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input checked="" type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S202c

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Intermittent stream begins immediately downstream from perennial section of S202.

Evidence of seeps include observed iron staining and salt crust on streambanks above wetland at multiple locations within reach.

One adult Pacific tree frog (*Pseudacris regilla*) observed within reach of intermittant section of S202.

Photos 14 and 15



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |  |   |                                       |                              |
|--|--|---|--|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |  |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |  |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/29/2009   |  |   |                                       |                              |
| Waterway Name    S202d   |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.5420231    N<br>Long.    120.0742193    W |   |                                       |                              |
| Reach Boundaries    60m  |  |   |  |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    1                            | Channel Width (m)    2  |  |   |                                       |                              |
| Observed Hydrology: <div style="display: flex; justify-content: space-around;"> <div>                     "Dry Channel"<br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present                 </div> <div>                     "Wet Channel"<br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow                 </div> </div> |  |   |  |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>               |  |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                           | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1                | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0                           | <input checked="" type="checkbox"/> 0.5           | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0                | <input type="checkbox"/> 1                        | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                           | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                         | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |  | 5.5   |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1                           | <input type="checkbox"/> 0.5                      | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                         | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input type="checkbox"/> Absent = 0   |  | <input checked="" type="checkbox"/> Present = 1.5 |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |  | 1.5   |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input type="checkbox"/> FAC 0.5 <input checked="" type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None                  |  |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2                           | <input checked="" type="checkbox"/> 1             | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                         | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                         | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1                           | <input type="checkbox"/> 2                        | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5                         | <input type="checkbox"/> 1                        | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0  | <input type="checkbox"/> 1                           | <input checked="" type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |   |  |   | 3.75                                  |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |  | 10.75   |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |  |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S202d

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Reach located immediately upstream of W205 boundary used to complete OSDAM form.  |   |
| Photos 14 and 15  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |                                       |   |                                       |                              |
|--|--|---|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/14/2009   |                                       |   |                                       |                              |
| Waterway Name    S203  |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.57778866    N              |   |                                       |                              |
| Reach Boundaries    35m  |  |   | Long.    120.1020642    W             |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3                            | Channel Width (m)    2.5  |                                       |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">“Dry Channel”</p> <p>Observed Hydrology:    <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present</p> </div> <div style="width: 48%;"> <p style="text-align: center;">“Wet Channel”</p> <p><input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow</p> </div> </div> |  |   |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <div style="width: 22%;">Absent</div> <div style="width: 22%;">Weak</div> <div style="width: 22%;">Moderate</div> <div style="width: 22%;">Strong</div> </div> |                                       |   |                                       |                              |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 3 |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |                                       | 6.5                                     |                                       |                              |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |                                       | 0                                       |                                       |                              |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None  |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |                                       | 0.5                                     |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |                                       |   | 7.0                                   |                              |
|  |  | <b>Flow Duration (select only one)</b><br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                               |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S203

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Entire reach of S203 is approximately 35 meters. Area is an upland vegetated swale and upland in areas above head of stream.

Photo 16, shows head of stream (biologist standing).



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |   |  |  |
|--|---|--|--|
| Project # / Name    Montague Wind Power Facility   |   | Evaluator    Forrest Parsons   |  |
|  |   | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |   | Date 10/14/2009  |  |
| Waterway Name    S204  |   | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.58315674    N   |
| Reach Boundaries    1 mile   |   |  | Long.    120.0910147    W  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    3   | Channel Width (m)    3   |  |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent           <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous           <input type="checkbox"/> Continuous surface flow         </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |   |  |  |
|  |   | <div style="display: flex; justify-content: space-between; font-weight: bold;"> <span>Absent</span> <span>Weak</span> <span>Moderate</span> <span>Strong</span> </div> |  |
| Geomorphology  | 1. Continuous Bed and Bank  |  | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3     |
|  | 2. In-channel Structure / Organized Sequences   |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 3. Soil texture or stream substrate sorting   |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 4. Erosional Features   | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity  |  | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 7. Headcuts And Grade Controls  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
| GEOMORPHOLOGY SUBTOTAL:  |   |  | 7.5  |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 9. Springs And Seeps (Note Locations)   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼   |  | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0 |
|  | 11. Debris Piles And Wrack Lines  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 12. Redoximorphic Features In Toe Of Bank   |  | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5                                      |
| HYDROLOGY SUBTOTAL:  |   |  | 0  |
| Biology  | 13. Wetland Plants In / Near Streambed <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |  |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼  |  | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 0     |
|  | 15. Streamer Mosses And Algal Mats  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 17. Macroinvertebrates  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 18. Amphibians  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 19. Fish  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only)  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 21. Riparian Corridor (Arid Regions Only)   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | BIOLOGY SUBTOTAL:   |  |  |
| ★ TOTAL SCORE:   |   |  | 8.0  |
| Single Indicators:<br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |   | Flow Duration (select only one)  |  |
|  |   | Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                    |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S204

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photos 17 and 18  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/21/2009  |   |   |                                       |                              |
| Waterway Name    S205  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.56874568    N                |   |                                       |                              |
| Reach Boundaries    30m  |  |  | Long.    120.1051618    W               |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    10                           | Channel Width (m)    1   |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent           <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous           <input type="checkbox"/> Continuous surface flow         </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |   |   |                                       |                              |
|  |  | <b>Absent      Weak      Moderate      Strong</b>  |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 6.0                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |   | 6.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |   |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S205

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Photo 19



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |   |  |  |
|--|---|--|--|
| Project # / Name    Montague Wind Power Facility   |   | Evaluator    Forrest Parsons   |  |
|  |   | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |
| Address    Gilliam County (see map)  |   | Date 10/21/2009  |  |
| Waterway Name    S206  |   | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.57106419    N   |
| Reach Boundaries    30m  |   |  | Long.    120.1114447    W  |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    10  | Channel Width (m)    1   |  |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |   |  |  |
|  |   | <div style="display: flex; justify-content: space-between; font-weight: bold;"> <span>Absent</span> <span>Weak</span> <span>Moderate</span> <span>Strong</span> </div> |  |
| Geomorphology  | 1. Continuous Bed and Bank  |  | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 2. In-channel Structure / Organized Sequences   |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 3. Soil texture or stream substrate sorting   |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 4. Erosional Features   | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 6. Sinuosity  |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 7. Headcuts And Grade Controls  |  | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
| GEOMORPHOLOGY SUBTOTAL:  |   |  | 6.5  |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 9. Springs And Seeps (Note Locations)   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼   |  | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0 |
|  | 11. Debris Piles And Wrack Lines  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 12. Redoximorphic Features In Toe Of Bank   |  | <input checked="" type="checkbox"/> Absent = 0 <input type="checkbox"/> Present = 1.5                                      |
| HYDROLOGY SUBTOTAL:  |   |  | 0  |
| Biology  | 13. Wetland Plants In / Near Streambed <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |  |  |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼  |  | <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 0     |
|  | 15. Streamer Mosses And Algal Mats  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 17. Macroinvertebrates  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 18. Amphibians  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 19. Fish  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only)  |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |
|  | 21. Riparian Corridor (Arid Regions Only)   |  | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |
|  | BIOLOGY SUBTOTAL:   |  |  |
| ★ TOTAL SCORE:   |   |  | 7.0  |
| Single Indicators:<br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |   | Flow Duration (select only one)  |  |
|  |   | Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator                    |  |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S206

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

S206 follows the north road ditch of Tree Lane (Cameron Road).

Photo 20



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |   |   |                                       |                              |
|--|--|--|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/22/2009  |   |   |                                       |                              |
| Waterway Name    S207  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.55452822    N                |   |                                       |                              |
| Reach Boundaries    100m   |  |  | Long.    120.1019668    W               |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0.05   | Channel Gradient (%)    7                            | Channel Width (m)    1.3   |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |   |   |                                       |                              |
|  |  | <b>Absent</b>  | <b>Weak</b>                             |   |                                       |                              |
|  |  | <b>Moderate</b>  | <b>Strong</b>                           |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |   | 8                                       |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2              | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |   |   | 0.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |   | 8.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |   |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S207

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

S207 is a tributary of S008.

Photo 21



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |   |   |   |                                       |                              |
|--|--|---|---|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons  |   |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |   |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 10/29/2009   |   |   |                                       |                              |
| Waterway Name    S208  |  | Coordinates at downstream end (ddd.mm.ss)   | Lat.    45.53887139    N                |   |                                       |                              |
| Reach Boundaries    100m   |  |   | Long.    120.0890597    W               |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    5                            | Channel Width (m)    2  |   |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |   |   |   |                                       |                              |
|  |  | <b>Absent      Weak      Moderate      Strong</b>   |   |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock  | <input type="checkbox"/> 0              | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0  | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |   |   | 7                                       |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5  | <input type="checkbox"/> 1              | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0  |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |   |   | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None                                |   |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3  | <input type="checkbox"/> 2              | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 1              | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0   | <input type="checkbox"/> 0.5            | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input type="checkbox"/> 0  | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
| <b>BIOLOGY SUBTOTAL:</b>   |  |   |   | 2.5                                     |                                       |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>   |   | 9.5                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |   |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S208

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

S208 channel dissipates into farm road and agricultural area before it reaches S202 (photo S208P49N).

Photo 22



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/2/2009   |                                       |   |                                       |                              |
| Waterway Name    S209  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.5968406    N               |   |                                       |                              |
| Reach Boundaries    100m   |  |  | Long.    -120.1061564    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)    1   |                                       |   |                                       |                              |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Observed Hydrology:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent             <input type="checkbox"/> No surface flow but at least one pool present           </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous             <input type="checkbox"/> Continuous surface flow           </div> </div> </div> <div style="width: 48%; border: 1px solid black; padding: 2px;"> <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)         </div> </div> |  |  |                                       |   |                                       |                              |
|  |  | <b>Absent</b>  | <b>Weak</b>                           |   |                                       |                              |
|  |  | <b>Moderate</b>  | <b>Strong</b>                         |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 4.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 0                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 1              | <input type="checkbox"/> 0            |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 2.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | <b>★ TOTAL SCORE:</b>  |                                       | 7.0                                     |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b>   |                                       |   |                                       |                              |
|  |  | <b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator            |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S209

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 23  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|   |  |  |  |  |                                       |                              |
|---|--|--|--|--|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Forrest Parsons   |  |  |                                       |                              |
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |  |                                       |                              |
| Address    Gilliam County (see map)   |  | Date 12/3/2009   |  |  |                                       |                              |
| Waterway Name    S210   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.52035905    N<br>Long.    -120.1136764    W |  |                                       |                              |
| Reach Boundaries    Entire reach within study area.   |  |  |  |  |                                       |                              |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)                                 | Channel Width (m)  | 1  |  |                                       |                              |
| Observed Hydrology: <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |  |  |  |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <div style="display: flex; justify-content: space-between; font-weight: bold;"> <span>Absent</span> <span>Weak</span> <span>Moderate</span> <span>Strong</span> </div>                 |  |  |                                       |                              |
| Geomorphology   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|   | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|   | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                             | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 1.5 |
|   | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                  | <input type="checkbox"/> 1             | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3            |                              |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5                           | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 1.5          |                              |
| GEOMORPHOLOGY SUBTOTAL:   |  |  |  | 10                                     |                                       |                              |
| Hydrology   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                             | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0 |                              |
|   | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5 |                                       |                              |
| HYDROLOGY SUBTOTAL:   |  |  |  | 0                                      |                                       |                              |
| Biology   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None           |  |  |                                       |                              |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                             | <input checked="" type="checkbox"/> 1  | <input type="checkbox"/> 0            |                              |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5          |                              |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3            |                              |
|   | BIOLOGY SUBTOTAL:                                    |  |  |  | 1.5                                   |                              |
| Single Indicators:<br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | ★ TOTAL SCORE:   |  | 11.5                                   |                                       |                              |
|   |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator |  |  |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S210

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Channel dissipates in areas. Photos near head of stream are the most defined areas of channel. Stream is less defined near the edge of the study area boundary.

Photo 24



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |  |  |   |                              |
|--|--|--|--|--|---|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |  |   |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |  |   |                              |
| Address    Gilliam County (see map)  |  | Date 12/3/2009   |  |  |   |                              |
| Waterway Name    S211  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.51752803    N<br>Long.    -120.0408206    W |  |   |                              |
| Reach Boundaries    Entire reach within study area.  |  |  |  |  |   |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    9                            | Channel Width (m)    1   |  |  |   |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |  |  |   |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |  |  |   |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3              |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3              |                              |
|  | 3. Soil texture or stream substrate sorting          | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                             | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                  | <input type="checkbox"/> 1             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2  | <input type="checkbox"/> 3              |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input checked="" type="checkbox"/> 1.5 |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |  | <b>7.5</b>                             |   |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                             | <input type="checkbox"/> 0.5           | <input checked="" type="checkbox"/> 0   |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5            |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5 |   |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |  | <b>0</b>                               |   |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |  |  |   |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input checked="" type="checkbox"/> 2                  | <input type="checkbox"/> 1             | <input type="checkbox"/> 0              |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5            |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5            |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1             | <input type="checkbox"/> 1.5            |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2             | <input type="checkbox"/> 3              |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |  |  | <b>2.5</b>                              |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |  | <b>10</b>                              |   |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |  |  |   |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S211

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☐ Other:

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Turns into vegetated swale upstream of head.

Photo 25



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |  |  |                                       |   |                                       |                              |
|--|--|--|---------------------------------------|---|---------------------------------------|------------------------------|
| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |                                       |   |                                       |                              |
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |                                       |   |                                       |                              |
| Address    Gilliam County (see map)  |  | Date 12/4/2009   |                                       |   |                                       |                              |
| Waterway Name    S212  |  | Coordinates at   | Lat.    45.51874787    N              |   |                                       |                              |
| Reach Boundaries    Entire reach within study area.  |  | downstream end<br>(ddd.mm.ss)  | Long.    -120.0516517    W            |   |                                       |                              |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)    7                            | Channel Width (m)  | 2                                     |   |                                       |                              |
| Observed Hydrology:  |  | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>“Dry Channel”</p> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present         </div> <div style="text-align: center;"> <p>“Wet Channel”</p> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow         </div> </div> |                                       |   |                                       |                              |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |  | <div style="display: flex; justify-content: space-between;"> <span><b>Absent</b></span> <span><b>Weak</b></span> <span><b>Moderate</b></span> <span><b>Strong</b></span> </div>  |                                       |   |                                       |                              |
| <b>Geomorphology</b>   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 2 | <input type="checkbox"/> 3   |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5          |                              |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |  |  |                                       | 9.5                                     |                                       |                              |
| <b>Hydrology</b>   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |
|  | 11. Debris Piles And Wrack Lines                     | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5          | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5          |                              |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |                                       | <input type="checkbox"/> Present = 1.5  |                                       |                              |
| <b>HYDROLOGY SUBTOTAL:</b>   |  |  |                                       | 1                                       |                                       |                              |
| <b>Biology</b>   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |                                       |   |                                       |                              |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2            | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |
|  | <b>BIOLOGY SUBTOTAL:</b>                             |  |                                       |   | 0.5                                   |                              |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates |  | <b>★ TOTAL SCORE:</b>  |                                       | 11                                      |                                       |                              |
|  |  | <b>Flow Duration (select only one)</b><br><b>Ephemeral</b> <input checked="" type="checkbox"/> Total Score < 13<br><b>Intermittent</b> <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator  |                                       |   |                                       |                              |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S212

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 26  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility   |  | Evaluator    Forrest Parsons   |  |   |                                       |                              |        |
|--|--|--|--|---|---------------------------------------|------------------------------|--------|
|  |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |  |   |                                       |                              |        |
| Address    Gilliam County (see map)  |  | Date 12/4/2009   |  |   |                                       |                              |        |
| Waterway Name    S213  |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.51915199    N<br>Long.    -120.0559652    W |   |                                       |                              |        |
| Reach Boundaries    Entire reach within study area.  |  |  |  |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0  | Channel Gradient (%)                                 | Channel Width (m)  | 1  |   |                                       |                              |        |
| Observed Hydrology: <div style="display: flex; justify-content: space-around;"> <div>                     "Dry Channel"<br/> <input checked="" type="checkbox"/> Water Absent                         <input type="checkbox"/> No surface flow but at least one pool present                 </div> <div>                     "Wet Channel"<br/> <input type="checkbox"/> Surface flow present but not spatially continuous                         <input type="checkbox"/> Continuous surface flow                 </div> </div> |  |  |  |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")  |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Absent</th> <th style="width: 15%;">Weak</th> <th style="width: 15%;">Moderate</th> <th style="width: 15%;">Strong</th> </tr> </table> |  | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent   | Weak   | Moderate   | Strong   |   |                                       |                              |        |
| Geomorphology  | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|  | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                  | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                  | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                             | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|  | 5. Depositional Features                             |  | <input type="checkbox"/> 0                             | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|  | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                             | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|  | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5                           | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5          |                              |        |
| GEOMORPHOLOGY SUBTOTAL:  |  |  |  | 8.5                                     |                                       |                              |        |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                             | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|  | 11. Debris Piles And Wrack Lines                     | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5                | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |  | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| HYDROLOGY SUBTOTAL:  |  |  |  | 0.5                                     |                                       |                              |        |
| Biology  | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |  |   |                                       |                              |        |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                             | <input type="checkbox"/> 1              | <input checked="" type="checkbox"/> 0 |                              |        |
|  | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                           | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|  | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                             | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
| BIOLOGY SUBTOTAL:  |  |  |  | 0.5                                     |                                       |                              |        |
| Single Indicators: <div style="display: flex; flex-direction: column; gap: 5px;"> <input type="checkbox"/> Fish                 </div> <input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates  |  | ★ TOTAL SCORE:   |  | 9.5                                     |                                       |                              |        |
|  |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |  |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S213

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 27  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

| Project # / Name    Montague Wind Power Facility  |  | Evaluator    Forrest Parsons   |   |   |                                       |                              |        |
|---|--|--|---|---|---------------------------------------|------------------------------|--------|
|   |  | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training  |   |   |                                       |                              |        |
| Address    Gilliam County (see map)   |  | Date 12/4/2009   |   |   |                                       |                              |        |
| Waterway Name    S214   |  | Coordinates at downstream end (ddd.mm.ss)  | Lat.    45.51935972    N<br>Long.    -120.064883    W |   |                                       |                              |        |
| Reach Boundaries    Entire reach within study area.   |  |  |   |   |                                       |                              |        |
| Precipitation w/in 48 hours (cm)    0   | Channel Gradient (%)                                 | Channel Width (m)  | 2   |   |                                       |                              |        |
| Observed Hydrology: <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: center;"> <b>"Dry Channel"</b><br/> <input checked="" type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present                 </div> <div style="text-align: center;"> <b>"Wet Channel"</b><br/> <input type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow                 </div> </div> |  |  |   |   |                                       |                              |        |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 25%;">Absent</th> <th style="width: 25%;">Weak</th> <th style="width: 25%;">Moderate</th> <th style="width: 25%;">Strong</th> </tr> </table> |   | Absent                                  | Weak                                  | Moderate                     | Strong |
| Absent  | Weak   | Moderate   | Strong  |   |                                       |                              |        |
| Geomorphology   | 1. Continuous Bed and Bank                           | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 2. In-channel Structure / Organized Sequences        | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 3. Soil texture or stream substrate sorting          | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 1                 | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 4. Erosional Features                                | <input type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0                            | <input checked="" type="checkbox"/> 0.5 | <input type="checkbox"/> 1            | <input type="checkbox"/> 1.5 |        |
|   | 5. Depositional Features                             |  | <input checked="" type="checkbox"/> 0                 | <input type="checkbox"/> 1              | <input type="checkbox"/> 2            | <input type="checkbox"/> 3   |        |
|   | 6. Sinuosity   | <input type="checkbox"/> 0   | <input type="checkbox"/> 1                            | <input checked="" type="checkbox"/> 2   | <input type="checkbox"/> 3            |                              |        |
|   | 7. Headcuts And Grade Controls                       | <input type="checkbox"/> 0   | <input type="checkbox"/> 0.5                          | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 1.5          |                              |        |
| GEOMORPHOLOGY SUBTOTAL:   |  |  |   | 7.5                                     |                                       |                              |        |
| Hydrology   | 8. Groundwater (Wet) / Hyporheic (Dry)               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 9. Springs And Seeps (Note Locations)                | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼    | <input type="checkbox"/> 1.5   | <input type="checkbox"/> 1                            | <input type="checkbox"/> 0.5            | <input checked="" type="checkbox"/> 0 |                              |        |
|   | 11. Debris Piles And Wrack Lines                     | <input type="checkbox"/> 0   | <input checked="" type="checkbox"/> 0.5               | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 12. Redoximorphic Features In Toe Of Bank            | <input checked="" type="checkbox"/> Absent = 0   |   | <input type="checkbox"/> Present = 1.5  |                                       |                              |        |
| HYDROLOGY SUBTOTAL:   |  |  |   | 0.5                                     |                                       |                              |        |
| Biology   | 13. Wetland Plants In / Near Streambed               | <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None   |   |   |                                       |                              |        |
|   | 14. Fibrous Roots / Rooted Plants In Thalweg ▼       | <input type="checkbox"/> 3   | <input type="checkbox"/> 2                            | <input checked="" type="checkbox"/> 1   | <input type="checkbox"/> 0            |                              |        |
|   | 15. Streamer Mosses And Algal Mats                   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 16. Iron Oxidizing Bacteria, Fungus, Flocculent      | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 17. Macroinvertebrates                               | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 18. Amphibians                                       | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 19. Fish   | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | 20. Lichen Line (Arid Regions and Alpine Areas Only) | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 0.5                          | <input type="checkbox"/> 1              | <input type="checkbox"/> 1.5          |                              |        |
|   | 21. Riparian Corridor (Arid Regions Only)            | <input checked="" type="checkbox"/> 0  | <input type="checkbox"/> 1                            | <input type="checkbox"/> 2              | <input type="checkbox"/> 3            |                              |        |
|   | BIOLOGY SUBTOTAL:                                    |  |   |   | 1.5                                   |                              |        |
| Single Indicators:<br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |  | ★ TOTAL SCORE:   |   |   | 9.5                                   |                              |        |
|   |  | Flow Duration (select only one)<br>Ephemeral <input checked="" type="checkbox"/> Total Score < 13<br>Intermittent <input type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |   |   |                                       |                              |        |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S214

|   |   |
|---|---|
| <b>Notes</b> (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.) |   |
| <b>Difficult Situation:</b>   | Describe situation. For disturbed streams, note extent, type, and history of disturbance. |
| <input type="checkbox"/> Prolonged Abnormal Rainfall / Snowpack   |   |
| <input type="checkbox"/> Below Average  |   |
| <input type="checkbox"/> Above Average  |   |
| <input type="checkbox"/> Natural or Anthropogenic Disturbance   |   |
| <input type="checkbox"/> Other:   |   |
| <b>Describe and Explain any Indicators of Questionable Applicability:</b>   |   |
| <b>Other Notes</b> (sketch of site, description of photos, depth of observed groundwater, etc.)   |   |
| Photo 28  |   |



# Oregon Streamflow Duration Field Assessment Form (Interim Version – March 2009)

|  |   |   |  |       |
|--|---|---|--|-------|
| Project # / Name    Montague Wind Power Facility   |   | Evaluator    Forrest Parsons  |  |       |
|  |   | Attended <input checked="" type="checkbox"/> Orientation <input checked="" type="checkbox"/> Field Training   |  |       |
| Address    Gilliam County (see map)  |   |   | Date 12/4/2009   |       |
| Waterway Name    S214-Int  |   | Coordinates at    Lat.    N   |  |       |
| Reach Boundaries    Entire reach within study area (~100m).  |   | downstream end    Long.    W  |  |       |
| Precipitation w/in 48 hours (cm)    0  |   | Channel Gradient (%)  | Channel Width (m)    2   |       |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">“Dry Channel”</p> <p>Observed Hydrology:    <input type="checkbox"/> Water Absent    <input type="checkbox"/> No surface flow but at least one pool present</p> </div> <div style="width: 48%;"> <p style="text-align: center;">“Wet Channel”</p> <p><input checked="" type="checkbox"/> Surface flow present but not spatially continuous    <input type="checkbox"/> Continuous surface flow</p> </div> </div> |   |   |  |       |
| <input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in “Notes”)  |   | <div style="display: flex; justify-content: space-between;"> <div style="width: 22%;">Absent</div> <div style="width: 22%;">Weak</div> <div style="width: 22%;">Moderate</div> <div style="width: 22%;">Strong</div> </div> |  |       |
| Geomorphology  | 1. Continuous Bed and Bank  |   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 2. In-channel Structure / Organized Sequences   |   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 3. Soil texture or stream substrate sorting   |   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 4. Erosional Features   | <input checked="" type="checkbox"/> Check this box if >50% of the streambed consists of exposed bedrock   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |       |
|  | 5. Depositional Features  |   | <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 6. Sinuosity  |   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 7. Headcuts And Grade Controls  |   | <input type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 1.5 |       |
| <b>GEOMORPHOLOGY SUBTOTAL:</b>   |   |   | 7.5  |       |
| Hydrology  | 8. Groundwater (Wet) / Hyporheic (Dry)  |   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3     |       |
|  | 9. Springs And Seeps (Note Locations)   |   | <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3     |       |
|  | 10. Evenly Disbursed Leaf Litter / Loose Debris ▼   |   | <input type="checkbox"/> 1.5 <input type="checkbox"/> 1 <input type="checkbox"/> 0.5 <input checked="" type="checkbox"/> 0 |       |
|  | 11. Debris Piles And Wrack Lines  |   | <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5 |       |
|  | 12. Redoximorphic Features In Toe Of Bank   |   | <input checked="" type="checkbox"/> Absent = 0 <input checked="" type="checkbox"/> Present = 1.5                           |       |
| <b>HYDROLOGY SUBTOTAL:</b>   |   |   | 7  |       |
| Biology  | 13. Wetland Plants In / Near Streambed <input checked="" type="checkbox"/> FAC 0.5 <input type="checkbox"/> FACW 0.75 <input type="checkbox"/> OBL 1.5 <input type="checkbox"/> SAV 2 <input type="checkbox"/> None |   |  |       |
|  | 14. Fibrous Roots / Rooted Plants In Thalweg ▼ <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 0   |   |  |       |
|  | 15. Streamer Mosses And Algal Mats <input type="checkbox"/> 0 <input checked="" type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |  |       |
|  | 16. Iron Oxidizing Bacteria, Fungus, Flocculent <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3  |   |  |       |
|  | 17. Macroinvertebrates <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |  |       |
|  | 18. Amphibians <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5   |   |  |       |
|  | 19. Fish <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3   |   |  |       |
|  | 20. Lichen Line (Arid Regions and Alpine Areas Only) <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1 <input type="checkbox"/> 1.5                                     |   |  |       |
|  | 21. Riparian Corridor (Arid Regions Only) <input checked="" type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3  |   |  |       |
|  | <b>BIOLOGY SUBTOTAL:</b>  |   |  | 3.25  |
| <b>Single Indicators:</b><br><input type="checkbox"/> Fish<br><input type="checkbox"/> Amphibians<br><input type="checkbox"/> Macroinvertebrates   |   | <b>★ TOTAL SCORE:</b>   |  | 17.75 |
|  |   | <b>Flow Duration (select only one)</b>  |  |       |
|  |   | Ephemeral <input type="checkbox"/> Total Score < 13<br>Intermittent <input checked="" type="checkbox"/> Total Score ≥ 13 <u>or</u> Single Indicator   |  |       |



Note: Scoring scale is reversed  
for indicators marked with ▼.

**Perennial** ☐ Total Score  $\geq 25$



**Waterway Name:** S214-Int

**Notes** (explanation of any single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

☐ Prolonged Abnormal Rainfall / Snowpack

☐ Below Average

☐ Above Average

☐ Natural or Anthropogenic Disturbance

☒ Other: Some cattle disturbance.

**Describe and Explain any Indicators of Questionable Applicability:**

**Other Notes** (sketch of site, description of photos, depth of observed groundwater, etc.)

Intermittant reach of stream had some borderline wetland within OHW, but overall qualifies as a stream. Spring seems to start at head and flow along reach mapped using GPS. Water was frozen on the day of the site visit. Some shallow pools, most ice 2 inches thick, some pools about 1 foot deep.

Photo 29



# Montague Wind Power Facility Wetlands and Other Waters Delineation Report Gilliam County, Oregon

PREPARED FOR: Sara Parsons/Iberdrola Renewables, Inc.  
PREPARED BY: Forrest Parsons/CH2M HILL  
REVIEWED BY: Joel Shaich/CH2M HILL  
COPIES: Carrie Konkol/CH2M HILL  
DATE: January 20, 2010

## Introduction

CH2M HILL conducted a wetland and other waters delineation in 2009 to identify potentially jurisdictional wetlands and other waters for the proposed Montague Wind Power Facility (Facility) in Gilliam County, Oregon (Figure 1 in Appendix A1). The delineation was completed in accordance with Section 404 of the Clean Water Act (CWA) and the Oregon Removal-Fill Law.

Iberdrola Renewables, Inc. (Applicant) proposes to construct the Facility with generating capacity of up to 404 megawatts (MW). No more than 269 turbines will be located within the Facility site boundary, depending on the final turbine size and vendor.

Wetland survey corridors for the delineation were established around all proposed facilities (Figure 2 in Appendix A1). Tax lots completely or partially within the survey corridors are listed in Appendix A2.

## Report Organization

This report is organized in accordance with Oregon Department of State Lands (DSL) requirements, as follows:

- A Description of the Site, Landscape Setting, and Previous and Current Land Uses
- B Site Alterations
- C Precipitation Data and Analysis
- D Site-Specific Methods
- E Description of Wetlands and Other Waters
- F Deviations from National Wetland Inventory/Local Wetland Inventory Mapping
- G Wetland Mapping Method
- H Additional Information Used to Establish Jurisdiction
- I Results and Conclusions
- J Disclaimer



Appendixes are as follows:

- Appendix A1 – Figures
- Appendix A2 – Tax Lots in Survey Corridor
- Appendix B – Wetland Determination Data Forms
- Appendix C1 – Ground Photographs: Wetlands
- Appendix C2 – Ground Photographs: Streams
- Appendix C3 – Ground Photographs: Upland Vegetated Drainages (Nonwater)
- Appendix D1 – Oregon Streamflow Duration Assessment Method (OSDAM) Forms
- Appendix D2 – Potential Waters in the Montague Wind Power Facility Survey Corridor
- Appendix D3 – Previous Oregon Department of State Lands and U.S. Army Corps of Engineers Jurisdictional Determinations
- Appendix E – Literature Citations

## A. Description of the Site, Landscape Setting, and Previous and Current Land Uses *OAR141-090-0035 (7)(a)*

The proposed Facility is located in the Columbia Plateau physiographic region, primarily in the Pleistocene Lake Basins Level IV ecoregion, with the extreme southern portions located in the Umatilla Plateau ecoregion (Thorson et al., 2003). The landscape consists of gentle rolling hills, plateaus, and occasional high buttes, rocky outcrops, sand dunes, and shallow exposed bedrock. These areas are regularly dissected by gently-sloped to steep headwater gullies, relict drainages, ravines, and shallow vegetated swales. Area elevations range from approximately 600 feet above mean sea level (AMSL) in Eightmile Canyon to approximately 1,500 feet AMSL on the Umatilla plateau in the southern portions of the site.

The regional climate is arid, with average annual precipitation of approximately 9 inches (NRCS, 2002). Most areas within the site boundary drain into Eightmile Canyon, which traverses the study corridor for approximately 11 miles from south to north. Eightmile Canyon drains to Willow Creek, a Columbia River tributary. The eastern portions of the site drain into Fourmile Canyon, a tributary to Eightmile Canyon. The western portions of the site drain into Alkali Canyon, an interior basin that has discontinuous drainage north to China Creek, a Columbia River tributary. The southwest corner of the site drains to Rock Creek, a tributary of the John Day River. Most drainages within the Facility site boundary become less distinct as they reach the larger canyon floors and many disappear completely. These drainages may have resulted from Missoula flood events given the existing arid climate and minimal runoff in the region.

Vegetation communities in the site are primarily shrub-steppe, grassland, and agricultural land (Table 1).



TABLE 1  
Vegetation Communities Within the Montague Wind Power Facility Site Boundary

| General Land Cover Type and Codes   | Specific Habitat Type ("subtype") and Mapping Codes | Specific Habitat Type Description   |
|---|---|---|
| <b>Developed (D)</b>  | Old Field (DB)                                      | Previously cultivated but likely not DC (see below), currently occupied by a variety of common non-native and native vegetation plants (rabbitbrush shrubs/annual grasses and weeds). Native vegetation is minor component.   |
|   | CRP or Other Planted Grassland (DC)                 | Planted grassland on previously farmed or other disturbed lands that may be enrolled in the Conservation Reserve Program. Residual (not previously plowed) native vegetation patches in a few locations. Old grass stands contain rabbitbrush or other shrubs but are not dominant (see SSB below).   |
|   | Irrigated Agriculture (DI)                          | Agricultural crop or livestock pasture fields that are irrigated for all or a portion of the growing season. The use was determined by presence of farm crop and onsite irrigation implements such as pipes, sprinklers, pumps, and motors.   |
|   | Dryland Wheat or Other Small Grain (DW)             | Agricultural fields currently in small grain production or fallow.  |
|   | Other (DX)  | Developed/disturbed areas including farming/ranching home and shop sites, corrals, structures, feedlots, inactive and active gravel quarries, pastures, roads, rights-of-way and waste areas associated with ongoing human activities.  |
| <b>Exposed Rock (ER)</b>  | Escarpment (ESC)                                    | Linear Columbia River Basalt outcroppings approximately 3 to 15 meters (10 to 50 feet) in height, found on steeper slopes that bound canyon edges and shoulders.  |
| <b>Grassland (G)</b><br>Steppe dominated by native and/or non-native grasses (<20% shrub cover) | Exotic Annual Grassland (GA)                        | Dominated by exotic annual grass and/or weeds. Open, low shrubs present in larger blocks. Some GA sites supports long-billed curlew (LBCU), Washington ground squirrel (WGS). Common bird species include HOLA.   |
|   | Native Perennial Grassland (GB)                     | Dominated by native perennial bunchgrass. Shrubs, if present, are an inconspicuous component.   |
| <b>Shrub-steppe (SS)</b><br>Steppe dominated by shrubs (>20% shrub cover)                       | Sagebrush Shrub-steppe (SSA)                        | Big sage sagebrush/bunchgrass-annual grass.   |
|   | Rabbitbrush-Snakeweed Shrub-steppe (SSB)            | Rabbitbrush-snakeweed-buckwheat/bunchgrass-annual grass. Most of these areas are formerly SSA (sagebrush-rabbitbrush-snakeweed/bunchgrass - annual grass) attempting to recover from recent fire or are older DC/CRP and have significant shrub component. Many sites contain mature big sagebrush cover in patches approx. 2 acres and less in size. |
| <b>Woodland (W)</b><br>With >10% tree cover   | Juniper Woodland (WJ)                               | Open canopy woodland consisting of western juniper trees in more concentrated distribution (vs. scattered individual trees in other habitat types). Often with significant big sage and grass understory component. Recent wildfires have killed some juniper trees in the Eightmile Canyon area.   |
|   | Riparian Woodland (WR)                              | Riparian woodland is limited to one narrow intermittent linear stream course in Eightmile Canyon. Willow is the dominant deciduous tree of the overstory.   |



TABLE 1  
Vegetation Communities Within the Montague Wind Power Facility Site Boundary

| General Land<br>Cover Type and<br>Codes | Specific Habitat<br>Type ("subtype")<br>and Mapping Codes | Specific Habitat Type Description |
|---|---|-----------------------------------|
|---|---|-----------------------------------|

Source: Adapted from NWC 2010.

Historical land use was dominated by wheat farming and livestock grazing. Current land use includes wheat and hay farming, livestock grazing and lands in the Conservation Reserve Program. Wheat crops are grown on the plateaus and gentler upper slopes of ridges and rolling hills. Irrigated hay crops are grown in portions of the valley bottom of Eightmile Canyon.

## B. Site Alterations *OAR141-090-0035 (7)(c)*

Vegetation throughout the site has been altered by historical and ongoing grazing. The headwaters of drainages in much of the site are currently or were historically managed as wheat fields with regular plowing and planting as part of the agricultural operations, eliminating most traces of drainages in these areas. As drainages traverse steeper unfarmed areas (because of slope or rocky soils), they have more developed channels, apparently as the result of natural erosive processes. The drainages then become less defined or entirely lose observable bed and banks as they enter the flatter bottoms of Eightmile Canyon and the other large canyons in the site.

Portions of the valley bottom of Eightmile Canyon are irrigated with well water for hay crops. Detention basins have been constructed within the canyon's channel to capture irrigation runoff for reuse or stock watering.

Additional site alterations include residences and farms, many of which are abandoned, asphalt and gravel roads, and dirt farm access roads. Eightmile Canyon has areas where gravel has been mined from the channel.

## C. Precipitation Data and Analysis *OAR141-090-0035 (7)(i)*

Fieldwork was conducted between October 12 and December 17, 2009. Precipitation data for the period October 2008 through October 2009 were obtained for the Arlington Coop weather station (NOAA/NWS Cooperative Observer Network ID 350265), approximately 5 miles northwest of the site (NOAA/NWS, 2009). Average annual precipitation for the Arlington weather station is 9.05 inches, including average annual snowfall of 7.4 inches (NRCS, 2002). The normal range for annual precipitation is 7.04 to 9.8 inches.

Precipitation for the water year prior to the fieldwork (October 2008 through September 2009) was 7.55 inches. Data for July 2009 were missing. Normal July precipitation ranges from 0.03 to 0.22 inch. Adding in normal July precipitation gives a water year total of 7.58 to 7.77 inches, within the normal range for the water year. Precipitation for the 3 months prior to the fieldwork was within the normal range, assuming July precipitation was normal (Table 2). Precipitation for the 2 weeks prior to the field work was 0.29 inch.



Precipitation data for November and December 2009 were not available for the Arlington Coop weather station and were obtained from the Weather Underground station in Arlington (Weather Underground, 2009). Precipitation from October 12 through December 17, 2009, was 1.19 inches.

Precipitation was slightly outside the normal ranges for October, November, and December 2009. This slight variation (0.30 inch total) from normal precipitation was unlikely to affect observation of or interpretation of wetland hydrology indicators or indicators of stream flow duration.

TABLE 2  
Monthly Precipitation (inches), Arlington, Oregon

|                | Actual Precipitation | Normal Range <sup>a</sup> | Amount Outside Normal Range |
|----------------|----------------------|---------------------------|-----------------------------|
| June 2009      | 0.11                 | 0.09 - 0.42               |                             |
| July 2009      | Data missing         | 0.03 - 0.22               | Unknown                     |
| August 2009    | 0.07                 | 0.05 - 0.37               |                             |
| September 2009 | 0.07                 | 0.06 - 0.48               |                             |
| October 2009   | 0.83                 | 0.27 - 0.79               | +0.04                       |
| November 2009  | 0.41                 | 0.71 - 1.53               | -0.30                       |
| December 2009  | 0.69                 | 0.73 - 1.77               | -0.04                       |

<sup>a</sup>Normal Range: 70 percent chance of monthly precipitation occurring within range (source: NRCS 2002).

July – October 2009 Actual Precipitation Source: Oregon Climate Service 2009.

November – December 2009 Actual Precipitation Source: Weather Underground 2009.

## D. Site-Specific Methods *OAR141-090-0030, OAR141-090-0035 (7)(d-e), (g-h), (16)(a-b), (f), (d) or (g), (17), & (19-20)*

Delineation survey corridors were established around all proposed Facility components including wind turbines, meteorological towers, access roads, underground and overhead electrical collector lines, transmission line, substations, and construction staging areas (Figures 2, 2a-2i).

## Literature Review

Prior to conducting the field study, the following information was reviewed:

- Addendum to Leaning Juniper II Wind Power Facility, Wetlands and Waters Delineation Report, Gilliam County, Oregon (CH2M HILL, 2009)
- Wetland Delineation Report, Pebble Springs Wind Power Project, Gilliam County, Oregon (CH2M HILL, 2007)
- Wetland Delineation Report, Pebble Springs Wind Power Project: 2008 Addendum, Gilliam County, Oregon (CH2M HILL, 2008)



- DSL jurisdictional determinations dated September 29, 2009, for DSL file WD#09-0252 (Leaning Juniper IIB) and January 10, 2008, for DSL file WD#07-0430 (Pebble Springs)
- U.S. Army Corps of Engineers (USACE) jurisdictional determination dated May 29, 2009, for Corps file NWP-2007-925 (Pebble Springs)
- U.S. Geological Survey (USGS) 7.5' topographic maps (digital format)
- USGS 100K National Hydrography Dataset (NHD) - digital water course data
- Pacific Northwest Hydrography Framework (PNWHF) 24K Dataset - digital water course data
- National Wetlands Inventory (NWI) digital data
- SSURGO digital soils data
- Hydric Soils List for Gilliam County (NRCS, 2006)
- Aerial imagery (USDA, 2005)

Wetland and other waters delineations were previously conducted by CH2M HILL in portions of the Facility site boundary in 2007-2008 for the Pebble Springs Wind Project (Pebble Springs) (Figure 3a) and in 2009 for the Leaning Juniper II Wind Power Facility (LJF) (Figures 3c, 3e, and 3f). Six wetlands that were delineated for Pebble Springs are located within the Montague survey corridor (Figure 3a). USACE determined in 2009 that none of these wetlands are jurisdictional under the Clean Water Act (Appendix D3). DSL determined in 2008 that four of the wetlands within the survey corridor are jurisdictional under the Removal-Fill Law (Appendix D3). DSL has not made jurisdictional determinations for the other two wetlands. Wetland delineation results for these two wetlands have been incorporated into this report.

More than 300 drainages were identified within the survey corridor during the review of existing information for field verification (Figures 3, 3a-3i; Appendix D2). No other potentially jurisdictional wetlands or waters, other than those previously delineated by CH2M HILL for Pebble Springs, were identified from existing information. There were no mapped hydric soils in the delineation survey corridors (Figures 4, 4a-4i) and there were no NWI-mapped wetlands outside of the identified drainages. No springs were mapped on the USGS maps in the survey corridors.

## Field Study

Fieldwork was conducted on 18 days between October 12 and December 17, 2009. Each drainage identified from the review of existing information was field-verified to determine whether it contained stream channels, wetlands, or other waters. Additionally, wetland biologists, in conjunction with cultural resource surveys, walked the entire survey corridor to identify isolated wetlands or other waters outside of drainages.

Field verification of drainages included observations of geomorphology, hydrology, and biology, and taking site photographs. USGS-mapped streams (regardless of whether they contained wetlands or other waters) and additional field-verified stream channels were



assessed using the Oregon Streamflow Duration Assessment Method (OSDAM) to determine if they had ephemeral, intermittent, or perennial flow regimes.

An additional survey corridor was added for an alternate 230-kV transmission line route as the field study was being completed (Alternate 1 Transmission Line, Figure 2a). A preliminary field inspection indicated that seasonal pool wetlands were present in two areas. These areas are marked as “Potential Wetlands (Seasonal Pools) to be Surveyed Before Construction” on the wetland delineation maps (see Figure 6a). Prior to construction, the areas will be field-verified and delineated, and the delineation results will be submitted to the regulatory agencies for review and approval. Poles for the transmission line will be located outside the wetland boundaries.

Data collection, description, and analysis for wetlands and other jurisdictional waters of the U.S. followed procedures in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE, 2008), and the *Oregon Streamflow Duration Assessment Method Interim Version* (OSDAM) (Topping, Brian J.D. et. al, 2009).

The routine onsite wetland determination method was used to observe vegetation, soils, and hydrological conditions at representative locations. Paired sample plots were used to document wetland and upland areas adjacent to wetland boundaries. The *USFWS National List of Plant Species that Occur in Wetlands: Oregon Combined 1988 Region 9 List and 1993 Supplement List of Plant Species that Occur in Wetlands (Region 9)* (DSL, 2009) was used to determine hydrophytic status of vegetation.

## E. Description of Wetlands and Other Waters OAR141-090-0035 (2), (7)(b), & (17)

Twenty-two wetlands and 26 streams were identified within the survey corridors (Figures 6, 6a-6i).

### Wetlands

Twenty-two wetlands totaling 3.6 acres were delineated within the survey corridors, including 6 wetlands previously delineated at Pebble Springs (Table 3; Figure 7, 7a-7f). Wetland determination data forms are in Appendix B. Ground photographs of wetlands are in Appendix C1.

**Wetland W1** is a 0.26-acre isolated, depression, palustrine emergent wetland located in a shallow depression in an irrigated hay field immediately east of Eightmile Road in township 1 north, range 22 east, section 8 (T1N, R22E, section 8) (Figure 7a). The wetland had ponded water and saturated soils. Dominant vegetation was *Polygonum aviculare* (FACW). The wetland boundary was delineated at the edge of the depression and characterized by the limits of soil saturation and a transition from dominant wetland vegetation and bare ground to a predominance of *Festuca idahoensis* (FACU). The wetland’s location in an irrigated field suggests the hydrology is augmented by or completely due to irrigation. According to local landowners, well water is the source of the irrigation water. No springs, seeps, or drainages were observed in the vicinity of the wetland.



**Wetlands W2A through 2K** comprise an approximately 2,000-foot-long series of 11 palustrine emergent, depressional wetlands that total 0.86 acre. They are located in detention basins within the banks of ephemeral stream S202 (Eightmile Canyon), located east of Eightmile Road in section 8, T1N, R22E (Figure 7a). The detention basins were created by earthen berms constructed across the channel. The source of wetland hydrology appears to be irrigation runoff from the surrounding irrigated hayfields that are irrigated with well water. Most of the basins contained ponded water or saturated soils. Dominant wetland vegetation was *Polygonum aviculare* (FACW). The boundaries of these wetlands were delineated at the toe of the slope of each basin and characterized by a change from dominant wetland vegetation and bare ground to a predominance of *Taraxacum officinale* (FACU) and *Festuca idahoensis* (FACU). There was no evidence that the wetlands receive stream flow regularly. According to local landowners, flow in the channel occurs only every few years following large rain storms or rain on snow events. The stream channel upstream and downstream of the detention basins is dominated with upland vegetation and lacks consistent indicators of regular flow. No springs or seeps were observed in the vicinity of the wetland.

**Wetland W3** is a 0.02-acre, isolated, palustrine emergent, depressional wetland located in a small depression approximately 500 feet south of Eightmile Canyon Road in T1N, R22E, section 16 (Figure 7b). The alkaline wetland is sparsely vegetated with *Distichlis spicata* (FACW). A salt crust and cracked soils were observed in portions of the wetland. The wetland boundary was delineated at the depression edge and characterized by a change in vegetation from dominant wetland vegetation and bare soils to a predominance of *Bromus tectorum* (UPL).

**Wetland W4** is a 1.86-acre, palustrine emergent, riverine wetland within the ordinary high water mark of stream S202 (Eightmile Canyon) for approximately one-half mile in T1N, R22E, sections 21 and 22 (Figure 7c). Dominant vegetation includes *Typha latifolia* (OBL) and *Distichlis spicata* (FACW). The wetland had extensive areas of ponding and saturated soils. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). According to the landowner, wetland hydrology results from springs in the area that discharge year-round.

**Wetland W5** is a 0.01-acre portion of a palustrine emergent/shrub-scrub, riverine wetland confined within the ordinary high water mark of stream S202 (Eightmile Canyon) approximately one-half mile west of Mason Davidson Road in T1N, R22E, section 34 (Figure 7d). The wetland extends outside the study area northwest (downstream) within the stream channel. Dominant vegetation is *Typha latifolia* (OBL) and *Phalaris arundinacea* (FACW). The wetland had areas of ponding and saturated soils. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). This wetland extends approximately 200 feet north of the survey corridor. No springs or seeps were observed within the vicinity of the wetland. However, the source of wetland hydrology is presumed to be groundwater discharge.

**Wetland W6A** is a 0.02-acre palustrine emergent, riverine wetland confined within the ordinary high water mark of stream S202 (Eightmile Canyon) approximately one-quarter mile southwest of Mason Davidson Road in T1S, R22E, section 2 (Figure 7e). The wetland



extends outside the study area south (upstream) within the stream channel. Dominant vegetation is *Phalaris arundinacea* (FACW). The wetland had a water table within 4 inches of the surface, drainage patterns, drift deposits and other indicators of wetland hydrology. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by *Artemisia tridentata* (NOL) and *Bromus tectorum* (NOL). No springs or seeps were observed within the vicinity of the wetland. However, the source of wetland hydrology is presumed to be groundwater discharge.

**Pebble Springs Wetlands W1G, W1H, W1I, W1J** are isolated, palustrine emergent, depressional wetlands ranging in size from less than 0.01 acre to 0.48 acre, located in small depressions in T3N, R21E, section 36 (Figure 6a). They were previously delineated for Pebble Springs. DSL determined in 2008 that the wetlands are jurisdictional under the Removal-Fill Law (Appendix D3). USACE determined in 2009 that none of these wetlands was jurisdictional under the Clean Water Act (Appendix D3).

TABLE 3  
Wetlands at the Montague Wind Power Facility

| Wetland ID | Acres <sup>1</sup> | Cowardin <sup>2</sup><br>Class | HGM Class <sup>3</sup> | Clean Water Act<br>Section 404 Jurisdiction | Oregon Removal-<br>Fill Law Jurisdiction |
|------------|--------------------|--------------------------------|------------------------|---|--|
| W1         | 0.26               | PEM                            | Depressional           | Yes (PJD)                                   | Yes (PJD)                                |
| W2A        | 0.07               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2B        | 0.02               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2C        | 0.08               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2D        | 0.09               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2E        | 0.06               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2F        | 0.06               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2G        | 0.05               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2H        | 0.08               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2I        | 0.18               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2J        | 0.08               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W2K        | 0.09               | PEM                            | Depressional           | Yes (PJD)                                   | No (PJD)                                 |
| W3         | 0.02               | PEM                            | Depressional           | Yes (PJD)                                   | Yes (PJD)                                |
| W4         | 1.86               | PEM                            | Riverine               | Yes (PJD)                                   | Yes (PJD)                                |
| W5         | 0.01               | PEM                            | Riverine               | Yes (PJD)                                   | Yes (PJD)                                |
| W6A        | 0.02               | PEM                            | Riverine               | Yes (PJD)                                   | Yes (PJD)                                |
| W1G        | 0.48               | PEM                            | Depressional           | NO (JD)                                     | YES (JD)                                 |
| W1H        | 0.01               | PEM                            | Depressional           | NO (JD)                                     | YES (JD)                                 |
| W1I        | <0.01              | PEM                            | Depressional           | NO (JD)                                     | YES (JD)                                 |
| W1J        | <0.01              | PEM                            | Depressional           | NO (JD)                                     | YES (JD)                                 |
| W22        | 0.02               | PEM                            | Depressional           | NO (JD)                                     | Yes (PJD)                                |



TABLE 3  
Wetlands at the Montague Wind Power Facility

| Wetland ID | Acres <sup>1</sup> | Cowardin <sup>2</sup><br>Class | HGM Class <sup>3</sup> | Clean Water Act<br>Section 404 Jurisdiction | Oregon Removal-<br>Fill Law Jurisdiction |
|------------|--------------------|--------------------------------|------------------------|---|--|
| W23        | 0.01               | PEM                            | Depressional           | NO (JD)                                     | Yes (PJD)                                |

<sup>1</sup> Within survey corridor. Wetlands W5 and W6A extend outside the survey corridor.

<sup>2</sup> Cowardin et al., 1979.

<sup>3</sup> Adamus, 2001.

PJD: Preliminary jurisdictional determination. PJDs are advisory only. Final jurisdictional determinations are made by the regulatory agencies.

JD: Final jurisdictional determination made by regulatory agency.

**Pebble Springs Wetlands W22 and W23** are isolated, palustrine unconsolidated bottom, depressional wetlands totaling 0.05 acre located in small depressions in T2N, R22E, section 6 (Figure 7f). The wetlands were delineated in 2008 for Pebble Springs. The wetland delineation was submitted to DSL in 2008 as additional information for DSL WD#07-0430 but review and approval was not requested at that time. The 2008 wetland delineation results are included in this report. The wetlands were ponded with bare soils during the 2008 field study. Wetland boundaries were delineated at the depression edges and characterized by transitions from bare, ponded, or saturated soils to dry soils dominated by *Bromus tectorum* (NOL) and *Chrysothamnus* sp. (NOL). The wetlands were field-verified again during the Montague field study and site conditions had not changed. USACE determined in 2009 that these wetlands were not jurisdictional under the Clean Water Act (Appendix D3).

## Other Waters

### Streams

Twenty-six streams were mapped in the survey corridor (Table 4; Figures 6, 6a-6i). Ground photographs of streams are in Appendix C2.

Eightmile Canyon (stream S202) is the largest, flowing from south to north along the eastern side of the study corridor. Eightmile Canyon drains to Willow Creek, a Columbia River tributary. Eightmile Canyon is ephemeral except for the sections containing wetlands W2A through 2K, W4, W5, and W6A and W6B. The portion of the stream that contains wetlands W2A through 2K appears to have ponding that is artificially maintained through the creation of detention basins to collect irrigation runoff. The stream reach containing wetland W4 has perennial discharge from springs maintaining ponding and saturation in the wetland year-round. Further upstream, the reaches of Eightmile Canyon that contain wetlands W5 and W6A appear to also have perennial groundwater discharge. The channel in the ephemeral reaches of Eightmile Canyon is 15 to 36 feet wide, and characterized by defined banks and a gravel/cobble bed. There was no observed flow and little evidence of recent flow and most of the stream bed was vegetated with upland species, predominately *Artemisia tridentata* (NOL), *Chrysothamnus viscidiflorus* (NOL), *Bromus tectorum* (NOL) and other upland shrub-steppe species common to the area. According to local landowners, flow



in the channel occurs only every few years following large rainstorms or rain on snow events.

Stream reach S214b is an approximately 250-foot intermittent reach of stream S214 that had groundwater discharge (Figure 6i). The other reaches of S214 (identified as S214a) are ephemeral. All other mapped streams were ephemeral. None of the ephemeral channels contained flow during the fieldwork. Channel characteristics of the ephemeral streams, other than Eightmile Canyon, were similar. Channels were 2 to 12 feet in width with poorly defined bed and banks and little to no evidence of recent flow. Channels were generally vegetated with upland species, predominately *Artemisia tridentata* (NOL), *Chrysothamnus viscidiflorus* (NOL), *Bromus tectorum* (NOL) and other upland shrub-steppe species common to the area. The ephemeral streams were generally in larger local watersheds than the upland vegetated drainages and maintained some bed and banks through low gradient areas, where upland vegetated drainages had no bed and banks or disappeared completely.

TABLE 4  
Stream Channels at the Montague Wind Power Facility

| Stream Reach ID | Stream Name      | Flow Regime | Width @ Widest Point (feet) | Preliminary Jurisdictional Determination <sup>a</sup> , Clean Water Act Section 404 | Preliminary Jurisdictional Determination <sup>a</sup> , Oregon Removal-Fill Law |
|-----------------|------------------|-------------|-----------------------------|---|---|
| S001            |                  | Ephemeral   | 6                           | YES   | NO  |
| S002            |                  | Ephemeral   | 6                           | YES   | NO  |
| S003            |                  | Ephemeral   | 12                          | YES   | NO  |
| S004            |                  | Ephemeral   | 6                           | YES   | NO  |
| S005            |                  | Ephemeral   | 12                          | YES   | NO  |
| S006            |                  | Ephemeral   | 8                           | YES   | NO  |
| S007            |                  | Ephemeral   | 12                          | YES   | NO  |
| S008            | Cow Canyon       | Ephemeral   | 19                          | YES   | NO  |
| S009            |                  | Ephemeral   | 12                          | YES   | NO  |
| S010            |                  | Ephemeral   | 10                          | YES   | NO  |
| S012            |                  | Ephemeral   | 4                           | YES   | NO  |
| S013            |                  | Ephemeral   | 15                          | YES   | NO  |
| S201            | Fourmile Canyon  | Ephemeral   | 36                          | YES   | NO  |
| S202            | Eightmile Canyon | Ephemeral   | 14                          | YES   | NO  |
| S203            |                  | Ephemeral   | 12                          | YES   | NO  |
| S204            |                  | Ephemeral   | 19                          | YES   | NO  |
| S205            |                  | Ephemeral   | 6                           | YES   | NO  |
| S206            |                  | Ephemeral   | 12                          | YES   | NO  |
| S207            |                  | Ephemeral   | 4                           | YES   | NO  |
| S208            |                  | Ephemeral   | 8                           | YES   | NO  |
| S209            |                  | Ephemeral   | 12                          | YES   | NO  |



TABLE 4  
Stream Channels at the Montague Wind Power Facility

| Stream Reach ID | Stream Name | Flow Regime  | Width @ Widest Point (feet) | Preliminary Jurisdictional Determination <sup>a</sup> , Clean Water Act Section 404 | Preliminary Jurisdictional Determination <sup>a</sup> , Oregon Removal-Fill Law |
|-----------------|-------------|--------------|-----------------------------|---|---|
| S210            |             | Ephemeral    | 15                          | YES   | NO  |
| S211            |             | Ephemeral    | 6                           | YES   | NO  |
| S212            |             | Ephemeral    | 6                           | YES   | NO  |
| S213            |             | Ephemeral    | 6                           | YES   | NO  |
| S214a           |             | Ephemeral    | 12                          | YES   | NO  |
| S214b           |             | Intermittent | 6                           | YES   | NO  |

<sup>a</sup> Jurisdictional determinations, including the applicability of exemptions, are preliminary only. Final determinations are made by the regulatory agencies.

Streams S006 and S007 are along the western edge of the site boundary and are tributaries to Rock Creek, a tributary to the John Day River (Figure 6e). All of the other mapped streams are tributaries to Eightmile Canyon.

## Upland Vegetated Drainages

The drainages that did not contain stream channels were all upland vegetated swales and gullies. These were generally well-vegetated, predominately with *Artemisia tridentata* (NOL), *Chrysothamnus viscidiflorus* (NOL), *Bromus tectorum* (NOL) and other upland shrub-steppe species common to the area. They did not have scoured beds, ordinary high water marks, or other indicators of recent flow. Ground photographs of these drainages are in Appendix C3.

## F. Deviations from NWI/LWI Mapping OAR141-090-0035 (16)(e)

No Local Wetland Inventory (LWI) has been compiled for the Facility site boundary. The NWI mapped Eightmile Canyon and several of the other drainages as riverine, upper perennial, streambed that were field-verified as ephemeral streams. Appendix D2 contains a table listing all drainages identified by NWI, USGS, and PNW mapping and the field results.

## G. Wetland Mapping Method OAR141-090-0035 (7)(f), (11), (12), (13), (18), and (22)

Wetland sample plot locations and wetland boundaries were mapped using a hand-held Global Positioning System (GPS) unit with sub-meter accuracy capability. Estimated accuracy of mapped wetland boundaries is  $\pm 3$  feet.

Streams were mapped by using existing PNW watercourse mapping, following field-verification. Stream locations in the field varied significantly from the PNW mapping at a



small number of sites. For these sites, the stream mapping was edited to reflect the field observations. Editing was based on air photo interpretation and field observations.

## H. Additional Information Used to Establish Jurisdiction

*OAR141-085-0015 (1-7), OAR141-090-0030 (2), OAR141-090-0035 (6)(c), (16)(c), & (21)*

Information on fish distribution was obtained from the StreamNet Pacific NW Interactive Mapper web site (StreamNet, 2009). None of the stream reaches within the site boundary provides spawning, rearing, or migration corridors or food-producing areas for fish. There is no fish use in Eightmile Canyon or its tributaries. Eightmile Canyon drains to Willow Creek, which also has no fish use. Streams S006 and S007 are tributaries to Rock Creek. Rock Creek has resident redband trout and is used by summer steelhead for rearing and migration. Stream S006 has no fish use and the portions in the site boundary are over a mile upstream from Rock Creek. Review of aerial photographs suggests stream S006 may not have a continuous channel outside the survey corridor connecting to Rock Creek, but this was not field-verified. Stream S007 has no fish use and becomes undefined more than a mile from Rock Creek, before it leaves the Facility site boundary, and does not have a continuous channel connecting to Rock Creek.

## I. Results and Conclusions *OAR141-090-0035(7)(i)*

All of the wetlands and other waters identified in this report are potentially subject to federal and/or state jurisdiction. Jurisdictional determinations, including the applicability of exemptions, are made on a case-by-case basis by the regulatory agencies.

The regulatory conclusions in this report are provided as preliminary jurisdictional determinations (PJDs) and are listed in Table 3 and Table 4. PJDs, including the applicability of exemptions, are advisory only. Final determinations are made by the regulatory agencies. Pebble Springs wetlands W1G, W1H, W1I, and W1J have received final jurisdictional determinations from USACE and DSL. Pebble Springs wetlands W22 and W23 have received final jurisdictional determinations from USACE.

### Waters of the State

Waters of the state include “all natural waterways, tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, [and] all other navigable and nonnavigable bodies of water in this state.....” (OAR 141-085-0510(91)). Furthermore, intermittent streams are defined as “any stream which flows during a portion of every year and which provides spawning, rearing or food-producing areas for food and game fish” (OAR 141-085-0510(43)). “Food-producing areas” are not defined.

### Ephemeral Streams

None of the ephemeral stream channels are potentially jurisdictional under the state Removal-Fill Law because ephemeral streams are not included in the definition of waters of



the state. Even if the streams were considered intermittent, they would still not be jurisdictional under state law because only those intermittent streams that provide spawning, rearing, or food-producing areas for food and game fish are jurisdictional, and none of the streams meet these criteria. There are no fish populations using the ephemeral streams for spawning or rearing and they are not food-producing areas for downstream waters that do support fish because they are either too far upstream from fish-bearing waters or because they do not have a hydrological connection to fish-bearing waters. The portions of Eightmile Canyon and its tributaries within the site boundary are approximately 8 miles upstream from the Columbia River, the nearest fish-bearing waters, too far to be food-producing. The reach of stream S006 in the survey corridor is over a mile from Rock Creek, making it unlikely to be a food-producing area. In addition, aerial photograph review suggests that stream S006 does not have a continuous channel connecting to Rock Creek. Stream S007 is not a food-producing area for Rock Creek, because it does not have a continuous channel connecting it to Rock Creek.

## Wetlands

Wetland W1 is potentially jurisdictional as a natural wetland which is a water of the state by definition. Wetland W1 may be exempt from state jurisdiction if it was artificially created entirely from upland through irrigation practices. However, additional historical information would be needed to support such a determination (OAR 141-085-0 515(7)(d)).

Wetlands W2A through W2K are potentially exempt from Oregon Removal-Fill Law jurisdiction because they are artificially created from upland (within a non-jurisdictional ephemeral stream channel) and used for agricultural crop irrigation and/or stock watering (OAR 141-085-0 515(7)(d)).

Wetlands W3, W4, W5, W6A, and W6b are potentially jurisdictional under Oregon Removal-Fill Law as natural wetlands which are waters of the state by definition.

Pebble Springs wetlands W1G, W1H, W1I, and W1J have been determined by DSL to be jurisdictional (Appendix D3).

Pebble Springs wetlands W22 and W23 are potentially jurisdictional under Oregon Removal-Fill Law as natural wetlands which are waters of the state by definition.

## Waters of the U.S.

USACE asserts jurisdiction over the following waters:

- Traditional navigable waters (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) where the tributaries typically flow year-round or have continuous flow at least seasonally (i.e., typically 3 months)
- Wetlands that directly abut (i.e., have a continuous surface connection to) such tributaries (U.S. Environmental Protection Agency [EPA] and USACE, 2008)



USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent nonnavigable tributary (EPA and USACE, 2008)

A “significant nexus” is determined through analysis of “the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream TNWs” (EPA and USACE, 2008).

USACE will decide jurisdiction over isolated (i.e., non-adjacent) wetlands and waters based on a fact-specific analysis to determine whether impacts to those wetlands or waters could affect interstate commerce.

### **Traditional Navigable Waters (TNWs)**

There are no traditional navigable waters in the site boundary. The nearest downstream TNW for all of the streams in the survey corridor is the Columbia River (USACE Portland District, 1994 and 2008).

### **Relatively Permanent Waters and Abutting Wetlands**

The portions of Eightmile Canyon (S202) that contain wetlands W4, W5 and W6A have intermittent or perennial flow in those reaches and are potentially RPWs. However, the portions of Eightmile Canyon downstream of these reaches is ephemeral for approximately 8 miles to the edge of the survey corridor and for an unknown distance beyond and is not an RPW. Wetlands W4, W5 and W6A are within the OHWM of Eightmile Canyon and are abutting wetlands to Eightmile Canyon. USACE may take jurisdiction over the portions of Eightmile Canyon and the abutting wetlands as RPWs or they may determine they are non-RPWs and adjacent wetlands and determine jurisdiction based on a significant nexus determination, due to their location upstream of a non-RPW (ephemeral reach of Eightmile Canyon). These reaches of Eightmile Canyon and wetlands W4, W5, and W6A are considered jurisdictional until a final determination is made by USACE.

Stream reach S214b has intermittent flow for an approximately 250-foot reach and is ephemeral downstream. USACE may take jurisdiction over S214b as an RPW or they may determine jurisdiction based on a significant nexus determination, due to the reach location upstream of a non-RPW (ephemeral portion of S214 identified as S214a). S214b is considered jurisdictional until a final determination is made by USACE.

### **Non-RPWs and Adjacent Wetlands**

All of the ephemeral streams are non-RPWs. Wetlands W2A through 2K are adjacent to an ephemeral reach of Eightmile Canyon. These streams and the adjacent wetlands potentially have a significant nexus to the Columbia River, which is the nearest downstream TNW, based on their contributions of water supply, water quality protection, and flood flow



attenuation. They are all presumed to be jurisdictional until a final determination has been made by USACE.

#### Isolated Waters and Wetlands

Isolated wetlands W1 and W3 do not have an apparent connection to interstate commerce and may not be jurisdictional. However, they are presumed to be jurisdictional until a final determination has been made by the USACE.

### J. Disclaimer *OAR141-090-0035 (7)(k)*

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been reviewed and approved in writing by the Oregon DSL in accordance with OAR 141-090-0055 and by the U.S. Army Corps of Engineers, Portland District.

Jurisdictional determinations, including the applicability of exemptions, are made on a case-by-case basis by DSL and USACE.



## APPENDIX A1

# Figures

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APPENDIX A2

# Tax Lots in Survey Corridor

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## Appendix A2. Taxlots in Survey Corridor

|             |             |
|-------------|-------------|
| 01N20E00100 | 01S22E00102 |
| 01N20E00200 | 01S22E00200 |
| 01N20E00500 | 01S22E00300 |
| 01N20E00800 | 01S22E00400 |
| 01N20E03200 | 01S22E00500 |
| 01N20E03204 | 01S22E00501 |
| 01N21E00100 | 01S22E00502 |
| 01N21E00200 | 01S22E00503 |
| 01N21E00300 | 01S23E00900 |
| 01N21E00400 | 02N20E02700 |
| 01N21E00401 | 02N20E02800 |
| 01N21E00500 | 02N21E00100 |
| 01N21E00600 | 02N21E00700 |
| 01N21E00700 | 02N21E00800 |
| 01N21E00800 | 02N21E00900 |
| 01N21E00804 | 02N21E01000 |
| 01N21E00805 | 02N21E01014 |
| 01N21E00806 | 02N21E01300 |
| 01N21E00900 | 02N21E01400 |
| 01N21E01500 | 02N21E01500 |
| 01N21E02000 | 02N21E01600 |
| 01N21E02001 | 02N21E01701 |
| 01N21E02002 | 02N21E01704 |
| 01N21E02100 | 02N21E02100 |
| 01N22E00100 | 02N21E02100 |
| 01N22E00500 | 02N21E02500 |
| 01N22E00501 | 02N21E88888 |
| 01N22E00600 | 02N22E00800 |
| 01N22E00700 | 02N22E00901 |
| 01N22E00800 | 02N22E01001 |
| 01N22E00900 | 02N22E01100 |
| 01N22E01000 | 02N22E01400 |
| 01N22E01001 | 02N22E01500 |
| 01N22E01100 | 02N22E02100 |
| 01N22E01701 | 02N22E02300 |
| 01N22E01800 | 02N22E02400 |
| 01N22E01900 | 02N22E02500 |
| 01N22E02000 | 02N22E02501 |
| 01N22E02100 | 02N22E02502 |
| 01N22E02200 | 02N22E02600 |
| 01N22E02500 | 02N22E02900 |
| 01N22E02800 | 02N22E03000 |
| 01N22E02900 | 02N22E03100 |
| 01N22E02901 | 02N22E03200 |
| 01N22E02902 | 02N22E03201 |
| 01N22E03000 | 02N22E03400 |
| 01N22E03100 | 02N22E03500 |
| 01N22E03200 | 03N21E00503 |
| 01N22E03201 | 03N21E00503 |
| 01N22E03202 | 03N21E00506 |
| 01S22E00100 | 03N22E00701 |
| 01S22E00101 |             |







**APPENDIX B**

# **Wetland Determination Data Forms**

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# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W1SP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Detention Basin Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58764272N Long: 120.0905011W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Wetland is in depression in irrigated hay field. The wetland boundary was delineated at the edge of the depression and characterized by the limits of soil saturation and a transition from dominant wetland vegetation and bare ground to a predominance of <i>Festuca idahoensis</i> (FACU). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                       | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)   |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species <u>15</u> x 2 = <u>30</u><br>FAC species <u>-</u> x 3 = <u>-</u><br>FACU species <u>5</u> x 4 = <u>20</u><br>UPL species _____ x 5 = _____<br>Column Totals: <u>20</u> (A) <u>50</u> (B)<br>Prevalence Index = B/A = <u>2.5</u>  |
| Sapling/Shrub Stratum (Plot size: 15' radius)              |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br><input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                        |                  |                   |                  |  |
| 1. <u>Polygonum aviculare</u>                              | <u>15</u>        | <u>X</u>          | <u>FACW</u>      |  |
| 2. <u>Festuca idahoensis</u>                               | <u>5</u>         | <u>X</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>20</u>                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                      |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| Total Cover: <u>0</u>                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:   |                  |                   |                  |  |
|  |                  |                   |                  |  |



## SOIL

Sampling Point: W1SP01

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

| Depth<br>(inches) | Matrix          |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|-----------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist)   | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-1               | 2.5Y/10Y Gley1  | 100 |                |   |                   |                  | muck/silt |         |
| 1-4               | 2.5Y/10Y Gley 1 | 100 |                |   |                   |                  | silt loam |         |
| 4-20              | 10YR3/3         | 100 |                |   |                   |                  | silt loam |         |
|                   |                 |     |                |   |                   |                  |           |         |
|                   |                 |     |                |   |                   |                  |           |         |
|                   |                 |     |                |   |                   |                  |           |         |
|                   |                 |     |                |   |                   |                  |           |         |
|                   |                 |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR C**)  
☐ 1 cm Muck (A9) (**LRR D**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☒ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

Concave surface with A10 hydric soils indicator. Absence of standard hydric soil indicators may be due to irrigation source of hydrology.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1) (**Nonriverine**)  
☐ Sediment Deposits (B2) (**Nonriverine**)  
☐ Drift Deposits (B3) (**Nonriverine**)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☒ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 0-4  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Ponding was present within 10' of sample plot. Presence of irrigation equipment/location in irrigated field suggests source of water is primarily irrigation runoff collecting in depression. See Appendix C1 for photos of ponding in wetland from 10/20/2009 to 11/5/2009.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W1SP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambank Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58764272N Long: 120.0905011W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located in an irrigated agricultural field.                                 |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)             |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                       |                  |                   |                  |  |
| 1. <u>Festuca idahoensis</u>                              | <u>95</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u>Trifolium repens</u>                                | <u>3</u>         | _____             | <u>FAC</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. <u>Geranium sp.</u>                                    | <u>2</u>         | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>100</u>                                   |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                     |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            | <b>Remarks:</b><br>_____<br>_____<br>_____   |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |



# SOIL

Sampling Point: W1SP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 4/3      | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pebble Springs Wind Power Feb 2008 City/County: Gilliam Sampling Date: 2/05/08  
 Applicant/Owner: PPM Energy State: OR Sampling Point: SP-W22-01  
 Investigator(s): Joel Shaich Section, Township, Range: T2N R22E S6  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): B (Columbia/Snake River Plateau) Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: (23C) Olex silt loam, 5 to 12 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u>   | Is the Sampled Area<br>within a Wetland? Yes _____ No <u>X</u> |
| Hydric Soil Present? Yes _____ No <u>X</u>  |  |
| Wetland Hydrology Present? Yes _____ No <u>X</u>  |  |
| Remarks:<br>Plot located on slightly higher ground outside ponded depressions<br>Precipitation slightly above normal for water year to date |  |

## VEGETATION

| Tree Stratum (Use scientific names.)                                 | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0-2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0-50</u> (A/B)   |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| <b>Sapling/Shrub Stratum</b>   |                  |                   |                  |  |
| 1. <u>Chrysothamnus sp.</u>  | <u>10</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Unknown sp. #1</u>   | <u>5</u>         | <u>X</u>          | <u>?</u>         |  |
| 3. <u>Unknown sp. #2</u>   | <u>T</u>         | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>15</u>   |                  |                   |                  |  |
| <b>Herb Stratum</b>  |                  |                   |                  |  |
| 1. <u>Bromus tectorum</u>  | <u>60</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Unknown sp. #3</u>   | <u>20</u>        | <u>X</u>          | <u>?</u>         |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>   |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>80</u>   |                  |                   |                  |  |
| <b>Woody Vine Stratum</b>  |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>  |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |
| Remarks:<br><b>Upland steppe community</b>                           |                  |                   |                  |  |



## SOIL

Sampling Point: SP-W22-01

[illegible]

## HYDROLOGY

|   |   |   |  |
|---|---|---|--|
| <b>Wetland Hydrology Indicators:</b><br>Primary Indicators (any one indicator is sufficient)  |   | <b>Secondary Indicators (2 or more required)</b>  |  |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )<br><input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> )<br><input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )<br><input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> )<br><input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |  |
| <b>Field Observations:</b><br>Surface Water Present?    Yes _____ No <u>  X  </u> Depth (inches): _____ >16<br>Water Table Present?    Yes _____ No <u>  X  </u> Depth (inches): _____ >16<br>Saturation Present?    Yes _____ No <u>  X  </u> Depth (inches): _____ >16<br>(includes capillary fringe)   |   | <b>Wetland Hydrology Present?</b> Yes _____    No <u>  X  </u>  |  |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  |   |   |  |
| Remarks:  |   |   |  |



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pebble Springs Wind Power Feb 2008 City/County: Gilliam Sampling Date: 2/05/08  
 Applicant/Owner: PPM Energy State: OR Sampling Point: SP-W22-02  
 Investigator(s): Joel Shaich Section, Township, Range: T2N R22E S6  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): B (Columbia/Snake River Plateau) Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: (23C) Olex silt loam, 5 to 12 percent slopes NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation X, 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 <u>?</u> No _____  | Is the Sampled Area<br>within a Wetland? Yes <u>X</u> No _____ |
| Hydric Soil Present? Yes <u>X</u> No _____   |  |
| Wetland Hydrology Present? Yes <u>X</u> No _____   |  |
| Remarks: Plot located in ponded depression<br>Precipitation slightly above normal for water year to date |  |

## VEGETATION

| Tree Stratum (Use scientific names.)                                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum</b>  |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>? Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                       |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| <b>Herb Stratum</b>   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| 6. _____  | _____            | _____             | _____            |   |
| 7. _____  | _____            | _____             | _____            |   |
| 8. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| <b>Woody Vine Stratum</b>   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <u>?</u> No _____  |
| % Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |

Remarks: Hydrophytic vegetation may sprout after water begins drying up



# SOIL

Sampling Point: SP-W22-02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks          |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |                  |
| 0-8               | 7.5YR 4/2     | 100 |                |   |                   |                  | silty clay |                  |
| 8+                | 10YR 8/1      | 100 |                |   |                   |                  | clay       | dry clay refusal |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |  |

## Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

## Restrictive Layer (if present):

Type: clay

Depth (inches): 8

Hydric Soil Present? Yes ☒ No ☐

## Remarks:

Depleted layer presumed to be at least 6" thick

# HYDROLOGY

## Wetland Hydrology Indicators:

### Primary Indicators (any one indicator is sufficient)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1)                      | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                              | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input checked="" type="checkbox"/> Saturation (A3)                         | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input checked="" type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> )      | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )         | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                           | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)          | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |
| <input type="checkbox"/> Water-Stained Leaves (B9)                          |  |

## Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

## Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1

Water Table Present? Yes ☐ No ☒ Depth (inches): >8

Saturation Present? Yes ☒ No ☐ Depth (inches): 0-3  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: bare soil indicates prolonged ponding

Soil saturated at surface (0-3") then dry below



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pebble Springs Wind Power Feb 2008 City/County: Gilliam Sampling Date: 2/05/08  
 Applicant/Owner: PPM Energy State: OR Sampling Point: SP-W22-02  
 Investigator(s): Joel Shaich Section, Township, Range: T2N R22E S6  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): B (Columbia/Snake River Plateau) Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: (23C) Olex silt loam, 5 to 12 percent slopes NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No X (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation X, 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 <u>?</u> No _____  | Is the Sampled Area<br>within a Wetland? Yes <u>X</u> No _____ |
| Hydric Soil Present? Yes <u>X</u> No _____   |  |
| Wetland Hydrology Present? Yes <u>X</u> No _____   |  |
| Remarks: Plot located in ponded depression<br>Precipitation slightly above normal for water year to date |  |

## VEGETATION

| Tree Stratum (Use scientific names.)                                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum</b>  |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>? Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                       |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| <b>Herb Stratum</b>   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| 6. _____  | _____            | _____             | _____            |   |
| 7. _____  | _____            | _____             | _____            |   |
| 8. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <u>?</u> No _____  |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| <b>Woody Vine Stratum</b>   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks: Hydrophytic vegetation may sprout after water begins drying up   |                  |                   |                  |   |



# SOIL

Sampling Point: SP-W23-01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks          |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |                  |
| 0-8               | 7.5YR 4/2     | 100 |                |   |                   |                  | silty clay |                  |
| 8+                | 10YR 8/1      | 100 |                |   |                   |                  | clay       | dry clay refusal |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |
|                   |               |     |                |   |                   |                  |            |                  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

## Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |  |

## Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.

## Restrictive Layer (if present):

Type: clay

Depth (inches): 8

Hydric Soil Present? Yes ☒ No ☐

## Remarks:

Depleted layer presumed to be at least 6" thick

# HYDROLOGY

## Wetland Hydrology Indicators:

### Primary Indicators (any one indicator is sufficient)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1)                      | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                              | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input checked="" type="checkbox"/> Saturation (A3)                         | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input checked="" type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> )      | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )         | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                           | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)          | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |
| <input type="checkbox"/> Water-Stained Leaves (B9)                          |  |

## Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

## Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1

Water Table Present? Yes ☐ No ☒ Depth (inches): >8

Saturation Present? Yes ☒ No ☐ Depth (inches): 0-3  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: bare soil indicates prolonged ponding

Soil saturated at surface (0-3") then dry below



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/17/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2ASP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambed Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58790654 N Long: 120.0889281 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: Kimberly fine sandy loam NWI classification: R4SBC

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>                                  | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                       |   |
| Remarks:<br>Sample plot located in bed of ephemeral stream S202 immediately downstream of farthest downstream detention basin (W2A). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)             |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                       |                  |                   |                  |  |
| 1. <u>Festuca idahoensis</u>                              | <u>90</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u>Malva neglecta</u>                                  | <u>5</u>         | _____             | <u>NOL</u>       |  |
| 3. <u>Taraxacum officinale</u>                            | <u>trace</u>     | _____             | <u>FACU</u>      |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>95</u>                                    |                  |                   |                  | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| Woody Vine Stratum (Plot size: _____)                     |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |



# SOIL

Sampling Point: W2ASP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |              |
| 2-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock/cobble

Depth (inches): 2

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2CSP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Detention Basin Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58791495N Long: 120.0888856W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Wetland is in a detention basin behind a constructed berm across ephemeral stream channel S202. Wetland boundary was delineated at the toe of the slope of the basin and characterized by a change from dominant wetland vegetation and bare ground to a predominance of <i>Taraxacum officinale</i> (FACU) and <i>Festuca idahoensis</i> (FACU). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                 | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)<br><br><b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15' radius)</b> |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5' radius)</b>           |                  |                   |                  |  |
| 1. <u>Polygonum aviculare</u>                        | <u>80</u>        | <u>X</u>          | <u>FACW</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 2. <u>Festuca idahoensis</u>                         | <u>5</u>         |                   | <u>FACU</u>      |  |
| 3. <u>Malva neglecta</u>                             | <u>trace</u>     |                   | <u>NOL</u>       |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>85</u>                               |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: _____)</b>         |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 2. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Remarks:



# SOIL

Sampling Point: W2CSP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 10YR 2/1      | 100 |                |   |                   |                  | silt loam |              |
| 2-                | -             | -   |                |   |                   |                  | -         | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 2

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

Concave surface/created detention basin with irrigation run-off hydrology source. Appears to be a "Recently Developed Wetland" problematic hydric soil situation.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☒ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 0-2  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location in irrigated hay field suggests source of water is irrigation runoff.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2CSP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambank Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58790654 N Long: 120.0889281 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: none

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located near top of stream bank.  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |  |
| 1. <u>Taraxacum officinale</u>                | <u>60</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u>Trifolium repens</u>                    | <u>15</u>        | _____             | <u>FACU</u>      | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. <u>Festuca idahoensis</u>                  | <u>10</u>        | _____             | <u>FACU</u>      |  |
| 4. <u>Polygonum aviculare</u>                 | <u>10</u>        | _____             | <u>FACW</u>      |  |
| 5. <u>Centaurea diffusa</u>                   | <u>5</u>         | _____             | <u>NOL</u>       |  |
| 6. _____                                      | _____            | _____             | _____            |  |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>100</u>                       |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum 0</b> <b>% Cover of Biotic Crust 0</b><br><br>Remarks:  |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |



## SOIL

Sampling Point: W2CSP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-6               | 10YR 3/4      | 100 |                |   |                   |                  | silt loam |              |
| 6-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock/cobble

Depth (inches): 6

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2GSP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Detention Basin Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58594369N Long: 120.0886671W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Wetland is in a detention basin behind a constructed berm across ephemeral stream channel S202. Wetland boundary was delineated at the toe of the slope of the basin and characterized by a change from dominant wetland vegetation and bare ground to a predominance of <i>Taraxacum officinale</i> (FACU) and <i>Festuca idahoensis</i> (FACU). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |   |
| 1. <u>Polygonum aviculare</u>                 | <u>50</u>        | <u>X</u>          | <u>FACW</u>      |   |
| 2. <u>Festuca idahoensis</u>                  | <u>5</u>         |                   | <u>FACU</u>      | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| 5. _____                                      | _____            | _____             | _____            |   |
| 6. _____                                      | _____            | _____             | _____            |   |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| 8. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>55</u>                        |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            | % Bare Ground in Herb Stratum <u>45</u> % Cover of Biotic Crust <u>0</u><br>Remarks: _____  |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |



## SOIL

Sampling Point: W2GSP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 7.5YR 2.5/1   | 100 |                |   |                   |                  | silt loam |              |
| 2-10              | 2.5YR 3/1     | 100 |                |   |                   |                  | silt loam |              |
| 10-               |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☒ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR C**)  
☐ 1 cm Muck (A9) (**LRR D**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock/cobble

Depth (inches): 10

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)  
☐ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1) (**Nonriverine**)  
☐ Sediment Deposits (B2) (**Nonriverine**)  
☐ Drift Deposits (B3) (**Nonriverine**)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☒ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 0-2  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location in irrigated hay field suggests source of water is irrigation runoff.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2GSP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambank Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58594304 N Long: 120.0887287 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: none

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located near top of stream bank.  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species?         | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
|---|------------------|---------------------------|------------------|---|
| 1. _____                                      | _____            | _____                     | _____            |   |
| 2. _____                                      | _____            | _____                     | _____            |   |
| 3. _____                                      | _____            | _____                     | _____            |   |
| 4. _____                                      | _____            | _____                     | _____            |   |
| Total Cover: <u>0</u>                         |                  |                           |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                           |                  |   |
| 1. _____                                      | _____            | _____                     | _____            |   |
| 2. _____                                      | _____            | _____                     | _____            |   |
| 3. _____                                      | _____            | _____                     | _____            |   |
| 4. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                         |
| 5. _____                                      | _____            | _____                     | _____            |   |
| Total Cover: <u>0</u>                         |                  |                           |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                           |                  |   |
| 1. <u>Festuca idahoensis</u>                  | <u>60</u>        | <u>X</u>                  | <u>FACU</u>      |   |
| 2. <u>Malva neglecta</u>                      | <u>20</u>        | <u>X</u>                  | <u>NOL</u>       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| 3. <u>Polygonum aviculare</u>                 | <u>15</u>        |                           | <u>FACW</u>      |   |
| 4. _____                                      | _____            | _____                     | _____            |   |
| 5. _____                                      | _____            | _____                     | _____            |   |
| 6. _____                                      | _____            | _____                     | _____            |   |
| 7. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |
| 8. _____                                      | _____            | _____                     | _____            |   |
| Total Cover: <u>95</u>                        |                  |                           |                  |   |
| Woody Vine Stratum (Plot size: _____)         |                  |                           |                  |   |
| 1. _____                                      | _____            | _____                     | _____            |   |
| 2. _____                                      | _____            | _____                     | _____            |   |
| Total Cover: <u>0</u>                         |                  |                           |                  |   |
| % Bare Ground in Herb Stratum 5               |                  | % Cover of Biotic Crust 0 |                  |   |
| Remarks:                                      |                  |                           |                  |   |



## SOIL

Sampling Point: WGSP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 3/4      | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2KSP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Detention Basin Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5837N Long: 120.0890W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Wetland is in a detention basin behind a constructed berm across ephemeral stream channel S202. Wetland boundary was delineated at the toe of the slope of the basin and characterized by a change from dominant wetland vegetation and bare ground to a predominance of <i>Taraxacum officinale</i> (FACU) and <i>Festuca idahoensis</i> (FACU). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                 | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)<br><br><b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: 15' radius)</b> |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: 5' radius)</b>           |                  |                   |                  |  |
| 1. <i>Polygonum aviculare</i>                        | 50               | X                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br>X Dominance Test is >50%<br>Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| 2. <i>Festuca idahoensis</i>                         | trace            |                   | FACU             |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>50</u>                               |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: _____)</b>         |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust 0

Remarks:



## SOIL

Sampling Point: W2KSP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 7.5YR 3/1     | 100 |                |   |                   |                  | silt loam |              |
| 2-6               | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |              |
| 6-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☒ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR C**)  
☐ 1 cm Muck (A9) (**LRR D**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock/cobble

Depth (inches): 6

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (**Nonriverine**)  
☐ Sediment Deposits (B2) (**Nonriverine**)  
☐ Drift Deposits (B3) (**Nonriverine**)  
☒ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Water-Stained Leaves (B9)  
☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☒ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location in irrigated hay field suggests source of water is irrigation runoff.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2KSP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambank Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5837 N Long: 120.0891 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: none

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located near top of stream bank.  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                       | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)              |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                        |                  |                   |                  |  |
| 1. <u>Festuca idahoensis</u>                               | <u>40</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u>Salsola kali</u>                                     | <u>2</u>         | _____             | <u>UPL</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>40</u>                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                      |                  |                   |                  |  |
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            | % Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0<br><br>Remarks:   |
| Total Cover: <u>0</u>                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:   |                  |                   |                  |  |
|  |                  |                   |                  |  |



# SOIL

Sampling Point: WKSP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-9               | 10YR 4/2      | 100 |                |   |                   |                  | silt loam |              |
| 9-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: rock/cobble

Depth (inches): 9

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague City/County: Arlington/Gilliam Sampling Date: 12/17/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W2KSP03  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S8  
 Landform (hillslope, terrace, etc.): Streambed Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.58790654 N Long: 120.0889281 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: Kimberly fine sandy loam NWI classification: none

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>                              | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                   |   |
| Remarks:<br>Sample plot located in bed of ephemeral stream S202 immediately upstream of farthest upstream detention basin (W2K). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |  |
| 1. <u>Festuca idahoensis</u>                  | <u>10</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u>Salsola kali</u>                        | <u>trace</u>     | _____             | <u>UPL</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| 5. _____                                      | _____            | _____             | _____            |  |
| 6. _____                                      | _____            | _____             | _____            |  |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>10</u>                        |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum 90</b> <b>% Cover of Biotic Crust 0</b><br><br>Remarks:   |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |



## SOIL

Sampling Point: W2KSP03

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-1               | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |              |
| 1-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Rock/cobble

Depth (inches): 1

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W3SP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S16  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5620 N Long: 120.0796 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: The wetland boundary was delineated at the depression edge and characterized by a change in vegetation from dominant wetland vegetation and bare soils to a predominance of <i>Bromus tectorum</i> (UPL). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species<br>That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |   |
| 1. <i>Distichlis spicata</i>                  | <u>5</u>         | <u>X</u>          | <u>FACW</u>      |   |
| 2. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| 5. _____                                      | _____            | _____             | _____            |   |
| 6. _____                                      | _____            | _____             | _____            |   |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| 8. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>5</u>                         |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum 95</b> <b>% Cover of Biotic Crust 0</b><br><br>Remarks:  |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |
| Remarks:                                      |                  |                   |                  |   |
| Remarks:                                      |                  |                   |                  |   |
| Remarks:                                      |                  |                   |                  |   |



## SOIL

Sampling Point: W3SP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 4/2      | 100 |                |   |                   |                  | silt loam |         |
| -                 | -             | -   |                |   |                   |                  | -         |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

Site has concave surface (depression) landscape setting, salt-tolerant wetland vegetation (*Distichlis spicata*) and soils appear to be alkaline based on observed salt crust, indicating it is a problematic hydric soil due to moderately to very strongly alkaline soils.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/20/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W3SP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S16  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5620 N Long: 120.0796 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                            | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)                   |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>0</u>   |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                             |                  |                   |                  |  |
| 1. <u>Bromus tectorum</u>                                       | <u>80</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| Total Cover: <u>80</u>  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                           |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 20      % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |



# SOIL

Sampling Point: W3SP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-16              | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |         |
| -                 | -             | -   |                |   |                   |                  | -         |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input type="checkbox"/> Drainage Patterns (B10)                    |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input type="checkbox"/> FAC-Neutral Test (D5)                      |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/28/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP01  
 Investigator(s): Forrest Parsons/Joel Shaich Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54658797 N Long: 120.0734121 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Plot located in stream bed. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by <i>Artemisia tridentata</i> (NOL) and <i>Bromus tectorum</i> (NOL). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30'X5')   | Absolute % Cover | Dominant Species?                | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|--|------------------|----------------------------------|------------------|---|
| 1. _____   | _____            | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| 4. _____   | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>  |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____       |
| Sapling/Shrub Stratum (Plot size: 15'X5')  |                  |                                  |                  |   |
| 1. <u>Salix sp.</u>  | <u>trace</u>     | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| 3. _____   | _____            | _____                            | _____            |   |
| 4. _____   | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____   | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>  |                  |                                  |                  |   |
| Herb Stratum (Plot size: 5' radius)  |                  |                                  |                  |   |
| 1. <u>Typha latifolia</u>  | <u>80</u>        | <u>X</u>                         | <u>OBL</u>       |   |
| 2. <u>Polygonum aviculare</u>  | <u>60</u>        | <u>X</u>                         | <u>FACW</u>      | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| 3. <u>Lemna minor</u>  | <u>5</u>         | _____                            | <u>OBL</u>       |   |
| 4. _____   | _____            | _____                            | _____            |   |
| 5. _____   | _____            | _____                            | _____            |   |
| 6. _____   | _____            | _____                            | _____            |   |
| 7. _____   | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 8. _____   | _____            | _____                            | _____            |   |
| Total Cover: <u>145</u>  |                  |                                  |                  |   |
| Woody Vine Stratum (Plot size: 5' x 30')   |                  |                                  |                  |   |
| 1. _____   | _____            | _____                            | _____            |   |
| 2. _____   | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>  |                  |                                  |                  |   |
| % Bare Ground in Herb Stratum <u>0</u>   |                  | % Cover of Biotic Crust <u>0</u> |                  |   |
| Remarks:<br>Plot sizes established to characterize wetland vegetation. Wetland is a 5'-6' wide linear feature. |                  |                                  |                  |   |



## SOIL

Sampling Point: W4SP01

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-16              | G1 2.5/10Y    | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)        | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1)                 | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input checked="" type="checkbox"/> Saturation (A3)                    | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☒ No ☐ Depth (inches): 4  
 Water Table Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☒ No ☐ Depth (inches): surface  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Unable to determine if water table present due to water filling soil pit from surface.



|                                      |                              |                                       |                   |                 |          |
|--------------------------------------|------------------------------|---------------------------------------|-------------------|-----------------|----------|
| Project/Site:                        | Montague Wind Power Facility | City/County:                          | Arlington/Gilliam | Sampling Date:  | 10/28/09 |
| Applicant/Owner:                     | Iberdrola Renewables         | State:                                | Oregon            | Sampling Point: | W4SP02   |
| Investigator(s):                     | Forrest Parsons/Joel Shaich  | Section, Township, Range:             | T1N R22E S21      |                 |          |
| Landform (hillslope, terrace, etc.): | Stream bank                  | Local relief (concave, convex, none): | Convex            | Slope (%):      | 10       |
| Subregion (LRR):                     | Lat: 45.54659293 N           | Long: 120.0733491 W                   | Datum:            | WGS 84          |          |
| Columbia/Snake R. Plateau (LRR B)    |                              |                                       |                   |                 |          |
| Soil Map Unit Name:                  | 13 Kimberly fine sandy loam  | NWI classification:                   | None              |                 |          |

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

|  |                              |  |                                       |                              |  |
|--|------------------------------|--|---------------------------------------|------------------------------|--|
| Hydrophytic Vegetation Present?            | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Hydric Soil Present?                       | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |                                       |                              |  |
| Wetland Hydrology Present?                 | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |                                       |                              |  |
| Remarks:                                   |                              |  |                                       |                              |  |
| Sample plot taken near top of stream bank. |                              |  |                                       |                              |  |

| Tree Stratum (Plot size: 20' x 60')                  | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:  |                     |
|--|------------------|-------------------|------------------|--|---------------------|
| 1. _____   | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC:   | <u>1</u> (A)        |
| 2. _____   | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata:  | <u>2</u> (B)        |
| 3. _____   | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC:  | <u>50</u> (A/B)     |
| 4. _____   | _____            | _____             | _____            |  |                     |
| Total Cover: <u>0</u>                                |                  |                   |                  | <b>Prevalence Index worksheet:</b>   |                     |
| <u>Sapling/Shrub Stratum (Plot size: 15' radius)</u> |                  |                   |                  | Total % Cover of:  | Multiply by:        |
| 1. <u>Artemisia tridentata</u>                       | <u>25</u>        | <u>X</u>          | <u>UPL</u>       | OBL species _____  | x 1 = _____         |
| 2. _____   | _____            | _____             | _____            | FACW species _____   | x 2 = _____         |
| 3. _____   | _____            | _____             | _____            | FAC species _____  | x 3 = _____         |
| 4. _____   | _____            | _____             | _____            | FACU species _____   | x 4 = _____         |
| 5. _____   | _____            | _____             | _____            | UPL species _____  | x 5 = _____         |
| Total Cover: <u>25</u>                               |                  |                   |                  | Column Totals: _____   | (A) _____ (B) _____ |
| <u>Herb Stratum (Plot size: 5' radius)</u>           |                  |                   |                  | Prevalence Index = B/A = _____   |                     |
| 1. <u>Festuca arundinacea</u>                        | <u>30</u>        | <u>X</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b>  |                     |
| 2. _____   | _____            | _____             | _____            | _____ Dominance Test is >50%   |                     |
| 3. _____   | _____            | _____             | _____            | _____ Prevalence Index is ≤3.0 <sup>1</sup>  |                     |
| 4. _____   | _____            | _____             | _____            | _____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |                     |
| 5. _____   | _____            | _____             | _____            | _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |                     |
| 6. _____   | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.                            |                     |
| 7. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b>   |                     |
| 8. _____   | _____            | _____             | _____            | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                      |                     |
| Total Cover: <u>30</u>                               |                  |                   |                  |  |                     |
| <u>Woody Vine Stratum (Plot size: 5' x 30')</u>      |                  |                   |                  |  |                     |
| 1. _____   | _____            | _____             | _____            |  |                     |
| 2. _____   | _____            | _____             | _____            |  |                     |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |                     |

Plot sizes established to characterize vegetation along stream bank



# SOIL

Sampling Point: W4SP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-20              | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/28/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP03  
 Investigator(s): Forrest Parsons/Joel Shaich Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): < 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54660894 N Long: 120.0735194 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot taken on terrace above stream bank.   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20' x 60')           | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. <u><i>Elaeagnus angustifolia</i></u>       | <u>5</u>         | <u>X</u>          | <u>FAC</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>5</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |   |
| 1. <u><i>Artemisia tridentata</i></u>         | <u>5</u>         | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>I</u>                         |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                         |
| 1. <u><i>Bromus tectorum</i></u>              | <u>50</u>        | <u>X</u>          | <u>NOL</u>       |   |
| 2. <u><i>Amsinckia lycopsoides</i></u>        | <u>25</u>        | <u>X</u>          | <u>NOL</u>       |   |
| 3. <u><i>Salsola tragus</i></u>               | <u>10</u>        | _____             | <u>NOL</u>       |   |
| 4. <u><i>Sisymbrium altissimum</i></u>        | <u>5</u>         | _____             | <u>FACU</u>      |   |
| 5. <u><i>Agropyron cristatum</i></u>          | <u>7</u>         | _____             | <u>NOL</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |
| 6. <u>Unknown grass</u>                       | <u>3</u>         | _____             | _____            |   |
| 7. _____                                      | _____            | _____             | _____            |   |
| 8. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>100</u>                       |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: 5' x 30')      |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Remarks:

Plot sizes established to characterize terrace vegetation community



## SOIL

Sampling Point: W4SP03

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-20              | 10YR 3/3      | 100 |                |   |                   |                  | sandy loam |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/28/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP04  
 Investigator(s): Joel Shaich Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54660894 N Long: 120.0735194 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Plot on bank slope above wetland.   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20' x 60')   | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)   |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)                                       |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>0</u>   |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)   |                  |                   |                  |  |
| 1. <u>Bromus tectorum</u>   | <u>50</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Salsola tragus</u>  | <u>10</u>        |                   | <u>FACU</u>      |  |
| 3. <u>Equisetum arvense</u>   | <u>20</u>        | <u>X</u>          | <u>FAC</u>       |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            |  |
| 8. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>80</u>  |                  |                   |                  | <b>Woody Vine Stratum (Plot size: 5' x 30')</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| Woody Vine Stratum (Plot size: 5' x 30')  |                  |                   |                  |  |
| 1. _____  |                  |                   |                  |  |
| 2. _____  |                  |                   |                  |  |
| Total Cover: <u>0</u>   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0                          |                  |                   |                  |  |
| Remarks:<br>Plot sizes established to characterize stream bank vegetation community |                  |                   |                  |  |



# SOIL

Sampling Point: W4SP04

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-16              | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input type="checkbox"/> Drainage Patterns (B10)                    |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input type="checkbox"/> FAC-Neutral Test (D5)                      |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/28/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP05  
 Investigator(s): Joel Shaich Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54878616 N Long: 120.0742367 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by <i>Artemisia tridentata</i> (NOL) and <i>Bromus tectorum</i> (NOL). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20' x 60')                                       | Absolute % Cover | Dominant Species?                | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|---|------------------|----------------------------------|------------------|---|
| 1. _____  | _____            | _____                            | _____            |   |
| 2. _____  | _____            | _____                            | _____            |   |
| 3. _____  | _____            | _____                            | _____            |   |
| 4. _____  | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>   |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____       |
| Sapling/Shrub Stratum (Plot size: 15' radius)                             |                  |                                  |                  |   |
| 1. _____  | _____            | _____                            | _____            |   |
| 2. _____  | _____            | _____                            | _____            |   |
| 3. _____  | _____            | _____                            | _____            |   |
| 4. _____  | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____  | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>   |                  |                                  |                  |   |
| Herb Stratum (Plot size: 5' radius)                                       |                  |                                  |                  |   |
| 1. <u>Typha latifolia</u>   | <u>70</u>        | <u>X</u>                         | <u>OBL</u>       |   |
| 2. <u>Distichlis spicata</u>  | <u>20</u>        | <u>X</u>                         | <u>FACW</u>      | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.   |
| 3. <u>Festuca arundinacea</u>   | <u>10</u>        | _____                            | <u>FAC</u>       |   |
| 4. _____  | _____            | _____                            | _____            |   |
| 5. _____  | _____            | _____                            | _____            |   |
| 6. _____  | _____            | _____                            | _____            |   |
| 7. _____  | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 8. _____  | _____            | _____                            | _____            |   |
| Total Cover: <u>100</u>   |                  |                                  |                  |   |
| Woody Vine Stratum (Plot size: 5' x 30')                                  |                  |                                  |                  |   |
| 1. _____  | _____            | _____                            | _____            |   |
| 2. _____  | _____            | _____                            | _____            |   |
| Total Cover: <u>0</u>   |                  |                                  |                  |   |
| % Bare Ground in Herb Stratum <u>0</u>                                    |                  | % Cover of Biotic Crust <u>0</u> |                  |   |
| Remarks:  |                  |                                  |                  |   |
| Plot sizes established to characterize vegetation community in stream bed |                  |                                  |                  |   |



# SOIL

Sampling Point: W4SP05

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-8               | 10YR 3/1      | 100 |                |   |                   |                  | silt loam |         |
| 8-16              | 10YR 3/1      | 95  | 7.5YR 4/6      | 5 | C                 | PL               | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input checked="" type="checkbox"/> Saturation (A3)                    | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 6  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/28/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP06  
 Investigator(s): Joel Shaich Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54876729 N Long: 120.0741089 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located on terrace above stream banks.                                      |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 20' x 60')           | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. <u>Salix sp. (dead)</u>                    | <u>30</u>        | <u>X</u>          | <u>FAC?</u>      |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>30</u>                        |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |   |
| 1. <u>Artemisia tridentata</u>                | <u>10</u>        | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>10</u>                        |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                         |
| 1. <u>Agropyron cristatum</u>                 | <u>100</u>       | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>100</u>                       |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Remarks:

Plot sizes established to characterize vegetation community on terrace. Salix sp. presumed FAC or wetter.



# SOIL

Sampling Point: W4SP06

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-16              | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |
|                   |               |     |                |   |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/29/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP07  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5510 N Long: 120.0765 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot taken on terrace above stream bank.   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30')                        | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)   |
|--|------------------|-------------------|------------------|--|
| 1. _____   | _____            | _____             | _____            |  |
| 2. _____   | _____            | _____             | _____            |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            |  |
| Total Cover: _____                                   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| <u>Sapling/Shrub Stratum (Plot size: 15' radius)</u> |                  |                   |                  |  |
| 1. <u>Ericameria nauseosa</u>                        | <u>10</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Salix sp</u>                                   | <u>5</u>         | <u>X</u>          | <u>FAC*</u>      |  |
| 3. <u>Artemisia tridentata</u>                       | <u>5</u>         | <u>X</u>          | <u>NOL</u>       |  |
| 4. _____   | _____            | _____             | _____            |  |
| 5. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>20</u>                               |                  |                   |                  |  |
| <u>Herb Stratum (Plot size: 5' radius)</u>           |                  |                   |                  |  |
| 1. <u>Sasola kali</u>                                | <u>50</u>        | <u>X</u>          | <u>UPL</u>       |  |
| 2. <u>Bromus tectorum</u>                            | <u>10</u>        | _____             | <u>NOL</u>       |  |
| 3. _____   | _____            | _____             | _____            |  |
| 4. _____   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 5. _____   | _____            | _____             | _____            |  |
| 6. _____   | _____            | _____             | _____            |  |
| 7. _____   | _____            | _____             | _____            |  |
| 8. _____   | _____            | _____             | _____            |  |
| Total Cover: <u>60</u>                               |                  |                   |                  | <b>Woody Vine Stratum (Plot size: 15' radius)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| <u>Woody Vine Stratum (Plot size: 15' radius)</u>    |                  |                   |                  |  |
| 1. _____   |                  |                   |                  |  |
| 2. _____   |                  |                   |                  |  |
| Total Cover: <u>0</u>                                |                  |                   |                  |  |

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Remarks:

\*Salix sp. presumed FAC or wetter



# SOIL

Sampling Point: W4SP07

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-20              | 2.5Y 4/2      | 100 |                |   |                   |                  | sandy loam |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/29/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP08  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.55101075 N Long: 120.0766596 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Plot located in stream bed. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by <i>Artemisia tridentata</i> (NOL) and <i>Bromus tectorum</i> (NOL). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 10'X60')          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|--|------------------|-------------------|------------------|---|
| 1. _____                                   | _____            | _____             | _____            |   |
| 2. _____                                   | _____            | _____             | _____            |   |
| 3. _____                                   | _____            | _____             | _____            |   |
| 4. _____                                   | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 10'X30') |                  |                   |                  |   |
| 1. <u>Salix amygdaloides</u>               | <u>trace</u>     | _____             | <u>FACW</u>      |   |
| 2. _____                                   | _____            | _____             | _____            |   |
| 3. _____                                   | _____            | _____             | _____            |   |
| 4. _____                                   | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><u>X</u> Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                   | _____            | _____             | _____            |   |
| Total Cover: <u>trace</u>                  |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)        |                  |                   |                  |   |
| 1. <u>Distichlis spicata</u>               | <u>75</u>        | <u>X</u>          | <u>FACW</u>      |   |
| 2. <u>Festuca arundinacea</u>              | <u>10</u>        | _____             | <u>FAC</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 3. <u>Juncus sp.</u>                       | <u>5</u>         | _____             | _____            |   |
| 4. _____                                   | _____            | _____             | _____            |   |
| 5. _____                                   | _____            | _____             | _____            |   |
| 6. _____                                   | _____            | _____             | _____            |   |
| 7. _____                                   | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| 8. _____                                   | _____            | _____             | _____            |   |
| Total Cover: <u>90</u>                     |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)      |                  |                   |                  |   |
| 1. _____                                   | _____            | _____             | _____            |   |
| 2. _____                                   | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum 10</b> <b>% Cover of Biotic Crust 0</b><br><br>Remarks:<br>Plot sizes established to characterize stream bed vegetation community  |
| Total Cover: <u>0</u>                      |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)      |                  |                   |                  |   |
| 1. _____                                   | _____            | _____             | _____            |   |
| 2. _____                                   | _____            | _____             | _____            |   |



# SOIL

Sampling Point: W4SP08

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

| Depth<br>(inches) | Matrix        |       | Redox Features |       |                   |                  | Texture         | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------------|---------|
|                   | Color (moist) | %     | Color (moist)  | %     | Type <sup>1</sup> | Loc <sup>2</sup> |                 |         |
| 0-8               | 10YR 3/1      | 90    | 10YR 6/6       | 10    | C                 | PL               | sandy clay loam |         |
| 8-18              | 10YR 2/2      | 75    | 10YR 5/6       | 25    | C                 | PL               | sandy clay      |         |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____           | _____   |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)         |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5)           |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/29/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP09  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.55099348 N Long: 120.076539 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located on terrace above OHWM   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                                    | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)  |
|---|------------------|-------------------|------------------|---|
| 1. <u>Salix amygdaloides</u>  | <u>10</u>        | <u>X</u>          | <u>FACW</u>      |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>10</u>  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15' radius)                           |                  |                   |                  |   |
| 1. <u>Artemisia tridentata</u>  | <u>5</u>         | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>5</u>   |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)                                     |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><u>X</u> Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 1. <u>Festuca arundinacea</u>   | <u>100</u>       | <u>X</u>          | <u>FAC</u>       |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>100</u>   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:  |                  |                   |                  |   |



## SOIL

Sampling Point: W4SP09

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

| Depth<br>(inches) | Matrix        |     | Redox Features |    |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-10              | 10YR 4/3      | 100 |                |    |                   |                  | sandy loam |         |
| 10-12             | 2.5Y 3/2      | 80  | 10YR 4/6       | 20 | C                 | PL               | clay       |         |
| 12-20             | 2.5Y 4/2      | 100 |                |    |                   |                  | sandy loam |         |
|                   |               |     |                |    |                   |                  |            |         |
|                   |               |     |                |    |                   |                  |            |         |
|                   |               |     |                |    |                   |                  |            |         |
|                   |               |     |                |    |                   |                  |            |         |
|                   |               |     |                |    |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

2" thick clay layer with redoximorphic features is too thin to meet Redox Dark Surface (F6) hydric soil indicator

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/29/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP10  
 Investigator(s): Forrest Parsons/Joel Shaich Section, Township, Range: T1N R22E S28  
 Landform (hillslope, terrace, etc.): Steambank Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54391366 N Long: 120.074162 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: none

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located on steep stream bank several feet above OHWM                        |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30'X5')          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)   |
|---|------------------|-------------------|------------------|--|
| 1. _____                                  | _____            | _____             | _____            |  |
| 2. _____                                  | _____            | _____             | _____            |  |
| 3. _____                                  | _____            | _____             | _____            |  |
| 4. _____                                  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15'X5') |                  |                   |                  |  |
| 1. <u><i>Atrémisia tridentata</i></u>     | <u>5</u>         | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u><i>Populus balsamifera</i></u>      | <u>trace</u>     | _____             | <u>FAC</u>       |  |
| 3. _____                                  | _____            | _____             | _____            |  |
| 4. _____                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>5</u>                     |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)       |                  |                   |                  |  |
| 1. <u><i>Cirsium arvense</i></u>          | <u>15</u>        | <u>X</u>          | <u>FACU</u>      |  |
| 2. <u><i>Festuca arundinacea</i></u>      | <u>7</u>         | <u>X</u>          | <u>FAC</u>       |  |
| 3. <u><i>Euthamia occidentalis</i></u>    | <u>5</u>         | _____             | <u>FACW</u>      | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 4. <u><i>Poa</i> sp.</u>                  | <u>3</u>         | _____             | _____            |  |
| 5. _____                                  | _____            | _____             | _____            |  |
| 6. _____                                  | _____            | _____             | _____            |  |
| 7. _____                                  | _____            | _____             | _____            |  |
| 8. _____                                  | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| Total Cover: <u>30</u>                    |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)     |                  |                   |                  |  |

% Bare Ground in Herb Stratum 65 % Cover of Biotic Crust 0

Remarks:

Plot sizes established to characterize vegetation community on stream bank



# SOIL

Sampling Point: W4SP10

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

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture   | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-17              | 10YR 3/3      | 90 | 7.5YR 4/6      | 10 | C                 | PL               | silt loam |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |
|                   |               |    |                |    |                   |                  |           |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

Redoximorphic features presumed to be relict

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input type="checkbox"/> Drainage Patterns (B10)                    |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input type="checkbox"/> FAC-Neutral Test (D5)                      |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 10/29/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP11  
 Investigator(s): Forrest Parsons/Joel Shaich Section, Township, Range: T1N R22E S28  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54388281 N Long: 120.0741027 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |   |
| Remarks: Plot located in stream bed. The wetland boundary was delineated at the stream's ordinary high water mark and characterized by a transition from dominant wetland vegetation to areas dominated by <i>Artemisia tridentata</i> (NOL) and <i>Bromus tectorum</i> (NOL). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30'X5')  | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15'X5')   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| Herb Stratum (Plot size: 10'X5')  |                  |                   |                  |   |
| 1. <u>Festuca arundinacea</u>   | <u>40</u>        | <u>X</u>          | <u>FAC</u>       |   |
| 2. <u>Lemna minor</u>   | <u>40</u>        | <u>X</u>          | <u>OBL</u>       | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 3. <u>Cirsium arvense</u>   | <u>trace</u>     | _____             | <u>FACU</u>      |   |
| 4. <u>Juncus sp.</u>  | <u>trace</u>     | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| 6. _____  | _____            | _____             | _____            |   |
| 7. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 8. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>80</u>  |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)   |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| Total Cover: <u>0</u>   |                  |                   |                  |   |
| % Bare Ground in Herb Stratum <u>10</u> bare ground and <u>10</u> open water % Cover of Biotic Crust <u>0</u> |                  |                   |                  |   |
| Remarks:  |                  |                   |                  |   |
| Plot sizes established to characterize vegetation in stream bed   |                  |                   |                  |   |



## SOIL

Sampling Point: W4SP11

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

| Depth<br>(inches) | Matrix        |       | Redox Features |       |                   |                  | Texture | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|---------|---------|
|                   | Color (moist) | %     | Color (moist)  | %     | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____   | _____   |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)        | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

Sample plot taken in inundated area.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1)                 | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input checked="" type="checkbox"/> Aquatic Invertebrates (B13)        |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)         |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☒ No ☐ Depth (inches): 12  
 Water Table Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☐ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Unable to determine saturation and water table depths due to inundation.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/17/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W4SP12  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S21  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.54658797 N Long: 120.0734121 W Datum: WGS 84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>      |   |
| Remarks:<br>Plot located in bed of stream S202 immediately downstream of wetland W4                 |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30'X5')          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____                                  | _____            | _____             | _____            |  |
| 2. _____                                  | _____            | _____             | _____            |  |
| 3. _____                                  | _____            | _____             | _____            |  |
| 4. _____                                  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15'X5') |                  |                   |                  |  |
| 1. _____                                  | _____            | _____             | _____            |  |
| 2. _____                                  | _____            | _____             | _____            |  |
| 3. _____                                  | _____            | _____             | _____            |  |
| 4. _____                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| Total Cover: <u>0</u>                     |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)       |                  |                   |                  |  |
| 1. <u>Festuca idahoensis</u>              | <u>5</u>         | <u>X</u>          | <u>FACU</u>      |  |
| 2. _____                                  | _____            | _____             | _____            |  |
| 3. _____                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 4. _____                                  | _____            | _____             | _____            |  |
| 5. _____                                  | _____            | _____             | _____            |  |
| 6. _____                                  | _____            | _____             | _____            |  |
| 7. _____                                  | _____            | _____             | _____            |  |
| 8. _____                                  | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: 5' x 30')</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| Total Cover: <u>5</u>                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: 5' x 30')  |                  |                   |                  |  |

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust 0

Remarks:

Plot sizes established to characterize vegetation community in stream bed



# SOIL

Sampling Point: W4SP12

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 10YR 3/3      | 100 |                |   |                   |                  | silt loam |              |
| 2-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 2

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1)                 | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input checked="" type="checkbox"/> Saturation (A3)                    | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                    |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)         |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input type="checkbox"/> FAC-Neutral Test (D5)                      |

**Field Observations:**

Surface Water Present? Yes ☒ No ☐ Depth (inches): 1

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☒ No ☐ Depth (inches): 2  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water/saturation presumed to be runoff from recent snow fall that was melting rapidly during site visit



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/04/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W5SP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S34  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5196 N Long: 120.0416 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 58 Xeric Torrifluvents, nearly level NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Plot located on stream bed. Wetland boundary delineated at OHWM and characterized by the change from dominant wetland vegetation to dominant upland vegetation ( <i>Artemisia tridentata</i> and <i>Bromus tectorum</i> ). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species<br>That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|---|------------------|-------------------|------------------|--|
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius)             |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            |  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)                       |                  |                   |                  |  |
| 1. <i>Phalaris arundinacea</i>                            | 100              | X                 | FACW             |  |
| 2. _____  | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 3. _____  | _____            | _____             | _____            |  |
| 4. _____  | _____            | _____             | _____            |  |
| 5. _____  | _____            | _____             | _____            |  |
| 6. _____  | _____            | _____             | _____            |  |
| 7. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 8. _____  | _____            | _____             | _____            |  |
| Total Cover: <u>100</u>                                   |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                     |                  |                   |                  |  |
| 1. _____  | _____            | _____             | _____            |  |
| 2. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| Total Cover: <u>0</u>                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0 |                  |                   |                  |  |
| Remarks:  |                  |                   |                  |  |
|   |                  |                   |                  |  |



# SOIL

Sampling Point: W5SP01

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

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-6               | 10YR 3/2      | 80 | 5YR 4/6        | 20 | C                 | PL               | sandy loam |         |
| 6-18              | 10YR 4/2      | 85 | 7.5YR 5/8      | 15 | C                 | PL               | sandy loam |         |
| -                 | -             | -  |                |    |                   |                  | -          |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |
|                   |               |    |                |    |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)   |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                                       |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                              |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                            |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)               |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                                   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input type="checkbox"/> Other (Explain in Remarks)                               |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/04/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W5SP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1N R22E S34  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5196 N Long: 120.0416 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 58 Xeric Torrifluvents, nearly level NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot taken on stream bank.   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |  |
| 1. <u>Artemisia tridentata</u>                | <u>10</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |  |
| 1. <u>Bromus tectorum</u>                     | <u>20</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Unknown forb</u>                        | <u>trace</u>     | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| 5. _____                                      | _____            | _____             | _____            |  |
| 6. _____                                      | _____            | _____             | _____            |  |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>20</u>                        |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum 75</b> <b>% Cover of Biotic Crust 0</b><br><br>Remarks:   |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |



## SOIL

Sampling Point: W5SP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-20              | 10YR3/3       | 100 | -              | - | -                 | -                | sandy loam |         |
| -                 | -             | -   | -              | - | -                 | -                | -          |         |
| -                 | -             | -   |                |   |                   |                  | -          |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |
|                   |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☐ No ☒**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☐ No ☒**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6ASP01  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5169 N Long: 120.0371 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Plot located on stream bed. Wetland boundary delineated at OHWM and characterized by the change from dominant wetland vegetation to dominant upland vegetation ( <i>Artemisia tridentata</i> and <i>Bromus tectorum</i> ). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species?         | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
|---|------------------|---------------------------|------------------|--|
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                           |                  |  |
| 1. <i>Phalaris arundinacea</i>                | 100              | X                         | FACW             |  |
| 2. <i>Rumex crispus</i>                       | trace            |                           | FAC              | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| 5. _____                                      | _____            | _____                     | _____            |  |
| 6. _____                                      | _____            | _____                     | _____            |  |
| 7. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 8. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>100</u>                       |                  |                           |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| % Bare Ground in Herb Stratum 0               |                  | % Cover of Biotic Crust 0 |                  |  |
| Remarks:                                      |                  |                           |                  |  |



## SOIL

Sampling Point: W6ASP01

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

| Depth<br>(inches) | Matrix        |       | Redox Features |       |                   |                  | Texture   | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|-----------|---------|
|                   | Color (moist) | %     | Color (moist)  | %     | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-4               | 10YR 3/2      | 93    | 7.5YR 4/6      | 7     | C                 | PL               | silt loam |         |
| 4-20              | 10YR 4/2      | 85    | 7.5YR 5/8      | 15    | C                 | PL               | silt loam |         |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____     | _____   |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☒ Drift Deposits (B3) (**Riverine**)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small pools were present within wetland to the south of the sample plot.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6ASP02  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5169 N Long: 120.0372 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot taken on stream bank of S202.   |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)  |
|---|------------------|-------------------|------------------|--|
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |  |
| 1. <u>Artemisia tridentata</u>                | <u>40</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. _____                                      | _____            | _____             | _____            |  |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>40</u>                        |                  |                   |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  |  |
| 1. <u>Pseudoroegneria spicata</u>             | <u>15</u>        | <u>X</u>          | <u>NOL</u>       |  |
| 2. <u>Unknown forb</u>                        | <u>trace</u>     | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |
| 3. _____                                      | _____            | _____             | _____            |  |
| 4. _____                                      | _____            | _____             | _____            |  |
| 5. _____                                      | _____            | _____             | _____            |  |
| 6. _____                                      | _____            | _____             | _____            |  |
| 7. _____                                      | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |
| 8. _____                                      | _____            | _____             | _____            |  |
| Total Cover: <u>15</u>                        |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |  |
| 1. _____                                      | _____            | _____             | _____            |  |
| 2. _____                                      | _____            | _____             | _____            | <b>% Bare Ground in Herb Stratum</b> <u>45</u> <b>% Cover of Biotic Crust</b> <u>0</u>   |
| Total Cover: <u>0</u>                         |                  |                   |                  |  |
| Remarks:                                      |                  |                   |                  |  |
|   |                  |                   |                  |  |
|   |                  |                   |                  |  |



# SOIL

Sampling Point: W6ASP02

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-4               | 10YR 3/3      | 100 | -              | - | -                 | -                | silt loam |              |
| 4-                | -             | -   | -              | - | -                 | -                | -         | rock refusal |
| -                 | -             | -   |                |   |                   |                  | -         |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 4

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6ASP03  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5157 N Long: 120.0358 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Plot located on stream bed. Wetland boundary delineated at OHWM and characterized by the change from dominant wetland vegetation to dominant upland vegetation ( <i>Artemisia tridentata</i> and <i>Bromus tectorum</i> ). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species?         | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
|---|------------------|---------------------------|------------------|--|
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                           |                  |  |
| 1. <i>Phalaris arundinacea</i>                | 95               | X                         | FACW             |  |
| 2. <i>Typha latifolia</i>                     | 2                |                           | OBL              | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| 5. _____                                      | _____            | _____                     | _____            |  |
| 6. _____                                      | _____            | _____                     | _____            |  |
| 7. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 8. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>97</u>                        |                  |                           |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| % Bare Ground in Herb Stratum 3               |                  | % Cover of Biotic Crust 0 |                  |  |
| Remarks:                                      |                  |                           |                  |  |



# SOIL

Sampling Point: W6ASP03

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

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture        | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|----------------|---------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |                |         |
| 0-3               | 10YR 3/1      | 95 | 7.5YR 4/6      | 5  | C                 | PL               | silt clay loam |         |
| 3-18              | 10YR 4/2      | 85 | 7.5YR 5/8      | 15 | C                 | PL               | silt clay loam |         |
| -                 | -             | -  |                |    |                   |                  | -              |         |
|                   |               |    |                |    |                   |                  |                |         |
|                   |               |    |                |    |                   |                  |                |         |
|                   |               |    |                |    |                   |                  |                |         |
|                   |               |    |                |    |                   |                  |                |         |
|                   |               |    |                |    |                   |                  |                |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)         |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5)           |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small pools present within wetland to the north of the sample plot.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6ASP04  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5155 N Long: 120.0357 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot located on stream bed of S202.  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                   |                  |   |
| 1. <u>Artemisia tridentata</u>                | <u>5</u>         | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>5</u>                         |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                         |
| 1. <u>Bromus tectorum</u>                     | <u>10</u>        | <u>X</u>          | <u>NOL</u>       |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| 3. _____                                      | _____            | _____             | _____            |   |
| 4. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>10</u>                        |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |
| Woody Vine Stratum (Plot size: _____)         |                  |                   |                  |   |
| 1. _____                                      | _____            | _____             | _____            |   |
| 2. _____                                      | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                         |                  |                   |                  |   |

% Bare Ground in Herb Stratum 85 % Cover of Biotic Crust 0

Remarks:

Bare ground consists predominantly of cobble/gravel



# SOIL

Sampling Point: W6ASP04

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-1               | 10YR 3/2      | 100 |                |   |                   |                  | silt loam |              |
| 1-                |               |     |                |   |                   |                  |           | rock refusal |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 1

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches):     
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6BSP05  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5152 N Long: 120.0355 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Plot located on stream bed. Wetland boundary delineated at OHWM and characterized by the change from dominant wetland vegetation to dominant upland vegetation ( <i>Artemisia tridentata</i> and <i>Bromus tectorum</i> ). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)          | Absolute % Cover | Dominant Species?         | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
|---|------------------|---------------------------|------------------|--|
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____  |
| Sapling/Shrub Stratum (Plot size: 15' radius) |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 5. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| Herb Stratum (Plot size: 5' radius)           |                  |                           |                  |  |
| 1. <i>Phalaris arundinacea</i>                | <u>92</u>        | <u>X</u>                  | <u>FACW</u>      |  |
| 2. <i>Typha latifolia</i>                     | <u>3</u>         | _____                     | <u>OBL</u>       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.  |
| 3. _____                                      | _____            | _____                     | _____            |  |
| 4. _____                                      | _____            | _____                     | _____            |  |
| 5. _____                                      | _____            | _____                     | _____            |  |
| 6. _____                                      | _____            | _____                     | _____            |  |
| 7. _____                                      | _____            | _____                     | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
| 8. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>95</u>                        |                  |                           |                  |  |
| Woody Vine Stratum (Plot size: _____)         |                  |                           |                  |  |
| 1. _____                                      | _____            | _____                     | _____            |  |
| 2. _____                                      | _____            | _____                     | _____            |  |
| Total Cover: <u>0</u>                         |                  |                           |                  |  |
| % Bare Ground in Herb Stratum 5               |                  | % Cover of Biotic Crust 0 |                  |  |
| Remarks:                                      |                  |                           |                  |  |



## SOIL

Sampling Point: W6BSP05

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

| Depth<br>(inches) | Matrix        |       | Redox Features |       |                   |                  | Texture        | Remarks |
|-------------------|---------------|-------|----------------|-------|-------------------|------------------|----------------|---------|
|                   | Color (moist) | %     | Color (moist)  | %     | Type <sup>1</sup> | Loc <sup>2</sup> |                |         |
| 0-3               | 10YR 3/1      | 95    | 7.5YR 4/6      | 5     | C                 | PL               | silt clay loam |         |
| 3-18              | 10YR 4/2      | 85    | 7.5YR 5/8      | 15    | C                 | PL               | silt clay loam |         |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |
| _____             | _____         | _____ | _____          | _____ | _____             | _____            | _____          | _____   |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)                   |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)               |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)           |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)           |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)               |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7)         |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)             |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)                  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR C</b> )  |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR B</b> ) |
| <input type="checkbox"/> Reduced Vertic (F18)             |
| <input type="checkbox"/> Red Parent Material (TF2)        |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present? Yes ☒ No ☐**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |

Secondary Indicators (2 or more required)

- |   |
|---|
| <input type="checkbox"/> Water Marks (B1) ( <b>Riverine</b> )       |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Riverine</b> ) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Riverine</b> )    |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)         |
| <input type="checkbox"/> Dry-Season Water Table (C2)                |
| <input type="checkbox"/> Crayfish Burrows (C8)                      |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  |
| <input type="checkbox"/> Shallow Aquitard (D3)                      |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5)           |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present? Yes ☒ No ☐**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small pools present within wetland to the south of the sample plot.



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6BSP06  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5139 N Long: 120.0346 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: None

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>            |   |
| Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>      |   |
| Remarks:<br>Sample plot taken on stream bed of S202.  |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)   | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)   |
|--|------------------|-------------------|------------------|---|
| 1. _____   | _____            | _____             | _____            |   |
| 2. _____   | _____            | _____             | _____            |   |
| 3. _____   | _____            | _____             | _____            |   |
| 4. _____   | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: 15' radius)</b><br>1. <u>Artemisia tridentata</u> 20 X NOL<br>2. _____<br>3. _____<br>4. _____<br>5. _____<br>Total Cover: <u>20</u>  |                  |                   |                  |   |
| <b>Herb Stratum (Plot size: 5' radius)</b><br>1. <u>Salsola kali</u> 80 X UPL<br>2. _____<br>3. _____<br>4. _____<br>5. _____<br>6. _____<br>7. _____<br>8. _____<br>Total Cover: <u>80</u>  |                  |                   |                  |   |
| <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>  |                  |                   |                  |   |
| % Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0  |                  |                   |                  |   |
| <b>Hydrophytic Vegetation Indicators:</b><br>_____ Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |                  |                   |                  |   |
| <b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>   |                  |                   |                  |   |
| Remarks:   |                  |                   |                  |   |



# SOIL

Sampling Point: W6BSP06

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

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-4               | 10YR 3/3      | 100 | -              | - | -                 | -                | silt loam |              |
| 4-                | -             | -   | -              | - | -                 | -                | -         | rock refusal |
| -                 | -             | -   |                |   |                   |                  | -         |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |
|                   |               |     |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 4

**Hydric Soil Present?** Yes ☐ No ☒

Remarks:

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montague Wind Power Facility City/County: Arlington/Gilliam Sampling Date: 12/16/09  
 Applicant/Owner: Iberdrola Renewables State: Oregon Sampling Point: W6BSP07  
 Investigator(s): Forrest Parsons/Renee Storey Section, Township, Range: T1S R22E S2  
 Landform (hillslope, terrace, etc.): Stream bed Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 45.5141 N Long: 120.0347 W Datum: WGS84  
 Columbia/Snake R. Plateau (LRR B) \_\_\_\_\_  
 Soil Map Unit Name: 13 Kimberly fine sandy loam NWI classification: R4SBC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/>   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |   |
| Remarks: Plot located on stream bed. Wetland boundary delineated at OHWM and characterized by the change from dominant wetland vegetation to dominant upland vegetation ( <i>Artemisia tridentata</i> and <i>Bromus tectorum</i> ). |   |

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30' radius)                      | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
|---|------------------|-------------------|------------------|---|
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____   |
| Sapling/Shrub Stratum (Plot size: 15' radius)             |                  |                   |                  |   |
| 1. <u>Salix exigua</u>                                    | <u>5</u>         | <u>X</u>          | <u>OBL</u>       |   |
| 2. _____  | _____            | _____             | _____            |   |
| 3. _____  | _____            | _____             | _____            |   |
| 4. _____  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><u>X</u> Dominance Test is >50%<br>_____ Prevalence Index is ≤3.0 <sup>1</sup><br>_____ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>_____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present. |
| 5. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>0</u>                                     |                  |                   |                  |   |
| Herb Stratum (Plot size: 5' radius)                       |                  |                   |                  |   |
| 1. <u>Phalaris arundinacea</u>                            | <u>95</u>        | <u>X</u>          | <u>FACW</u>      |   |
| 2. <u>Cirsium arvense</u>                                 | <u>3</u>         | _____             | <u>FACU</u>      | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
| 3. <u>Dipsacus fullonum</u>                               | <u>2</u>         | _____             | <u>FAC</u>       |   |
| 4. _____  | _____            | _____             | _____            |   |
| 5. _____  | _____            | _____             | _____            |   |
| 6. _____  | _____            | _____             | _____            |   |
| 7. _____  | _____            | _____             | _____            | <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>Total Cover: <u>0</u>   |
| 8. _____  | _____            | _____             | _____            |   |
| Total Cover: <u>100</u>                                   |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: _____)                     |                  |                   |                  |   |
| 1. _____  | _____            | _____             | _____            |   |
| 2. _____  | _____            | _____             | _____            | <b>Remarks:</b>   |
| Total Cover: <u>0</u>                                     |                  |                   |                  |   |
| % Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0 |                  |                   |                  |   |
| Remarks:  |                  |                   |                  |   |
| Remarks:  |                  |                   |                  |   |



# SOIL

Sampling Point: W6BSP07

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

| Depth<br>(inches) | Matrix        |    | Redox Features |   |                   |                  | Texture   | Remarks      |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------|--------------|
|                   | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |              |
| 0-2               | 10YR 3/2      | 95 | 7.5YR 5/8      | 5 | C                 | PL               | silt loam |              |
| 2-                | -             | -  | -              | - | -                 | -                | -         | rock refusal |
| -                 | -             | -  |                |   |                   |                  | -         |              |
|                   |               |    |                |   |                   |                  |           |              |
|                   |               |    |                |   |                   |                  |           |              |
|                   |               |    |                |   |                   |                  |           |              |
|                   |               |    |                |   |                   |                  |           |              |
|                   |               |    |                |   |                   |                  |           |              |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)        | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☒ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: cobble/gravel

Depth (inches): 2

**Hydric Soil Present?** Yes ☒ No ☐

Remarks:

Soil may meet Redox Dark Surface (F6) hydric soil indicator if redoximorphic features continue to required profile thickness

# HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input checked="" type="checkbox"/> High Water Table (A2)              | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     | <input checked="" type="checkbox"/> Other (Explain in Remarks)         |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☒ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☒ No ☐ Depth (inches): 1

Saturation Present? Yes ☐ No ☒ Depth (inches): \_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



APPENDIX C1

# Ground Photographs: Wetlands

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Photo 1: Wetland W1 facing northeast

11/5/2009



Photo 2: Wetland W1 facing northeast

10/29/2009



Photo 3: Wetland W1 facing south at SP02

10/20/2009



Photo 4: Wetland W2A facing south

10/20/2009





Photo 5: Wetland W2B facing south at SP02 10/20/2009



Photo 6: Wetland W2C facing north at SP02 10/20/2009



Photo 7: Wetland W2F and W2G facing south 10/20/2009



Photo 8: Wetland W2D and W2E facing north 10/20/2009





Photo 9: Wetland W2H facing south. 10/20/2009



Photo 10: Wetland W2I facing north 10/20/2009



Photo 11: Wetland W2J facing south 10/20/2009



Photo 12: Wetland W2K facing south 10/20/2009





Photo 13: Wetland W2 facing north to SP07

12/17/2009



Photo 14: Wetland W3 facing northeast from SP02

12/4/2009



Photo 15: Wetland W4 facing southwest at SP08

10/28/2009



Photo 16: Wetland W4 facing south from SP04

10/28/2009





Photo 17: Wetland W4 facing southeast toward SP09 10/28/2009



Photo 18: Wetland W4 facing north toward SP10 and SP11 10/29/2009



Photo 19: Wetland W4 facing south at source of wetland 10/29/2009



Photo 20: Wetland W4 facing northeast toward SP01 10/28/2009





Photo 21: Wetland W4 facing north toward SP12 12/17/2009



Photo 22: Wetland W4 facing northeast toward SP03 10/28/2009



Photo 23: Wetland W5 facing northwest toward SP01 (shovel) 12/4/2009



Photo 24: Wetland W6A facing northeast at SP05 12/16/2009





Photo 25: Wetland W6B facing south at SP07

12/16/2009



Photo 26: Wetland W6A facing south toward SP01

12/16/2009



Photo 27: Wetlands W22 (foreground) and W23 (background, behind and left of shovel handle) facing northeast

2/5/2008







APPENDIX C2

# Ground Photographs: Streams

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Photo 1: S001 facing southwest

10/13/2009



Photo 2: S002 facing southwest

10/14/2009



Photo 3: S003 facing north

10/13/2009



Photo 4: S004 facing West

12/17/2009





Photo 5: S005 facing south

10/14/2009



Photo 6: S006 facing north

10/15/2009



Photo 7: S007 facing east

10/20/2009



Photo 8: S008 facing east

10/22/2009





Photo 9: S009 facing northeast

11/5/2009



Photo 10: S010 facing northeast

11/3/2009



Photo 11: S012 facing east

11/4/2009



Photo 12: S013 facing South

11/5/2009





Photo 13: S201 facing northwest

10/12/2009



Photo 14: S202 facing south

11/3/2009



Photo 15: S202 facing southeast

10/13/2009



Photo 16: S203 facing northwest

10/14/2009





Photo 17: S204 facing west

10/14/2009



Photo 18: S204 facing west

10/14/2009



Photo 19: S205 facing east

10/21/2009



Photo 20: S206 facing west

10/21/2009





Photo 21: S207 facing west toward head of stream. 10/21/2009



Photo 22: S208 facing northeast 10/29/2009



Photo 23: S209 facing northeast 10/29/2009



Photo 24: S210 facing southwest toward head 12/3/2009





Photo 25: S211 facing northeast

12/3/2009



Photo 26: S212 facing southeast

12/4/2009



Photo 27: S213 facing north

12/4/2009



Photo 28: S214A facing south

12/4/2009





Photo 29: S214B facing north

12/4/2009



Photo 30: S204 facing downstream from head of stream

12/2/2009



APPENDIX C3

# Ground Photographs: Upland Vegetated Drainages (Nonwaters)

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APPENDIX D1

# Oregon Streamflow Duration Assessment Method (OSDAM) Forms

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Photo 1: PW001 facing south

10/12/2009



Photo 2: PW002 facing south

10/12/2009



Photo 3: PW003 facing north

10/12/2009



Photo 4: PW004 facing southwest

10/12/2009





Photo 5: PW004 facing southwest

10/14/2009



Photo 6: PW008 facing northwest

10/13/2009



Photo 7: PW011 facing southwest

10/13/2009



Photo 8: PW013 facing south

10/13/2009





Photo 9: PW014 facing southwest

10/13/2009



Photo 10: PW015 facing southwest

10/13/2009



Photo 11: PW016 facing west

10/13/2009



Photo 12: PW017 facing northeast

10/13/2009





Photo 13: PW018 facing north

10/13/2009



Photo 14: PW019 facing north

10/13/2009



Photo 15: PW020 facing west

10/13/2009



Photo 16: PW021 facing west

10/13/2009





Photo 17: PW022 facing west

10/13/2009



Photo 18: PW023 facing west

10/13/2009



Photo 19: PW024 facing west

10/13/2009



Photo 20: PW026 facing south

10/14/2009





Photo 21: PW027 facing south

10/14/2009



Photo 22: PW028 facing northwest

10/14/2009



Photo 23: PW029 facing northwest

10/14/2009



Photo 24: PW030 facing northwest

10/14/2009





Photo 25: PW031 facing northwest

10/14/2009



Photo 26: PW031 facing northwest

10/14/2009



Photo 27: PW032 facing south

10/14/2009



Photo 28: PW032 facing south

10/15/2009





Photo 29: PW032 facing northeast

10/15/2009



Photo 30: PW033 facing east

10/14/2009



Photo 31: PW036 facing northeast

10/15/2009



Photo 32: PW037 facing east

10/15/2009





Photo 33: PW047 facing northwest

10/15/2009



Photo 34: PW047 facing south

10/15/2009



Photo 35: PW048 facing west

10/15/2009



Photo 36: PW049 facing east

10/15/2009





Photo 37: PW050 facing west

10/15/2009



Photo 38: PW051 facing north

10/15/2009



Photo 39: PW052 facing southeast

10/15/2009



Photo 40: PW053 facing southeast

10/15/2009





Photo 41: PW054 facing south

10/15/2009



Photo 42: PW055 facing east

10/15/2009



Photo 43: PW056 facing east

10/15/2009



Photo 44: PW057 facing east

10/15/2009



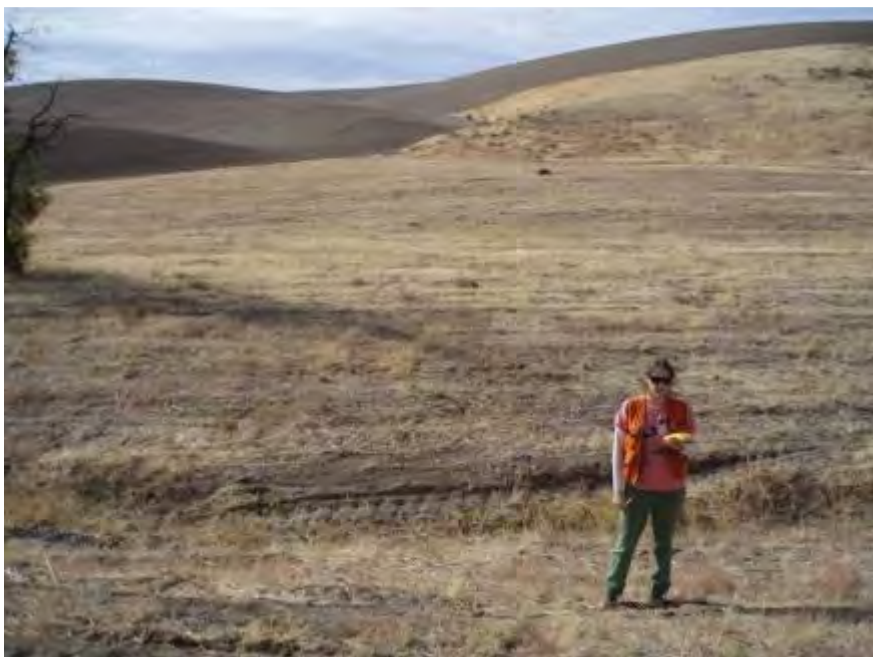


Photo 45: PW058 facing west

10/15/2009



Photo 46: PW059 facing north

10/15/2009



Photo 47: PW060 facing east

10/15/2009



Photo 48: PW061 facing southwest

10/15/2009





Photo 49: PW062 facing south



Photo 50: PW064 facing west

10/15/2009



Photo 51: PW065 facing south

10/15/2009



Photo 52: PW066 facing southwest

10/15/2009





Photo 53: PW067 facing northwest

10/15/2009



Photo 54: PW068 facing north

10/15/2009



Photo 55: PW069 facing northwest

10/15/2009



Photo 56: PW070 facing southwest

10/15/2009





Photo 57: PW071 facing northeast

10/20/2009



Photo 58: PW072 facing northwest

10/20/2009



Photo 59: PW073 facing southeast

10/20/2009



Photo 60: PW074 facing southeast

10/20/2009





Photo 61: PW075 facing east

10/20/2009



Photo 62: PW076 facing west

10/20/2009



Photo 63: PW077 facing northwest

10/21/2009



Photo 64: PW079 facing south

10/21/2009





Photo 65: PW079 facing south

10/21/2009



Photo 66: PW080 facing southeast

10/21/2009



Photo 67: PW080 facing southeast

10/21/2009



Photo 68: PW081 facing east

10/21/2009





Photo 69: PW082 facing west

10/21/2009



Photo 70: PW083 facing southeast

10/21/2009



Photo 71: PW084 facing west

10/21/2009



Photo 72: PW085 facing southeast

10/21/2009





Photo 73: PW086 facing west

10/21/2009



Photo 74: PW087 facing north

10/27/2009



Photo 75: PW088 facing east

10/27/2009



Photo 76: PW089 facing east

10/27/2009





Photo 77: PW090 facing east

10/27/2009



Photo 78: PW091 facing east

10/27/2009



Photo 79: PW092 facing northeast

10/27/2009



Photo 80: PW096 facing southwest

10/27/2009





Photo 81: PW097 facing northwest

10/27/2009



Photo 82: PW098 facing north

10/27/2009



Photo 83: PW099 facing north

10/27/2009



Photo 84: PW101 facing southwest

10/28/2009





Photo 85: PW102 facing northeast

11/3/2009



Photo 86: PW103 facing northeast

11/3/2009



Photo 87: PW104 facing northeast

11/3/2009



Photo 88: PW105 facing west

11/3/2009





Photo 89: PW106 facing west

11/3/2009



Photo 90: PW107 facing west

11/3/2009



Photo 91: PW108 facing west

11/3/2009



Photo 92: PW109 facing northwest

11/3/2009





Photo 93: PW110 facing west

11/3/2009



Photo 94: PW111 facing south

11/3/2009



Photo 95: PW112 facing northwest

11/3/2009



Photo 96: PW113 facing east

11/3/2009





Photo 97: PW114 facing west

11/3/2009



Photo 98: PW114 facing south

11/3/2009



Photo 99: PW115 facing east

11/3/2009



Photo 100: PW116 facing west

11/3/2009





Photo 101: PW117 facing northwest 11/3/2009



Photo 102: PW136 facing east 11/4/2009



Photo 103: PW137 facing NE 11/4/2009





Photo 104: PW138 facing east

11/4/2009



Photo 105: PW139 facing northeast

11/4/2009



Photo 106: PW140 facing southwest

11/5/2009



Photo 107: PW141 facing southwest

11/5/2009





Photo 108: PW142 facing east

11/5/2009



Photo 109: PW143 facing southeast

11/5/2009



Photo 110: PW144 facing east

11/5/2009



Photo 111: PW144 facing southeast

11/5/2009





Photo 112: PW152 facing southwest 11/5/2009



Photo 113: PW201 facing south 10/12/2009



Photo 114: PW202 facing south 10/12/2009



Photo 115: PW203 facing south 10/13/2009





Photo 116: PW204 facing south

10/13/2009



Photo 117: PW205 facing south

10/13/2009



Photo 118: PW206 facing southwest

10/13/2009



Photo 119: PW207 facing northeast

10/13/2009





Photo 120: PW208 facing southwest 10/13/2009



Photo 121: PW209 facing southeast 10/13/2009



Photo 122: PW210 facing south 10/13/2009



Photo 123: PW211 facing north 10/13/2009





Photo 124: PW212 facing west

10/13/2009



Photo 125: PW 213 facing east

10/13/2009



Photo 126: PW214 facing east

10/13/2009



Photo 127: PW215 facing southeast

10/13/2009





Photo 128: PW216 facing west

10/13/2009



Photo 129: PW217 facing southwest

10/14/2009



Photo 130: PW218 facing southwest

10/14/2009



Photo 131: PW219 facing southeast

10/14/2009





Photo 132: PW220 facing southeast 10/14/2009



Photo 133: PW221 facing east 10/14/2009



Photo 134: PW222 facing northwest 10/14/2009



Photo 135: PW223 facing east 10/14/2009





Photo 136: PW224 facing west

10/14/2009



Photo 137: PW225 facing northwest

10/14/2009



Photo 138: PW226 facing southwest

10/14/2009



Photo 139: PW227 facing northwest

10/14/2009





Photo 140: PW228 facing north

10/14/2009



Photo 141: PW229 facing northwest

10/14/2009



Photo 142: PW230 facing west

10/20/2009



Photo 143: PW231 facing west

10/20/2009





Photo 144: PW232 facing northeast 10/20/2009



Photo 145: PW233 facing west 10/21/2009



Photo 146: PW234 facing west 10/21/2009



Photo 147: PW235 facing east 10/21/2009





Photo 148: PW236 facing west

10/21/2009



Photo 149: PW237 facing east

10/21/2009



Photo 150: PW238 facing east

10/21/2009



Photo 151: PW239 facing west

10/21/2009





Photo 152: PW240 facing east

10/21/2009



Photo 153: PW241 facing west

10/21/2009



Photo 154: PW242 facing southwest

10/21/2009



Photo 155: PW243 facing southwest

10/21/2009





Photo 156: PW244 facing south

10/22/2009



Photo 157: PW245 facing west

10/22/2009



Photo 158: PW246 facing southeast

10/22/2009



Photo 159: PW247 facing southeast

10/22/2009



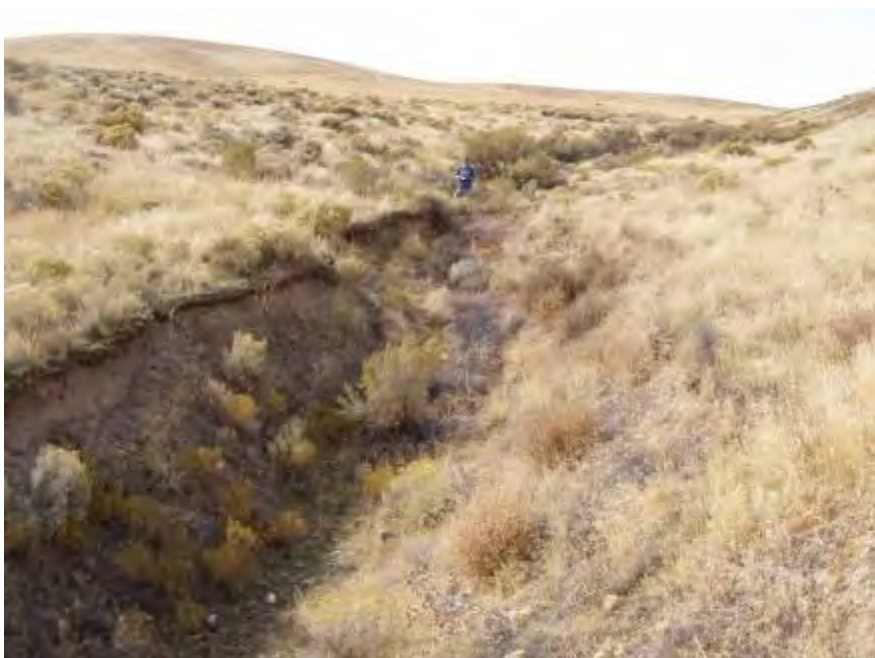


Photo 160: PW248 facing east

10/22/2009



Photo 161: PW249 facing west

10/22/2009



Photo 162: PW250 facing east

10/22/2009



Photo 163: PW251 facing southwest

10/22/2009





Photo 164: PW252 facing north

10/22/2009



Photo 165: PW253 facing northeast

10/22/2009



Photo 166: PW254 facing northeast

10/22/2009



Photo 167: PW255 facing east

10/22/2009





Photo 168: PW256 facing east

10/22/2009



Photo 169: PW257 facing southeast

10/27/2009



Photo 170: PW258 facing east

10/27/2009



Photo 171: PW259 facing east

10/27/2009





Photo 172: PW260 facing south

10/27/2009



Photo 173: PW261 facing southeast

10/27/2009



Photo 174: PW262 facing east

10/27/2009



Photo 175: PW263 facing north

10/27/2009





Photo 176: PW264 facing east

10/27/2009



Photo 177: PW265 facing east

10/27/2009



Photo 178: PW266 facing west

10/27/2009



Photo 179: PW267 facing southeast

10/27/2009





Photo 180: PW268 facing west

10/27/2009



Photo 181: PW269 facing east

10/27/2009



Photo 182: PW270 facing east

10/28/2009



Photo 183: PW271 facing east

10/28/2009





Photo 184: PW272 facing west

10/28/2009



Photo 185: PW273 facing northwest

10/28/2009



Photo 186: PW274 facing east

10/29/2009



Photo 187: PW275 facing east

10/30/2009





Photo 188: PW276 facing northeast 10/29/2009



Photo 189: PW277 facing west 10/29/2009



Photo 190: PW278 facing south 10/29/2009



Photo 191: PW279 facing southeast 10/29/2009





Photo 192: PW280 facing south

10/29/2009



Photo 193: PW281 facing northwest

10/29/2009



Photo 194: PW282 facing northwest

10/29/2009



Photo 195: PW283 facing west

10/29/2009





Photo 196: PW284 facing northwest 10/29/2009



Photo 197: PW285 facing west 10/29/2009



Photo 198: PW301 facing northwest 12/2/2009



Photo 199 PW302 facing west 12/2/2009





Photo 200: PW303 facing west

12/2/2009



Photo 201: PW304 facing west

12/2/2009



Photo 202: PW305 facing west

12/2/2009



Photo 203: PW306 facing west

12/2/2009





Photo 204: PW307 facing southeast 12/2/2009



Photo 205: PW308 facing southeast 12/2/2009

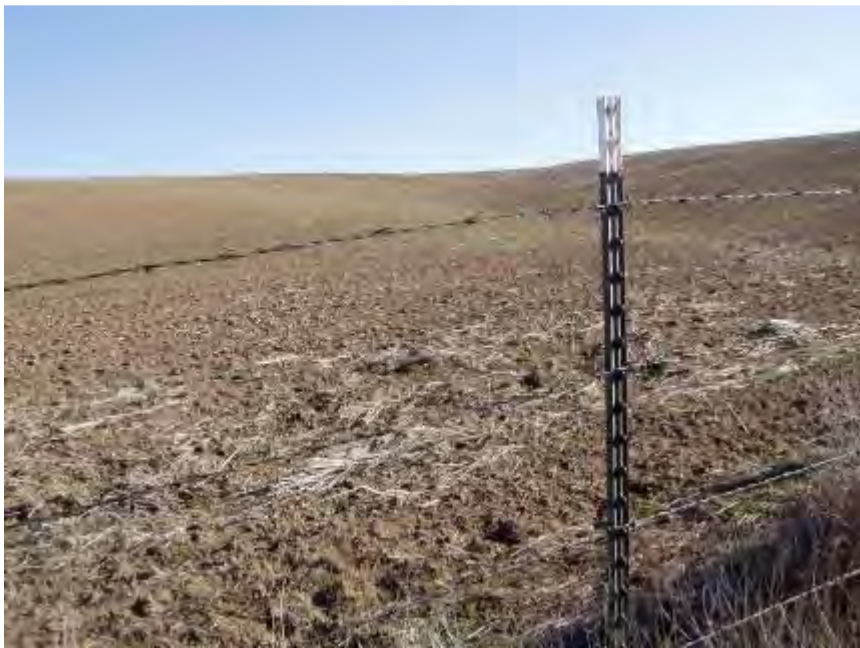


Photo 206: PW309 facing southeast 12/2/2009



Photo 207: PW310 facing east 12/2/2009





Photo 208: PW311 facing southwest 12/2/2009



Photo 209: PW312 facing southwest 12/2/2009



Photo 210: PW313 facing southwest 12/2/2009



Photo 211: PW314 facing south 12/2/2009





Photo 212: PW315 facing south

12/2/2009



Photo 213: PW316 facing south

12/2/2009



Photo 214: PW317 facing north

12/2/2009



Photo 215: PW318 facing west

12/2/2009





Photo 216: PW320 facing south

12/3/2009



Photo 217: PW321 facing southwest

12/3/2009



Photo 218: PW323 facing west

12/3/2009



Photo 219: PW324 facing south

12/3/2009





Photo 220: PW325 facing east

12/3/2009



Photo 221: PW326 facing south

12/3/2009



Photo 222: PW327 facing southwest

12/3/2009



Photo 223: PW328 facing north

12/3/2009





Photo 224: PW329 facing northeast 12/3/2009



Photo 225: PW330 facing northeast 12/3/2009



Photo 226: PW331 facing southwest 12/3/2009



Photo 227: PW332 facing southwest 12/3/2009





Photo 228: PW333 facing southwest 12/4/2009



Photo 229: PW334 facing north 12/4/2009



Photo 230: PW335 facing east 12/4/2009



Photo 231: PW336 facing south 12/4/2009





Photo 232: PW337 facing north

12/4/2009



Photo 233: PW338 facing southwest

12/4/2009



Photo 234: PW340 facing west

12/4/2009



Photo 235: PW341 facing east

12/4/2009





Photo 236: PW342 facing west

12/4/2009



Photo 237: PW237 facing north

12/4/2009



Photo 238: PW344 facing south

12/4/2009



Photo 239: PW345 facing northeast

12/4/2009





Photo 240: PW346a facing southeast



Photo 241: PW346b facing north

12/4/2009

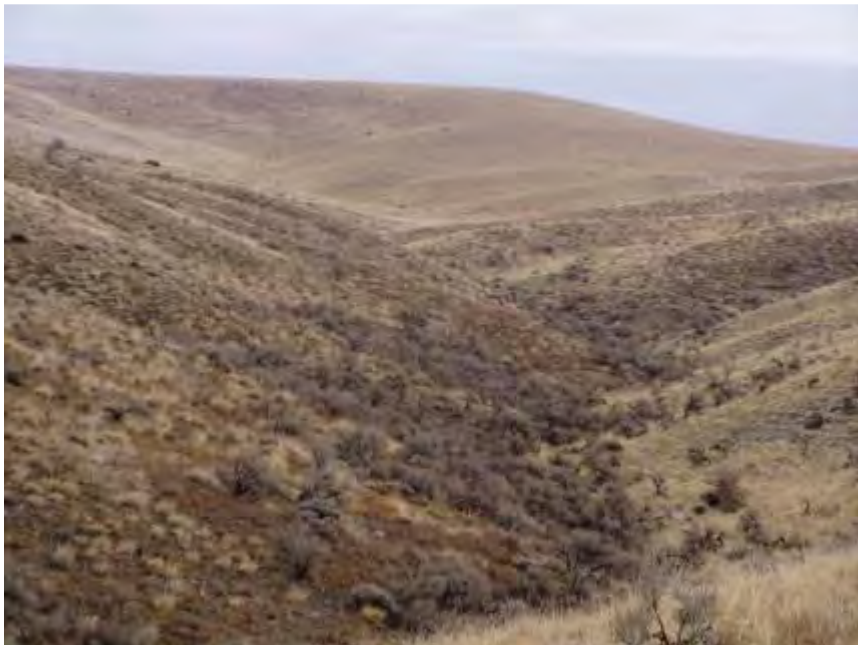


Photo 242: PW346 facing east

12/4/2009



Photo 243: PW347 facing east

12/4/2009







**APPENDIX D2**

**Potential Waters in the Montague Wind  
Power Facility Survey Corridor**

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APPENDIX D2  
Potential Waters in the Montague Wind Power Facility Survey Corridor

| Feature Label | Mapped by NWI as: | Mapped by USGS as: | Mapped by PNWHF as:    | Observed in Field as: | Photo Number |
|---------------|-------------------|--------------------|------------------------|-----------------------|--------------|
| S001          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 1            |
| S002          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 2            |
| S003          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 3            |
| S004          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 4            |
| S005          |                   | Intermittent       | Intermittent/Ephemeral | Ephemeral Stream      | 5            |
| S006          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 6            |
| S007          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 7            |
| S008          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 8            |
| S009          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 9            |
| S010          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 10           |
| S012          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 11           |
| S013          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 12           |
| S201          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 13           |
| S202          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 14, 15       |
| S203          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 16           |
| S204          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 17, 18       |
| S205          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 19           |
| S206          |                   |                    | Unknown                | Ephemeral Stream      | 20           |
| S207          |                   |                    | Unknown                | Ephemeral Stream      | 21           |
| S208          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 22           |
| S209          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 23           |
| S210          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 24           |
| S211          |                   |                    | Unknown                | Ephemeral Stream      | 25           |
| S212          | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 26           |
| S213          |                   | Intermittent       | Intermittent           | Ephemeral Stream      | 27           |
| S214a         | R4SBC             | Intermittent       | Intermittent           | Ephemeral Stream      | 28           |
| S214b         | R4SBC             | Intermittent       | Intermittent           | Intermittent Stream   | 29           |
| PW001         |                   | Intermittent       | Intermittent           | Upland/no OHWM        | 1            |
| PW002         |                   | Intermittent       | Intermittent           | Upland/no OHWM        | 2            |
| PW003         |                   | Intermittent       | Intermittent           | Upland/no OHWM        | 3            |
| PW004         |                   |                    | Intermittent           | Upland/no OHWM        | 4,5          |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW005                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW006                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW007                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW008                |                          |                           | Ephemeral                  | Upland/no OHWM               | 6                   |
| PW011                |                          |                           | Intermittent               | Upland/no OHWM               | 7                   |
| PW012                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW013                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 8                   |
| PW014                |                          |                           | Unknown                    | Upland/no OHWM               | 9                   |
| PW015                |                          |                           | Unknown                    | Upland/no OHWM               | 10                  |
| PW016                |                          |                           | Unknown                    | Upland/no OHWM               | 11                  |
| PW017                |                          |                           | Unknown                    | Upland/no OHWM               | 12                  |
| PW018                |                          |                           | Unknown                    | Upland/no OHWM               | 13                  |
| PW019                |                          |                           | Unknown                    | Upland/no OHWM               | 14                  |
| PW020                |                          |                           | Unknown                    | Upland/no OHWM               | 15                  |
| PW021                |                          |                           | Intermittent               | Upland/no OHWM               | 16                  |
| PW022                |                          |                           | Unknown                    | Upland/no OHWM               | 17                  |
| PW023                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 18                  |
| PW024                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 19                  |
| PW026                |                          |                           | Unknown                    | Upland/no OHWM               | 20                  |
| PW027                |                          |                           | Unknown                    | Upland/no OHWM               | 21                  |
| PW028                |                          |                           | Unknown                    | Upland/no OHWM               | 22                  |
| PW029                |                          |                           | Unknown                    | Upland/no OHWM               | 23                  |
| PW030                |                          |                           | Unknown                    | Upland/no OHWM               | 24                  |
| PW031                |                          |                           | Unknown                    | Upland/no OHWM               | 25, 26              |
| PW032                |                          | Intermittent              | Ephemeral                  | Upland/no OHWM               | 27, 28, 29          |
| PW032a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW033                |                          |                           | Ephemeral                  | Upland/no OHWM               | 30                  |
| PW036                |                          |                           | Unknown                    | Upland/no OHWM               | 31                  |
| PW037                |                          |                           | Ephemeral                  | Upland/no OHWM               | 32                  |
| PW038                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW039                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW040                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW041                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW042                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW043                |                          | Intermittent              | Ephemeral                  | Upland/no OHWM               |                     |
| PW044                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW045                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW047                |                          |                           | Ephemeral                  | Upland/no OHWM               | 33, 34              |
| PW047a               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW047b               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW047c               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW048                |                          |                           | Ephemeral                  | Upland/no OHWM               | 35                  |
| PW049                |                          |                           | Ephemeral                  | Upland/no OHWM               | 36                  |
| PW050                |                          |                           | Ephemeral                  | Upland/no OHWM               | 37                  |
| PW051                |                          |                           | Ephemeral                  | Upland/no OHWM               | 38                  |
| PW052                |                          |                           | Ephemeral                  | Upland/no OHWM               | 39                  |
| PW053                |                          |                           | Ephemeral                  | Upland/no OHWM               | 40                  |
| PW054                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 41                  |
| PW055                |                          |                           | Ephemeral                  | Upland/no OHWM               | 42                  |
| PW056                |                          |                           | Ephemeral                  | Upland/no OHWM               | 43                  |
| PW057                |                          |                           | Ephemeral                  | Upland/no OHWM               | 44                  |
| PW058                |                          |                           | Ephemeral                  | Upland/no OHWM               | 45                  |
| PW059                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 46                  |
| PW059a               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW060                |                          |                           | Ephemeral                  | Upland/no OHWM               | 47                  |
| PW061                |                          |                           | Ephemeral                  | Upland/no OHWM               | 48                  |
| PW062                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 49                  |
| PW062a               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW062b               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW063                |                          | Intermittent              | Intermittent               | Upland/no OHWM               |                     |
| PW064                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW065                |                          |                           | Ephemeral                  | Upland/no OHWM               | 51                  |
| PW066                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 52                  |
| PW067                |                          |                           | Ephemeral                  | Upland/no OHWM               | 53                  |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW068                |                          |                           | Ephemeral                  | Upland/no OHWM               | 54                  |
| PW069                |                          |                           | Ephemeral                  | Upland/no OHWM               | 55                  |
| PW070                |                          |                           | Ephemeral                  | Upland/no OHWM               | 56                  |
| PW071                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 57                  |
| PW072                |                          |                           | Ephemeral                  | Upland/no OHWM               | 58                  |
| PW073                |                          |                           | Ephemeral                  | Upland/no OHWM               | 59                  |
| PW074                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 60                  |
| PW074a               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW074b               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW075                |                          |                           | Ephemeral                  | Upland/no OHWM               | 61                  |
| PW076                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 62                  |
| PW077                |                          |                           | Ephemeral                  | Upland/no OHWM               | 63                  |
| PW078                |                          |                           | Ephemeral                  | Upland/no OHWM               | 64                  |
| PW079                |                          |                           | Unknown                    | Upland/no OHWM               | 65                  |
| PW080                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 66, 67, 68          |
| PW081                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW081a               |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW082                |                          |                           | Unknown                    | Upland/no OHWM               | 69                  |
| PW083                |                          |                           | Unknown                    | Upland/no OHWM               | 70                  |
| PW084                |                          |                           | Unknown                    | Upland/no OHWM               | 71                  |
| PW085                |                          |                           | Unknown                    | Upland/no OHWM               | 72                  |
| PW086                |                          |                           | Unknown                    | Upland/no OHWM               | 73                  |
| PW087                |                          |                           | Ephemeral                  | Upland/no OHWM               | 74                  |
| PW088                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 75                  |
| PW089                |                          |                           | Ephemeral                  | Upland/no OHWM               | 76                  |
| PW090                |                          |                           | Ephemeral                  | Upland/no OHWM               | 77                  |
| PW091                |                          |                           | Ephemeral                  | Upland/no OHWM               | 78                  |
| PW092                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 79                  |
| PW093                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW094                |                          |                           | Ephemeral                  | Upland/no OHWM               |                     |
| PW095                |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW096                |                          |                           | Unknown                    | Upland/no OHWM               | 80                  |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW097                |                          |                           | Unknown                    | Upland/no OHWM               | 81                  |
| PW098                |                          |                           | Unknown                    | Upland/no OHWM               | 82                  |
| PW099                |                          |                           | Unknown                    | Upland/no OHWM               | 83                  |
| PW101                |                          |                           | Unknown                    | Upland/no OHWM               | 84                  |
| PW102                |                          |                           | Unknown                    | Upland/no OHWM               | 85                  |
| PW103                |                          |                           | Unknown                    | Upland/no OHWM               | 86                  |
| PW104                |                          |                           | Unknown                    | Upland/no OHWM               | 87                  |
| PW105                |                          |                           | Unknown                    | Upland/no OHWM               | 88                  |
| PW106                |                          |                           | Unknown                    | Upland/no OHWM               | 89                  |
| PW107                |                          |                           | Unknown                    | Upland/no OHWM               | 90                  |
| PW108                |                          |                           | Unknown                    | Upland/no OHWM               | 91                  |
| PW108a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW108b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW108c               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW109                |                          |                           | Unknown                    | Upland/no OHWM               | 92                  |
| PW110                |                          |                           | Unknown                    | Upland/no OHWM               | 93                  |
| PW110a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW110b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW111                |                          |                           | Unknown                    | Upland/no OHWM               | 94                  |
| PW112                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 95                  |
| PW112a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW113                |                          |                           | Unknown                    | Upland/no OHWM               | 96                  |
| PW114                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 97, 98              |
| PW114a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW115                |                          |                           | Unknown                    | Upland/no OHWM               | 99                  |
| PW115a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW116                |                          |                           | Unknown                    | Upland/no OHWM               | 100                 |
| PW117                |                          |                           | Unknown                    | Upland/no OHWM               | 101                 |
| PW117a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW136                |                          |                           | Unknown                    | Upland/no OHWM               | 102                 |
| PW137                |                          |                           | Unknown                    | Upland/no OHWM               | 103                 |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW138                |                          |                           | Unknown                    | Upland/no OHWM               | 104                 |
| PW139                |                          |                           | Unknown                    | Upland/no OHWM               | 105                 |
| PW140                |                          |                           | Unknown                    | Upland/no OHWM               | 106                 |
| PW141                |                          |                           | Unknown                    | Upland/no OHWM               | 107                 |
| PW142                |                          |                           | Unknown                    | Upland/no OHWM               | 108                 |
| PW143                |                          |                           | Unknown                    | Upland/no OHWM               | 109                 |
| PW144                |                          |                           | Intermittent               | Upland/no OHWM               | 110, 111            |
| PW152                |                          |                           | Ephemeral                  | Upland/no OHWM               | 112                 |
| PW201                |                          |                           | Intermittent               | Upland/no OHWM               | 113                 |
| PW202                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 114                 |
| PW203                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 115                 |
| PW204                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 116                 |
| PW205                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 117                 |
| PW206                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 118                 |
| PW207                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 119                 |
| PW208                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 120                 |
| PW209                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 121                 |
| PW210                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 122                 |
| PW211                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 123                 |
| PW212                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 124                 |
| PW213                |                          |                           | Unknown                    | Upland/no OHWM               | 125                 |
| PW214                |                          |                           | Unknown                    | Upland/no OHWM               | 126                 |
| PW215                |                          |                           | Unknown                    | Upland/no OHWM               | 127                 |
| PW216                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 128                 |
| PW217                |                          |                           | Unknown                    | Upland/no OHWM               | 129                 |
| PW218                |                          |                           | Unknown                    | Upland/no OHWM               | 130                 |
| PW219                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 131                 |
| PW220                |                          |                           | Unknown                    | Upland/no OHWM               | 132                 |
| PW221                |                          |                           | Unknown                    | Upland/no OHWM               | 133                 |
| PW222                |                          |                           | Unknown                    | Upland/no OHWM               | 134                 |
| PW223                |                          | Intermittent              | Unknown/ Intermittent      | Upland/no OHWM               | 135                 |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW224                |                          |                           | Unknown                    | Upland/no OHWM               | 136                 |
| PW225                |                          |                           | Unknown                    | Upland/no OHWM               | 137                 |
| PW226                |                          |                           | Unknown                    | Upland/no OHWM               | 138                 |
| PW227                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 139                 |
| PW228                |                          |                           | Unknown                    | Upland/no OHWM               | 140                 |
| PW228a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW228b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW229                |                          | Intermittent              |                            | Upland/no OHWM               | 141                 |
| PW230                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 142                 |
| PW231                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 143                 |
| PW232                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 144                 |
| PW233                |                          |                           | Unknown                    | Upland/no OHWM               | 145                 |
| PW234                |                          |                           | Unknown                    | Upland/no OHWM               | 146                 |
| PW235                |                          |                           | Unknown                    | Upland/no OHWM               | 147                 |
| PW236                |                          |                           | Unknown                    | Upland/no OHWM               | 148                 |
| PW237                |                          | Intermittent              | Unknown/ Intermittent      | Upland/no OHWM               | 149                 |
| PW238                |                          | Intermittent              | Unknown/ Intermittent      | Upland/no OHWM               | 150                 |
| PW239                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 151                 |
| PW240                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 152                 |
| PW241                |                          |                           | Unknown                    | Upland/no OHWM               | 153                 |
| PW242                |                          |                           | Unknown                    | Upland/no OHWM               | 154                 |
| PW243                |                          |                           | Unknown                    | Upland/no OHWM               | 155                 |
| PW244                |                          |                           | Unknown                    | Upland/no OHWM               | 156                 |
| PW245                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 157                 |
| PW245a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW245b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW246                |                          |                           | Unknown                    | Upland/no OHWM               | 158                 |
| PW247                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 159                 |
| PW248                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 160                 |
| PW248a               |                          |                           | Intermittent               | Upland/no OHWM               |                     |
| PW248b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW248c               |                          |                           | Unknown                    | Upland/no OHWM               |                     |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW249                |                          |                           | Unknown                    | Upland/no OHWM               | 161                 |
| PW250                |                          |                           | Unknown                    | Upland/no OHWM               | 162                 |
| PW251                |                          |                           | Unknown                    | Upland/no OHWM               | 163                 |
| PW251a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW251b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW252                |                          |                           | Unknown                    | Upland/no OHWM               | 164                 |
| PW253                |                          |                           | Unknown                    | Upland/no OHWM               | 165                 |
| PW254                |                          |                           | Unknown                    | Upland/no OHWM               | 166                 |
| PW255                |                          |                           | Unknown                    | Upland/no OHWM               | 167                 |
| PW256                |                          |                           | Unknown                    | Upland/no OHWM               | 168                 |
| PW256a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW257                |                          |                           | Ephemeral                  | Upland/no OHWM               | 169                 |
| PW258                |                          |                           | Ephemeral                  | Upland/no OHWM               | 170                 |
| PW259                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 171                 |
| PW260                |                          | Intermittent              | Ephemeral                  | Upland/no OHWM               | 172                 |
| PW261                |                          |                           | Ephemeral                  | Upland/no OHWM               | 173                 |
| PW262                |                          | Intermittent              | Ephemeral                  | Upland/no OHWM               | 174                 |
| PW264                |                          |                           | Unknown                    | Upland/no OHWM               | 176                 |
| PW265                |                          |                           | Unknown                    | Upland/no OHWM               | 177                 |
| PW265a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW266                |                          |                           | Unknown                    | Upland/no OHWM               | 178                 |
| PW267                |                          |                           | Unknown                    | Upland/no OHWM               | 179                 |
| PW268                |                          | Intermittent              | Unknown                    | Upland/no OHWM               | 180                 |
| PW269                |                          |                           | Unknown                    | Upland/no OHWM               | 181                 |
| PW270                |                          |                           | Unknown                    | Upland/no OHWM               | 182                 |
| PW270a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW270b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW271                |                          |                           | Unknown                    | Upland/no OHWM               | 183                 |
| PW272                |                          |                           | Unknown                    | Upland/no OHWM               | 184                 |
| PW273                |                          |                           | Unknown                    | Upland/no OHWM               | 185                 |
| PW274                |                          |                           | Unknown                    | Upland/no OHWM               | 186                 |
| PW275                |                          |                           | Unknown                    | Upland/no OHWM               | 187                 |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW276                |                          |                           | Unknown                    | Upland/no OHWM               | 188                 |
| PW277                |                          |                           | Unknown                    | Upland/no OHWM               | 189                 |
| PW278                |                          |                           | Unknown                    | Upland/no OHWM               | 190                 |
| PW279                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 191                 |
| PW279a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW279b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW280                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 192                 |
| PW281                |                          |                           | Unknown                    | Upland/no OHWM               | 193                 |
| PW282                |                          |                           | Unknown                    | Upland/no OHWM               | 194                 |
| PW283                |                          |                           | Unknown                    | Upland/no OHWM               | 195                 |
| PW284                |                          |                           | Unknown                    | Upland/no OHWM               | 196                 |
| PW285                |                          |                           | Unknown                    | Upland/no OHWM               | 197                 |
| PW286                |                          | Intermittent              | Unknown                    | Upland/no OHWM               |                     |
| PW287                |                          | Intermittent              | Unknown                    | Upland/no OHWM               |                     |
| PW288                |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW288a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW288b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW289                |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW301                |                          |                           | Intermittent               | Upland/no OHWM               | 198                 |
| PW302                |                          |                           | Unknown                    | Upland/no OHWM               | 199                 |
| PW303                |                          |                           | Unknown                    | Upland/no OHWM               | 200                 |
| PW304                |                          |                           | Unknown                    | Upland/no OHWM               | 201                 |
| PW305                |                          |                           | Unknown                    | Upland/no OHWM               | 202                 |
| PW306                |                          |                           | Unknown                    | Upland/no OHWM               | 203                 |
| PW307                |                          |                           | Unknown                    | Upland/no OHWM               | 204                 |
| PW308                |                          |                           | Unknown                    | Upland/no OHWM               | 205                 |
| PW309                |                          |                           | Unknown                    | Upland/no OHWM               | 206                 |
| PW310                |                          |                           | Unknown                    | Upland/no OHWM               | 207                 |
| PW311                |                          |                           | Unknown                    | Upland/no OHWM               | 208                 |
| PW312                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 209                 |
| PW313                |                          |                           | Unknown                    | Upland/no OHWM               | 210                 |
| PW314                |                          |                           | Unknown                    | Upland/no OHWM               | 211                 |



| <b>Feature Label</b> | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|----------------------|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW315                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 212                 |
| PW316                |                          |                           | Unknown                    | Upland/no OHWM               | 213                 |
| PW317                |                          |                           | Unknown                    | Upland/no OHWM               | 214                 |
| PW318                |                          |                           | Unknown                    | Upland/no OHWM               | 215                 |
| PW319                |                          | Intermittent              | Intermittent               | Upland/no OHWM               |                     |
| PW319a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW320                |                          | Intermittent              | Unknown/ Intermittent      | Upland/no OHWM               | 216                 |
| PW320a               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW321                |                          |                           | Unknown                    | Upland/no OHWM               | 217                 |
| PW322                |                          | Intermittent              | Intermittent               | Upland/no OHWM               |                     |
| PW322a               |                          | Intermittent              | Intermittent               | Upland/no OHWM               |                     |
| PW322b               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW322c               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW322d               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW322d               |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW323                |                          |                           | Unknown                    | Upland/no OHWM               | 218                 |
| PW324                |                          |                           | Unknown                    | Upland/no OHWM               | 219                 |
| PW325                |                          |                           | Unknown                    | Upland/no OHWM               | 220                 |
| PW326                |                          |                           | Intermittent               | Upland/no OHWM               | 221                 |
| PW327                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 222                 |
| PW328                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 223                 |
| PW329                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 224                 |
| PW330                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 225                 |
| PW331                |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 226                 |
| PW332                |                          |                           | Intermittent               | Upland/no OHWM               | 227                 |
| PW333                |                          |                           | Unknown                    | Upland/no OHWM               | 228                 |
| PW334                |                          |                           | Unknown                    | Upland/no OHWM               | 229                 |
| PW335                |                          |                           | Unknown                    | Upland/no OHWM               | 230                 |
| PW336                |                          |                           | Unknown                    | Upland/no OHWM               | 231                 |
| PW337                |                          |                           | Unknown                    | Upland/no OHWM               | 232                 |
| PW338                |                          |                           | Unknown                    | Upland/no OHWM               | 233                 |
| PW339                |                          | Intermittent              | Intermittent               | Upland/no OHWM               |                     |



| <b>Feature Label</b>  | <b>Mapped by NWI as:</b> | <b>Mapped by USGS as:</b> | <b>Mapped by PNWHF as:</b> | <b>Observed in Field as:</b> | <b>Photo Number</b> |
|---|--------------------------|---------------------------|----------------------------|------------------------------|---------------------|
| PW340   |                          |                           | Unknown                    | Upland/no OHWM               | 234                 |
| PW340a  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW340b  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW341   |                          |                           | Unknown                    | Upland/no OHWM               | 235                 |
| PW342   |                          |                           | Unknown                    | Upland/no OHWM               | 236                 |
| PW343   |                          |                           | Unknown                    | Upland/no OHWM               | 237                 |
| PW344   |                          |                           | Unknown                    | Upland/no OHWM               | 238                 |
| PW344a  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW345   |                          |                           | Unknown                    | Upland/no OHWM               | 239                 |
| PW346   |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 242                 |
| PW346a  |                          |                           | Unknown                    | Upland/no OHWM               | 240                 |
| PW346b  |                          |                           | Unknown                    | Upland/no OHWM               | 241                 |
| PW346c  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW346d  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347   |                          | Intermittent              | Intermittent               | Upland/no OHWM               | 243                 |
| PW347a  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347b  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347c  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347d  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347e  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| PW347f  |                          |                           | Unknown                    | Upland/no OHWM               |                     |
| NWI = National Wetland Inventory.<br>PNWHF = Pacific Northwest Hydrography Framework.<br>USGS = U.S. Geological Survey. |                          |                           |                            |                              |                     |







**APPENDIX D3**

**Previous Oregon Department of State  
Lands and U.S. Army Corps of Engineers  
Jurisdictional Determinations**

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# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

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Salem, OR 97301-1279

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September 29, 2009

### State Land Board

Theodore R. Kulongoski

Governor

Sara Parsons

Iberdrola Renewables, Inc.

1125 NW Couch St., Suite 700

Portland, OR 97209

Kate Brown

Secretary of State

Ben Westlund

State Treasurer

Re: Wetland Delineation Report for the Leaning Juniper IIB Wind Power  
Facility, Gilliam County; T2N R21E; T2N R22E; T1N R21E; T2N R22E;  
Portions of Multiple Sections and Tax Lots; WD #09-0252

Dear Ms. Parsons:

The Department of State Lands has reviewed the wetland delineation report prepared by CH2M HILL Inc. for the site referenced above. Based upon our review, we concur with their delineation and conclusions as mapped in Figures 6 through 6d. Within the study area, 1 wetland, totaling 0.39 acres, and 7 potentially jurisdictional waterways were identified. The wetland and one of the waterways (S27, previously approved in WD #07-0116) are subject to the permit requirements of the state Removal-Fill Law. The remaining waterways are exempt because they don't meet the definition of an intermittent stream as defined in OAR 141-085-0510 (41) and are not subject to the permit requirements of the state law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

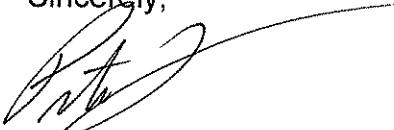




This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.

Thank you for having the site evaluated. Please phone me at (503) 986-5232 if you have any questions.

Sincerely,



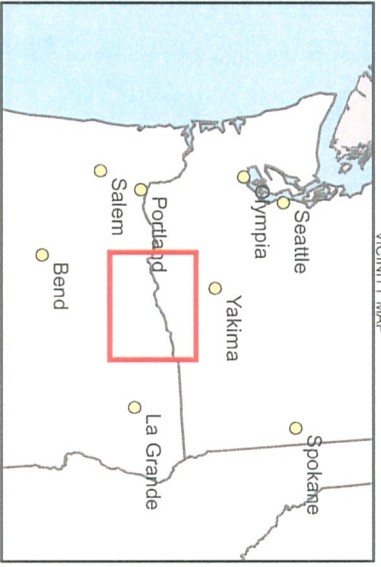
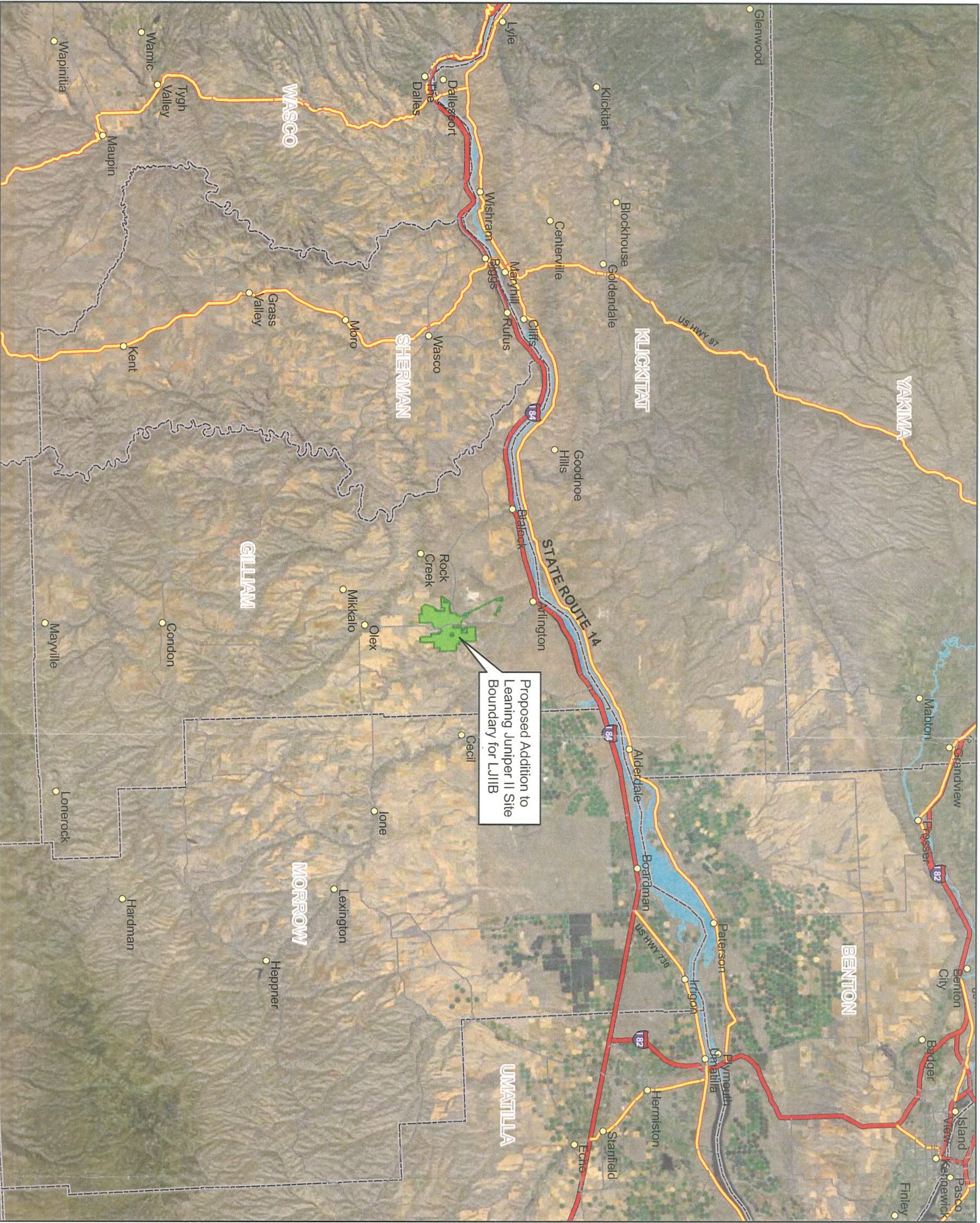
Peter Ryan, PWS  
Wetland Specialist

Approved by   
Janet C. Morlan, PWS  
Wetlands Program Manager

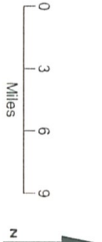
Enclosures

cc: Joel Shaich, CH2M HILL, Inc.  
Gilliam County Planning Department  
Mary Hoffman, Corps of Engineers  
Sarah Kelly, DSL





- Legend**
- City
  - Limited Access
  - Highway
  - Secondary Road
  - Proposed Addition to Leaning Juniper II Site Boundary for LJIIB
  - County Boundary
  - River/ Stream

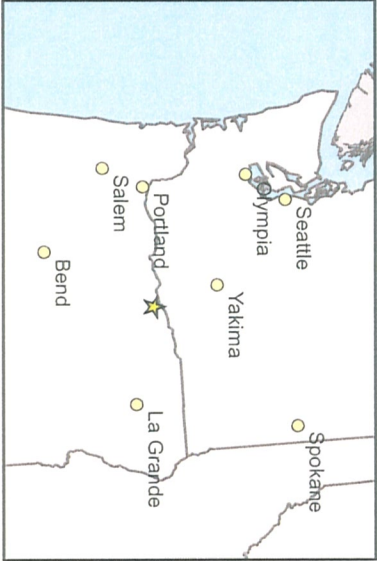
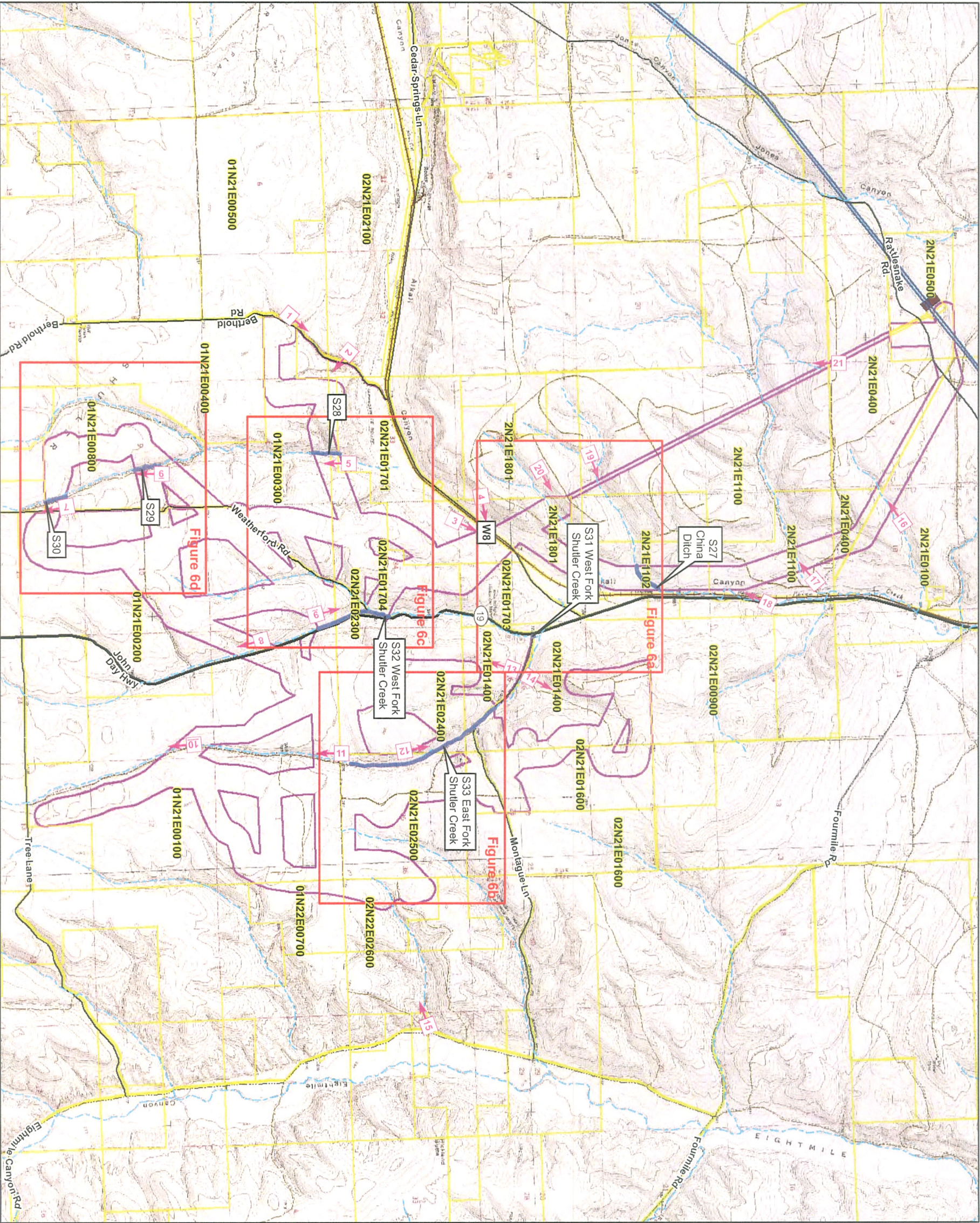


**Figure 1**  
Location Map  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report

REVISED 9/2/2009







**Legend**

- Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
- Wetland<sup>1</sup> (W8)
- Stream - National Hydrography Dataset
- Wetland Study Corridor (April 2009)
- Detail Map Extents
- Existing Transmission Line
- Existing BPA Jones Canyon Switching Substation
- Railroad
- Public, Paved
- Other Public Road
- Public, Gravel
- Private, Farm Road
- Property Line (02N21E01701)

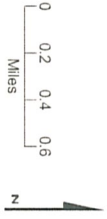
**Notes:**

1. Streams, wetlands and sample plots mapped using Trimble GeoXT<sup>®</sup> Global Positioning Satellite (GPS) unit with sub-meter accuracy

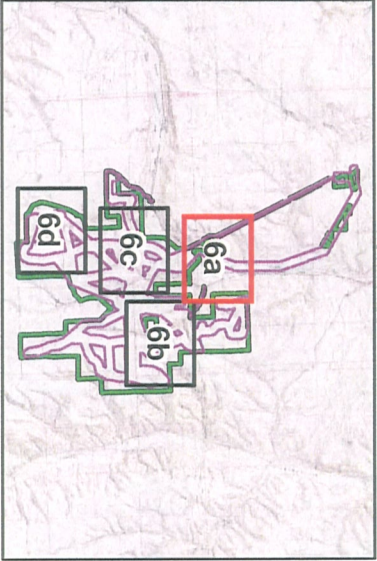
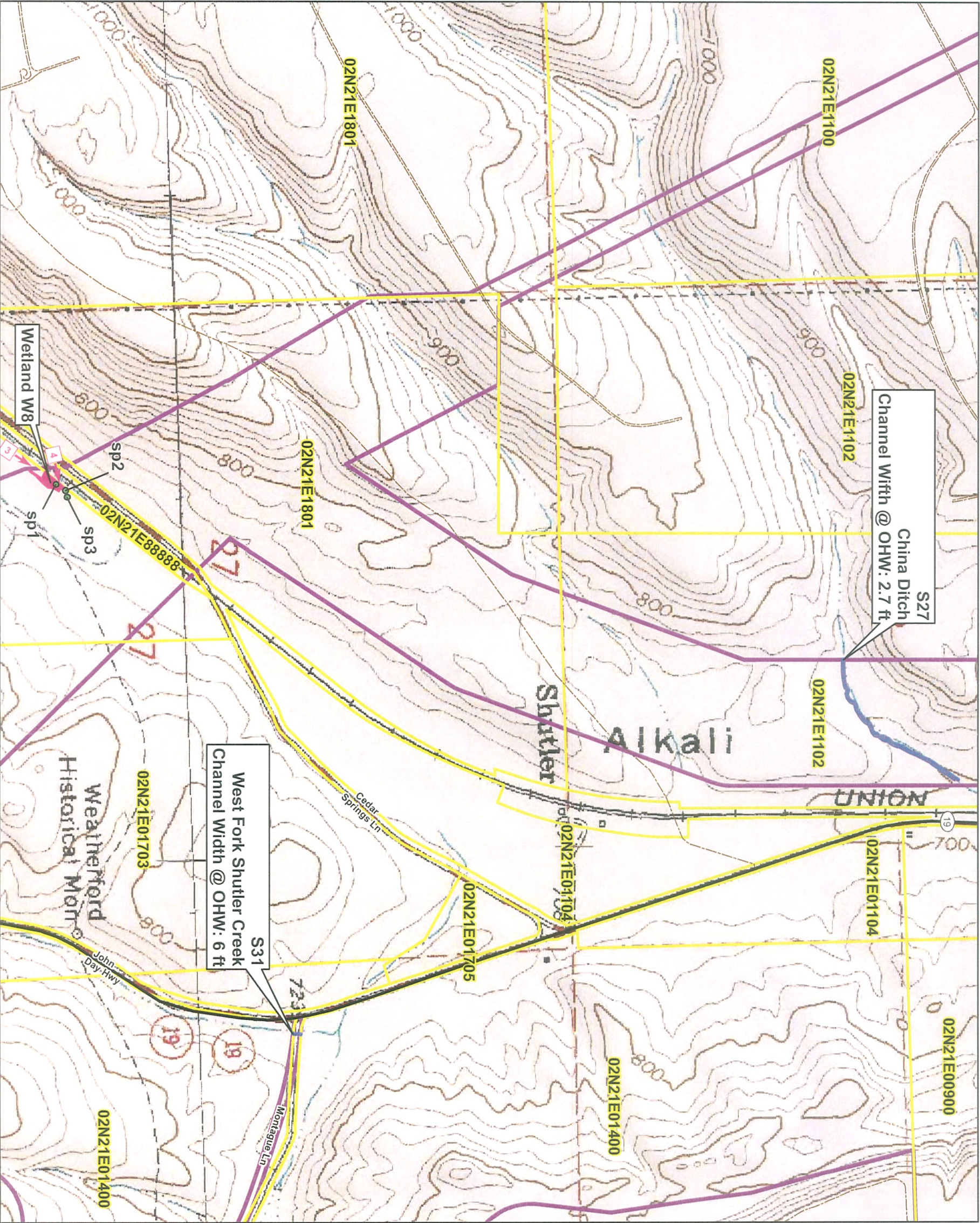
DSL WD # 09-0252

Approval Issued 4/24/09

Approval Expires 9/24/2014







- Legend
- Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Wetland Sample Plots<sup>1</sup>
  - Wetland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)

Notes:

1. Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252

Approval Issued 9/24/2009

Approval Expires 9/24/2014

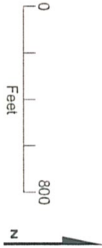
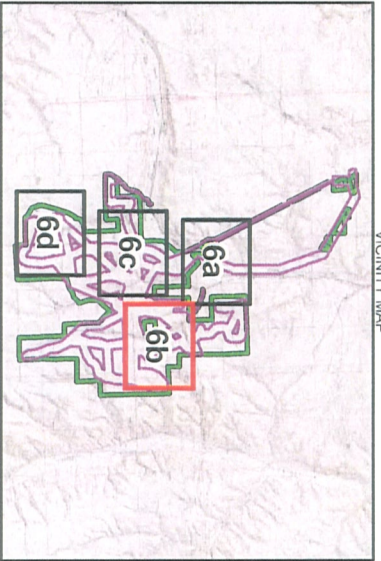
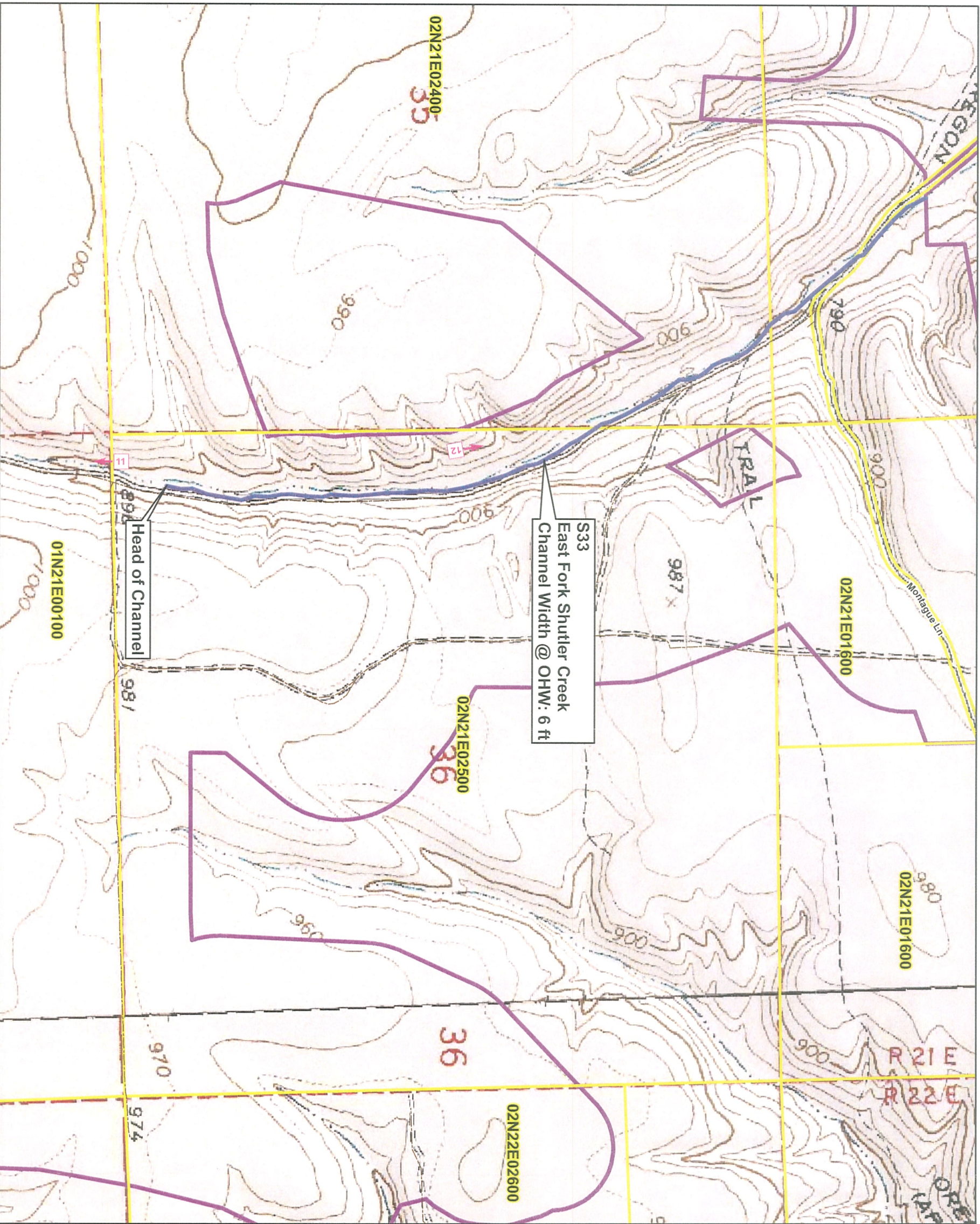


Figure 6a  
Wetland W8, Stream S27, Stream S31  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report

REVISED 9/9/2009



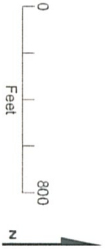




- Legend**
- Photo Point
  - Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Wetland Sample Plots<sup>1</sup>
  - Wetland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)

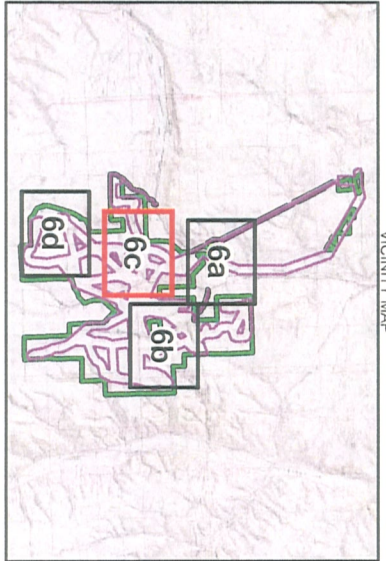
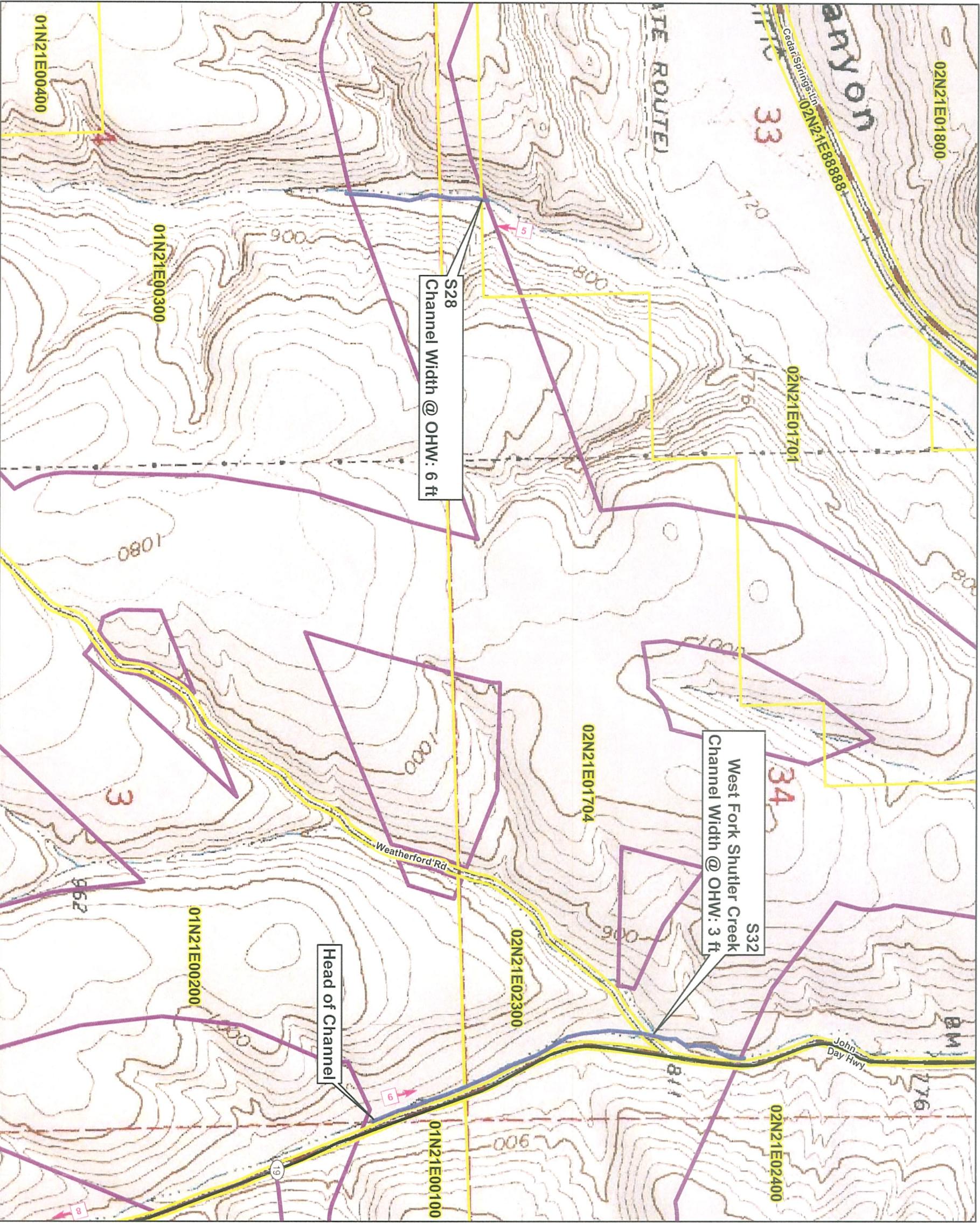
Notes:  
1. Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252  
Approval Issued 09/29/2009  
Approval Expires 09/29/2014



**Figure 6b**  
**Stream S33**  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report





- Legend**
- Photo Point
  - Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Welland Sample Plots<sup>1</sup>
  - Welland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Welland Study Corridor (April 2009)

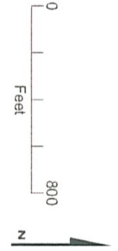
Notes:

- Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252

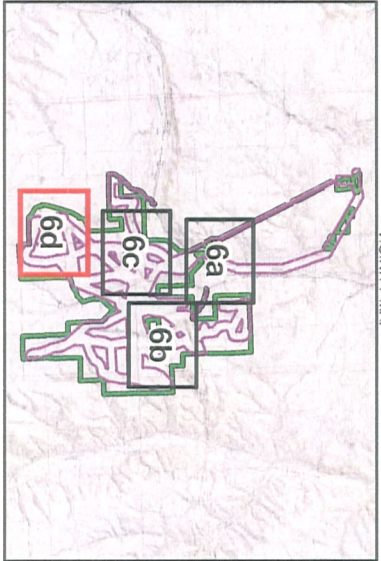
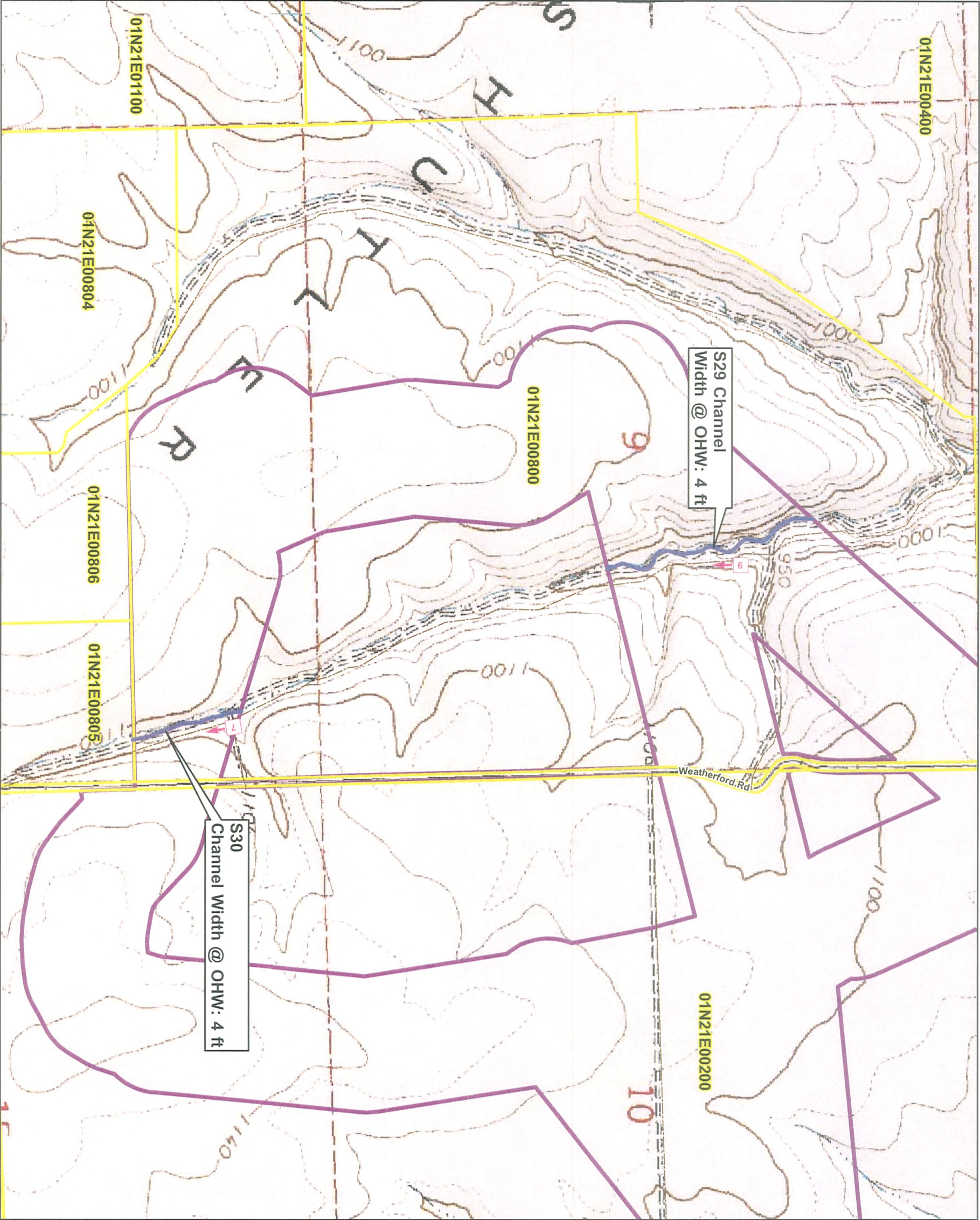
Approval Issued 09/29/2009

Approval Expires 09/29/2014



**Figure 6c**  
Stream S28, Stream S32  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report



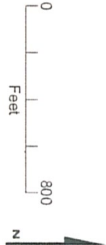


- Legend**
- Stream-Delineated by CH2M Hill (S27)
  - Wetland Sample Plots
  - Wetland W8 (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)
  - Photo Point

Notes:

- Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252  
Approval Issued 09/29/2009  
Approval Expires 09/29/2014



**Figure 6d**  
Stream S29, Stream S30  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report





# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

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December 6, 2007

### State Land Board

Ty Daul  
PPM Energy, Inc.  
1125 NW Couch St.  
Portland, OR 97209

Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Re: Wetland Delineation Report for Pebble Springs Wind Power Project LLC,  
near Arlington, Gilliam County, T2N and 3N R21 and 22E Sec. 1-5, 8-13,  
24 and 13-14, 23-26, 33-36 and 5-8,18, Tax Lot (Figure 2); WD #07-0430

Dear Mr. Daul:

The Department of State Lands has reviewed the wetland delineation report prepared by Neilson Natural Resource Consulting for the site referenced above. Based upon our review, we concur with their delineation and conclusions. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 1 and Figure 5a-5g of the report. Please replace all copies of the preliminary wetland map with these final Department-approved maps. Within the study area, there were thirty wetlands and one jurisdictional waterway (China Creek) identified. The wetlands and China Creek are subject to the permit requirements of the state Removal-Fill Law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

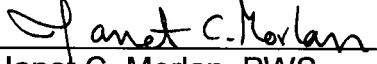
This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.



Thank you for having the site evaluated. Please phone me at 541-388-6060 if you have any questions.

Sincerely,

  
Jess Jordan  
Natural Resource Coordinator

Approved by   
Janet C. Morlan, PWS  
Wetlands Program Manager

Enclosures

cc: Nichole Coulter, CH2M Hill  
Gilliam County, Planning Department  
Mary Hoffman, Corps of Engineers



# Figure 1 Location and Index Map Pebble Springs Wind Power Wetland Delineation

Gilliam County, Oregon



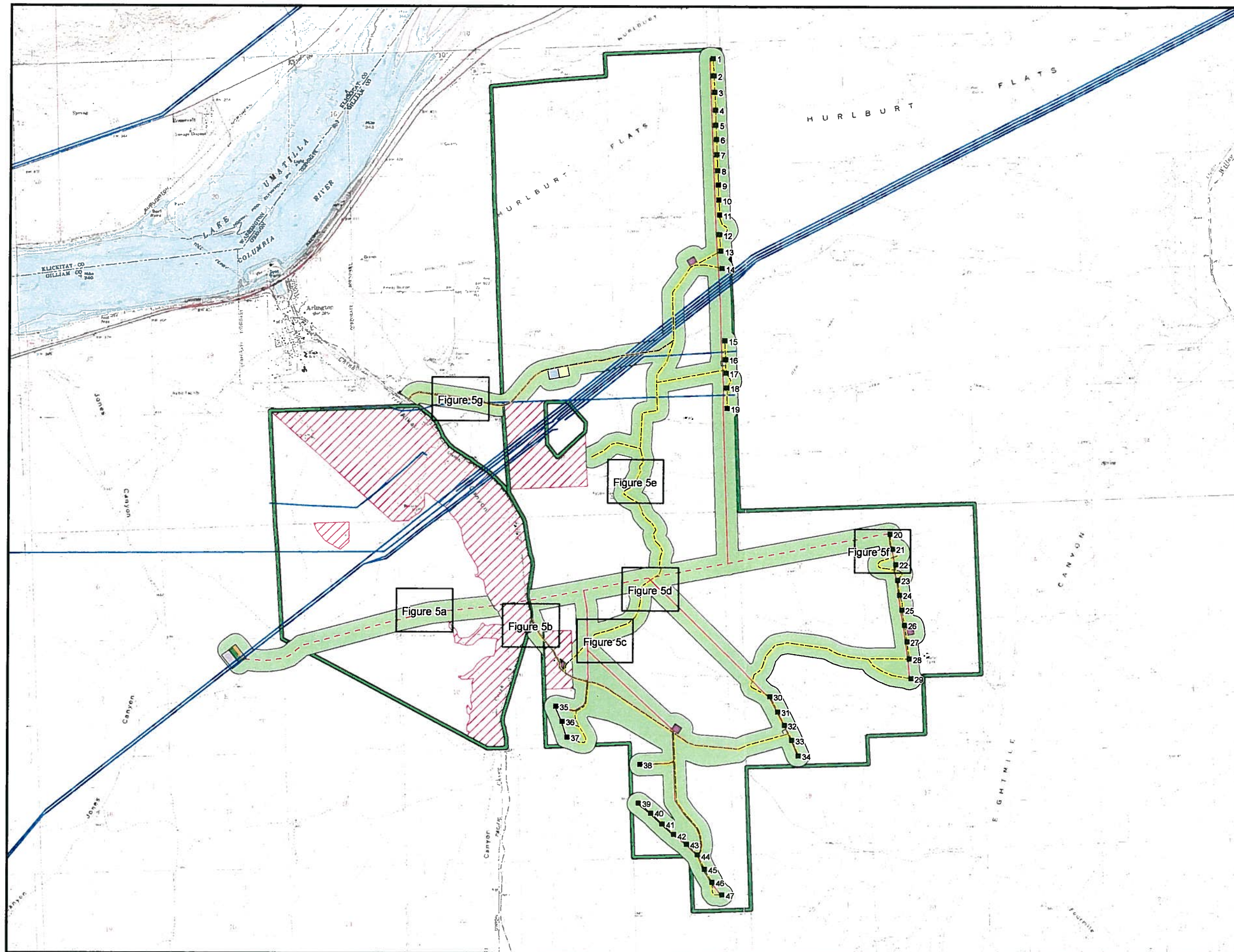
## Legend

- Wetlands Figure Index
- Wetland Study Area
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
- Exclusion Area
- Lease Boundary

DSL WD# 07-0430  
Approval issued 12/6/2007  
Approval expires 12/6/2012



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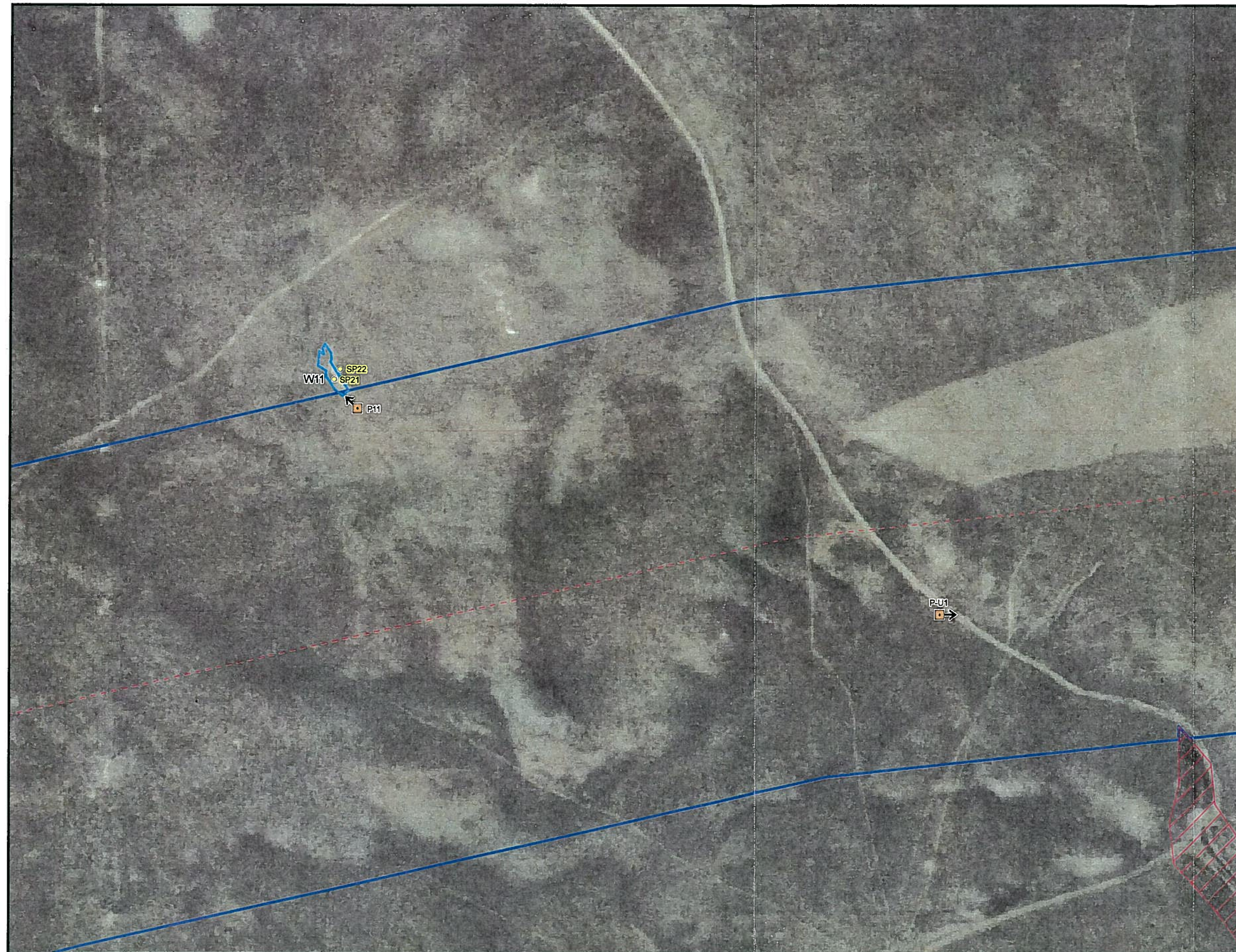
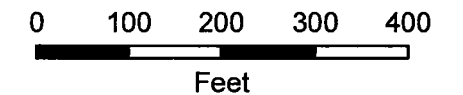
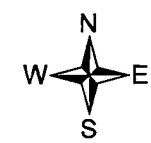
# **Figure 5a** **Wetland Map** **Pebble Springs Wind Power** **Wetland Delineation**

Gilliam County, Oregon



## **Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road**
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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DSL WDH 07-0430  
 Approval issued 12/6/2007  
 Approval Expires 12/6/2012





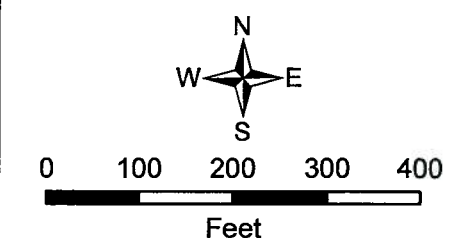
**Figure 5b**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon



**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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 Approval issued 12/6/2007  
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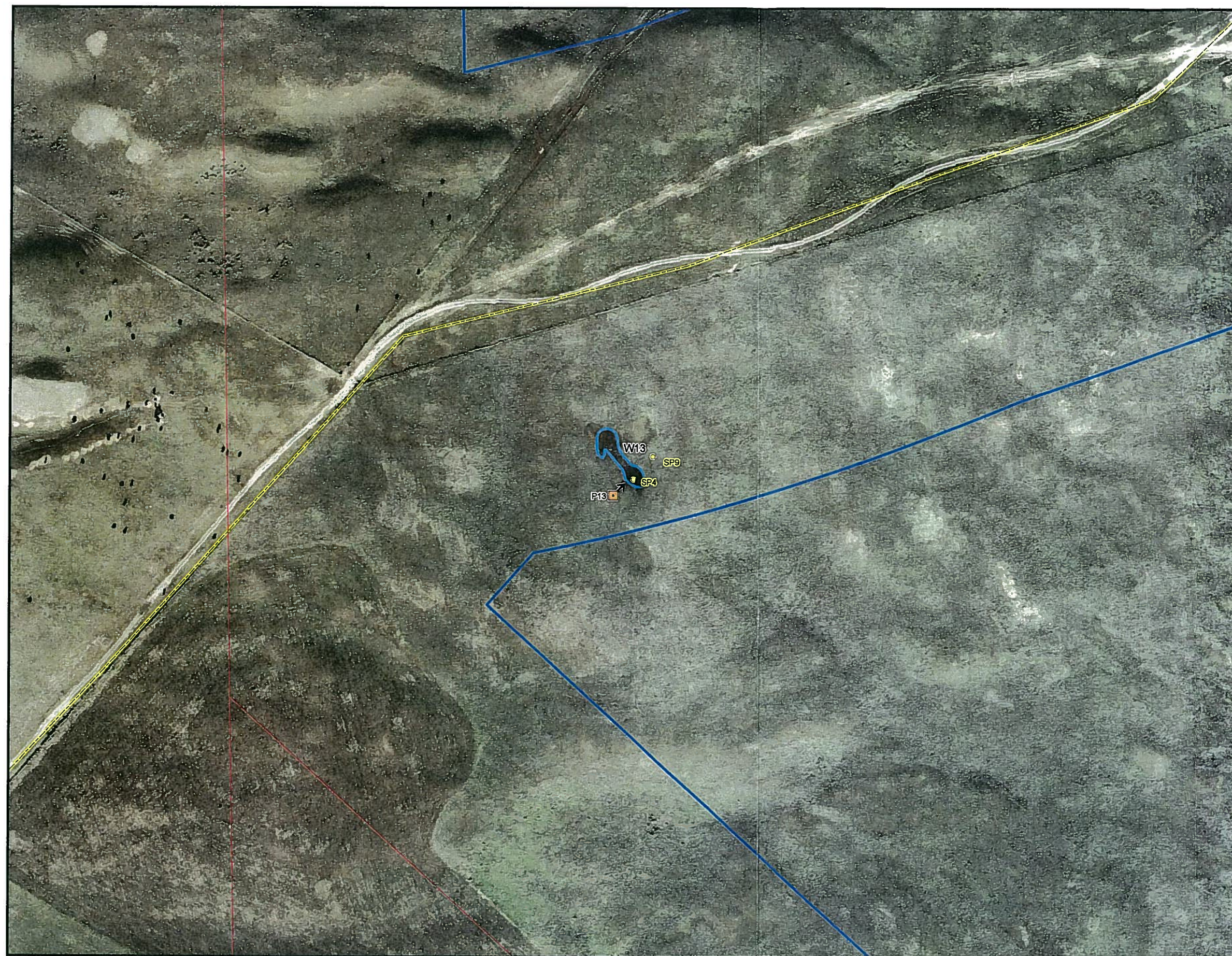
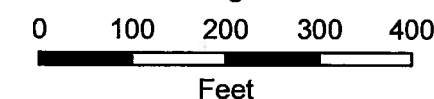
**Figure 5c**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon



**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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# Figure 5d Wetland Map Pebble Springs Wind Power Wetland Delineation

Gilliam County, Oregon



## Legend

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
- Proposed Turbine Access Road**
  - New Road
  - Existing - Needs Improvement
- Proposed Collection System**
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
- Proposed Facilities**
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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Feet



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DSL WD# 07-0430  
Approval issued 12/6/2007  
Approval Expires 12/6/2012



**Figure 5e**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon

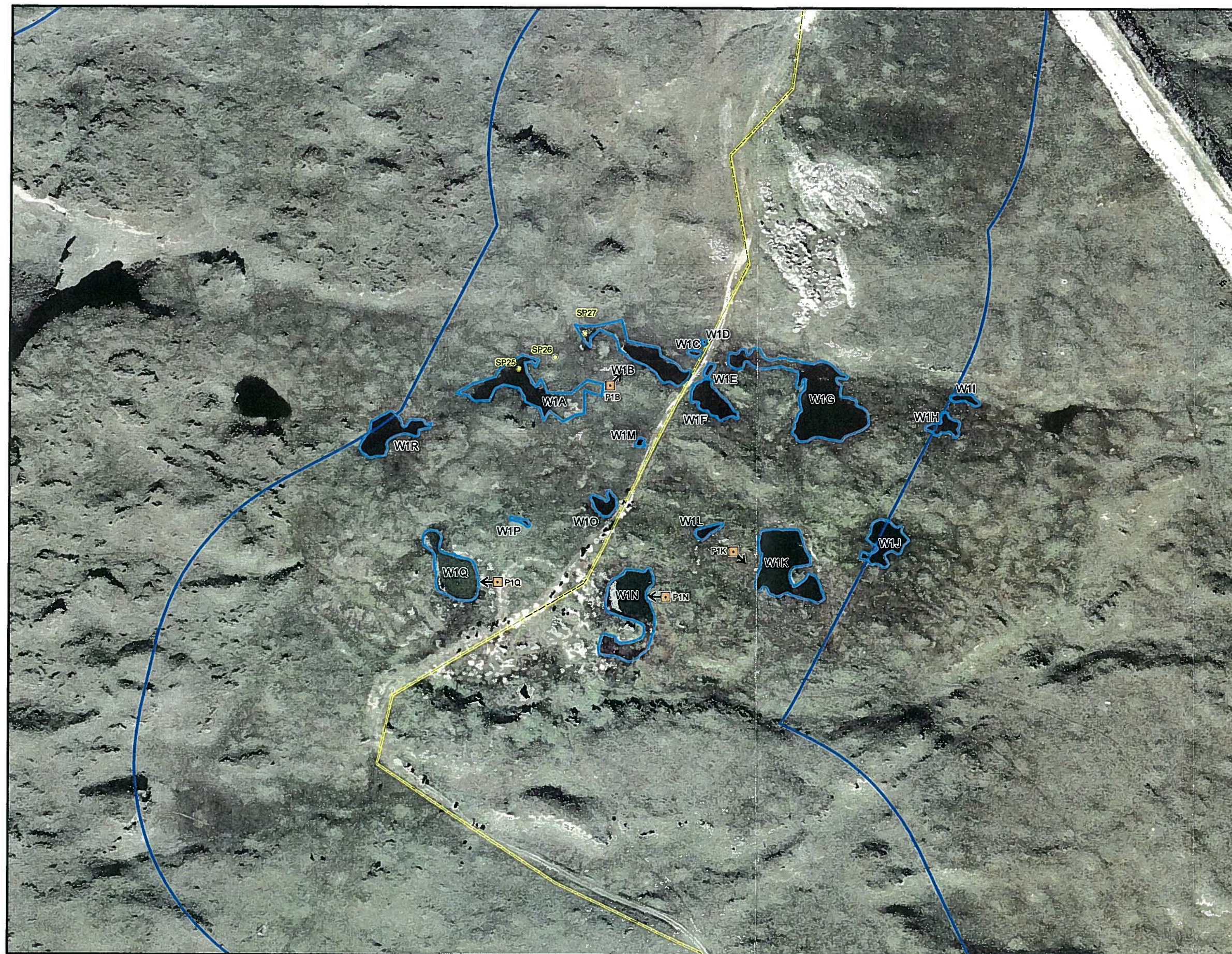


**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
- Proposed Collection System**
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
- Proposed 5-Acre O&M Facility
- Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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 Approval issued 12/6/2007  
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**Figure 5f**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon

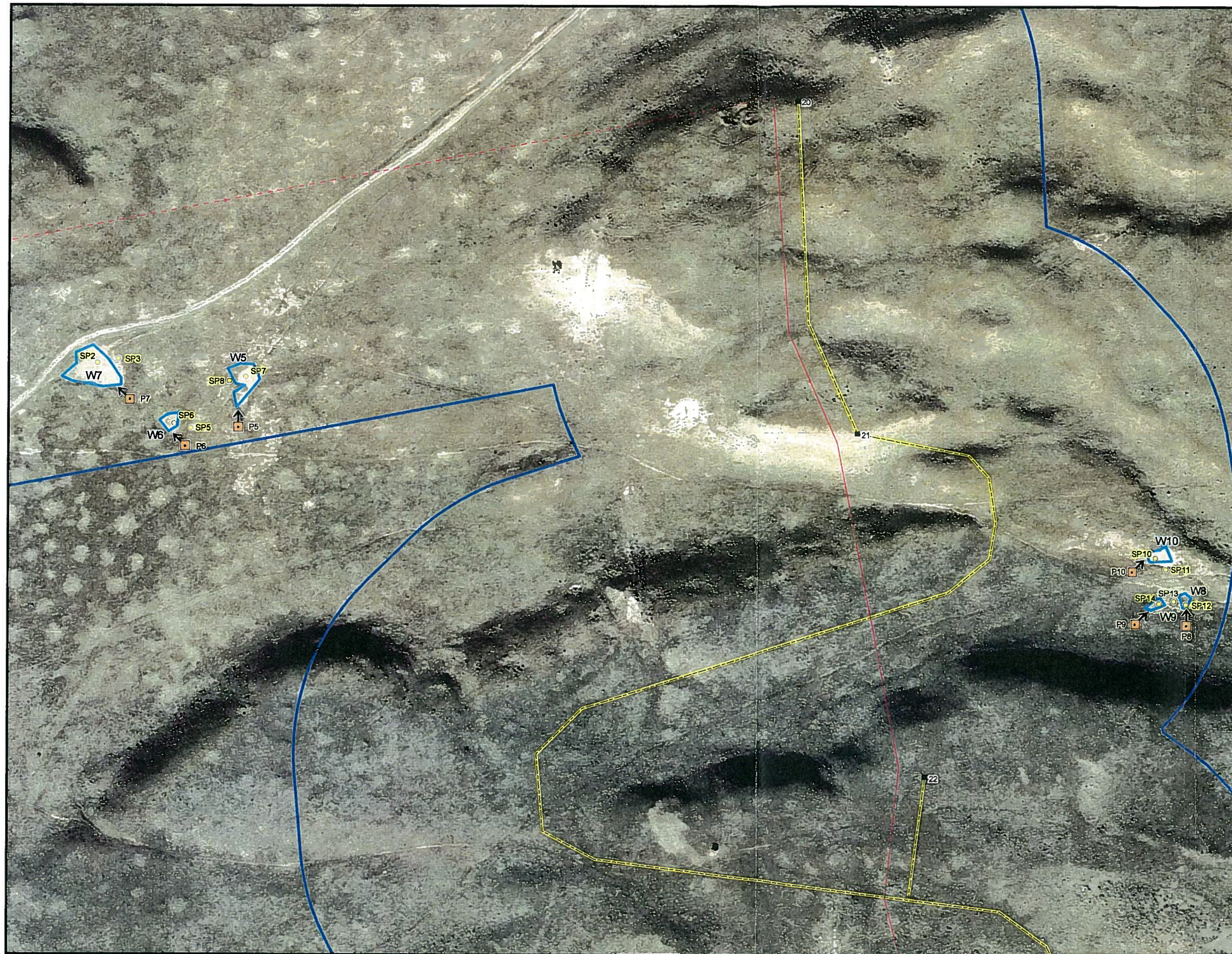


**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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DSL WD# 07-0430  
 Approval issued 12/6/2007  
 Approval Expires 12/6/2012



# Figure 5g Wetland Map Pebble Springs Wind Power Wetland Delineation

Gilliam County, Oregon



## Legend

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road**
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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DSL WD # 07-0430  
Approval Issued 12/6/2007  
Approval Expires 12/6/2012





REPLY TO

ATTENTION OF:

Operations Division  
Regulatory Branch  
Corps No.: NWP-2007-925

**DEPARTMENT OF THE ARMY**

PORTLAND DISTRICT, CORPS OF ENGINEERS

P.O. BOX 2946

PORTLAND, OREGON 97208-2946

**MAY 29 2009**

Mr. Ty Daul  
PPM Energy, Inc.  
1125 NW Couch Street  
Portland, Oregon 97209

Dear Mr. Daul:

The U.S. Army Corps of Engineers (Corps) reviewed your wetland delineation for several wetlands and two drainageways located in the vicinity of Pebble Springs and China Creek, near Arlington (the review area is shown on Enclosure 1 and includes several sections within Township 2 North, Range 21 East; Township 3 North, Range 21 East; and Township 3 North, Range 22 East).

The Corps determined that China Creek is a water of the U.S. Therefore approximately 1000 linear feet of China Creek within the review area will be regulated as "waters of the United States" (Enclosure 2). The placement of dredged or fill material into these waters identified in the Figures may require a Department of the Army permit under Section 404 of the Clean Water Act.

The Corps determined that wetlands within the review area, as well as the two drainageways that are mapped as tributaries to China Creek are not jurisdictional (Enclosure 2). Enclosure 3 is the jurisdictional determination (JD) form that identifies the basis for not asserting jurisdiction. If you are not in agreement with the approved JD, you can make an administrative appeal under 33 CFR 331 (Enclosure 4).

If you have any questions regarding our regulatory authority, please contact me at the letterhead address, by telephone at (503) 808-4381 or by email at [Michael.R.Turaski@usace.army.mil](mailto:Michael.R.Turaski@usace.army.mil).

Sincerely,

Mike Turaski  
Project Manager, Regulatory Branch

Enclosures

Copy Furnished:






















Oregon Department of State Lands (Jordan)  
CH2MHill (Coulter)

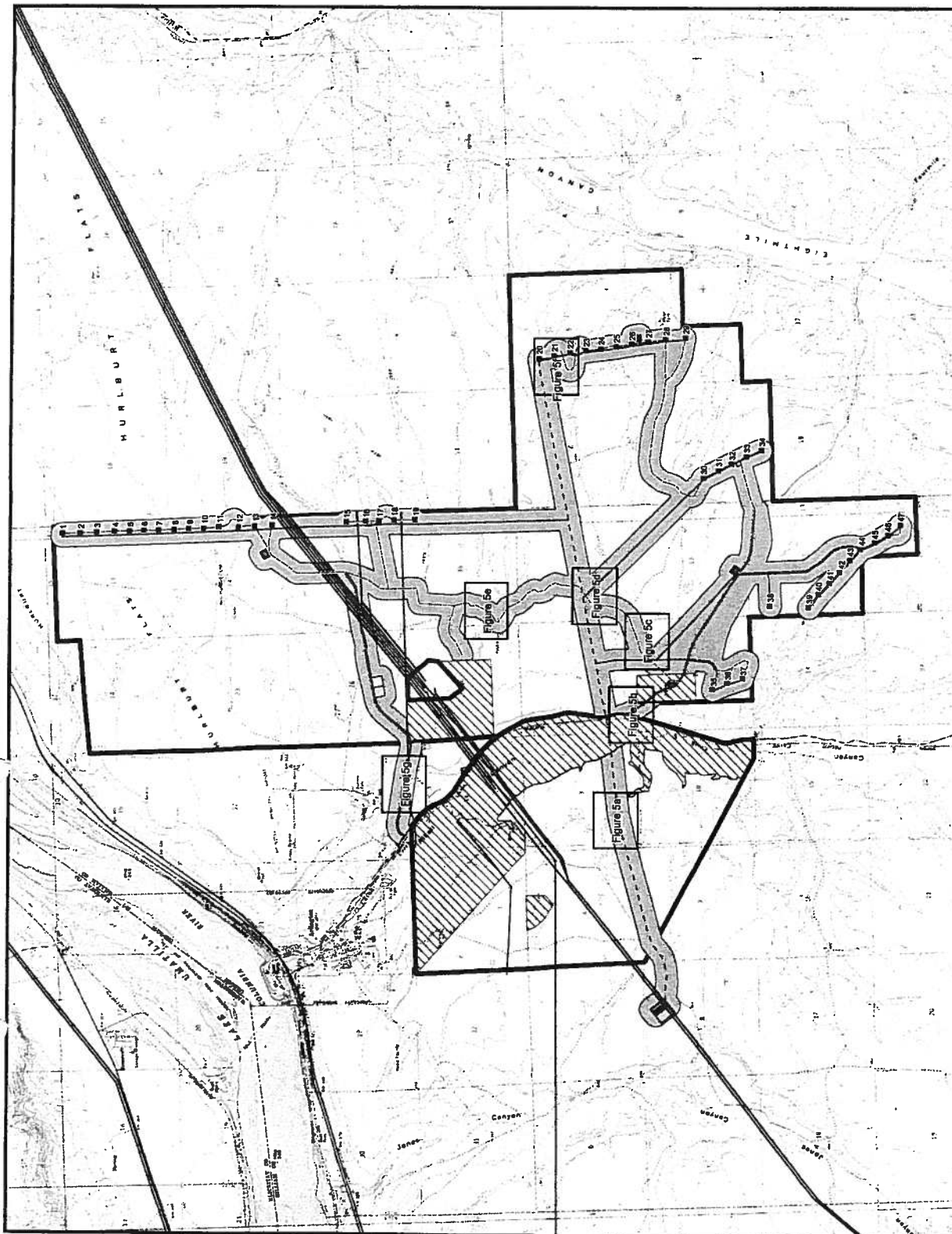
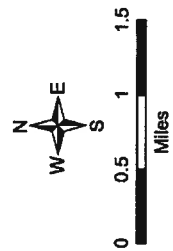






**Figure 1**  
**Location and Index Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  


- Legend**
-  Wetlands Figure Index
  -  Wetland Study Area
  - Proposed Permanent Facilities**
    -  Proposed Turbines
    -  Proposed Turbine Access Road
    -  New Road
    -  Existing - Needs Improvement
    -  Proposed Collection System
    -  Underground 34.5-kV Line
    -  Overhead 34.5-kV Line
    -  Proposed 5-Acre O&M Facility
    -  Proposed Substation
  - Proposed Temporary Facilities**
    -  1-Acre Staging Area
    -  3-Acre Staging Area
    -  3-Acre Batch Plant
    -  5-Acre Staging Area
  - Existing Facilities**
    -  Existing BPA Transmission Line
    -  Leaning Juniper I Substation
    -  BPA Jones Canyon Switching Station
    -  Station
    -  Exclusion Area
    -  Lease Boundary



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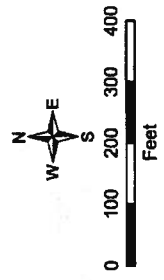






**Figure 5a**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities**
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities**
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary



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**Figure 5b**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

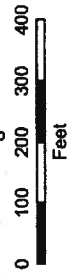
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- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
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    - Underground 34.5-kV Line
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    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary





**Figure 5c**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

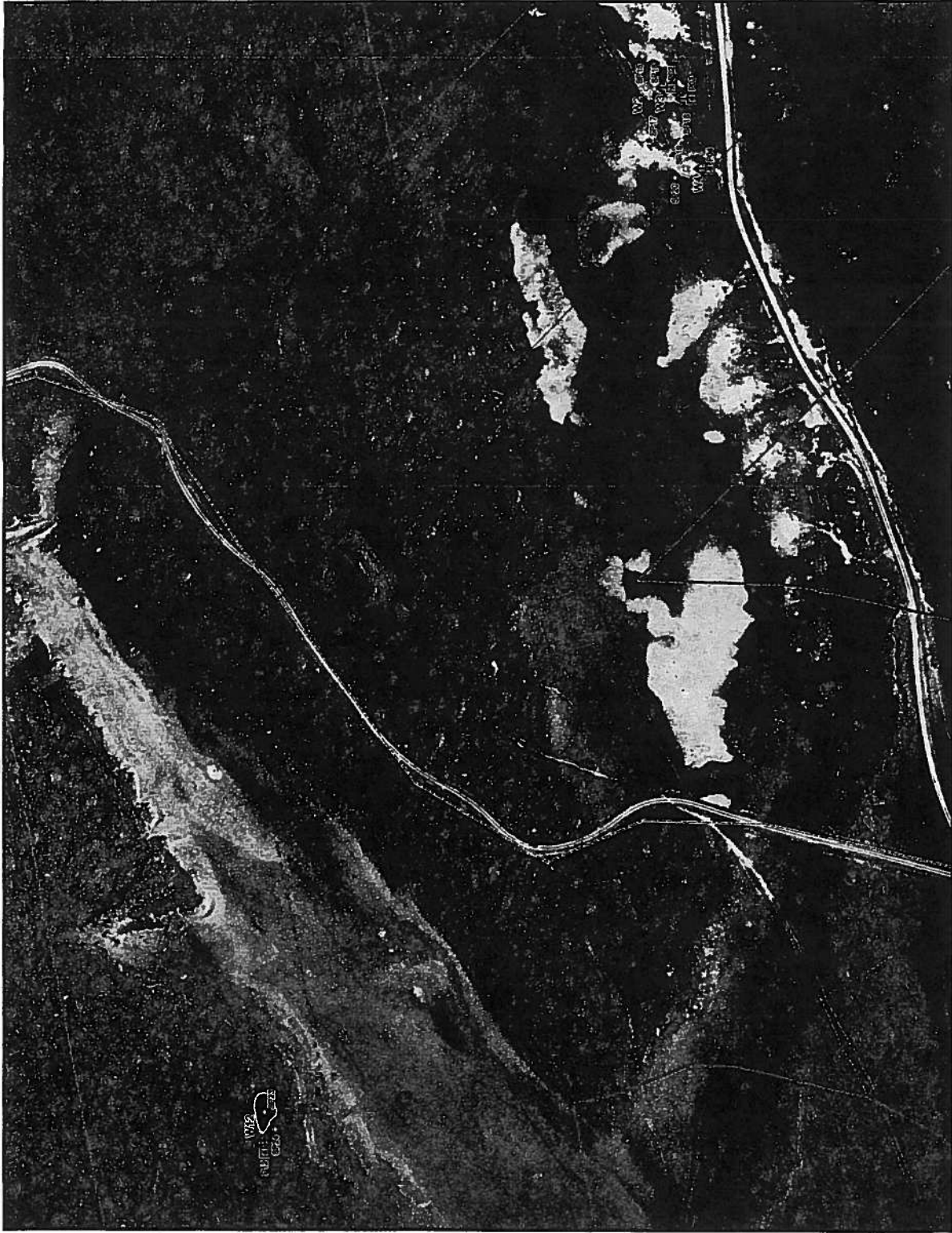
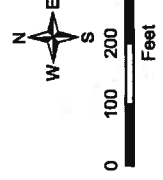
- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary





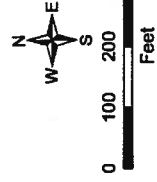
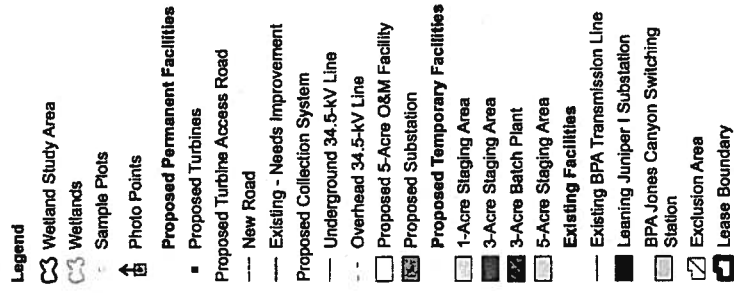
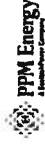
**Figure 5d**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities**
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities**
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    - Leaning Juniper / Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary



























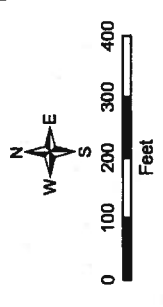
**Figure 5e**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**





**Figure 5f**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  

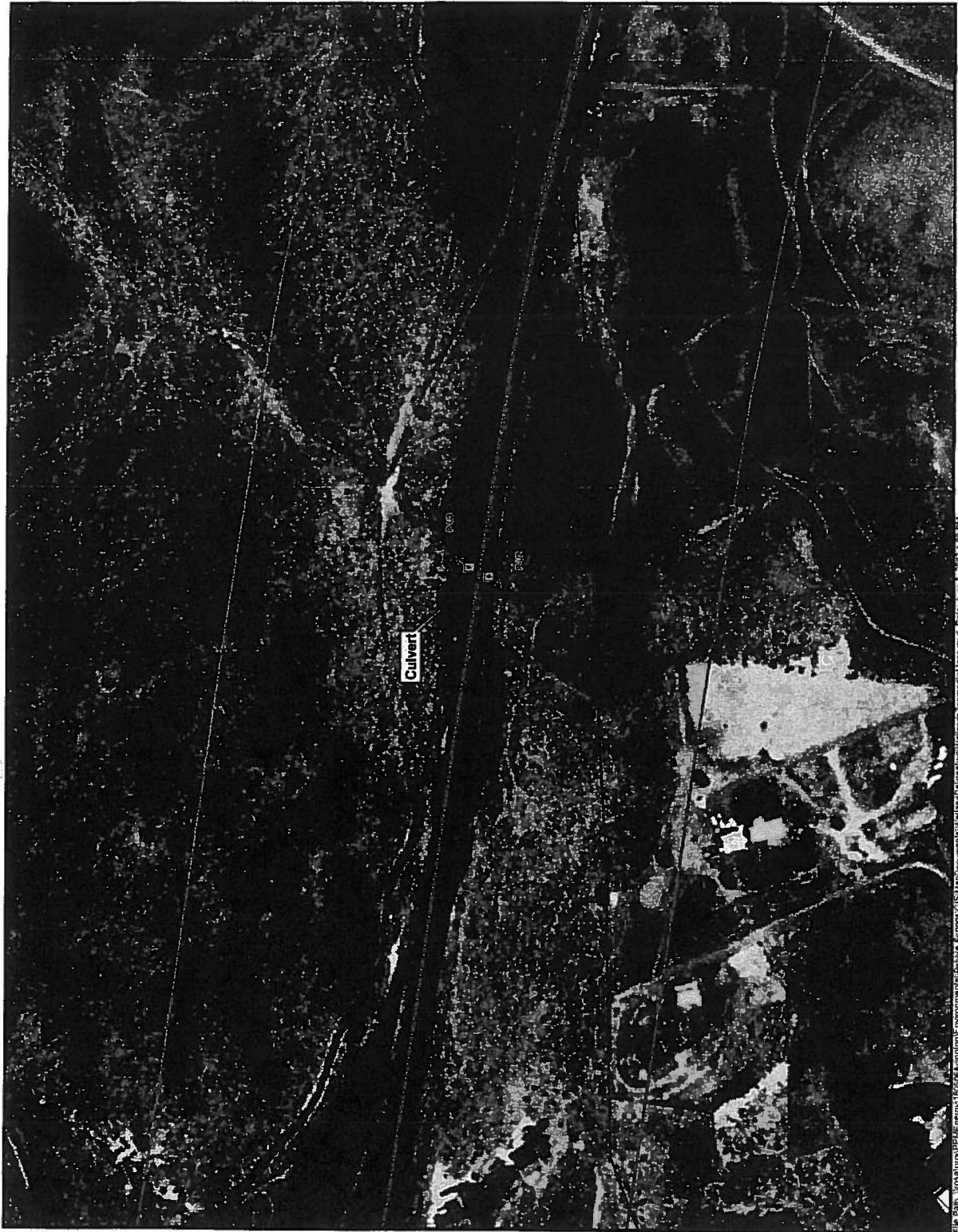
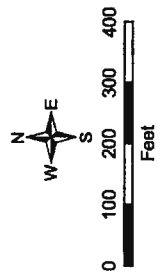

- Legend**
-  Wetland Study Area
  -  Wetlands
  -  Sample Plots
  -  Photo Points
  - Proposed Permanent Facilities**
    -  Proposed Turbines
    -  Proposed Turbine Access Road
    -  New Road
    -  Existing - Needs Improvement
    -  Proposed Collection System
    -  Underground 34.5-kV Line
    -  Overhead 34.5-kV Line
    -  Proposed 5-Acre O&M Facility
    -  Proposed Substation
  - Proposed Temporary Facilities**
    -  1-Acre Staging Area
    -  3-Acre Staging Area
    -  3-Acre Batch Plant
    -  5-Acre Staging Area
  - Existing Facilities**
    -  Existing BPA Transmission Line
    -  Leaning Juniper / Substation
    -  BPA Jones Canyon Switching Station
    -  Exclusion Area
    -  Lease Boundary





**Figure 5g**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy  
 A Lender Group

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary









**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** May 26, 2009

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Portland District, PPM Energy, Inc. (Pebble Springs), NWP-2007-925

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Oregon County/parish/borough: Gilliam City: Arlington  
Center coordinates of site (lat/long in degree decimal format): Lat. 45.6897° N, Long. 120.1434° W.  
Universal Transverse Mercator:

Name of nearest waterbody: China Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Columbia River

Name of watershed or Hydrologic Unit Code (HUC):

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.  
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

- ☒ Office (Desk) Determination. Date: May 4, 2009  
☐ Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- ☐ Waters subject to the ebb and flow of the tide.  
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain: .

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **are and are not** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- ☐ TNWs, including territorial seas  
☐ Wetlands adjacent to TNWs  
☒ Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
☐ Non-RPWs that flow directly or indirectly into TNWs  
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
☐ Impoundments of jurisdictional waters  
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: Approx 1000 linear feet: Approx 10 to 20 width (ft) and/or acres.  
Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Established by OHWM.**

Elevation of established OHWM (if known): .

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: Thirty-three small wetlands are located within the review area. The wetlands range in size from 0.001 acre to 0.5 acre. 18 of the wetlands occur in close proximity to one another, while the remainder occur individually or in groups of 2 or 3. The wetlands occur in seasonally inundated depressions, in an area of generally low topographic relief (with the notable exception of the China Creek canyon), low annual precipitation, and well-drained soils. The

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

ENCLOSURE (3)



applicant's consultants did not observe evidence of surface hydrologic connections between the wetlands and other Waters of the U.S., nor are there any indications that the wetlands meet other criteria for consideration as "adjacent."

### **SECTION III: CWA ANALYSIS**

#### **A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

**1. TNW**

Identify TNW: .

Summarize rationale supporting determination: .

**2. Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is "adjacent": .

#### **B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

☐ Tributary flows directly into TNW.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.



Identify flow route to TNW<sup>5</sup>:

Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural  
☐ Artificial (man-made). Explain:  
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet  
Average depth: feet  
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

|  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

☐ Dye (or other) test performed:

Tributary has (check all that apply):

|   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input type="checkbox"/> the presence of litter and debris          |
| <input type="checkbox"/> changes in the character of soil                     | <input type="checkbox"/> destruction of terrestrial vegetation      |
| <input type="checkbox"/> shelving   | <input type="checkbox"/> the presence of wrack line                 |
| <input type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input type="checkbox"/> leaf litter disturbed or washed away                 | <input type="checkbox"/> scour                                      |
| <input type="checkbox"/> sediment deposition                                  | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining                                       | <input type="checkbox"/> abrupt change in plant community           |
| <input type="checkbox"/> other (list):  |   |
| <input type="checkbox"/> Discontinuous OHWM. <sup>7</sup> Explain:            |   |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

|  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list):                             |  |

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

<sup>6</sup> A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup> Ibid.



(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size:        acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (        ) acres in total are being considered in the cumulative analysis.



For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

### D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

☐ TNWs: linear feet width (ft), Or, acres.

☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: **China Creek is an intermittent tributary to the Columbia River. The stream has defined beds and banks and is described as flowing intermittently.**

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **Approx 1000** linear feet **Approx 10 to 20** width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters:



3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
- ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
- ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

**Identify water body and summarize rationale supporting determination:** .

Provide estimates for jurisdictional waters in the review area (check all that apply):

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup>Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.



- ☐ Other non-wetland waters:                      acres.  
Identify type(s) of waters:                      .

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
- ☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: \_\_\_\_\_.
- ☒ Other: (explain, if not covered above): **Two drainageways were evaluated to determine whether they were potentially tributaries to China Creek. Neither drainageway had defined beds and banks, and both drainageways lacked indicators of an ordinary high water mark (nor did they meet wetland criteria); therefore these features are not jurisdictional.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).  
☐ Lakes/ponds: acres.  
☐ Other non-wetland waters: acres. List type of aquatic resource:  
☒ Wetlands: 2.65 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams):      linear feet,      width (ft).  
☐ Lakes/ponds:      acres.  
☐ Other non-wetland waters:      acres. List type of aquatic resource: \_\_\_\_\_  
☐ Wetlands:      acres.

#### SECTION IV: DATA SOURCES.

**A. SUPPORTING DATA.** Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:  
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.  
☒ Office concurs with data sheets/delineation report. Wetland delineation report prepared by CH2MHill, dated June 18, 2007; mitigation report supplement dated May 12, 2008.  
☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:  
☐ Corps navigable waters' study:  
☐ U.S. Geological Survey Hydrologic Atlas:  
☐ USGS NHD data.  
☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Arlington, OR.  
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey.  
☐ National wetlands inventory map(s). Cite name:  
☐ State/Local wetland inventory map(s):  
☐ FEMA/FIRM maps:  
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)  
☐ Photographs: ☐ Aerial (Name & Date):  
or ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:  
☐ Applicable/supporting case law:  
☐ Applicable/supporting scientific literature:  
☒ Other information (please specify): Federal Register volume 51, number 219, p. 41217 (preamble to the 1986 regulations).

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**







## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

|                                     |  |                   |
|-------------------------------------|--|-------------------|
| Applicant: PPM Energy, Inc.         | File Number: NWP-2007-925  | Date: 5/26/2009   |
| Attached is:                        |  | See Section below |
| <input type="checkbox"/>            | INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission) | A                 |
| <input type="checkbox"/>            | PROFFERED PERMIT (Standard Permit or Letter of permission)         | B                 |
| <input type="checkbox"/>            | PERMIT DENIAL  | C                 |
| <input checked="" type="checkbox"/> | APPROVED JURISDICTIONAL DETERMINATION                              | D                 |
| <input type="checkbox"/>            | PRELIMINARY JURISDICTIONAL DETERMINATION                           | E                 |

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. Also, see Section II.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.



**SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record. If you believe you have additional information pertinent to an approved jurisdictional determination {see Part D} with which you disagree, that new information should first be sent to the Portland District for reconsideration. Following the District's reconsideration, the approved jurisdictional determination can still be appealed as noted in Part D)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact:

U.S. Army Corps of Engineers  
Portland District Office  
CENWP-OD-GP (ATTN: Mike Turaski)  
P.O. Box 2946  
Portland, Oregon 97208-2946

If you decide to appeal an action under Parts B, C or D above, send a copy of each page to:

Division Engineer  
Attention: Dave Gesl  
Appeals Review Officer  
P.O. Box 2870  
Portland, Oregon 97208-2870  
Telephone: 503-808-3825

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

\_\_\_\_\_  
Signature of appellant or agent.

Date:

Telephone number:





# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 378-3805

FAX (503) 378-4844

[www.oregonstatelands.us](http://www.oregonstatelands.us)

January 10, 2008

State Land Board

Ty Daul  
PPM Energy, Inc.  
1125 NW Couch St.  
Portland, OR 97209

Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Re: Revised Approval of Wetland Delineation Report for Pebble Springs Wind Power Project LLC (corrects consulting firm), near Arlington, Gilliam County, T2N and 3N R21 and 22E Sec. 1-5, 8-13, 24 and 13-14, 23-26, 33-36 and 5-8, 18, Tax Lot (Figure 2); WD #07-0430

Dear Mr. Daul:

The Department of State Lands has reviewed the wetland delineation report prepared by CH2M Hill for the site referenced above. Based upon our review, we concur with their delineation and conclusions. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 1 and Figure 5a-5g of the report. Please replace all copies of the preliminary wetland map with these final Department-approved maps. Within the study area, there were thirty wetlands and one jurisdictional waterway (China Creek) identified. The wetlands and China Creek are subject to the permit requirements of the state Removal-Fill Law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.



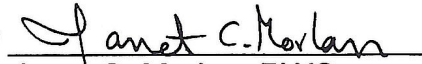
Thank you for having the site evaluated. Please phone me at 541-388-6060 if you have any questions.

Sincerely,



Jess Jordan  
Natural Resource Coordinator

Approved by

  
Janet C. Morlan, PWS  
Wetlands Program Manager

Enclosures

cc: Nichole Coulter, CH2M Hill  
Gilliam County, Planning Department  
Mary Hoffman, Corps of Engineers



APPENDIX E

# Literature Citations

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## APPENDIX E

# Literature Citations

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Adamus, P. R. 2001. Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles. Oregon Division of State Lands, Salem, Or.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. USFWS, FWS/OBS-79/31.

Department of State Lands (DSL). 2009. USFWS National List of Plant Species that Occur in Wetlands: Oregon Combined 1988 Region 9 List & 1993 Supplement List of plant species that occur in wetlands (Region 9).

National Oceanic and Atmospheric Administration (NOAA)/National Weather Service (NWS) Cooperative Observer Network. 2009. Data provided by Oregon Climate Service

Natural Resources Conservation Service (NRCS). 2006. Hydric Soils List, Gilliam County, Oregon. U.S. Department of Agriculture.

Natural Resources Conservation Service (NRCS). 2009. Arlington, Oregon, WETS table. Gilliam County, Oregon. U.S. Department of Agriculture. Accessed December 2009 at <http://ftp.wcc.nrcs.usda.gov/support/climate/wetlands/or/41021.txt>.

Northwest Wildlife Consultants, Inc. (NWC). 2010. Wildlife and Habitat Studies for Montague Wind Power Facility. Prepared for Iberdrola Renewables, Inc.

StreamNet. 2009. Fish distribution info [map info]. <http://map.streamnet.org/>. Accessed December 2009.

Thorson, T.D., Bryce, S.A., Lammers, D.A., Woods, A.J., Omernik, J.M., Kagan, J., Pater, D.E., and Comstock, J.A., 2003. Ecoregions of Oregon (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000). Accessed December 2009 online at [http://www.epa.gov/wed/pages/ecoregions/or\\_eco.htm](http://www.epa.gov/wed/pages/ecoregions/or_eco.htm).

Topping, Brian J.D., Tracie-Lynn Nadeau, Michael R. Turaski. 2009. *Oregon Streamflow Duration Assessment Method Interim Version (OSDAM)*. Public Notice release date, March 6, 2009.

U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Portland District.

U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE). 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States*. Memorandum issued December 2, 2008.



Weather Underground. 2009.

<http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=KORARLIN2&graphspan=custom&month=11&day=1&year=2009&monthend=12&dayend=17&yearend=2009>. Accessed December 2009.





REPLY TO

ATTENTION OF:

Operations Division  
Regulatory Branch  
Corps No.: NWP-2007-925

**DEPARTMENT OF THE ARMY**

PORTLAND DISTRICT, CORPS OF ENGINEERS

P.O. BOX 2946

PORTLAND, OREGON 97208-2946

**MAY 29 2009**

Mr. Ty Daul  
PPM Energy, Inc.  
1125 NW Couch Street  
Portland, Oregon 97209

Dear Mr. Daul:

The U.S. Army Corps of Engineers (Corps) reviewed your wetland delineation for several wetlands and two drainageways located in the vicinity of Pebble Springs and China Creek, near Arlington (the review area is shown on Enclosure 1 and includes several sections within Township 2 North, Range 21 East; Township 3 North, Range 21 East; and Township 3 North, Range 22 East).

The Corps determined that China Creek is a water of the U.S. Therefore approximately 1000 linear feet of China Creek within the review area will be regulated as "waters of the United States" (Enclosure 2). The placement of dredged or fill material into these waters identified in the Figures may require a Department of the Army permit under Section 404 of the Clean Water Act.

The Corps determined that wetlands within the review area, as well as the two drainageways that are mapped as tributaries to China Creek are not jurisdictional (Enclosure 2). Enclosure 3 is the jurisdictional determination (JD) form that identifies the basis for not asserting jurisdiction. If you are not in agreement with the approved JD, you can make an administrative appeal under 33 CFR 331 (Enclosure 4).

If you have any questions regarding our regulatory authority, please contact me at the letterhead address, by telephone at (503) 808-4381 or by email at [Michael.R.Turaski@usace.army.mil](mailto:Michael.R.Turaski@usace.army.mil).

Sincerely,

Mike Turaski  
Project Manager, Regulatory Branch

Enclosures

Copy Furnished:

Oregon Department of State Lands (Jordan)  
CH2MHill (Coulter)















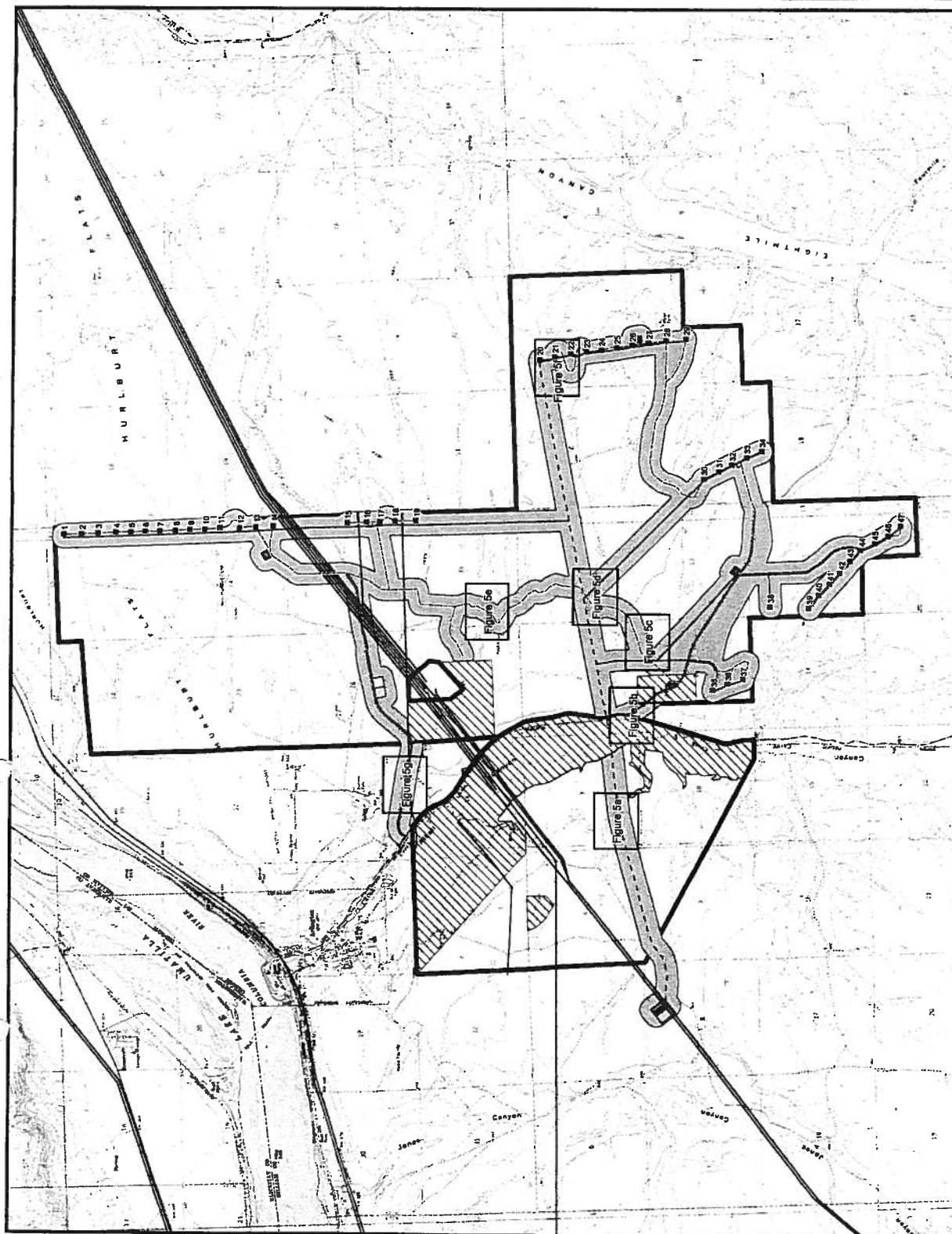
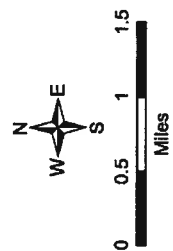




**Figure 1**  
**Location and Index Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**



- Legend**
-  Wetlands Figure Index
  -  Wetland Study Area
  - Proposed Permanent Facilities**
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - - - Overhead 34.5-kV Line
    -  Proposed 5-Acre O&M Facility
    -  Proposed Substation
  - Proposed Temporary Facilities**
    -  1-Acre Staging Area
    -  3-Acre Staging Area
    -  3-Acre Batch Plant
    -  5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    -  Learning Juniper 1 Substation
    - BPA Jones Canyon Switching Station
    -  Station
    -  Exclusion Area
    -  Lease Boundary



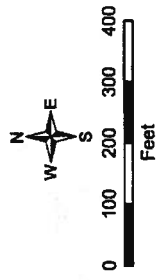






**Figure 5a**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities**
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities**
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary



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**Figure 5b**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

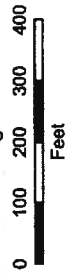
- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
  - Proposed Temporary Facilities
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary





**Figure 5c**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

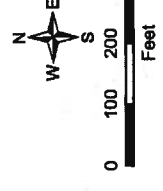
- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities**
    - Proposed Turbines
  - Proposed Turbine Access Road**
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility**
    - Proposed 5-Acre O&M Facility
  - Proposed Substation**
    - Proposed Substation
  - Proposed Temporary Facilities**
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary





**Figure 5d**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Plots
  - Photo Points
  - Proposed Permanent Facilities**
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities**
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities**
    - Existing BPA Transmission Line
    - Leaning Juniper / Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary







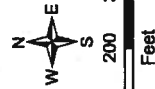


**Figure 5f**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
Gilliam County, Oregon



### Legend

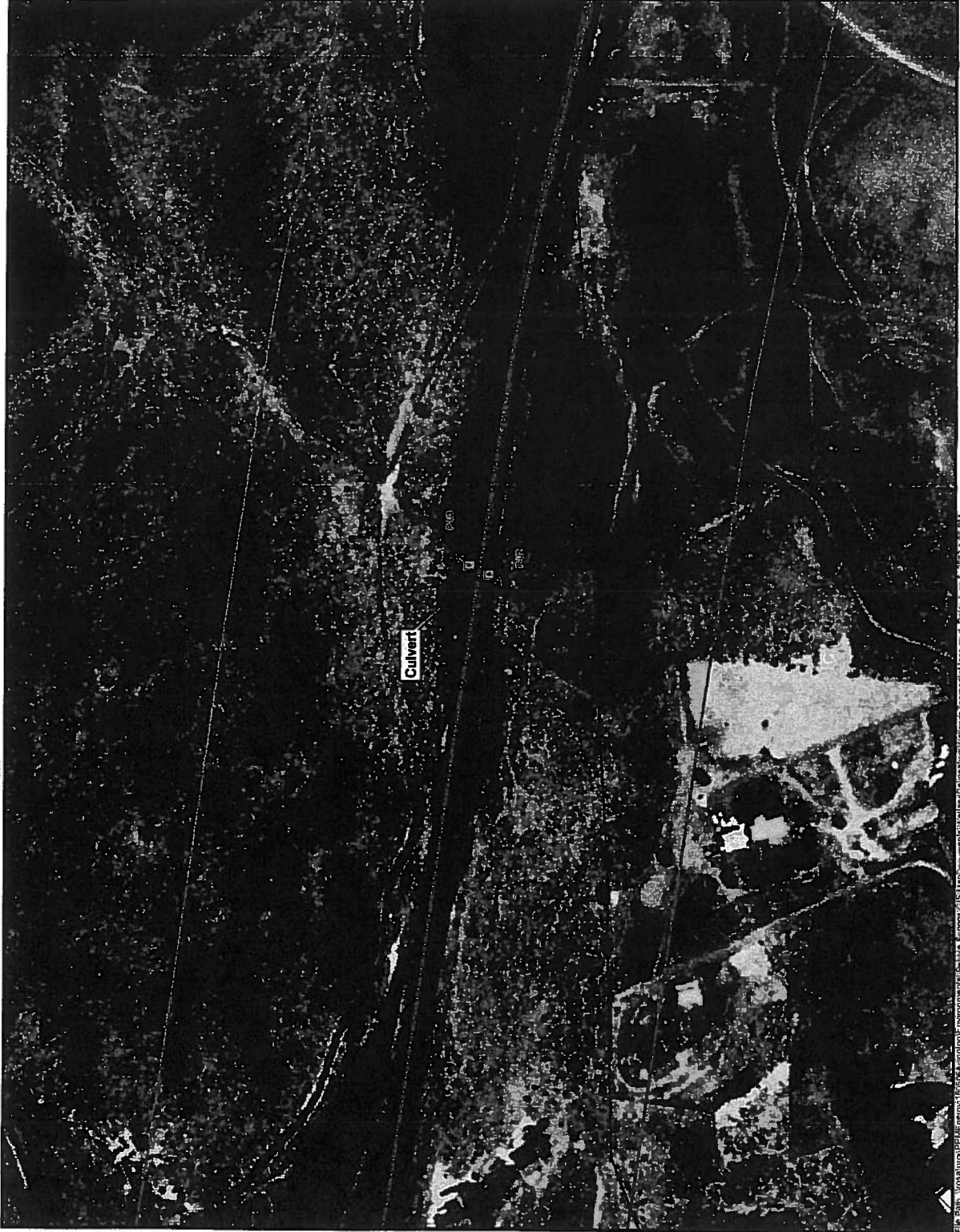
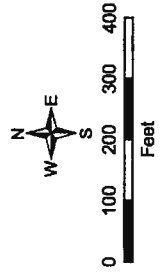
- Welland Study Area**
- Wellands  
Sample Plots  
Photo Points
- Proposed Permanent Facilities**
- Proposed Turbines
  - New Road
  - Existing - Needs Improvement
- Proposed Collection System**
- Underground 34.5-kV Line
  - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
- 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
  - Existing Facilities
  - Existing BPA Transmission Line
  - Learning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary





**Figure 5g**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**  
 Gilliam County, Oregon  
 PPM Energy  
 A Lender Group

- Legend**
- Wetland Study Area
  - Wetlands
  - Sample Points
  - Photo Points
  - Proposed Permanent Facilities
    - Proposed Turbines
    - Proposed Turbine Access Road
    - New Road
    - Existing - Needs Improvement
    - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
    - Proposed 5-Acre O&M Facility
    - Proposed Substation
  - Proposed Temporary Facilities
    - 1-Acre Staging Area
    - 3-Acre Staging Area
    - 3-Acre Batch Plant
    - 5-Acre Staging Area
  - Existing Facilities
    - Existing BPA Transmission Line
    - Leaning Juniper I Substation
    - BPA Jones Canyon Switching Station
    - Exclusion Area
    - Lease Boundary









**APPROVED JURISDICTIONAL DETERMINATION FORM**  
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** May 26, 2009

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** Portland District, PPM Energy, Inc. (Pebble Springs), NWP-2007-925

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: Oregon County/parish/borough: Gilliam City: Arlington  
Center coordinates of site (lat/long in degree decimal format): Lat. 45.6897° N, Long. 120.1434° W.  
Universal Transverse Mercator:

Name of nearest waterbody: China Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Columbia River

Name of watershed or Hydrologic Unit Code (HUC):

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.  
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

- ☒ Office (Desk) Determination. Date: May 4, 2009  
☐ Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- ☐ Waters subject to the ebb and flow of the tide.  
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain: .

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **are and are not** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- ☐ TNWs, including territorial seas  
☐ Wetlands adjacent to TNWs  
☒ Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
☐ Non-RPWs that flow directly or indirectly into TNWs  
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
☐ Impoundments of jurisdictional waters  
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: Approx 1000 linear feet: Approx 10 to 20 width (ft) and/or acres.  
Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Established by OHWM.**

Elevation of established OHWM (if known): .

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: **Thirty-three small wetlands are located within the review area. The wetlands range in size from 0.001 acre to 0.5 acre. 18 of the wetlands occur in close proximity to one another, while the remainder occur individually or in groups of 2 or 3. The wetlands occur in seasonally inundated depressions, in an area of generally low topographic relief (with the notable exception of the China Creek canyon), low annual precipitation, and well-drained soils. The**

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

ENCLOSURE (3)



applicant's consultants did not observe evidence of surface hydrologic connections between the wetlands and other Waters of the U.S., nor are there any indications that the wetlands meet other criteria for consideration as "adjacent."

### **SECTION III: CWA ANALYSIS**

#### **A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

**1. TNW**

Identify TNW: .

Summarize rationale supporting determination: .

**2. Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is "adjacent": .

#### **B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

☐ Tributary flows directly into TNW.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.



Identify flow route to TNW<sup>5</sup>:

Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural  
☐ Artificial (man-made). Explain:  
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet  
Average depth: feet  
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

|  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

☐ Dye (or other) test performed:

Tributary has (check all that apply):

|   |   |
|---|---|
| <input type="checkbox"/> Bed and banks  |   |
| <input type="checkbox"/> OHWM <sup>6</sup> (check all indicators that apply): |   |
| <input type="checkbox"/> clear, natural line impressed on the bank            | <input type="checkbox"/> the presence of litter and debris          |
| <input type="checkbox"/> changes in the character of soil                     | <input type="checkbox"/> destruction of terrestrial vegetation      |
| <input type="checkbox"/> shelving   | <input type="checkbox"/> the presence of wrack line                 |
| <input type="checkbox"/> vegetation matted down, bent, or absent              | <input type="checkbox"/> sediment sorting                           |
| <input type="checkbox"/> leaf litter disturbed or washed away                 | <input type="checkbox"/> scour                                      |
| <input type="checkbox"/> sediment deposition                                  | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining                                       | <input type="checkbox"/> abrupt change in plant community           |
| <input type="checkbox"/> other (list):  |   |
| <input type="checkbox"/> Discontinuous OHWM. <sup>7</sup> Explain:            |   |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

|  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list):                             |  |

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

<sup>6</sup> A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup> Ibid.



(iv) **Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size:        acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (        ) acres in total are being considered in the cumulative analysis.



For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

### D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

☐ TNWs: linear feet width (ft), Or, acres.

☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: **China Creek is an intermittent tributary to the Columbia River. The stream has defined beds and banks and is described as flowing intermittently.**

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **Approx 1000** linear feet **Approx 10 to 20** width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters:



3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).  
☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.  
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .  
☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or  
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or  
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.  
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.  
☐ which are or could be used for industrial purposes by industries in interstate commerce.  
☐ Interstate isolated waters. Explain: .  
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup>Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.



- ☐ Other non-wetland waters:                      acres.  
Identify type(s) of waters:                      .

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
- ☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: \_\_\_\_\_.
- ☒ Other: (explain, if not covered above): **Two drainageways were evaluated to determine whether they were potentially tributaries to China Creek. Neither drainageway had defined beds and banks, and both drainageways lacked indicators of an ordinary high water mark (nor did they meet wetland criteria); therefore these features are not jurisdictional.**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).  
☐ Lakes/ponds: acres.  
☐ Other non-wetland waters: acres. List type of aquatic resource:  
☒ Wetlands: 2.65 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): \_\_\_\_\_ linear feet, \_\_\_\_\_ width (ft).  
☐ Lakes/ponds: \_\_\_\_\_ acres.  
☐ Other non-wetland waters: \_\_\_\_\_ acres. List type of aquatic resource: \_\_\_\_\_  
☐ Wetlands: \_\_\_\_\_ acres.

#### SECTION IV: DATA SOURCES.

**A. SUPPORTING DATA.** Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:  
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.  
☒ Office concurs with data sheets/delineation report. Wetland delineation report prepared by CH2MHill, dated June 18, 2007; eation report supplement dated May 12, 2008.  
☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:  
☐ Corps navigable waters' study:  
☐ U.S. Geological Survey Hydrologic Atlas:  
☐ USGS NHD data.  
☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: Arlington, OR.  
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Web Soil Survey.  
☐ National wetlands inventory map(s). Cite name:  
☐ State/Local wetland inventory map(s):  
☐ FEMA/FIRM maps:  
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)  
☐ Photographs: ☐ Aerial (Name & Date):  
or ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:  
☐ Applicable/supporting case law:  
☐ Applicable/supporting scientific literature:  
☒ Other information (please specify): Federal Register volume 51, number 219, p. 41217 (preamble to the 1986 regulations).

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**







## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

|                             |  |                           |                   |
|-----------------------------|--|---------------------------|-------------------|
| Applicant: PPM Energy, Inc. |  | File Number: NWP-2007-925 | Date: 5/26/2009   |
| Attached is:                |  |                           | See Section below |
|                             | INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission) | A                         |                   |
|                             | PROFFERED PERMIT (Standard Permit or Letter of permission)         | B                         |                   |
|                             | PERMIT DENIAL  | C                         |                   |
| X                           | APPROVED JURISDICTIONAL DETERMINATION                              | D                         |                   |
|                             | PRELIMINARY JURISDICTIONAL DETERMINATION                           | E                         |                   |

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice. Also, see Section II.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.



**SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record. If you believe you have additional information pertinent to an approved jurisdictional determination {see Part D} with which you disagree, that new information should first be sent to the Portland District for reconsideration. Following the District's reconsideration, the approved jurisdictional determination can still be appealed as noted in Part D)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact:

U.S. Army Corps of Engineers  
Portland District Office  
CENWP-OD-GP (ATTN: Mike Turaski)  
P.O. Box 2946  
Portland, Oregon 97208-2946

If you decide to appeal an action under Parts B, C or D above, send a copy of each page to:

Division Engineer  
Attention: Dave Gesl  
Appeals Review Officer  
P.O. Box 2870  
Portland, Oregon 97208-2870  
Telephone: 503-808-3825

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

\_\_\_\_\_  
Signature of appellant or agent.

Date:

Telephone number:





# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

1645 NE Forbes Rd., Suite 112

Bend, OR 97701

(541) 388-6112

FAX (541) 388-6480

[www.oregonstatelands.us](http://www.oregonstatelands.us)

December 6, 2007

### State Land Board

Ty Daul  
PPM Energy, Inc.  
1125 NW Couch St.  
Portland, OR 97209

Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Re: Wetland Delineation Report for Pebble Springs Wind Power Project LLC,  
near Arlington, Gilliam County, T2N and 3N R21 and 22E Sec. 1-5, 8-13,  
24 and 13-14, 23-26, 33-36 and 5-8,18, Tax Lot (Figure 2); WD #07-0430

Dear Mr. Daul:

The Department of State Lands has reviewed the wetland delineation report prepared by Neilson Natural Resource Consulting for the site referenced above. Based upon our review, we concur with their delineation and conclusions. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 1 and Figure 5a-5g of the report. Please replace all copies of the preliminary wetland map with these final Department-approved maps. Within the study area, there were thirty wetlands and one jurisdictional waterway (China Creek) identified. The wetlands and China Creek are subject to the permit requirements of the state Removal-Fill Law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

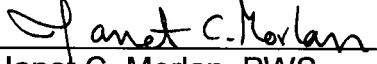
This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.



Thank you for having the site evaluated. Please phone me at 541-388-6060 if you have any questions.

Sincerely,

  
Jess Jordan  
Natural Resource Coordinator

Approved by   
Janet C. Morlan, PWS  
Wetlands Program Manager

Enclosures

cc: Nichole Coulter, CH2M Hill  
Gilliam County, Planning Department  
Mary Hoffman, Corps of Engineers



# **Figure 1** **Location and Index Map** **Pebble Springs Wind Power** **Wetland Delineation**

Gilliam County, Oregon



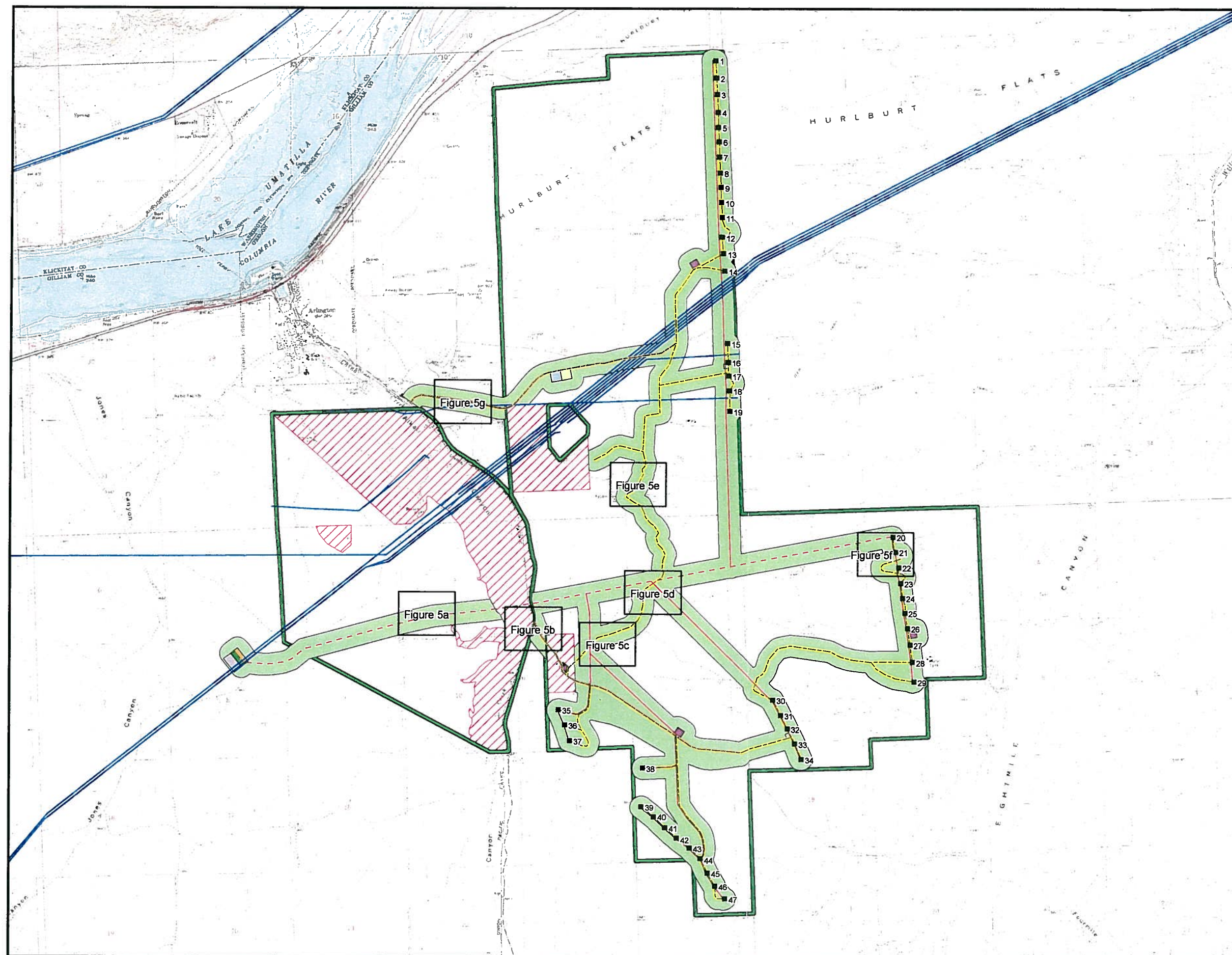
## **Legend**

- Wetlands Figure Index
- Wetland Study Area
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
- Exclusion Area
- Lease Boundary

DSL WD# 07-0430  
 Approval issued 12/6/2007  
 Approval expires 12/6/2012



0 0.5 1 1.5  
 Miles





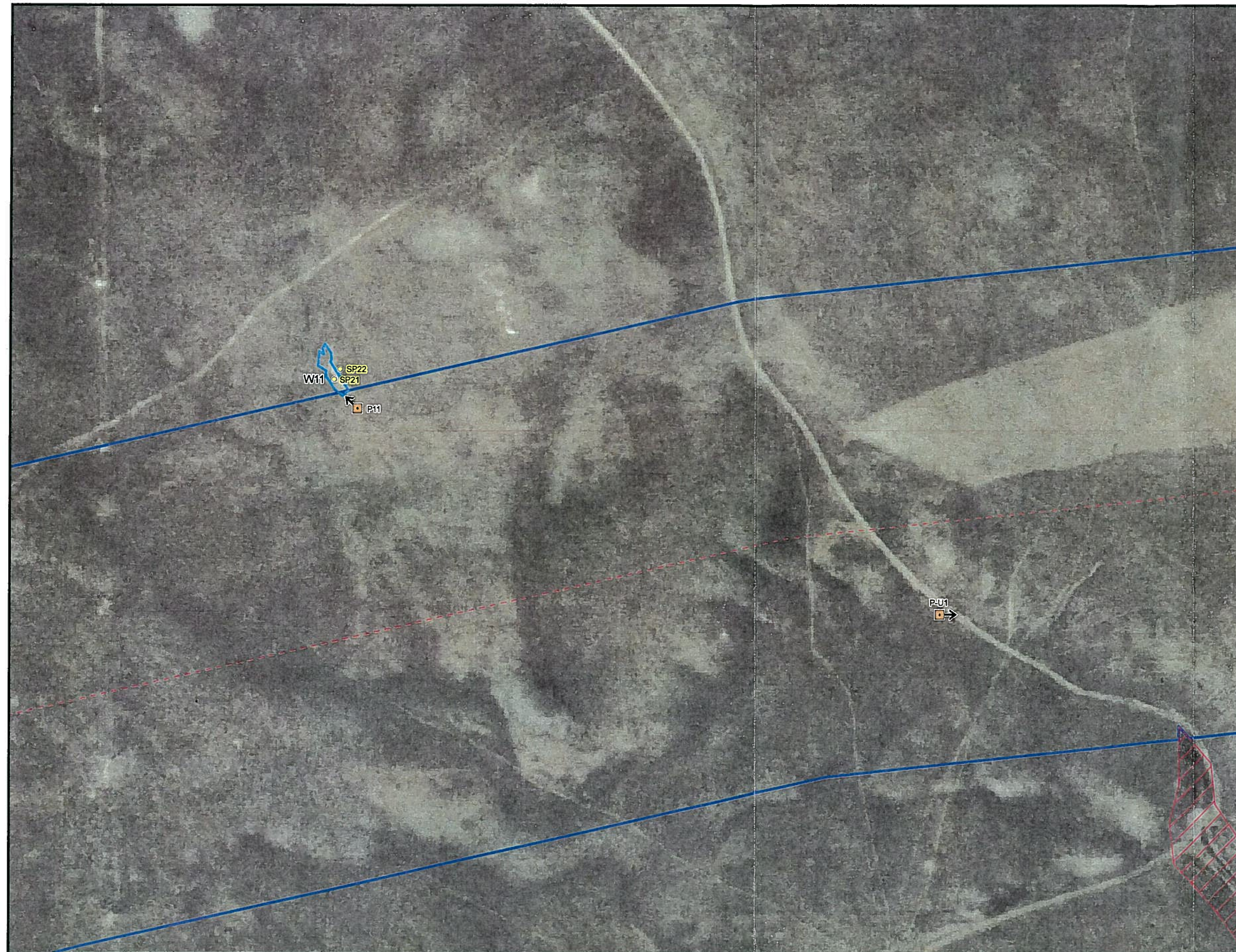
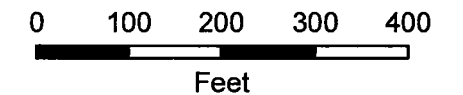
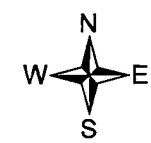
# **Figure 5a** **Wetland Map** **Pebble Springs Wind Power** **Wetland Delineation**

Gilliam County, Oregon



## **Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road**
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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 Approval issued 12/6/2007  
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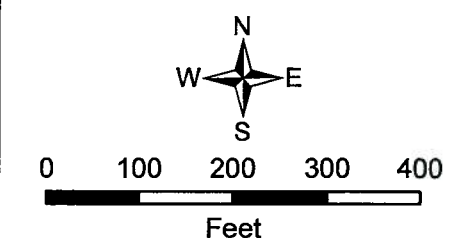
**Figure 5b**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon



**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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DSLWD# 07-0430  
 Approval issued 12/6/2007  
 Approval Expires 12/6/2012



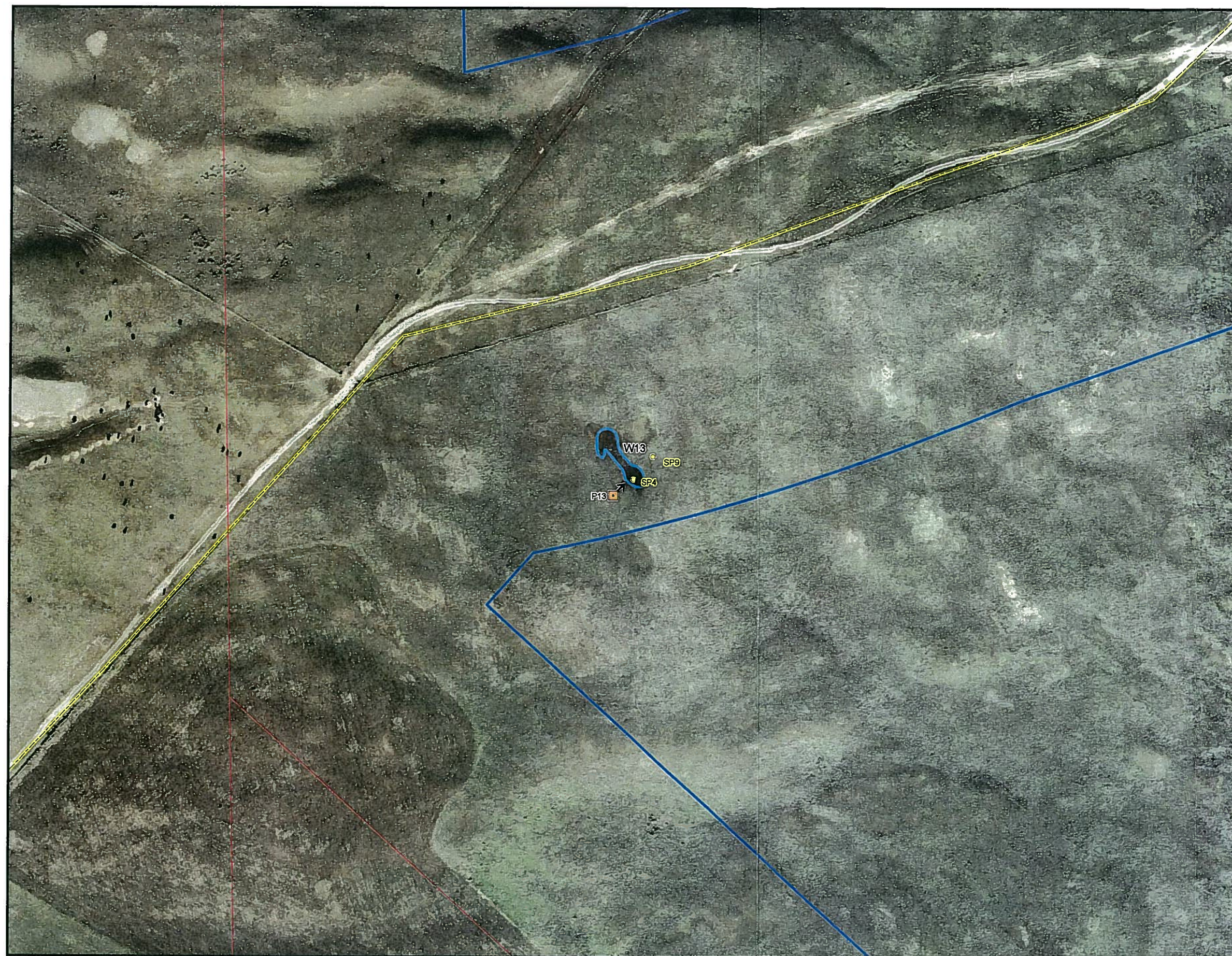
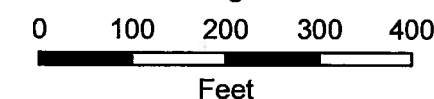
**Figure 5c**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon



**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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# Figure 5d Wetland Map Pebble Springs Wind Power Wetland Delineation

Gilliam County, Oregon



## Legend

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
- Proposed Turbine Access Road**
  - New Road
  - Existing - Needs Improvement
- Proposed Collection System**
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
- Proposed Facilities**
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



0 100 200 300 400  
Feet



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DSL WD# 07-0430  
Approval issued 12/6/2007  
Approval Expires 12/6/2012



**Figure 5e**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon



**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
- Proposed Collection System**
  - Underground 34.5-kV Line
  - Overhead 34.5-kV Line
- Proposed 5-Acre O&M Facility
- Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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 Feet



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DSL WD # 07-0430  
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**Figure 5f**  
**Wetland Map**  
**Pebble Springs Wind Power**  
**Wetland Delineation**

Gilliam County, Oregon

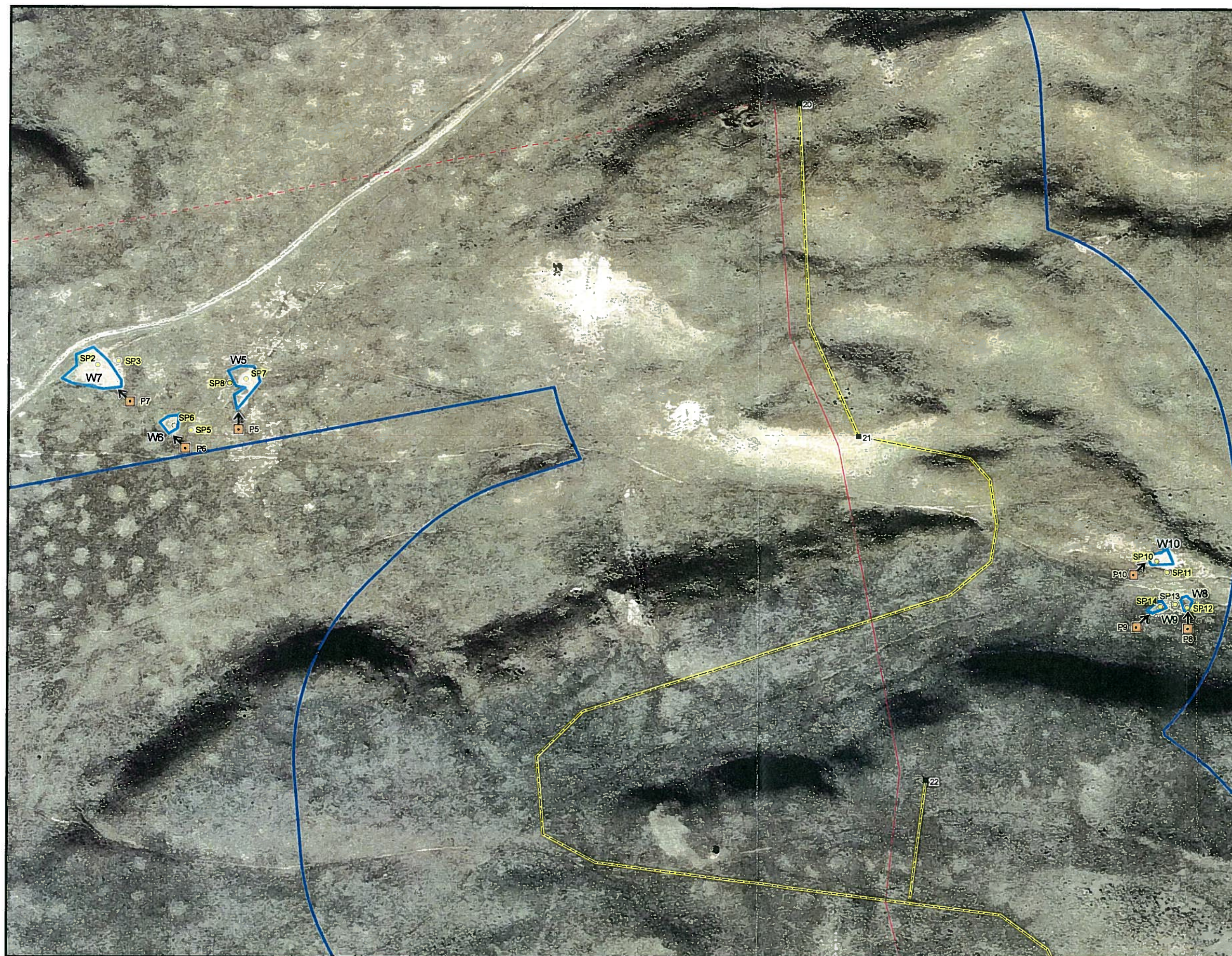


**Legend**

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road
  - New Road
  - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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 Feet



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DSL WD# 07-0430  
 Approval issued 12/6/2007  
 Approval Expires 12/6/2012



# Figure 5g Wetland Map Pebble Springs Wind Power Wetland Delineation

Gilliam County, Oregon



## Legend

- Wetland Study Area
- Wetlands
- Sample Plots
- Photo Points
- Proposed Permanent Facilities**
  - Proposed Turbines
  - Proposed Turbine Access Road**
    - New Road
    - Existing - Needs Improvement
  - Proposed Collection System**
    - Underground 34.5-kV Line
    - Overhead 34.5-kV Line
  - Proposed 5-Acre O&M Facility
  - Proposed Substation
- Proposed Temporary Facilities**
  - 1-Acre Staging Area
  - 3-Acre Staging Area
  - 3-Acre Batch Plant
  - 5-Acre Staging Area
- Existing Facilities**
  - Existing BPA Transmission Line
  - Leaning Juniper I Substation
  - BPA Jones Canyon Switching Station
  - Exclusion Area
  - Lease Boundary



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Feet



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DSL WD # 07-0430  
Approval Issued 12/6/2007  
Approval Expires 12/6/2012





# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 378-3805

FAX (503) 378-4844

[www.oregonstatelands.us](http://www.oregonstatelands.us)

January 10, 2008

State Land Board

Ty Daul  
PPM Energy, Inc.  
1125 NW Couch St.  
Portland, OR 97209

Theodore R. Kulongoski  
Governor

Bill Bradbury  
Secretary of State

Randall Edwards  
State Treasurer

Re: Revised Approval of Wetland Delineation Report for Pebble Springs Wind Power Project LLC (corrects consulting firm), near Arlington, Gilliam County, T2N and 3N R21 and 22E Sec. 1-5, 8-13, 24 and 13-14, 23-26, 33-36 and 5-8, 18, Tax Lot (Figure 2); WD #07-0430

Dear Mr. Daul:

The Department of State Lands has reviewed the wetland delineation report prepared by CH2M Hill for the site referenced above. Based upon our review, we concur with their delineation and conclusions. Based upon the information presented in the report, and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 1 and Figure 5a-5g of the report. Please replace all copies of the preliminary wetland map with these final Department-approved maps. Within the study area, there were thirty wetlands and one jurisdictional waterway (China Creek) identified. The wetlands and China Creek are subject to the permit requirements of the state Removal-Fill Law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.



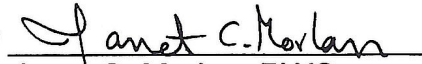
Thank you for having the site evaluated. Please phone me at 541-388-6060 if you have any questions.

Sincerely,



Jess Jordan  
Natural Resource Coordinator

Approved by

  
Janet C. Morlan, PWS  
Wetlands Program Manager

Enclosures

cc: Nichole Coulter, CH2M Hill  
Gilliam County, Planning Department  
Mary Hoffman, Corps of Engineers





# Oregon

Theodore R. Kulongoski, Governor

## Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

[www.oregonstatelands.us](http://www.oregonstatelands.us)

September 29, 2009

### State Land Board

Theodore R. Kulongoski

Governor

Sara Parsons

Iberdrola Renewables, Inc.

1125 NW Couch St., Suite 700

Portland, OR 97209

Kate Brown

Secretary of State

Ben Westlund

State Treasurer

Re: Wetland Delineation Report for the Leaning Juniper IIB Wind Power  
Facility, Gilliam County; T2N R21E; T2N R22E; T1N R21E; T2N R22E;  
Portions of Multiple Sections and Tax Lots; WD #09-0252

Dear Ms. Parsons:

The Department of State Lands has reviewed the wetland delineation report prepared by CH2M HILL Inc. for the site referenced above. Based upon our review, we concur with their delineation and conclusions as mapped in Figures 6 through 6d. Within the study area, 1 wetland, totaling 0.39 acres, and 7 potentially jurisdictional waterways were identified. The wetland and one of the waterways (S27, previously approved in WD #07-0116) are subject to the permit requirements of the state Removal-Fill Law. The remaining waterways are exempt because they don't meet the definition of an intermittent stream as defined in OAR 141-085-0510 (41) and are not subject to the permit requirements of the state law. A state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined).

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

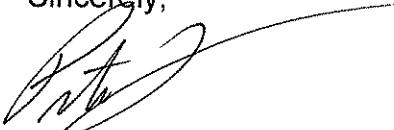




This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within 60 calendar days of the date of this letter.

Thank you for having the site evaluated. Please phone me at (503) 986-5232 if you have any questions.

Sincerely,



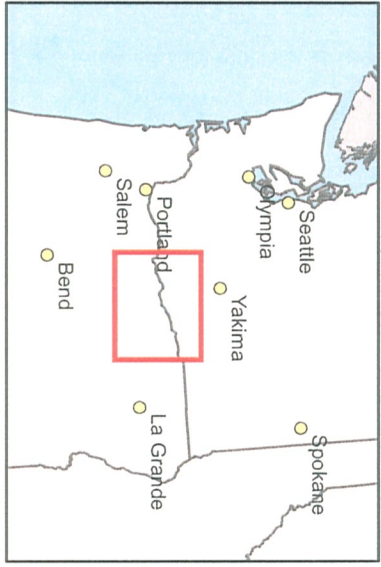
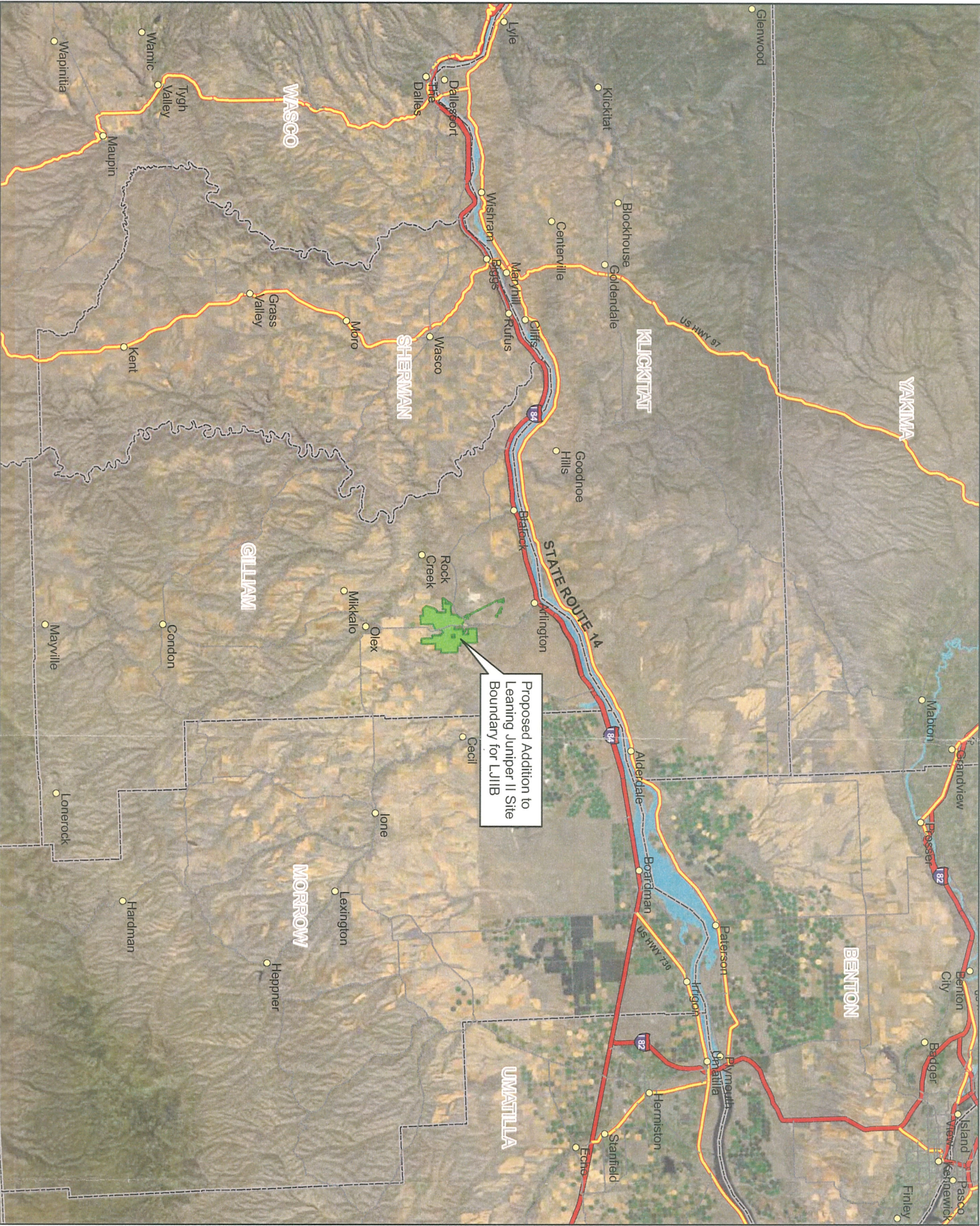
Peter Ryan, PWS  
Wetland Specialist

Approved by   
Janet C. Morlan, PWS  
Wetlands Program Manager

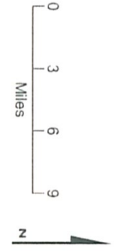
Enclosures

cc: Joel Shaich, CH2M HILL, Inc.  
Gilliam County Planning Department  
Mary Hoffman, Corps of Engineers  
Sarah Kelly, DSL



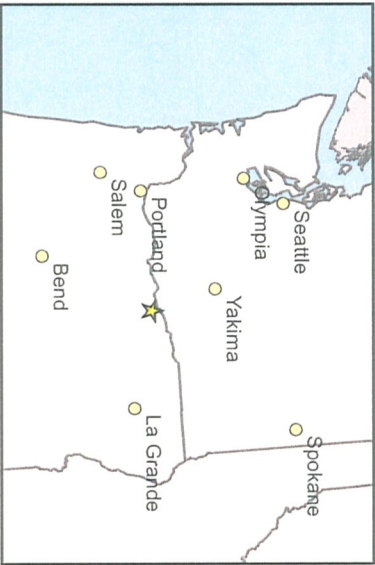
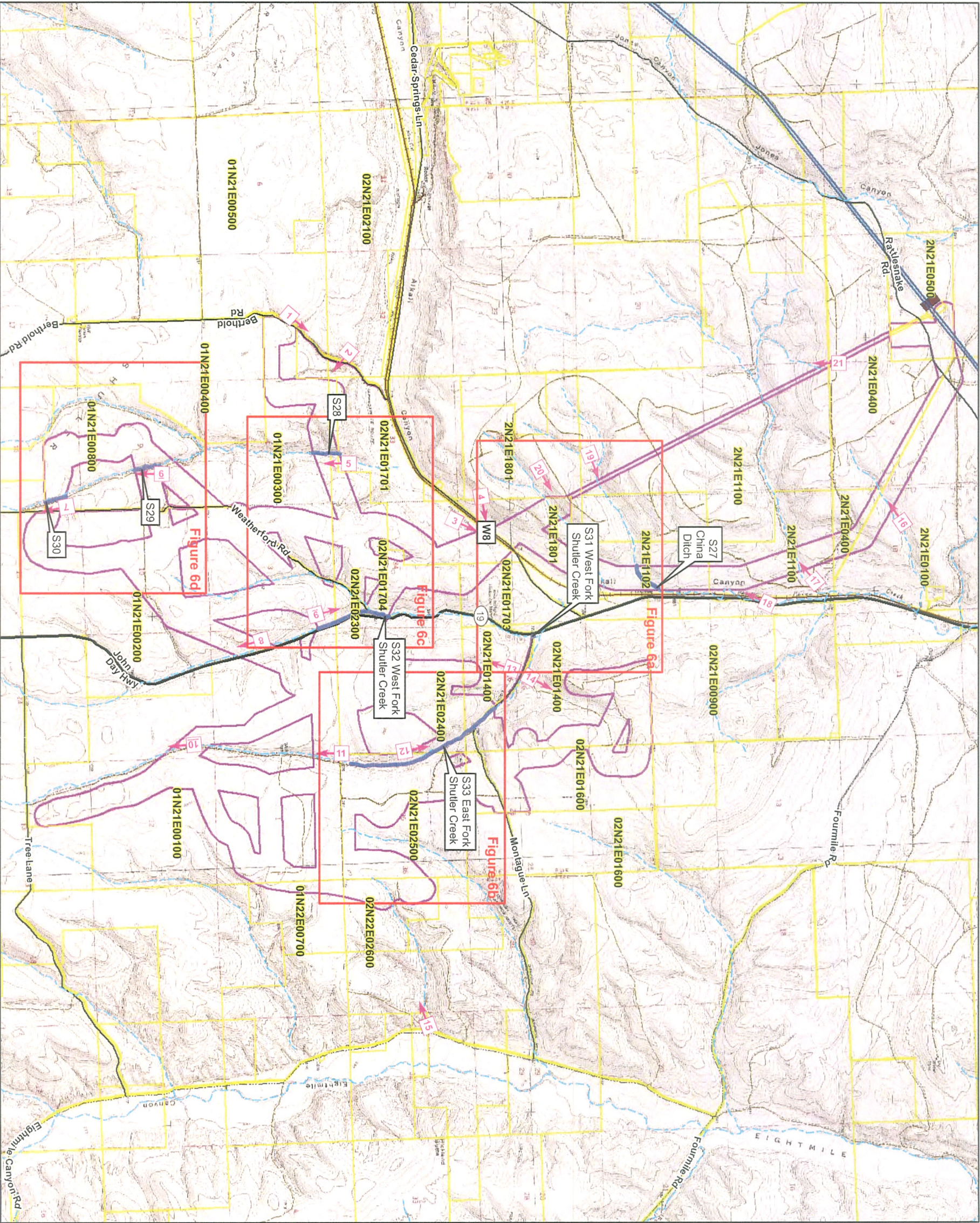


- Legend**
- City
  - Limited Access
  - Highway
  - Secondary Road
  - Proposed Addition to Leaning Juniper II Site Boundary for LJIIB
  - County Boundary
  - River/ Stream



**Figure 1**  
Location Map  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report



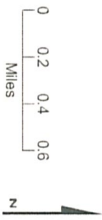


- Legend**
- Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Wetland<sup>1</sup> (W8)
  - Stream - National Hydrography Dataset
  - Wetland Study Corridor (April 2009)
  - Detail Map Extents
  - Existing Transmission Line
  - Existing BPA Jones Canyon Switching Substation
  - Railroad
  - Public, Paved
  - Other Public Road
  - Public, Gravel
  - Private, Farm Road
  - Property Line (02N21E01701)
- Notes:**
1. Streams, wetlands and sample plots mapped using Trimble GeoXT<sup>®</sup> Global Positioning Satellite (GPS) unit with sub-meter accuracy

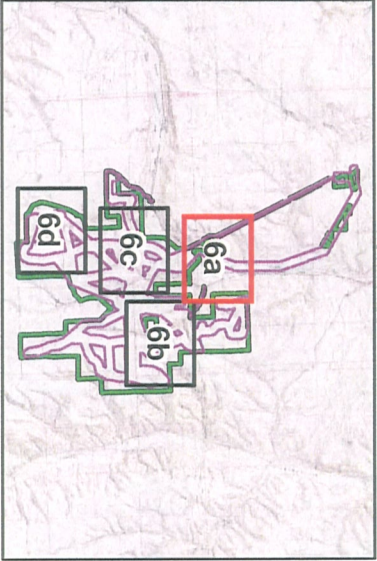
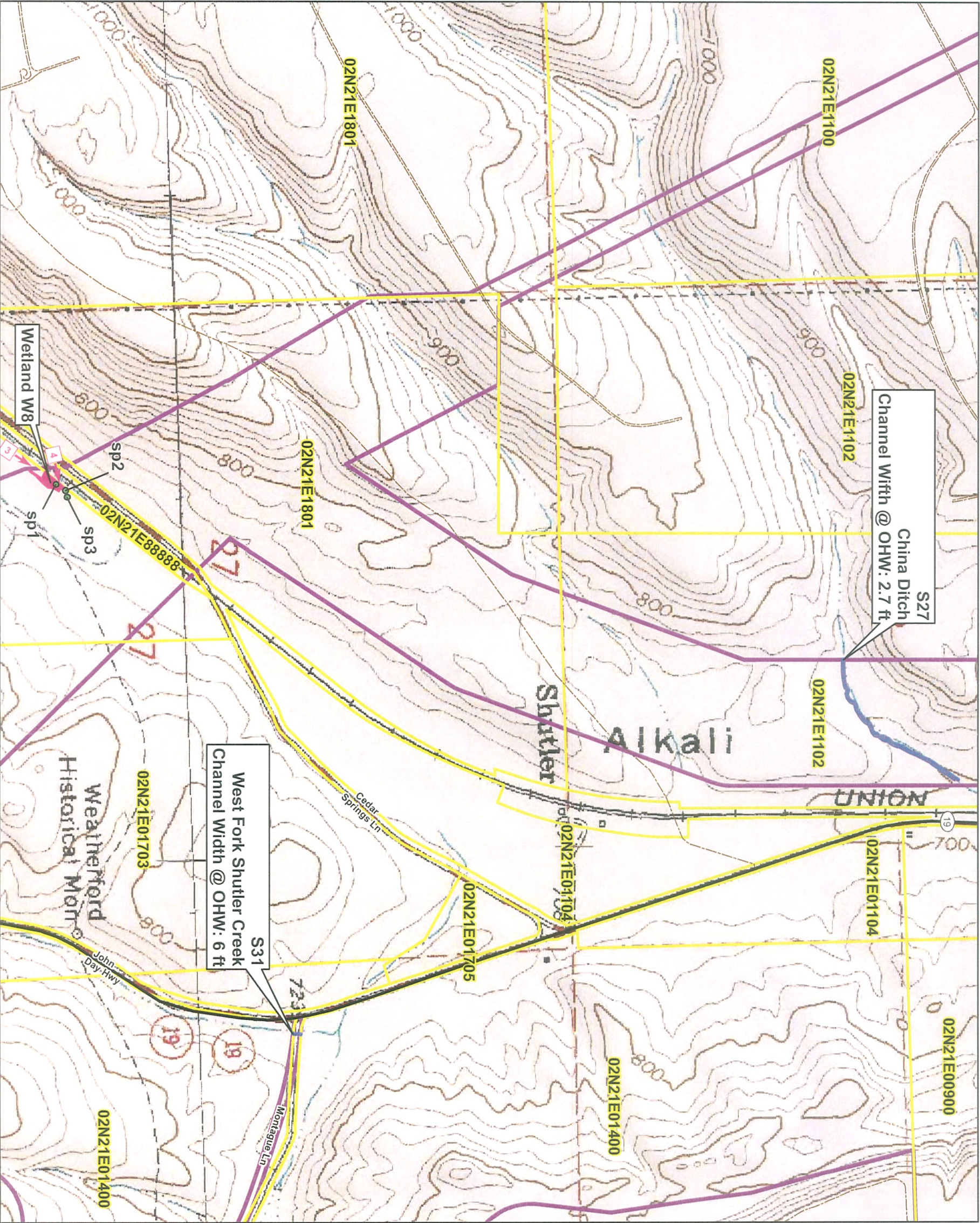
DSL WD # 09-0252

Approval Issued 4/24/09

Approval Expires 9/29/2014







- Legend
- Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Wetland Sample Plots<sup>1</sup>
  - Wetland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)

Notes:

1. Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252

Approval Issued 9/24/2009

Approval Expires 9/24/2014

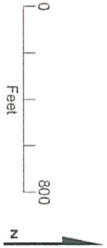
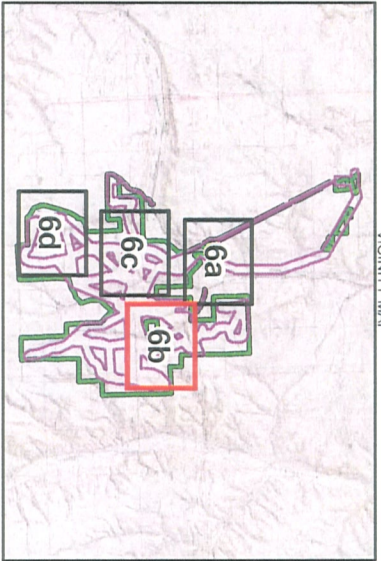
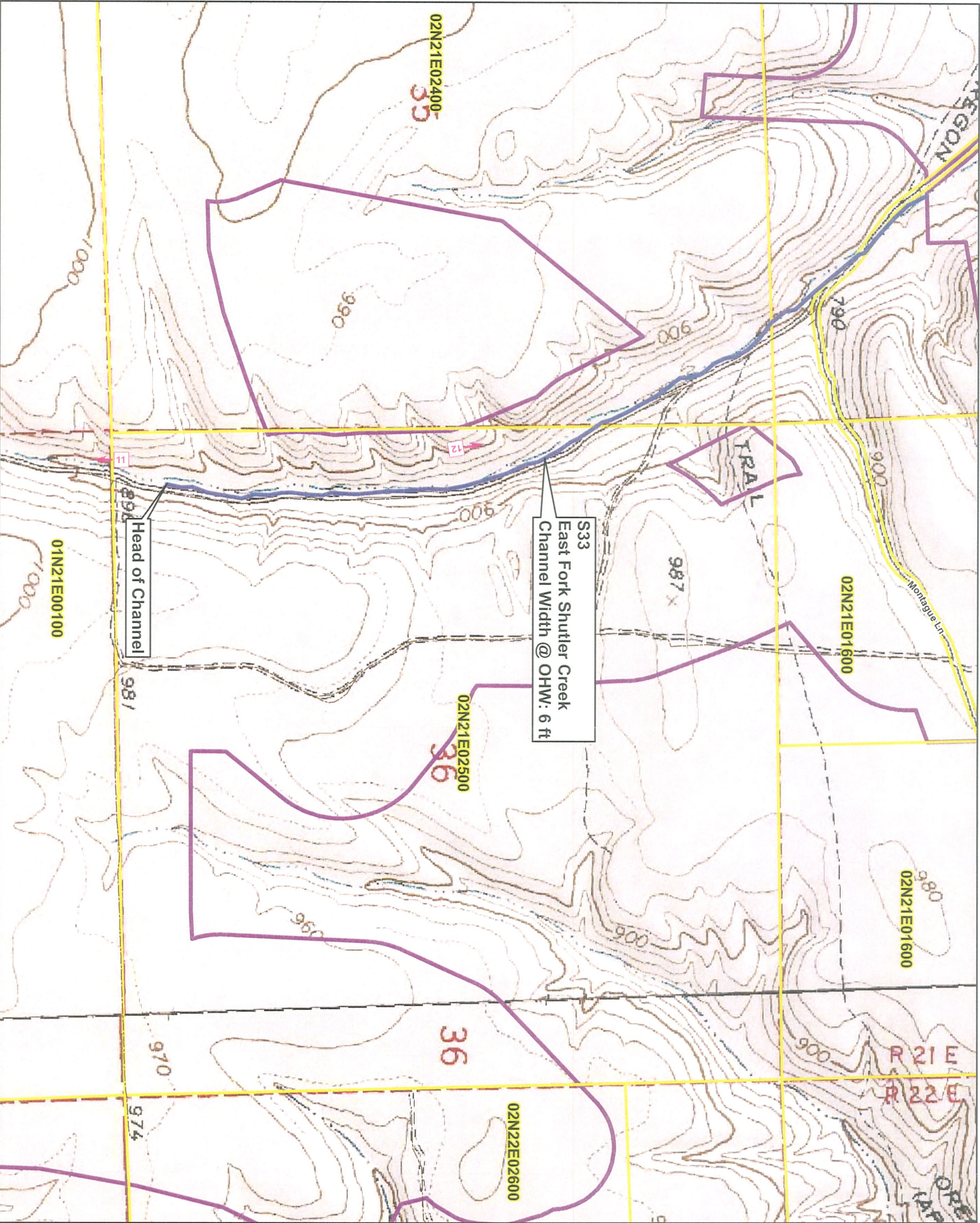


Figure 6a  
Wetland W8, Stream S27, Stream S31  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report

REVISED 9/9/2009



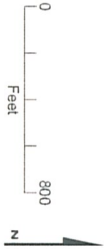




- Legend**
- Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Wetland Sample Plots<sup>1</sup>
  - Wetland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)
  - Photo Point

Notes:  
1. Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252  
Approval Issued 09/29/2009  
Approval Expires 09/29/2014

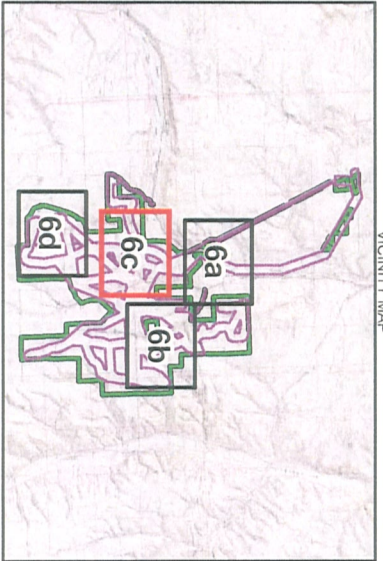
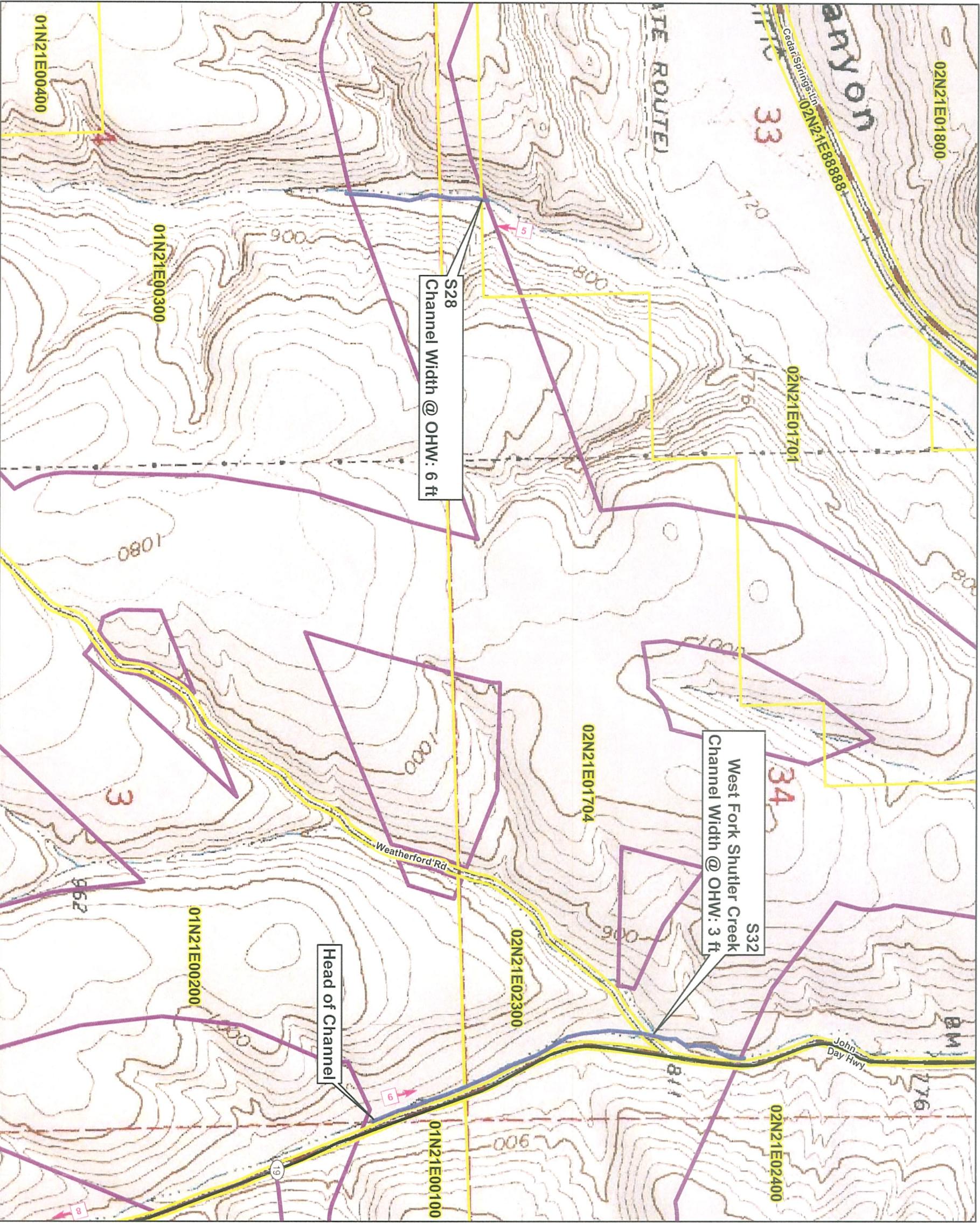


**Figure 6b**  
**Stream S33**  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report

REVISED 9/9/2009







- Legend**
- Photo Point
  - Stream-Delineated by CH2M Hill<sup>1</sup> (S27)
  - Welland Sample Plots<sup>1</sup>
  - Welland W8<sup>1</sup> (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Welland Study Corridor (April 2009)

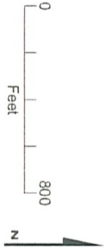
Notes:

- Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252

Approval Issued 09/29/2009

Approval Expires 09/29/2014

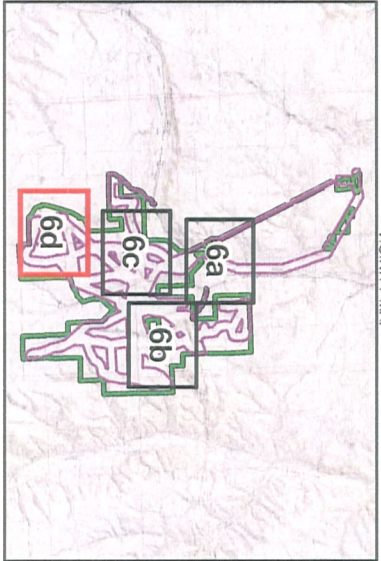
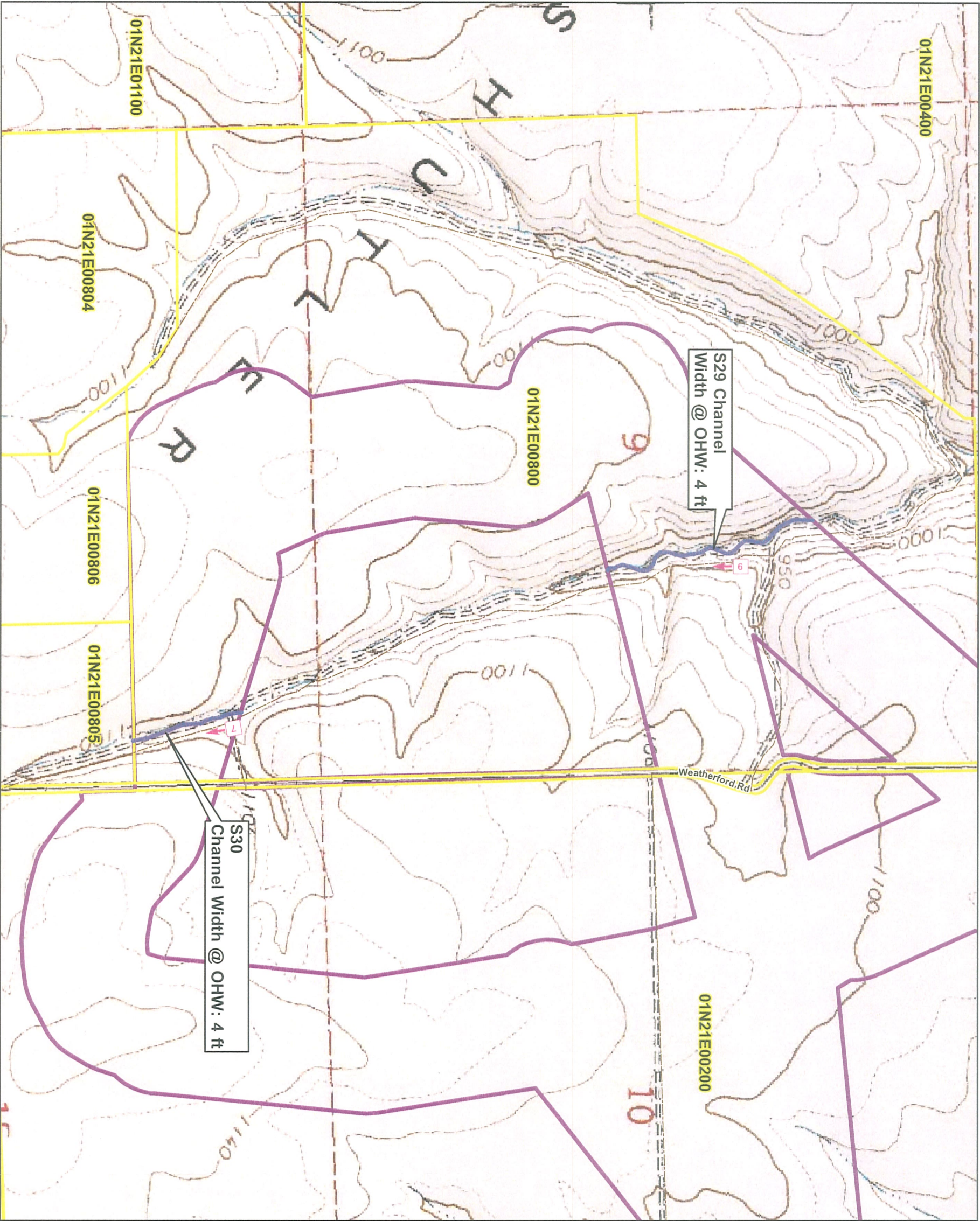


**Figure 6c**  
Stream S28, Stream S32  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report



REVISED 9/9/2009



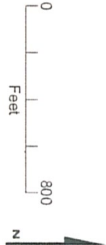


- Legend**
- Stream-Delineated by CH2M Hill (S27)
  - Wetland Sample Plots
  - Wetland W8 (W8)
  - Public, Paved
  - Private, Farm Road
  - Property Line (02N21E01701)
  - Wetland Study Corridor (April 2009)
  - Photo Point

Notes:

- Streams, wetlands and sample plots mapped using Trimble GeoXT Global Positioning Satellite (GPS) unit with sub-meter accuracy

DSL WD # 09-0252  
Approval Issued 09/29/2009  
Approval Expires 09/29/2014



**Figure 6d**  
Stream S29, Stream S30  
Leaning Juniper II Wind  
Power Facility Amendment  
Addendum to Wetland Delineation Report