LJW APP Doc 82

CH2MHILL TRANSMITTAL

To: John White
Oregon Department of Energy
625 Marion St. NE
Salem, OR 97310

From: Sara McMahon
PPM Energy
1125 NW Couch, Suite 700
Portland, OR 97209

Date: May 14, 2007

Re: Leaning Juniper II Supplement: Preliminary Review Copy

We Are Sending You:

☑ Attached

Shop Drawings

Prints

Copy of letter

Method of shipment:

Under separate cover via

☑ Documents

Specifications

Other:

Tracings

Catalogs

Quantity	Description
1	Preliminary Review Copy: Supplement to the Leaning Juniper II Wind Power Facility Application for Site Certificate
1	Response to U.S. Army Corps of Engineers comments on Section 404 permit application NWP-2007-168

Hello John,

As you requested, a printed copy of the Supplement is attached for your preliminary review.

Please note:

- We are waiting for confirmation from Susie Anderson of Gilliam County on the accuracy of the ASC Exhibit F table titled "Property Owners Within 500 Feet of Facility Site."
- Enclosed is a separate, clipped package containing our response to U.S. Army Corps of Engineers comments (dated March 21, 2007) on the Section 404 permit application. Note that the Section 404 permit application is included in the Supplement as Attachment 6 to Appendix B.
- To date, we have not received Section 404 comments from the Department of State Lands.
- The PPM logo on the cover will be updated before final distribution.

Copy To: Erin Toelke/CH2M HILL

Supplement to the Site Certificate Application for the Leaning Juniper II Wind Power Facility

Gilliam County, Oregon

Prepared for

Oregon Department of Energy

August 2011

Prepared by

PPM Energy

CH2M HILL

Northwest Wildlife Consultants

Printed on Recycled and Recyclable Paper

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EXHIBIT A

Applicant Information

Exhibit A was not the subject of a formal Request for Additional Information (RAI). However, the Oregon Department of Energy (ODOE) requested information from PPM Energy, Inc. (the Applicant) by e-mail, as documented below. In this exhibit and others to follow, requests other than those made through the RAI process are titled "Additional Request(s)."

Additional Request

Comment

In an e-mail dated November 20, 2006, John White of the Oregon Department of Energy (ODOE) requested clarification of the corporate organization linking PPM Energy (the Applicant) with Scottish Power. In e-mails dated November 28, 2006, and March 7, 2007, he requested further clarification of the Scottish Power buyout offer from the Spanish utility Iberdrola SA, and the affect of a buyout on PPM.

Response

The Applicant responded to the ODOE request in e-mails dated November 28, 2006, March 8, 2007, and April 11, 2007.

Documentation of the e-mail exchange is provided below.

> >>> John White 11/20/2006 9:43:46 AM >>>
>
> Sara and Andy,
> Below is the description of the corporate organization linking PPM Energy with Scottish Power that we used in the Klondike order. Is this description still accurate? Please explain any changes that we should make.
>
> PPM is a wholly owned direct subsidiary of PacifiCorp Holdings, Inc. (PHI), a Delaware corporation with general offices located in Portland,
> Oregon. PHI is a wholly owned direct subsidiary of NA General Partnership, a Nevada general partnership having two partners: Scottish
> Power NA 1 Limited and Scottish Power NA 2 Limited (wholly owned direct
> subsidiaries of Scottish Power PLC). These partners are private limited
> companies incorporated in Scotland and are wholly owned direct subsidiaries of Scottish Power PLC, a public limited corporation organized under the laws of Scotland.
>
> Thanks,
> John
>
> John G. White

Oregon Department of Energy
625 Marion St., NE
Salem, Oregon 97301-3742
john.white@state.or.us
-----Original Message-----
From: John White [mailto:John.White@state.or.us]
Sent: Tuesday, November 28, 2006 8:23 AM
To: Linehan, Andrew; McMahon, Sara
Cc: Tom Stoops
Subject: Re: PPM lineage

I note this morning's news that Scottish Power PLC has agreed to a $22.5
billion buyout offer from the Spanish utility Iberdrola SA, to be completed in April. Will that affect PPM?
-John

-----Original Message-----
From: Linehan, Andrew
Sent: Tuesday, November 28, 2006 8:53 AM
To: John White; McMahon, Sara
Cc: Tom Stoops
Subject: RE: PPM lineage

We had an all-employee call today about that. It sounds as though Iberdrola's intentions are to preserve PPM as a stand-alone entity, and Iberdrola's N. American' generation assets may be rolled under PPM. We don't know much more than that. The transaction will take 4 months to complete. Andy

>>> "McMahon, Sara" <Sara.McMahon@PPMEnergy.com> 11/28/2006 11:16:31 AM >>>
John,

In case you need the corrected language for the draft proposed order based on PPM's status today, you can include the following language. Our legal group made some changes to the original language.

Thanks,
Sara

PPM is a wholly owned direct subsidiary of ScottishPower Holdings, Inc.
(SPHI), a Delaware corporation with general offices located in Portland,
Oregon. SPHI is a wholly owned direct subsidiary of ScottishPower NA 2 Limited, a wholly owned direct subsidiary of Scottish Power PLC. Scottish Power PLC is a public limited corporation organized under the laws of Scotland.

>>> John White 11/28/2006 11:41:31 AM >>>

Thanks. We may need to revise further, if the Iberdrola buyout is completed (or there are other organizational changes) before the Council acts on the site certificate.
-John

-----Original Message-----
From: John White [mailto:John.White@state.or.us]
Sent: Wednesday, March 07, 2007 4:00 PM
To: Linehan, Andrew

Cc: McMahon, Sara
Subject: RE: PPM lineage

Andy,
Has there been any update to the organizational description that Sara included in her [November 28, 2006] message? What is the status of the Iberdrola buy-out?
-John

John G. White
Oregon Department of Energy
625 Marion St., NE
Salem, Oregon 97301-3742
john.white@state.or.us

-----Original Message-----
From: McMahon, Sara
Sent: Wednesday, April 11, 2007 1:52 PM
To: 'John White'
Cc: 'Tom Stoops'
Subject: RE: PPM lineage

John,
Per our discussion this morning, although Iberdrola SA is merging with Scottish Power, there will be no change in control or ownership of PPM Energy or its subsidiaries Klondike Wind Power III LLC and Leaning Juniper Wind Power II, LLC.

Klondike Wind Power III LLC and Leaning Juniper Wind Power II, LLC will remain under the ownership of PPM Energy, and there will be no change in the ownership or control of the facility or the legal responsibility under the KIII Site Certificate or LJ II application.

If the ownership of the LLCs were to change, I would let you know as soon as I know so that we can discuss what processes we would need to do under EFSC rules.
Thanks,
Sara

EXHIBIT B

General Information About the Proposed Facility

RAI No. 1

Comment B1

Page B-4

Please correct Table B-1. For each turbine type:

1. Show the weight of metals that could have scrap value (do not include the weight of blades). Confirm whether weight is in US tons or metric tons.
2. Estimate the cubic yards of concrete in the foundations above three feet below grade.
3. Describe the dimensions of the "pedestal" portion of foundations (Figure B-3, #2 Elevation: Tower Foundation) above three feet below grade.
4. Show the manufacturer's guaranteed maximum sound power level and the manufacturer's uncertainty band; if you do not have manufacturer's data, show an estimate (marked as an estimate) and include an explanation of how you made the estimate.
5. What is the minimum work area needed by the contractor (radius from turbine base)?

Response

1. The weight of metal in the Vestas and General Electric (GE) turbines is equal to approximately 348 and 220 U.S. tons, respectively, excluding the weight of blades. The weight of the GE turbine in Table B-1 does not include the blades. The weight of the Vestas turbine in Table B-1 does include the blades.
2. The portion of the foundation that is above 3 feet below grade is called the pedestal. The amount of cubic yards of concrete in this portion of the foundation is described in number 3 below.
3. The entire pedestal is located above 3 feet below grade. The pedestal ranges in size from 16 to 20 feet in diameter depending on the turbine size, and 3.5 feet in depth. The estimated amount of concrete in the pedestal is 26 to 41 cubic yards.
4. Application for Site Certificate (ASC) Table X-6 provides the warranted levels based on manufacturers' test data. The overall A-weighted levels are typically guaranteed and subject to a +/- 2 dBA uncertainty band when measured in accordance with IEC61400-11. Supporting warranty documentation will be available when contract documents have been signed with the selected turbine vendor.

5. Contractors prefer an area measuring 400 feet by 400 feet to keep costs down. This area is larger than the area identified in the ASC. The area of disturbance specified in the ASC is circular, with a radius slightly longer than the blade length, reflecting the minimum area that can be used. The contractors need this area to lay down the rotors and maneuver cranes during turbine assembly.

Comment B2

Page B-5

Describe the foundation of the GSU transformers. Include dimensions and the estimated cubic yards of concrete in the foundation above 3 feet below grade.

Response

Figure B-3a, provided in Appendix A, Attachment 1, shows the typical GSU transformer and its foundation. The transformer is a rectangle measuring approximately 7.5 feet by 8.5 feet. The transformer is supported by a concrete pad or foundation approximately 8 inches thick, which is placed over 2 feet of weak concrete fill. The weak concrete fill will measure 7.5 feet by 13.5 feet and will be placed under the transformer pad and between the transformer and the tower pedestal.

The entire support structure will be above 3 feet below grade. Approximately 1.5 cubic yards will be used in the pad and approximately 11 cubic yards will be used in the concrete fill, for a total of approximately 13 cubic yards of concrete per transformer.

Comment B3

Page B-6

Describe the base and foundation of the met towers. How are the non-guyed towers supported?

[Note: Explain what would be involved in restoring the site where met towers would be located.]

Response

The foundation for an 80-meter tower measures 20 feet radius x 10 feet deep, and approximately 96 percent of the met tower foundation is below 3 feet below grade.

The met tower sites will be restored using the same decommissioning methods used to restore the turbine sites.

Comment B4

Page B-8

Please confirm whether gate keys would be given to fire departments.

[Note: As an alternative to supplying gate keys to the fire departments, you may propose a condition similar to Klondike III Condition 69.]

Response

The Applicant proposes to use Klondike III condition 69, as stated below.

At the beginning of Facility operation, the certificate holder will provide to the North Gilliam County Rural Fire Protection District and the Arlington Fire Department copies of the approved site plan indicating the identification number assigned to each turbine and the location of all Facility structures. During operation of the Facility, the certificate holder will provide to the North Gilliam County Rural Fire Protection District and the Arlington Fire Department the names and telephone numbers of Facility personnel available to respond on a 24-hour basis in case of an emergency on the Facility site.

Comment B5

Page B-12

Confirm that existing roads would be widened up to 20 feet but that area of temporary disturbance would not exceed a total width of 35 feet. Confirm that new roads would be up to 16 feet wide but that temporary disturbance would not exceed a total width of 35 feet.

[Note: It is our understanding that Tables P-10A, 10B, 15A, and 15B were calculated based on a total width not exceeding 35 feet for both existing and new roads. Further, we understand that the "temporary facilities" acreages on those tables were calculated based on the difference between the permanent width (assuming 20 feet for improved roads and 16 feet for new roads) and 35 feet in width.]

Response

Confirmed as stated. Existing roads will be widened up to 20 feet but the area of temporary disturbance will not exceed a total width of 35 feet. New roads will be up to 16 feet wide but temporary disturbance will not exceed a total width of 35 feet.

Comment B6

Page B-14

Describe the electric distribution lines that would carry on-site power to each of the proposed O&M buildings. Include a description of the route and support structures. What is the overall length of these lines under worst-case assumptions? What area would be temporarily disturbed during construction of the distribution line? What area would the line permanently occupy? Would the permanent and temporary areas affected change the totals in Tables C-4, C-5 and P-10A, 10B, 15A and 15B?

Response

The electric distribution lines that will carry onsite power to each of the proposed operations and maintenance (O&M) buildings are shown on revised Figure C-3a (Appendix A, Attachment 2). The Leaning Juniper II (LJ II) North O&M building will be serviced by the existing power line along Rattlesnake Road that currently services the existing Leaning Juniper I (LJ I) O&M building. There will be no additional power lines for the O&M building on LJ II North, because the building will be serviced by the existing powerline.

For LJ II South, new powerlines will be constructed to bring power from either existing powerlines along Blalock Canyon or the existing line along Rattlesnake Road to the LJ II South O&M building on the west side of the Facility area. These lines will be placed underground in the trenches with the 34.5-kV collector lines or within the disturbed road shoulders. Under the worst-case scenario, there will be approximately 6.6 miles of underground powerlines to bring power from the existing powerline at Rattlesnake Road to the LJ II South O&M building near turbine string B. Under the preferred route, there will be approximately 1.8 miles of powerline to bring power from existing lines along Blalock Canyon Road to this same O&M building. If the alternate O&M building location is used, it will also require approximately 1.8 miles of powerline.

No new area will be disturbed because the powerlines will be placed in the trenches of collector lines or in disturbed road shoulders.

Comment B7

Page B-15

What is the maximum length (in miles) of the collector system under the worst case? Of the total, what is the maximum length in miles that would be installed aboveground (the "not to exceed" length)?

[Note: The cost of site restoration includes the cost to remove aboveground collector lines, assuming the maximum length.]

Response

The maximum length of the collector system under the worst-case scenario is approximately 33.2 miles. The maximum length that would be installed aboveground under the worst-case scenario would be 30 percent of the collector system or 9.9 miles (up to 3.3 miles in LJ II North and 6.6 miles in LJ II South).

Comment B8

Page B-17

Within what distance from turbines would perch-guards be installed on transmission poles?

Response

Perch-guards will be installed on transmission line poles within ½ mile from turbines, as stated in Klondike III:

"The certificate holder shall design all aboveground transmission line support structures following the practices suggested by the Avian Powerline Interaction Committee [APLIC, *Suggested Practices for Raptor Protection on Powerline: the State of the Art in 1996*, Edison electric Institute / Raptor Research Fund, 1996] and shall install anti-perching devices on transmission pole tops and cross arms where the poles are located within ½ mile of turbines."

Comment B9

Page B-17

Confirm the proposed construction beginning deadline. The statement on p. B-17 conflicts with the statement on p. U-1.

What is the proposed construction completion deadline?

Response

Construction is expected to begin no later than 3 years from the issuance of the site certificate. The Applicant requests this "window" for beginning construction to allow flexibility in response to industry constraints such as turbine availability.

Construction is anticipated to take 10 to 12 months.

Comment B10

Page B-17

Crane paths are not included in the list of temporary disturbance areas shown on Table C-5. Provide an estimate of the temporary disturbance due to crane paths and a revised total temporary disturbance area. Provide a revised Table C-5. See related request P2 in the Exhibit P section of this document.

Response

Crane paths will result in an estimated 12 acres of temporary disturbance (see also response to RAI P3). All crane paths are in LJ II North. Please refer to revised Table C-5 in Appendix A, Attachment 3. A small portion of the temporary disturbance associated with crane paths is geographically located in LJ II South. However, because these crane paths are necessary for construction of LJ II North, the temporary disturbances are included in the LJ II North total.

RAI No. 2

Comment B1

You did not provide a revised table, but we accept your response as "corrections" to Table B-1.

1. Based on your response, the total weight of metal in the turbines is not less than 220 U.S. tons (GE) and not more than 348 U.S. tons (Vestas).

2 / 3. Please confirm that your response means that the bottom of the pedestal is at 3' below grade and the top of the pedestal is 0.5' above grade. Does the 16' diameter correspond to the 80 m towers and the 20' diameter correspond to the 100 m towers? If not, we will assume the larger diameter in calculating retirement costs.

4. See comment on your response to RAI X1 below.

5. Your response to (5) is unclear. If your construction contractors need a 400x400 area that is larger than the area that you have used to calculate temporary impacts during construction, then please provide a new tables C-5, P-10a, P-10b, P-15a and P-15b that take into account the increased area.

Your further response on 1/2/07 does not provide an adequate answer. The area calculated on Table C-5 ("Laydown area at each tower") is based on a "worst-case" assumption that a circular area with a radius of 164 feet would be needed. Figure B-4 shows this area as a circle centered on the turbine location. The area of a circle having a radius of 164 feet is approximately 84,500 sq ft.. In contrast, a 400x400 foot square would have an area of 160,000 sq ft. We believe the 400x400 area would more accurately describe the "worst case." While we understand your interest in minimizing impacts, there is quite a large difference in these two areas, and we question whether the contractors could really be constrained to operate within the smaller area as a practical matter. We also note that with the turbine tower in place, a radius of 164 feet from the turbine location is not large enough to lay down a rotor assembly that would have a diameter of 328 feet and allow for additional room to maneuver. Accordingly, we believe the proposed 84,500 disturbance area is not sufficient.

If the larger area is used, then the calculated temporary impact areas shown on tables C-5, P-10A, P-10B, P-15A and P-15B are incorrect.

Response

1. That is correct. The total weight of metal in the turbines is not less than 220 U.S. tons (GE) and not more than 348 U.S. tons (Vestas).

2 & 3. Yes, the bottom of the pedestal is at 3 feet below grade and the top of the pedestal is 0.5 foot above grade. Yes, the 16-foot-diameter pedestal corresponds to the 80-meter towers and the 20-foot-diameter pedestal corresponds to the 100-meter towers.

4. Please refer to the response to RAI X1.

5. The Applicant has revised Tables C-5, P-10B, and P-15B to account for a laydown area measuring 400 by 400 feet. The revised tables are included in Appendix B, Attachment 1. To calculate the "worst case" impacts shown in Tables P-10B and P-15B, 133 turbines were used, with a temporary laydown area of 400 feet by 400 feet, for a total of approximately 160,000 square feet at each of the 133 turbine locations.

Tables P-10A and P-15A are not provided in this RAI because they do not show worst case impacts and therefore have not been revised.

Comment B3

1. Please confirm the dimensions of the met tower foundation. Do you actually need a foundation with a 20 foot radius? This would result in a foundation with a 40' diameter, which is twice the diameter of the turbine tower pedestal (see your response to B1(3)).

2. You state that "96 percent" of the met tower foundation is below 3 feet below grade. How did you calculate that percentage? Is it a percentage by weight, volume or vertical dimension? How much, if any, of the foundation is above grade? How many cubic yards of concrete are in the foundation above 3 feet below grade?

3. We cannot determine the cubic yards of concrete that would have to be removed during site restoration, given the information you have provided. A schematic drawing of a cross-section of the foundation, showing the dimensions above 3 feet below grade, would be helpful.

Response

Please disregard the response to RAI No. 1 provided on December 21, 2006. The met tower foundation will be a square pad measuring approximately 28 feet by 28 feet by 3 feet deep, as depicted in the figure included as Appendix B, Attachment 2.

Comment B5

Based on your response, we will assume site restoration would include removal of a 16-ft-wide graveled surface, plus grading with topsoil and reseeding of a 35-ft width of disturbance.

Response

Comment noted.

Comment B9

Your response is unclear as to the construction completion deadline. Do you mean to request a completion deadline of four years after the issuance of the site certificate?

Response

Yes. The Applicant requests a completion deadline of four years after the issuance of the site certificate.

Comment B11

For aboveground segments of the collector system, describe the number of individual wires that would be carried by the support poles. Include both electric power lines and SCADA communication lines. This information is needed to estimate the site restoration cost, which is calculated by a unit cost per individual wire or cable.

Response

The overhead collection support poles would carry up to two collection circuits, with each circuit consisting of three conductors for a total of six conductors. Additionally, there would be an overhead composite ground wire with optical fiber.

EXHIBIT C

Proposed Location and Maps

RAI No. 1

Comment C1

Page C-2

What is the actual distance from Arlington to the site boundary? Page C-2 says "3 miles," but Figure C-2 shows the site boundary within approximately 1 mile of Arlington. Figure P-3 shows turbine G-1 within 2,000 feet of city streets (and micrositing would allow placement of the nearest turbine even closer).

Response

The Arlington city limit boundary is adjacent to the LJ II North lease boundary and micrositing corridor. However, the Applicant will maintain appropriate setbacks between all turbines and residences and property lines. While some temporary disturbance may occur within the micrositing corridors, no turbines will be placed closer to residences than the total turbine height. Specifically, the Applicant will use a minimum setback between turbines and residences equal to the total turbine height (389 to 492 feet, depending on turbine selected). In addition, all turbines will be sited a sufficient distance from residences to ensure that no noise-sensitive properties are within the 50-dBA contour line.

Comment C2

Page C-13

In Table C-4, the area occupied by aboveground 34.5-kV transmission line is shown as "0.00 acres" based on 5 poles for LJ-North and 5 poles for LJ-South. Note 5 on the table says that it is assumed that poles are placed 350 feet apart. Based on this assumption, a total of 10 poles placed 350 feet apart would support only 3,500 feet of aboveground transmission line. Please explain this length in light of Exhibit B, which says that 9 miles of aboveground transmission line might be built. If necessary, provide a revised Table C-4 with a correct calculation.

Response

Please see revised Table C-4 in Appendix A, Attachment 3. Under the worst-case scenario, up to 30 percent of the collector line route will be placed overhead, or 9.9 miles (up to 3.3 miles in LJ II North and 6.6 miles in LJ II South). The area occupied by an aboveground 34.5-kV transmission line is 0.01 acre (50 poles) or 600 square feet for LJ II North and 0.03 acre (100 poles) or 1,200 square feet for LJ II South.

Comment C2 Addendum

The Department requested additional turbine micrositing information during verbal and e-mail discussions with PPM Energy.

Response

Table C-2 has been revised to include additional turbine micrositing corridor information (see Appendix A, Attachment 4). In addition, Table C-3 has been revised to correlate to the new Figure C-3c. Table C-3 and Figure C-3c are both included in Appendix A, Attachment 4. Table C-3 provides a description of the additional LJ II Facility micrositing corridors and correlates to Figure C-3c by number.

Comment C3

Page C-3, Figure C-4

The description of the substation location on page C-3 and Figure C-4 is identical to the substation location described for Leaning Juniper I in the January application. Please describe the location of the LJ II Substation and explain how it would be separated from the LJ I Substation.

Response

The total size of the property on which the LJ I and LJ II collector substations are located has not changed from the original application. However, this property area has been divided in half (physically and in ownership) to accommodate both facilities, as shown on the revised Figure C-4 included in Appendix A, Attachment 19. Both substations will have fences around them, and all poles will be inside the fences.

RAI No. 2

Comment C2

From your further response on 1/2/07, should we conclude that you did not revise tables P-10A, P-10B, P-15A and P-15B (to take into account the increased area and the habitat types affected) because you believe that the increased area of permanent disturbance is insignificant?

Response

That is correct. If 30 percent of the collector lines were to be installed overhead, the area permanently occupied by the 150 poles supporting the 9.9 miles of aboveground 34.5-kV lines would be 0.01 acre or 600 square feet for LJ II North and 0.03 acre or 1,200 square feet for LJ II South, for a total of 0.04 acre.

Given the minor amount of disturbance resulting from the aboveground poles, the proposed mitigation for temporary impacts, and the fact that some of the temporary impacts would not occur in the event that 30 percent of the collector lines were placed overhead, the Applicant does not propose additional mitigation.

Comment (unnumbered)

1. Table C-2: This table lists turbine strings A through J. Figures X-2 and X-4 show a "K" string in the approximate location of turbines J-12 through J-16 on Figure C-3a. We also note the inconsistencies in the H and I strings on Figure C-3a compared to the H and I strings on Figures X2 and X4. Are these errors in numbering? If not, please confirm which numbering scheme will be used. We suggest that you do not use different numbering schemes for different turbine sizes.
2. Table C-3: Many of the features are described by multiple points that are not identified by position (N, E, S, W). How were these points selected? Some features have multiple points for a single position (for example feature 11 has nine points identified as "N"). Please explain.
3. The new figure C-3a is very helpful, but in some cases it is difficult to tell what is included within the descriptions on Table C-2 (for example #18).
4. It appears that you have not included features outside the lease boundary (with the exception of #10). The collector lines that are within the LJ1 area (for which you will need easements) are related and supporting facilities that are part of LJ-II. These facilities are part of the site. Please revise Table C-3 to include them as part of the area within the site boundary.

Response

1. There are no errors in numbering.

   Table C-2 describes the turbine string corridors. Figures X-2 and X-4 show a proposed 3-MW turbine layout within the turbine string corridors, including a K string. The K string is within the J corridor described in Table C-2.

   Figure C-3a shows a proposed 1.5-MW turbine layout and Figures X-2 and X-4 show a proposed 3-MW turbine layout within the turbine string corridors.

   Turbine string numbering is based on the sharing of electrical circuits. This varies between the layouts for 2 different turbine sizes.
2. The number of points provided varied based on the shape of the corridor being described. Multiple points were provided to describe corridors with curves or a nonlinear shape, with an effort to provide an adequate number of coordinates to accurately map out the corridor boundary using professional judgment.
3. The Department has indicated to the Applicant that this question refers to Figure C-3c and Table C-3. The Applicant responded to questions during a conference call with Department staff on February 7, 2007, and provided revised versions of Figure C-3c and Table C-3 to the Department via an e-mail sent on February 22, 2007. Copies of this correspondence will be included in the supplemental document.
4. Appendix B, Attachment 3 contains legal descriptions for the easements outside the lease boundary that are within the LJ I area. Table C-3 will not be revised to include these areas.

Additional Requests

Additional requests from ODOE concerning Tables C-2 and C-3 and Figures C-3a and C-3c occurred via conference call with the Applicant on February 7, 2007, and via e-mail exchanges on March 7, 12, and 28 and April 3, 2007.

Comment

In a conference call with the Applicant on February 7, 2007, John White of ODOE requested additional information on micrositing corridors. He requested a revised version of Table C-2 (Micrositing Corridors for Turbine Strings), and clarification on Table C-3 (Micrositing Corridors for Roads, Collector Cables, and Crane Paths), Figure C-3a (Facility Components, 1.5-MW Layout), and Figure C-3c (Micrositing Corridors for Roads, Collector Cables, and Crane Paths).

Response

The Applicant responded by e-mail on February 22, 2007, as shown below. Revised Tables C-2 and C-3 and revised Figures C-3a and C-3c are provided in Appendix C, Attachment 1.

> February 22, 2007
> John,
>
> Below is a response to your questions from our conference call on 2/7/07. I tried to be very detailed to clarify all your questions. We have not included this in the response to RAI #2. Please let us know if you would like this included in the response to RAI.
>
> Clarification/revisions to Tables C-2, C-3, and Figure C-3c.
>
> PacifiCorp Easements
> We have obtained shared easements with PacifiCorp to cross land they lease from Waste Management for operation of Leaning Juniper I, and will provide the Department the legal descriptions for these easements as part of the response to RAI #2. In our maps of the micrositing corridors, we have also added a 100-ft buffer on either side of the easements. If ultimately needed, PPM will obtain an easement with Waste Mgt prior to construction for this additional buffer area.
>
> Near J Turbine String in SE Part of Project Area
> 4 – Table C-3 includes coordinates for the collector line route starting at the lease boundary and ending at the western boundary of the J turbine string micrositing corridor; The area between the #4 corridor and turbine J-17 that is outside the lease boundary is included in the legal description for the easements with PacifiCorp.
>
> We have also included a buffer around turbine J-17 outside of the lease boundary that is larger than our current easement with PacifiCorp. The coordinates for the J-17 "box" were included as part of the turbine corridor coordinates (see Table C-2 with our first RAI response). As mentioned above, if ultimately needed, PPM will obtain an easement with Waste Mgt prior to construction for the additional buffer area.
>
> 23 - The coordinates for the "triangle" corridor for an alternate underground collector line (within the lease boundary) NW of #4 are included on Table C-3 and Figure C-3c as #23.
>
> Center of Project Area
> 5 – This road corridor in Table C-3 starts at the eastern edge of the D-string corridor and ends at the western edge of the E string corridor.
>
> 18 – Like turbine J-17, we have revised the micrositing corridor for the E string to extend it north to cover the access road to the north a buffer area. The coordinates are included in the revised Table C-2.

This micrositing corridor is larger than the current easement with PacifiCorp; we would obtain an easement prior to construction if needed.

10 – We have also included a buffer north of turbine F-6 outside of the lease boundary that is not included in the current easement with PacifiCorp for the collector lines. The coordinates for this buffer area are included in Table C-3, rather than in table C-2, because the buffer is not the same width as the turbine string micrositing corridor. If ultimately needed, we would obtain an easement prior to construction.

Substation Area
17 – The micrositing corridor #17 included in Table C-3 includes a buffer around the existing Rattlesnake Road starting at the LJ II North lease boundary and ending at the substation, as well as a diagonal route from the road to the proposed substation. PPM plans to build the collector line along Rattlesnake Road and within the County ROW and then north along the corridor owned by PPM. PPM is in negotiations with the adjacent landowner in the event that the collector line needs to be routed outside the County ROW or diagonally to the substation.

22 - This corridor was added to both Figure C-3c and Table C-3 to describe the substation area owned by PPM.

West Portion of Project Area
19 – Table C-3 describes the micrositing corridor around the existing road. The western boundary of this corridor is Blalock Canyon Road. If ultimately needed, PPM will obtain an easement with the landowner prior to construction.

Rattlesnake Road
20 – This micrositing corridor included in Table C-3 includes two parts: 1) a buffer around the existing Rattlesnake Road starting at the east side of the H string turbine micrositing corridor and ending at the west side of corridor #21, and 2) a buffer around the existing road starting where the #21 road diverges from the existing road and ending when the two roads converge, just east of the lease boundary.

21 – This micrositing corridor included in Table C-3 includes a buffer around a proposed route change/straightening of the County Road starting at the eastern edge of the bluff and ending at Hwy 19. There is no overlap between #20 and 21.

Thanks,
Sara
Wind Energy Permitting
PPM Energy

In a follow-up e-mail dated March 7, 2007, ODOE requested additional information:

-----Original Message-----
From: John White [mailto:John.White@state.or.us]
Sent: Wednesday, March 07, 2007 3:26 PM
To: McMahon, Sara
Subject: RAI #2 Attachment 3 [in Appendix B]

Sara,
Attachment 3 contains the legal descriptions of various LJ features outside the lease boundary. Can you revise Figure C-3c to include the identifiers shown in these legal descriptions? For example, the first one in the attachment is "WM-LJ2 COLLECTOR 2." We don't know where that is without a map.

Also, the revised Figure C-3c that you sent in your 2/22 e-mail does not have feature 18. I did not check to make sure that the other features identified on Table C-3 are shown on the map, but if I find that there are others missing I will want to have the map revised again, so you might check.

Attachment 3 is in pdf format, and it appears that I can convert to text, but it would be easier to work with the Word files, if those are available. I am thinking about putting all of these feature descriptions (Tables C-2, C-3, and the descriptions in Attachment 3) into a single document that would become Attachment D to the draft proposed order.

-John

John G. White
Oregon Department of Energy
625 Marion St., NE
Salem, Oregon 97301-3742
The Applicant responded on March 12:

>>> "McMahon, Sara" <Sara.McMahon@PPMEnergy.com> 3/12/2007 8:39:21 AM
>>>
John,

I just remembered that #18 was not included on the revised Figure C-3c because it is part of a turbine micrositing corridor. Those are listed in Table C-2 and are not included on the figure.

Sara

ODOE responded on March 12:

-----Original Message-----
From: John White [mailto:John.White@state.or.us]
Sent: Monday, March 12, 2007 10:08 AM
To: McMahon, Sara
Subject: RE: RAI #2 Attachment 3

OK, but the "new" Table C-2 has the same coordinates for the E-1 to
E-3
corridor as the original Table C-2. It looks like you intended to have a new northern boundary of this turbine string corridor. This new boundary would be outside the lease boundary (which previously was the northern boundary for the string). Table C-2 as revised does not show this.

-John

The Applicant responded on March 28:

>>> "McMahon, Sara" <Sara.McMahon@PPMEnergy.com> 3/28/2007 3:27:45 PM
>>>
John,
Here is the revised Table C-2. We forgot to add that row to the table.
Thanks
Sara

ODOE responded on April 3:

-----Original Message-----
From: John White [mailto:John.White@state.or.us]
Sent: Tuesday, April 03, 2007 9:42 AM
To: McMahon, Sara
Subject: Re: FW: RAI #2 Attachment 3/Revised Table C-2

Sara,
Unfortunately, I am still confused by your revised Table C-2. My question earlier in this e-mail thread (3/12) was in regard to the northern boundary of string E-1 to E-3. The revised table still does not show a northern boundary for this string. On revised Fig C-3c, this corridor is shown with a northern boundary that is outside the lease boundary.

Revised Table C-2 changed the longitude of the western boundary of string E1-3 and the northern boundary of a different string (E4-11), but it still does not show a northern boundary for string E1-3. Tyler's e-mail (3/12) provides updated coordinates for the "E-string," but, as there are two E-string corridors, it is unclear what he means.

Please clarify.

Thanks,
John

John G. White
Oregon Department of Energy
625 Marion St., NE
Salem, Oregon 97301-3742
john.white@state.or.us

The Applicant responded on April 3 with revised Tables C-2 and C-3 (see Appendix C, Attachment 1).

EXHIBIT E

Permits Needed for Construction and Operation

RAI No. 1

Comment E1

Page E-6

It is understood that a water right is not required for a 5,000-gallon-per-day water well; however, please confirm whether there a local land use or building permit required for drilling the well.

Response

Per Susie Anderson, the Gilliam County Planning Director, a local land use or building permit is not required for drilling the well (personal communication with Erin Toelke of CH2M HILL on December 4, 2006).

Comment E2

Page E-6

Provide a copy of the 1200-C permit application, including the Erosion and Sediment Control Plan Worksheet. We will need confirmation from DEQ that they have received the application and the estimated date when DEQ would issue a permit decision (OAR 345-021-0010(1)(e)(D)).

Response

The Applicant is in the process of developing the 1200-C permit application, with the Erosion and Sediment Control Plan Worksheet. The Applicant anticipates submittal of this permit application to DEQ in January 2007. A copy will be provided to ODOE upon submittal.

RAI No. 2

Comment E2

What is your target date for submitting these documents to DEQ and ODOE?

Response

The NPDES permit application, including an erosion and sediment control plan, was submitted to DEQ on February 23, 2007. A copy is provided in Appendix B, Attachment 4.

EXHIBIT G

Material Analysis

RAI No. 1

Comment G1

Page G-5

You estimate 150 gallons of water per turbine would be used for blade-washing. The DEQ permit exemption for de minimis activities does not directly address washing the blades of wind turbines. We do not believe the phrase "less than 8 vehicles or pieces of equipment" can be reasonably interpreted to include wind turbines. We will need a definitive statement from DEQ to conclude that no wastewater permit is required. [Note: As an alternative, a condition similar to Klondike III Condition 83 might be proposed.]

Clarify whether cleaning agents would be used with the wash water (The statement on p. G-5 conflicts with the statement on p. B-10).

Response

Appendix A, Attachment 5 contains a letter from DEQ to the Applicant stating that no wastewater permit is required for blade-washing activities.

Biodegradable, phosphate-free cleaning agents may be used with the washwater. The last paragraph of Section B.1.6 on page B-10 has been revised as follows:

> Because of the area's climate, the Applicant does not anticipate having to wash turbine blades regularly, as is typical in drier areas. However, if washing is needed, the blades would be cleaned with cold water and a biodegradable, phosphate-free cleaner. ~~washwater free of any additives~~. No potentially hazardous wastes would be generated from blade washing. The amount and nature of blade washing would be below the DEQ threshold and would be considered a deminimis impact (DEQ, 1998).

RAI No. 2

Comment G1

DEQ letter is qualified by conditions (summarized in paragraph 3 of the letter). What assurance can you give that there would be no run-off?

Response

As outlined in Exhibit O of the ASC, blade washing is not anticipated to occur. If recommended by the manufacturer, the blade washing would require a small amount of water per turbine (estimated to be approximately 50 gallons per blade). This small amount

of water would primarily evaporate during washing or infiltrate into surrounding soils. In addition, very few turbines are located near seasonal streams. Washing at these locations would be avoided when possible or done in a manner to direct the washing activity away from the stream.

EXHIBIT H

Geological and Soil Stability

RAI No. 1

Comment H1

Page H-15

Explain or correct the statement that two locations of potential landslide activity have been identified.

Response

The third to last paragraph on page H-15, Section H.8, has been revised as follows:

> The basalt rock present over most of the Facility area is generally competent rock, free of existing landslides. No active landslide activity was observed during the site reconnaissance. ~~However, two locations were identified as potential sites of landslide activity. These areas are described in more detail in Section H.6.~~

EXHIBIT J

Wetlands

RAI No. 1

Note from ODOE: The primary focus of this exhibit is to provide sufficient information for the Council to determine whether a DSL removal or fill permit is needed. The language used in OAR 345-021-0010(1)(j) might lead applicants to conclude that ODOE is interested only in "wetlands," but we are interested in potential impacts to any jurisdictional "waters of the state." As you have correctly stated, "wetlands" are a particular feature included within the definition of "waters of the state."

As a secondary issue, the exhibit should explain whether any waters subject to federal jurisdiction might be affected. The federal "Section 404" permit is not within the jurisdiction of the Siting Council, but we would like to see written confirmation from USACE regarding whether any waters under federal jurisdiction exist and whether a Section 404 permit will be needed.

Comment J1

Page J-2

What state-jurisdictional waters lie within the proposed micrositing corridors? Please list these areas, using the identification labels on Figure J-1. We will need written confirmation from DSL regarding whether that agency agrees with your assessment regarding state jurisdiction.

Response

The following state-jurisdictional waters lie within the proposed micrositing corridors: S8, S14, S20, S25, and S27. During the permitting process for LJ I, the Applicant received concurrence that S8 is a state-jurisdictional drainage. A delineation report that includes the other state-jurisdictional waters has been submitted to DSL. The Applicant has not yet received written concurrence. Please refer to Appendix A, Attachment 6 for Figure J-1, which has been revised to show the micrositing corridors.

Comment J2

Page J-2

What waters under federal jurisdiction lie within the proposed micrositing corridors? Please list, as above. If possible, provide written confirmation from USACE regarding your assessment of federal jurisdiction. Is a Section 404 permit needed for S8B? Describe the additional impacts at S8 and S8A.

Response

The following streams within the micrositing corridor are potentially under federal jurisdiction: S8, S14, S20, S25, and S27. The U.S. Army Corps of Engineers (USACE) does not provide written concurrence. Concurrence is implied upon issuance of a USACE permit for a project.

The Applicant is in the process of drafting the delineation report and Section 404 permit application for the Facility. The Applicant anticipates submittal of this permit application to the USACE in January 2007. A copy will be provided to ODOE upon submittal.

A Section 404 permit will be needed for S8B. An access road will cross the channel at S8A via a ford or culvert crossing. No impacts are anticipated at S8. Potential impacts will be described in further detail in the permit application.

Comment J3

Page J-3

Was the assessment of impacts that is described in Section J.2.2.3 based on the "proposed" 1.5-MW layout (Fig C-3a)? What additional impacts could occur if project facilities are built in other locations within the micrositing corridors?

Response

The assessment of impacts described in Section J.2.2.3 was based on the "proposed" layout as shown in Figure C-3a. Impacts associated with changes to the current Facility layout will not likely result in additional impacts. Any changes to the currently proposed layout will result in impacts similar in nature and extent to those described in Section J.2.2.3. Possible changes might include moving the location of a stream crossing upstream or downstream. Impacts resulting from this change would be similar to the initially-described crossing and impact no greater area. If impacts were to exceed the initial estimate as described in Exhibit J, these impacts would be fully addressed in the Section 404 permit application.

Comment J4

Page J-4

The application identifies W-1 and W-2 as "potentially jurisdictional" vernal pools. The application states that these areas might be temporarily disturbed from collector cable trenches. Could these potential impacts be avoided?

Response

No turbines will be placed within vernal pools. Based on the current layout, the Applicant also does not anticipate placing roads, collector lines, or other associated facilities within potentially jurisdictional vernal pools. The Applicant will avoid impacting vernal pools to the extent practicable through minor road or collector line route changes. If impacts cannot be avoided as a result of site-specific conditions or other factors, the Applicant will address these impacts in the Section 404 permit application. All temporary impacts will be restored

to preconstruction conditions according to the Section 404 permit. No permanent impacts will occur.

RAI No. 2

Comment J1

Figure J-1 shows S8 as a "Corps Only Jurisdictional" water, but your response here says that it is a state-jurisdictional water. Please explain.

Please provide a copy of the DSL concurrence as to S8 (if you have previously sent this to us, what is the date of the document?).

Please provide a copy of the delineation report recently submitted to DSL. Please provide the response you receive from DSL.

Response

This was an error. DSL declined jurisdiction over drainage S8. The DSL concurrence letter is provided in Appendix B, Attachment 5. A copy of the Section 404 application, which includes the delineation report, is provided as Appendix B, Attachment 6.

Comment J2

What is your target date for submittal of the report and 404 application?

Response

A copy of the Section 404 application, which includes the delineation report, is provided as Appendix B, Attachment 6.

Comment J4

Should we conclude from your response that you cannot commit to avoiding impacts to the vernal pool areas? We are concerned that it might not be possible to restore vernal pool areas. Describe measures you will take to restore these areas if impacts cannot be avoided.

Response

The Applicant has reviewed the layout since responding to RAI No. 1, and has determined that it is feasible to avoid temporarily or permanently impacting vernal pools. No turbines, collector lines, roads, or other associated facilities will be placed in the vernal pools. No permanent or temporary impacts will occur.

Additional Request

In an e-mail dated April 4, 2007, John White of ODOE requested additional information on Exhibit J documentation. His questions and Applicant responses are documented below.

Comment No. 1

In Exhibit J, you have stated that the on-site wetlands & waters surveys addressed the area within 500-foot survey corridors centered on the preliminary alignments of proposed turbine strings, underground collector lines and access roads in the LJ-North area and within 200-foot survey corridors in the LJ-South area (Application, page J-1).

The various reports from CH2M HILL that you have submitted do not support this statement. The reports are described below. Please let me know if I have overlooked any reports.

The report dated January 19, 2005 (Application, Attachment J-1), describes study areas within 200-foot survey corridors centered on the alignments of proposed turbine strings, underground collector lines and access roads. This survey report is limited to the LJ-South area.

The report dated September 2, 2005 (RAI #2, Attachment 6), describes a survey of four discrete locations. The report dated January 16, 2006 (Application, Attachment J-1), describes a survey of a single location in Jones Canyon. The report dated September 25, 2006 (Application, Attachment J-1), describes a survey of 12 discrete locations (nine in the LJ-North area and three in the LJ-South area). None of these reports describes a survey area within 500-foot corridors in the LJ-North area.

Response

The Exhibit J text quoted in the first paragraph of the comment above inadvertently suggests that each of the four project wetland survey reports describes the area within 500-foot survey corridors in LJ-North and within 200-foot survey corridors in LJ-South. In fact, three of the four surveys predate the LJ-North and LJ-South designations, as described in the next paragraphs. Consequently, the distinction between North and South is not made in the three reports documenting these surveys. However, the 200-foot survey corridor does apply for all surveys conducted before the North and South site boundaries were established. Further, the 500-foot survey corridor applies for the LJ-North area once this boundary was established, and for selected areas in LJ-South that were included in the later wetland surveys because the project alignment had shifted from the initial project layout.

The report dated January 19, 2005 (Application, Attachment J-1) predates the division of the project area into LJ-South and LJ-North. At the time the field survey documented in this report was conducted, the project consisted of one area. This area largely comprised the Leaning Juniper Wind Energy Project (formerly known as Leaning Juniper I). The Leaning Juniper I project was eventually purchased by PacifiCorp. However, portions of the area were maintained by the Applicant as part of the Leaning Juniper II South area. The January 19, 2005, report is included in the Application as part of the record of surveys performed. This report is often referred to as the "initial" wetland report because it is the first in a series of Leaning Juniper wetland reports. The three reports described in the paragraphs below are referred to as "addenda" to the initial report.

The addendum report dated September 2, 2005 (RAI No. 2, Attachment 6) documents the survey of four additional, discrete locations in the Leaning Juniper Wind Energy Project

(formerly known as Leaning Juniper I). Again, this survey predates the division of the project area into LJ-South and LJ-North.

The addendum report dated January 16, 2006 (Application, Attachment J-1) documents the survey of a single, discrete area in Jones Canyon, located in the southern portion of the Leaning Juniper Wind Energy Project (formerly known as Leaning Juniper I). Again, this survey predates the division of the project area into LJ-South and LJ-North.

The addendum report dated September 25, 2006 (Application, Attachment J-1) documents the survey of 12 discrete locations (nine in the LJ-North area and three in the LJ-South area). At this point in the Leaning Juniper II project chronology, the project had been subdivided into LJ-South and LJ-North. Survey areas in LJ-South were changed from the 200-foot corridor surveyed in the southern portion of Leaning Juniper I to a 500-foot corridor. This change in survey area allowed room for future potential shifts in the alignments before final layout was established. Consistent with LJ-South, 500-foot corridors were surveyed in LJ-North. The September 25, 2006, report does not explicitly state LJ-North survey areas within a 500-foot survey corridor. However, the 500-foot corridor is implied in statements such as the following:

Page 1

"Within the Leaning Juniper II North boundary, four potential stream crossings and five seasonal (vernal) pools were investigated…. One of the streams (S25) was determined to be potentially jurisdictional under federal and state wetlands regulations. The other three were determined to be not jurisdictional within 500 feet of proposed Facility activities under federal and state regulations…Three of the five vernal pools are located within 500 feet of proposed Facility activities."

Pages 1 and 2

"Two potential stream crossings and one vernal pool in the Leaning Juniper II South area area also were investigated. Both stream drainages are mapped intermittent streams on the USGS map of the area. One of the streams (S27) was determined to be potentially jurisdictional under federal and state wetlands regulations. The other (S26) was determined to be not jurisdictional under federal and state regulations within 500 feet of proposed Facility activities. The vernal pool was determined to be potentially jurisdictional as a wetland under state and federal wetlands regulations. It is located within 500 feet of proposed Facility activities and was dry at the time of the field investigation."

Page 3

"Leaning Juniper II North is located in the Arlington, Oregon-Washington (USGS, 1971) and Sundale, Oregon-Washington (USFWS, 1971) 7.5-minute quadrangles of the USGS topographic maps (Figure 3). The USGS maps indicate three stream channels within 500 feet of the proposed Facility area."

Comment No. 2

I also note that there is another report dated September 25, 2006, in Attachment 6 of RAI #2. This report appears to be identical to the report of the same date that is in Attachment J-1 of

the application, except for the first paragraph. That paragraph refers to "the initial Delineation Report (January 10, 2005)." I have not located a copy of this referenced report in any of the material you have submitted. Would you please provide a copy of this report? Also, would you please explain why there are two versions of the September 25, 2006, report?

Response

The date of January 10, 2005, cited in the first paragraph of the September 25, 2006, report in Attachment 6 of RAI No. 2, should be January 19, 2005. The January 19, 2005, report is contained in Attachment J-1 of the Application. As stated in the response to Comment No. 1, this report is referred to as the "initial delineation report" because it is the first delineation report generated for the Leaning Juniper project.

You are correct in noting that the version of the September 25, 2006, report in Attachment 6 (Section 404 Permit Application) of RAI No. 2 is identical to the report of the same date in Attachment J-1 of the application, except for the first paragraph. This paragraph was added as part of the Section 404 submittal to the Oregon Division of State Lands and U.S. Army Corps of Engineers. The purpose of the paragraph addition was to refer the DSL and Corps back to the January 19, 2005 "initial" report for a more complete record of the delineation process, should they seek additional information.

Comment No. 3

In addition, would you please submit a map (or maps) showing the areas that have been surveyed for wetlands & waters within the entire site boundary (LJ-North and LJ-South)? This map should combine all of the locations surveyed as described in the various reports. Please include the outlines of all micrositing areas.

Response

A map showing the areas that have been surveyed for wetlands and waters within the entire site boundary (LJII-North and LJII-North) is provided in Appendix C, Attachment 2.

Final comment

I anticipate a site certificate condition that will require on-site surveys for wetlands and waters before construction begins in any location that has not been surveyed previously.

EXHIBIT K

Land Use

RAI No. 1

Comment K1

Page K-10

How much land within the analysis area is actively used for farming currently?

[Note. The analysis area for land use is defined as the area within the site boundary and ½-mile from the site boundary.]

Response

Approximately 5,864 acres within the ½-mile land use study area are actively used for farming. Approximately 3,013 acres within the lease boundary are actively used for farming.

Comment K2

Page K-15

What are the locations of the "lockable gates"? The statement on K-15 is contrary to the statement on K-19 that there will be no lockable gates. GCZO 7.020(T)(4)(d)(6) requires "private access roads" to be gated. Would the facility comply with this ordinance?

Response

Lockable gates will be located at the substation and private access roads. The statement on K-19 that there will be no lockable gates has been revised. If landowners do not have existing gates or do not want gates, the Applicant will obtain a variance from the County in accordance with the GCZO 7.020(T)(4)(d)(6) requirement.

Comment K3

Page K-14

We believe the facility is subject to Gilliam County Zoning Ordinance 4.020(J), which requires a 25-foot setback (front, rear and side) for "nonresidential development." Gilliam County imposed a greater setback requirement on LJ1 in CUP condition #16 (250 feet from towers; 50 feet from buildings/substations) and might request similar setbacks for LJ-II. What do you propose as a minimum setback distance from any facility structure to the property line of the underlying parcels? (We assume that for the purposes of setback requirements, a "structure" could include turbine towers, O&M buildings, substations, met towers and aboveground transmission infrastructure).

Response

The Application proposes the following setbacks:

- Minimum setback between turbines and residences equal to the total turbine height (389 to 492 feet, depending on turbine selected) or minimum distance needed to ensure that no noise-sensitive properties are within the 50-dBA contour line.
- 250-foot setback between towers and property lines (including met towers, even though they are shorter)
- 50-foot setback between the O&M buildings or substation and property lines
- No setback for overhead poles. Because overhead poles will be placed within Gilliam County rights-of-way or immediately adjacent to the easement in many cases, no setback from property lines is proposed.

Comment K4

Page K-18

GCZO 7.020(T)(4)(d) requires that no portion of the wind power generation facility be located within 3,520 feet of "properties zoned residential use or designated on the Comprehensive Plan as residential." Figures K-1 and K-2 do not show residential areas within the City of Arlington to the north of LJ-North. Provide a map showing the nearest "properties zoned residential use or designated on the Comprehensive Plan as residential." What is the distance from the micrositing area to the nearest residential property? Would the facility comply with the ordinance?

Response

Revised Figure K-1 (in Appendix A, Attachment 7) shows the residential zone. The distance from the micrositing area to the nearest residential property is approximately 65 feet (zero feet to the residential property line). However, as described above, no turbines will be placed closer to residences than the total turbine height and all turbines will be sited sufficient distance from residences to ensure that no noise-sensitive properties are within the 50-dBA contour line.

Because this distance is less than 3,520 feet as designated in GCZO 7.020(T)(4)(d), the Applicant will obtain a variance(s) from Gilliam County. The Applicant has begun discussions with the Gilliam County Planning Department on this matter.

Comment K5

Page K-20

Would the proposed facility occupy any "high-value" farmland? Explain the basis for your answer.

Response

No, the Facility does not occupy any "high-value" farmland. According to the Oregon Department of Land Conservation and Development:

> "High-value farmland is land with exceptionally good soils. That includes soils rated as prime, unique, Class I, or Class II by the Soil Conservation Service (SCS). It also includes certain other soils listed in OAR 660-033-0020(8). Most high-value farmland is in the Willamette Valley."

Based on SCS GIS data, the Facility does not occupy Class I or Class II soils. Soil classification was also confirmed by Gilliam County in the Conditional Use Permit (CUP) 2004-05.

Comment K6

Page K-23

Please discuss in more detail the statement that the facility is "expected to provide substantial tax revenues to the County over its lifespan." What is the estimated range of anticipated county revenue added on an annual basis? When would these revenues begin? Would they stop after the facility is "depreciated" or would the revenue continue for the life of the facility?

Response

Under current assessment methods, a 100-MW wind plant in Gilliam County will contribute approximately $1 million annually from 2010 to 2020, with annual taxes declining approximately $20,000 / year.

The Oregon Department of Revenue (DOR) is reviewing the manner in which it assesses wind plants. The DOR has stated that its new assessment methodology will better track the cash value of wind plants (i.e., the value of the wind plant will depreciate in line with its cash flow). From a cash perspective, a 5-year-old wind plant is worth 50 percent its value on day 1 and 25 percent its initial value by year 10. It should be noted that while DOR has said they are going to adopt a new approach, DOR's assessment of PPM Energy's wind plants have not been in line with this new methodology. The Applicant will try to get LJ II included in the Gilliam County Enterprise Zone or will try to establish a Strategic Investment Program in Gilliam County as PPM Energy has done in Sherman County. This program would provide a 15-year property tax exemption and per state law would provide for a minimum payment to the County of $500,000 annually in these years.

RAI No. 2

Comment K2

To conform to the ordinance, we would have to condition the site certificate to require lockable gates. It is doubtful whether the County could legally grant a variance in conflict with the site certificate. If a variance is needed due to landowner wishes, then the decision is probably a Council decision as part of the site certificate process. We will need to consult with our attorneys.

Response

Comment noted.

Comment K3

The information appears to be complete, but we will need to review whether Gilliam County requires a setback for transmission or distribution poles. We will also review what "structures" are included under the ordinance and whether your response covers all required setbacks.

Response

Comment noted.

Comment K4

See comment on K2 above. The ordinance requires a 3,520 foot setback from residential property. We will seek legal advice regarding whether a variance would be a Council decision.

Response

Comment noted.

Comment K6

Please advise us if you learn of any change in policy by ODOR in the method of assessment. Please let us know of any changes in the projected income to the county under current assessment methods.

Response

Comment noted.

EXHIBIT L

Impacts on Protected Areas

RAI No. 2

Comment L1

Page L-11

Portions of the John Day River scenic area are within 6 miles of the nearest turbine location. In previous cases, the Council has found that the visual impact of wind turbines 50 to 85 meters at hub height would not be significant at distances of 5 miles or more from the site, but the LJ-II turbines could be up to 100 m. at hub height. Can you provide photo-simulations of the visual appearance of a 100-m wind turbine from a distance of 6 miles to assist the Council in evaluating the visual impact of the proposed facility when viewed from distances of 6 miles or more?

Response

To provide more information about the potential visibility of wind turbines from portions of the John Day River scenic area, the Applicant developed Figure L-3 (see Appendix B, Attachment 7). This figure provides a close-up view of the results of the Zone of Visual Influence (ZVI) analysis completed for 3-MW turbines (100-meter at hub height) and the portions of the John Day River within 6 miles of the nearest turbine location. As shown in Figure L-3, the turbines will not be visible from the John Day River within 6 miles, nor will turbines be visible from McDonald Crossing. A few turbines might be visible from a very small area within 1/4 mile of the river bank and within 6 miles of the nearest turbine. This area is not a specific area of use and as such, does not warrant a photo-simulation. As stated in Exhibits L and R, the minimal portions visible within the 1/4 mile will not constitute a significant adverse impact on this Protected Area.

EXHIBIT M

Financial Analysis

RAI No. 1

Comment M1

Page M-1

The legal opinion letter (Attachment M-1) refers to an "up to 99.5 MW name-plate capacity wind generation facility." The proposed capacity is 279 MW. Please provide a consistent letter.

Response

Please refer to Appendix A, Attachment 8 for the revised legal opinion letter.

Comment M2

Page M-1

The Retirement and Financial Assurance Standard requires the Council to make a finding that the applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council. We cannot determine the amount that we would consider appropriate to recommend to the Council until you have provided information requested in these RAI related to site restoration. Based on the incomplete information in the site certificate, together with some assumptions about costs, we believe the gross site restoration cost could be as much as $7 million. Whether to recommend to the Council that the estimated value of scrap steel be taken into account to reduce the amount of the bond or letter of credit is currently under internal review by Department staff. We are concerned that under some circumstances the scrap value might not be available to the State as a source of funds for site restoration.

Once we have determined the amount that we will recommend to the Council, we will request that you provide a letter from Safeco or other financial institution demonstrating reasonable likelihood that the applicant can obtain an adequate bond or letter of credit in that amount, subject to annual adjustment.

Response

The Applicant is prepared to post decommissioning security to ensure the Facility's prompt removal once the Facility is no longer operational. The Applicant asks the council to recognize the costs of said decommissioning security and requests that EFSC take into account the following when establishing the amount and timing of said bond:

1. The risk of the Facility ceasing operations in the first 10 years is extremely low.
2. The wind turbines will have a significant resale value in the early years of the Facility.
3. The salvage value of the turbines and towers warrants consideration.
4. The landowner leases require the Applicant to decommission the Facility.
5. One of the lessees (Waste Management) already requires PPM to post a letter of credit sufficient to cover the cost to decommission. The security amount may require adjustment if the landowner determines the current level is insufficient.

The Applicant prefers that the decommissioning security requirement become effective in the later years of the Facility's life (e.g., in year 15). At this point, the Facility will still have substantial commercial value, but decommissioning could be expected after a further 15 to 20 years.

RAI No. 2

Comment M2

We note that RAI M2 did not request additional information from the applicant.

The Department has recommended to the Council that no credit for scrap or salvage value be considered in determining the appropriate site restoration cost under OAR 345-022-0050.

Our preliminary retirement cost estimate, with no credit for scrap or salvage value, is $7.093 million for LJ-II (North and South) and $3.751 million for LJ-II (excluding LJ-North facilities).

Response

Comment noted.

EXHIBIT O

Water Resources

RAI No. 1

Comment O1

Page O-2

The application states that water needed during construction would "most likely" be supplied from the City of Arlington under the water right shown in Attachment O-2 ("Emprise water right"). According to Jerry Sauter at the Water Resources Department, this "quasi-judicial" water right has not been properly completed by the City of Arlington. The City needs to submit a claim of beneficial use. That process needs to be completed before we can rely on the Emprise water right. Please provide a letter from the city verifying that the City is able and willing to provide construction water and specifying what water right would be used. The letter should explain that they have sufficient water to supply the needs of the Leaning Juniper project under their existing water rights (which can include the Emprise water right, if they complete the claim process) over and above the city's committed uses.

Response

Please replace Permit G-14507 in ASC Attachment O-2 with the copy of Permit G-1201 provided in Appendix A, Attachment 9.

The Applicant contacted Mr. Tim Wetherell, the Arlington Public Works Director, to inform him that the water right (G-14507) used for Exhibit O requires that a claim of beneficial use be filed with the Oregon Water Resources Department before water can be used for Facility construction. In response, Mr. Wetherell informed the Applicant that the City has another source of water that would be appropriate for the needs stated in Exhibit O. The source of water is a City-owned groundwater well permitted under water right G-1201. Mr. Wetherell informed the Applicant that the City will provide water from the City-owned well (permitted under water right G-1201) (personal communication between Tim Wetherell, City of Arlington, and Mike Pappalardo and Adam Sussman, CH2M HILL, on March 14, 2006). This exchange is validated in the letter sent on December 2005 and revised on September 26, 2006, from Tim Wetherell to Andrew O'Connell at PPM Energy. The September 26 letter is included as Attachment O-1 of Exhibit O of the ASC.

The Applicant contacted Mr. Jerry Sauter at the Oregon Water Resources Department to notify him of the change in water sources and water rights for the Facility. Mr. Sauter was asked to review the file to determine whether using Permit G-1201 would present problems. Mr. Sauter noted that he did not see any problem using Permit G-1201 as a source of water for the Facility as specified under Exhibit O (personal communication between Jerry Sauter, OWRD, and Adam Sussman, CH2M HILL, on March 15, 2006).

Facts about Permit G-1201 are as follows:

Permit G-1201 is for 2.2 cfs (1,000 gallons per minute) of water for municipal use with a priority date of 1959. The permit authorizes the use of two wells. This permit was amended in 2004 to change the location of well #2. The permit is fully developed. The two wells associated with this permit provide water to the City's municipal water system. This permit and associated water use are in good standing.

Comment O2

Page O-5

Please correct the statement that blade wash water "would be discharged into wetlands, streams or other waterways."

Response

The last sentence of the first paragraph on page O-5, Section O.5, has been revised as follows:

> If blade washwater were to be produced, this water would evaporate or infiltrate into the ground and would not be discharged into wetlands, streams, or other waterways.

Reviewing Agency Comment (RAC) 1

Discuss your response to the OWRD comment letter from Jerry Sauter (October 10, 2006).

Response

Please refer to the response to RAI Comment O1 above.

EXHIBIT P

Fish and Wildlife Habitats and Species

RAI No. 1

Comment P1

Pages P-9, P-10, P-20

Correct the statements that Category 2 habitat is "not replaceable."

Response

Basalt escarpments on the Facility site vary in suitability to support nesting raptors (i.e., no suitable-sized shelf or secure cliff face for placing the nest). The escarpments are oriented along topographic relief changes, resulting in rim edges, and are generally shorter in height than the taller, more extensive cliff faces found along the Columbia River.

Any active, inactive, or unknown status nest site (including areas where American kestrels, cliff nesters, were present but no nest located) were mapped as Category 1. Technically, the rocky outcropping is not easily "replaced" for obvious logistical reasons. However, some features of the general habitat type are replaceable, such as sparse grass and forbs. Escarpments are not a limited habitat within the Columbia Basin.

On pages P-9, P-10, and P-20, the phrase "not replaceable" has been replaced with "not irreplaceable" for consistency with Category 2 designation.

Comment P2, No. 1

Page P-41

There are inconsistencies between the text, tables, and figures in the discussion of raptor nest surveys and special status species surveys that begins on p. P-41. Please review these sections and correct or explain the following:

The text describes raptor nest surveys in 2005 and 2006 within 2 miles of the LJ-North and LJ-South lease boundaries, but Tables P-8 and P-9 are divided into two sections showing "raptor nests within 0.5 mile" of turbines and "active raptor nests within 2 miles" of the lease boundaries. It would be more helpful, and less confusing, if the tables would show all the nest sites (active and inactive) identified during the 2005 and 2006 surveys with the approximate distance to the nearest proposed facilities (not limited to turbines).

Response

Appendix A, Attachment 10 contains two new tables (addenda to Tables P-8 and P-9) showing the approximate distances from each raptor nest to the nearest proposed facilities, as identified during the 2005 and 2006 surveys, respectively. Figure P-5a in ASC Exhibit P

does not match ASC Tables P-8 and P-9 because some of the raptor nests included in the table are outside the Facility lease boundary. These nests are not on Figure P-5a because the Applicant does not have agreements with landowners outside of the lease boundary and therefore has no way of securing or monitoring the raptor nests to reduce the risk of nest site vandalism or harm to the birds. The Applicant will discuss with ODOE and the Oregon Department of Fish and Wildlife (ODFW) the locations of raptor nests within 2 miles of the Facility in further detail, and may provide a map of the general locations of these nests.

Comment P2, No. 2

Page P-41

The text on p. P-41 for 2005 surveys indicates 11 Swainson's hawk nests and 10 red-tailed hawk nests, but Table P-9 shows only 10 Swainson's and 8 red-tailed hawk nests.

Response

The text on page P-41 regarding the number of Swainson's hawk nests is correct. The 2005 survey results indicate 11 Swainson's hawk nests. However, only 10 nests were found in the LJ II South survey area, which is why only 10 nests were shown in Table P-9. The 11th nest (#380) is located in the LJ II North survey area.

The text on page P-41 regarding the number of red-tailed hawk nests is incorrect. The 2005 survey results indicate 11 red-tailed hawk nests, 8 of which were found in the LJ II South survey area (as accurately indicated in ASC Table P-9).

The addenda to Tables P-8 and P-9 (in Appendix A, Attachment 10) show the correct nests and their distances to project facilities for each species, as identified during the 2005 and 2006 surveys, respectively.

Comment P2, No. 3

Page P-42

The text on page P-42 for 2006 surveys indicates nests for several species that are not indicated on Table P-8.

Response

Below is a revised count of active nests identified during the 2006 raptor nest surveys at LJ II North:

- 2 red-tailed hawk nests
- 4 Swainson's hawk nests
- 5 common raven nests
- 2 prairie falcon nests
- 3 American kestrel nests
- 2 barn owl nests
- 1 ferruginous hawk nests

Below is a revised count of active nests identified during the 2006 raptor nest surveys at LJ II South:

- 5 red-tailed hawk nests
- 9 Swainson's hawk nests
- 2 common raven nests
- 1 prairie falcon nest
- 1 barn owl nest
- 2 ferruginous hawk nests

The addenda to Tables P-8 and P-9 (in Appendix A, Attachment 10) show the correct nests and their distances to project facilities for each species, as identified during the 2005 and 2006 surveys, respectively.

Comment P2, No. 4

Figure P-5a does not show two red-tailed hawk nests listed in Table P-9 (# 29 and 6).

Response

Red-tailed hawk nests were not shown on Figure P-5a because they are located on land not leased by the Applicant.

Comment P2, No. 5

The legend for Figure P-5a shows both "inactive large stick nest" and "inactive raptor or other large bird nest." Is there is an important difference between these? Tables P-8 and 9 show inactive large stick nests but do not show "inactive raptor or other large bird" nests.

Response

"Inactive large stick nest" is a term used to indicate the relative size of a raptor-like nest (typically Buteos spp.). The word "large" indicates that a ferruginous hawk may have constructed the nest or repaired and built up another species' nest (typically smaller). The significance here is that a large, buteo-like nest may indicate possible future nesting or courtship nest-building by the ferruginous hawk, a species of interest.

Comment P2, No. 6

Figure P-5a shows several nests that are not included in either Table P-8 or 9 (#600, 602, 52, 51, 53 and 44).

Response

These nests are either "Inactive Large Stick Nests" or "Inactive Raptor or Other Large Bird Nests." Many stick nests persist in juniper trees for several years, even if never used after the initial construction. It is highly unlikely that all known nests (of active and inactive status) would be active during the same year because territories of paired birds at active nest sites are strongly defended, in addition to other factors.

The status of nests not included in Tables P-8 and P-9 is as follows:

- 600—Inactive, probably used by common raven in the past
- 602—Inactive

- 52—was last used by common Raven in 2003
- 51—Inactive nest, no historical use data available
- 53—Inactive, might be an alternate nest site for birds using the nest to the north (#41 in Figure P-5a). Very unlikely that both would be used by raptors in the same year.
- 44—Inactive

The addenda tables to Tables P-8 and P-9 (contained in Appendix A, Attachment 10) include all nests surveyed in 2005 and 2005 and their distances to project facilities.

Comment P2, No. 7

Figure P-6 shows burrowing owl nest sites within the LJ-North lease boundary that are not consistent with the text on p. P-46 and p. P-71.

Response

The figure legend should read "Potential Burrowing Owl Nest." The indicated sites show characteristics of potential burrowing owl use or had possible signs of much earlier burrowing owl use. No burrowing owls were seen in this area during the protocol surveys or during other field tasks.

Comment P3

Pages P-48, P-50, P-75, P-78

Do the estimated acres of temporary disturbance include the area disturbed by crane paths? Provide revised tables P-10A, 10B, 15A, and 15B, if necessary.

Response

Tables P-10A and B have been revised to include temporary disturbance from crane paths in LJ II North (see Appendix A, Attachment 11 for revised tables). There are no crane paths in LJ II South. A small portion of the temporary disturbance associated with crane paths is geographically located in LJ II South. However, because these crane paths are necessary for construction of LJ II North, the temporary disturbances are included in the LJ II North total.

Comment P4, No. 1

Pages P-50, P-78

Tables P-10B and 15B provide estimates of "temporary" and "permanent" impacts under "worst case" assumptions. Taken together, the "temporary" impact to higher-value habitat (Category 5 and higher) from LJ-North and LJ-South would affect about 292 acres, including 137 acres of Category 2 habitat. Considering the cumulative habitat impacts of Stateline, Klondike III, Biglow Canyon and Leaning Juniper, the "temporary" impacts of LJ-II account for 32% of the cumulative "temporary" impacts, 60% of the "temporary" impacts to higher-value habitat and 76% of the "temporary" impacts to Category 2 habitat. Given the high proportion of "temporary" impact to high-value habitat presented by LJ-II, we must be able to assure the Council that "temporary" impacts are really temporary and that the proposed

mitigation for temporary impacts is consistent with the ODFW mitigation goals and standards.

Based on the tables, more than 50% of the "temporary" impact would affect Category 2 or Category 3 open low-shrub (SSB) or shrub/grass (SSA) habitat. Restoration of this "shrub" habitat requires re-establishment of sagebrush or other shrub species. Accordingly, restoration of this habitat might take longer to achieve than restoration of grassland or other habitat subtypes.

Response

In the following sentence from the ODOE comment, the phrase "Category 5 and higher" should read "Categories 2, 3, 4 and 5":

> "Taken together, the "temporary" impact to higher-value habitat (Category 5 and higher) from LJ-North and LJ-South would affect about 292 acres, including 137 acres of Category 2 habitat."

The Applicant proposes to restore temporarily disturbed habitat following construction using approved seed mixes according to the Revegetation Plan. Reseeding the site will not only restore high value habitat, but also ensure site stabilization and soil erosion control.

In addition to reseeding efforts, the Applicant proposes to provide additional mitigation acreage for temporary impacts to sagebrush shrub-grass (SSA) and bitterbrush (SSE) communities. As further described below, the Applicant understands that even with revegetation measures, it may take many years for sagebrush and bitterbrush to reach maximum height and vertical branching. To account for this temporal loss in habitat, the Applicant proposes to include additional acres in the Habitat Mitigation Plan equal to 50 percent of the acres of SSA and SSE temporarily impacted by the Facility. Further details are provided below and in the Habitat Mitigation Plan included as Appendix A, Attachment 12.

In contrast to mature sagebrush and bitterbrush stands, other Category 2 and 3 habitat will have a higher likelihood of successful restoration. For example, the habitat subtype, SSB, Open-low-shrub, is not all sagebrush. As described on ASC pages P-11, P-12, P-21, and P-23, SSB is dominated by rabbitbrush (an increaser with fire and disturbance such as heavy grazing), snakeweed (very low stature, below knee-high at maturity), and the low-growing buckwheat (various Erigonum species). Depending on soil type, some of the SSB habitat may have had some patches of mature sagebrush before wildfires and land use practices removed most of it. However, SSB currently lacks extensive, mature sagebrush stands.

Although a Category 2 designation is used by biologists rating habitat primarily for the habitat types in a better vegetative stage and supporting target sensitive species (as per definitions), for parts of LJ II, Category 2 was used for habitat within proximity to Category 1 where active WGS colonies are present, regardless of the quality of the vegetation (see page P-20 in the Application). This approach is consistent with ODFW recommendations for the Stateline Wind Project, where Washington ground squirrel (WGS) colonies existed within proposed project expansion sites. The habitat near colonies is assumed to provide cover for travel and likely includes daily movements of individuals before returning to their home-site burrow within the colony boundary (the Category 1). If there were no WGS colonies, these habitats may have been designated as Category 3 or 4, given the fact that

much of Facility vicinity has burned in the past and was subsequently grazed heavily, recovery of native vegetation is progressing slowly, weeds are present throughout, and the current vegetative state does not exceed "fair" in some portions.

In some cases, SSB habitat that is not immediately adjacent to a WGS colony was designated as Category 2 habitat because it was documented as supporting one or more sensitive wildlife species during the breeding season. As described in the ASC, much of the SSB habitat that would be temporarily impacted is at an "early seral stage" (residual, unburned sage patches exist intermittently). Although the quality is fair and some areas contain recovering sagebrush shrub-steppe, it is still important for some wildlife species and is limited. This habitat is used by some special status species such as long-billed curlew (as stated on ASC page P-15, this species is not a tall, shrub-nesting species). Thus it was rated accordingly. However, this habitat is not dominated by mature shrubs, and would take less time to restore than SSA or SSE.

Comment P4, No. 2

Please provide further discussion of the "temporary" impacts that could result from construction of the facility. In your discussion, please address the following questions. Propose additional mitigation if necessary, as justified by your discussion.

1. Considering the local climate and soil conditions, how many years is it likely to take for higher-value habitat to be restored to pre-disturbance condition if no restoration actions are taken (time-to-restore)? Distinguish between "shrub" habitat and grassland (or other) habitat if your estimate of the time-to-restore would be different.

   If the restoration actions proposed as "Mitigation for Temporary Impacts" (p. P-90 and P-97) are implemented, how many years is it likely to take for higher-value habitat to be restored to pre-disturbance condition?

   Distinguish between "shrub" habitat and grassland (or other) habitat if your estimate of the time-to-restore would be different.

Response

Time-to-restore native mature grassland and shrubland where restoration (seeding, planting) does not occur is dependent on annual precipitation and timing of the precipitation, competition from aggressive weeds, soil types, and land use such as grazing. Based on prior experience in the Columbia Basin and observations of disturbed xeric habitats, competition from weeds and improper grazing (grazing too soon after disturbance, grazing too many months in the year, and other practices) both affect recovery. If residual seed and root sources occur in the soil and competition from undesirable plants is not great, then, depending on the precipitation levels, perennial bunchgrass may recover to a tall stature mature stage in 5 to 7 years whereas desirable shrubs such as bitterbrush and sagebrush may take 10 to 30 years to reach maximum height and vertical branching. Disturbance also affects the soil surface protective crust and results in continual persistence of non-native annual grasses such as cheatgrass and bulbous bluegrass. Recovery without manual manipulation (seeding) may not occur at all at some sites, especially in drought periods and in areas where grazing continues.

Time-to-restore native mature grassland and shrubland where restoration (seeding, planting) does occur is dependent on implementation of appropriate seeding and planting methods, quality of seed used, annual precipitation and timing of the precipitation, competition from aggressive weeds, soil types, and land use such as grazing. Based on prior experience in the Columbia Basin and observations of disturbed xeric habitats, competition from weeds and improper grazing (grazing too soon after disturbance) both affect recovery. Chemical weed control and removal of grazing pressure during the first 5 years would aid in the recovery.

Perennial bunchgrass may recover to a tall stature mature stage in 5 to 7 years whereas desirable shrubs such as bitterbrush and sagebrush may take 10 to 30 years to reach maximum height and vertical branching. As described in the Application and elsewhere, much of the Facility site has burned periodically though the years, removing desirable large sagebrush and stimulating smaller rabbitbrush. Recovery is occurring but many sites are still at a young seral stage. Patches of mature shrubs are scattered throughout. Monitoring of revegetation success at nearby wind projects may provide answers to questions about recovery of restored sites.

Comment P4, No. 3

1. Taking the time-to-restore into account, how would the ODFW goal of "no net loss" of quantity or quality be achieved for Category 2, 3 and 4 habitat "temporarily" affected by construction?
2. Taking the time-to-restore into account, how would the ODFW of "net benefit" be achieved for Category 2 and 5 habitat "temporarily" affected by construction?

Response

As mentioned above, the Applicant will ensure both no net loss for Category 2, 3 and 4 habitat and a net benefit for Category 2 and 5 habitat by implementing the revegetation plan and mitigating for temporal impacts to sagebrush and bitterbrush habitats.

Revegetation Plan

All temporarily disturbed habitat will be seeded with native or native-like seed mixture (see the revegetation plan in Appendix A, Attachment 13) by a specialist with experience in native land restoration. The mixture is expected to consist primarily of perennial bunchgrass species. Opportunities for shrub planting after seeding will be explored for the shrub-dominated sites that will be impacted. These are sagebrush patches and bitterbrush areas (bitterbrush habitat is found in parts of LJ II North). Opportunities will be reviewed in further detail after the final Facility placement and associated disturbance areas are known. Assuming typical recovery of bunchgrass and shrubs, these sites should recover vegetatively in 5 to 10 years; desirable shrub height and branching may take longer. Wildlife response to restored areas is less clear and will also likely be influenced by landowner land use activities (for example, grazing) each year and over time.

Weed control of seeded and planted areas will aid in recovery, in some areas better than before construction because of the uncontrolled presence of weeds on the site. As stated earlier, some of the Category 2 shrub-steppe is in a recovery stage from burning and grazing

and for LJ II South, areas of fair vegetation quality but near WGS colonies were rated Category 2 rather than Category 3 or 4 typically used for that vegetative quality.

Mitigation for Temporal Impacts

The Applicant will mitigate for temporal impacts by providing additional mitigation acreage for temporary impacts to sagebrush shrub-grass (SSA) and bitterbrush (SSE) communities in the Habitat Mitigation Plan equal to 50 percent of the acres of SSA and SSE temporarily impacted by the Facility. Further details are provided in the Habitat Mitigation Plan included as Appendix A, Attachment 12.

Comment P5

Pages P-52, P-80

The application states that the facility could have displacement or indirect impacts to grassland-nesting bird species habitat. Affected species include long-billed curlews and grasshopper sparrows, which are State sensitive species. You have proposed a Grassland Bird Displacement study (Attachment P-3) to "measure obvious changes in presence of these species during the spring breeding season in a portion of the leased land" and "to investigate whether the Facility has a significant impact on grassland bird use in the area."

Please provide a more detailed plan for the proposed displacement study.

Consider revising the study area (as requested by ODFW) to include areas where burrowing owl nests have been observed (Figure P-6).

Clarify the size and number of transects to be surveyed.

Clarify the number of transect surveys per year.

Explain how the preconstruction data would be compared with the post-construction survey data; specifically, what criteria would be used to determine whether an "obvious change" or "significant impact" has occurred and whether the change or impact resulted from operation of the facility?

Discuss appropriate actions if a significant impact is detected. Discuss how the data and results would be reported to ODOE and ODFW.

Response

Based on consultation with ODFW and given the level of baseline data available for use, the Applicant has revised the grassland bird study. The study is included as Appendix A, Attachment 14. While answers to the specific questions in RAI #P5 are included below, please refer to the revised study for further details.

The Applicant has expanded the proposed study area by an additional 100 acres to include an area with potential burrowing owl nests, resulting in a total of 1,100 acres, as shown in Figure 1 of Appendix A, Attachment 14, and on a subsequent version of Figure 1 provided in Appendix C, Attachment 4.

The grassland study surveys will include repetition of the 57 transect lines that were walked during the 2006 surveys. The 2006 transect lines were tracked with GPS units and will be

repeated during this study. Approximately 150 miles of transects were walked in 2006, and this same amount will be walked during this study.

The study will include two transect surveys per year. If the surveyor determines a third visit is needed to specific potential burrowing owl dens (2006 data and any new ones) to confirm use, a third visit to these sites will be conducted.

In 2006, data on the location and abundance of special status species (grasshopper sparrow, long-billed curlew) were collected for each 50- to 60-meter-wide transect. During the post-construction surveys, this same level of data will be collected. In addition, the biologists will record data on the location and abundance of common species, or species with no special State or Federal status, excluding the very abundant horned lark.

The post-construction data will be compared with the preconstruction data to determine whether an obvious change in grassland nesting bird use occurs. By comparing the data, the independent biologists conducting the study will be able to discuss with biologists at ODFW and ODOE persistence (or not) of nesting and breeding grassland and open shrub grass-dependent species in an area developed and operated for wind power. By surveying a large area that includes the undisturbed area between turbine strings, the study could provide information on whether the Facility discourages use of the entire 1,100-acre area by grasshopper sparrows or long-billed curlews.

In addition, the post-construction gradient data on the location of common species at distances near and far from turbines and other facilities could also be used to discuss whether wind turbines affect species use of habitat adjacent to or in proximity to the turbines.

A draft summary report will be prepared for the first monitoring year's results and a second, more comprehensive report will be prepared after completion of the second year of surveys (year to be determined).

If an obvious and significant decline in nesting pairs is detected during the study, the Applicant will consult with ODOE and ODFW on appropriate mitigation measures. Measures could include conservation of additional acres at the habitat mitigation site, a similar approach to what has been required as part of the Stateline, Klondike III, and Biglow Canyon site certificates.

Comment P6

Pages P-90, P-97

Provide a draft of the "Revegetation Plan." Include a discussion of success criteria, post-construction monitoring and proposed mitigation if successful restoration of areas of "temporary" impact is not achieved in a reasonable time.

Response

Appendix A, Attachment 13 contains a draft revegetation plan.

Comment P7

Pages P-91, P-98

Provide a draft of the Habitat Mitigation Plan. The plan should: (a) describe the current condition and use of the proposed mitigation area, (b) justify the size of the mitigation area by comparison with the potential loss of habitat within the site boundary, (c) discuss whether additional mitigation area is needed to ensure "no net loss" and "net benefit" for "temporary" impacts to habitat (see RAI P4), (d) discuss how the area would be "protected", (e) discuss proposed "enhancement" actions, (f) describe success criteria for enhancement actions, (g) discuss proposed monitoring of the mitigation area over the life of the facility, (h) discuss appropriate mitigation actions if success criteria are not met within a reasonable time, (i) discuss whether you propose any surveys of wildlife use of the mitigation area (by raptors, other avian species and WGS) before construction and during the life of the facility.

Response

Appendix A, Attachment 12 contains a draft habitat mitigation plan.

Comment P8

Pages P-100, P-101

Provide a draft of the Wildlife Monitoring and Mitigation Plan (WMMP). Include proposed monitoring for raptors and WGS. Include criteria to determine whether operation of the facility results in a significant impact. Discuss appropriate mitigation if a significant impact occurs.

[Note: Table P-14 indicates that LJ-II has the second-highest "all raptors" nest density among all the regional wind projects listed and the highest nest-density for Swainson's hawk. Given the importance of the site for nesting raptors, the WMMP should address whether long-term monitoring of raptor nesting is appropriate and what mitigation would be proposed if a decline in raptor nest success is detected.]

Response

Appendix A, Attachment 15 contains a draft wildlife monitoring and mitigation plan.

Reviewing Agency Comment (RAC) 2

Discuss your response to the ODFW comment letter from Rose Owens (November 9, 2006)?

1. On Page P-71, third paragraph and in several other locations in the application, construction around raptor nests is addressed. ODFW is interested in discussing this issue further with ODOE and the Applicant in order to assure minimization of impacts to nesting raptors during project construction.
2. On Page P-71, last paragraph and top of Page P-72, the application states that there was "one active burrowing owl nest documented during the 2005 wildlife surveys; however, no nests were observed within the Leaning Juniper II North lease boundary. In addition, no burrowing owls were observed during the 2006 spring avian point counts in this area." However, Figure P-6 shows several burrowing owl nest designations located in

the North lease boundary area and these are listed as 2006 data in the legend box in the upper left corner of the figure. ODFW requests that the Applicant clarify the location(s) of burrowing owl nests documented during the 2005 and 2006 surveys in the Leaning Juniper II North lease boundary area.

3. On Page P-96, Exclusion Flagging section, the 2nd bullet should be revised to state the same information that is given on Page P-89, 1st bullet. Were Washington ground squirrel (WGS) surveys also last done in Leaning Juniper South in 2006? If so, the language on Page P-96 should reflect that a "refresh of the original 2006 surveys will be conducted …" And then, this bullet should go on to include the same language as that found on Page P-89 as to what will be done in the event that WGSs are found in the area where turbines are proposed to be placed.

4. On Page P-101, fourth paragraph, the application states "If WGSs are present at the habitat mitigation site, this population could also be monitored …" ODFW is interested in discussing whether PPM is proposing monitoring at the habitat mitigation site for WGSs and, if so, for how long?

5. Overall, ODFW is concerned about the anticipated temporary category 2 habitat impacts of 93 acres (79 acres in Leaning Juniper II South and 14 acres in Leaning Juniper II North), with the worst case scenario impacting as much as 138 acres. ODFW anticipates that attempts to re-establish this habitat to its pre-construction condition will take much time and effort, if achievable at all. ODFW recommends that the applicant minimize the temporary as well as permanent impacts to category 2 habitat to the extent possible. ODFW would then be interested in participating in discussions with ODOE and the Applicant as to what constitutes acceptable mitigation for these category 2 habitat impacts. In the Mitigation Intent sections starting on Page P-92, the application states that "the Applicant will enhance or protect…" to mitigate for each permanent habitat category impact. ODFW suggests that protection of habitat alone (without enhancement activity) will not meet the intent of ODFW's Fish and Wildlife Mitigation Policy. ODFW is interested in continuing to work with ODOE and the Applicant in order to address these concerns as the habitat mitigation plan and the revegetation plan are developed.

Response

1. The Applicant plans to schedule a conference call with ODOE and ODFW in December 2006 to discuss these and other wildlife issues.

2. The figure legend on P-6 should read "Potential Burrowing Owl Nest." The indicated sites show characteristics of potential burrowing owl use or possible signs of much earlier burrowing owl use. No burrowing owls were seen in this area. No active burrowing owl dens were found in 2006. One active burrowing owl nest was found in 2005 near the existing LJ I facility on land that is not leased by the Applicant. This nest was not active in 2006.

3. On Page P-96, Exclusion Flagging section, the 2nd bullet should be revised to state the following:

   If the Facility is not built within 3 years of the original 2005 surveys and any supplemental 2006 surveys, a refresh survey will be conducted within the

anticipated construction zones during the spring season before initiation of construction. If WGS colonies are identified, these would be marked with orange exclusion fencing or other marking. The contractor will also be instructed to work outside these boundaries at all times.

4. If WGS are identified on the habitat mitigation site, the Applicant will note the presence of WGS during the periodic monitoring described in the habitat mitigation plan. The mitigation site will also be available to ODFW for monitoring, with landowner approval.

5. The Applicant discussed these concerns with ODFW and ODOE during the site visit to the proposed habitat mitigation site on December 5, 2006, and understands the concerns. Further discussion of these issues is provided in response to RAI numbers P4 and P7.

RAI No. 2

Comment P3

The original Tables P-10A and P-10B (LJ-North impacts) showed no Category 4 "old field" habitat within the lease area. Revised Tables P-10A and P-10B show 102 acres of Category 4 "old field" habitat within the lease boundary, but a footnote states that the "total acres" are the total for LJ-South. Tables 15A and 15B (LJ-South impacts) show 100 acres of Category 4 "old field" habitat, not 102 acres. Which figure is correct?

Response

The correct number is 100 acres of Category 4 "old field" habitat.

Comment P5

We plan to include the grassland study as a section within the Wildlife Monitoring and Mitigation Plan. We will provide a revision of the draft WMMP for further discussion no later than 1/31/2007.

See comment letter from Rose Owens, ODFW, dated 1/16/2007.

Response

The Applicant is reviewing the Department's changes to the draft Wildlife Monitoring and Mitigation Plan, which includes the grassland bird study, revegetation plan, and habitat mitigation plan, in conjunction with the comment letter from Rose Owens, Oregon Department of Fish and Wildlife (ODFW), dated January 16, 2007, and comments provided by Tom Meehan, consultant to the Department. The Applicant submitted preliminary comments to the Department via e-mail on February 16, 2007, in preparation for a teleconference with the Department and ODFW to discuss these plans. The Applicant will continue to coordinate with the Department and the ODFW on these plans.

Comment P6

We will provide a revision of the draft Reveg Plan for further discussion no later than 1/31/2007.

See comment letter from Rose Owens, ODFW, dated 1/16/2007.

Response

Please see response to Comment P5.

Comment P7

We will provide a revision of the draft HMP for further discussion no later than 1/31/2007.

See comment letter from Rose Owens, ODFW, dated 1/16/2007.

Response

Please see response to Comment P5.

Comment P8

We will provide a revision of the draft WMMP for further discussion no later than 1/31/2007.

See comment letter from Rose Owens, ODFW, dated 1/16/2007.

Response

Please see response to Comment P5.

Comment P9

Pages P-48, P-50, P-75, P-78, RAI No. 1 Attachment 11

[This is a new request]

Do the areas of habitat impact shown on Tables P-10A, 10B, 15A and 15B include areas of temporary and permanent impact for related or supporting facilities outside of the lease boundaries of LJ-North and LJ-South, such as the collector lines in the LJ-I area? If not, please provide revised tables that include these areas.

Response

Yes. The areas of habitat impact shown on Tables P-10A, P-10B, P-15A, and P-15B include areas of temporary and permanent impact for related or supporting facilities outside of the lease boundaries of LJ-North and LJ-South.

Reviewing Agency Comment (RAC) 2

See comment letter from Rose Owens, ODFW, dated 1/16/2007 (Appendix B, Attachment 8).

Response

Please see response to Comment P5.

Additional Requests

Comment

On March 12, 2007, John White of ODOE requested clarification of habitat acreage within the Facility lease boundary, as shown on Tables P-10B and P-15B.

> -----Original Message-----
> From: John White [mailto:John.White@state.or.us]
> Sent: Monday, March 12, 2007 10:24 AM
> To: McMahon, Sara
> Subject: Revised Tables P-10B and P-15B
>
> Sara,
> On revised Table P-10B, you have added construction disturbance ("temporary facilities") of 0.74 acres of Category 2 SSA, and 0.77 acres of Category 6 DB, but the column for "Total Acres Within Lease Boundary"
> is blank for both of these additions.
>
> Similarly on revised Table P-15B, you have added construction disturbance of 0.05 acres of Category 3 SSU and 0.21 acres of Category 4 SSC, but show no acres within the lease boundary.
>
> You can't disturb what isn't there. Can you explain, or provide new tables?
>
> Thanks,
> John
>
> John G. White
> Oregon Department of Energy
> 625 Marion St., NE
> Salem, Oregon 97301-3742
> john.white@state.or.us

Response

In response to this request, the Applicant provided revised Tables P-10B and P-15B. Missing acreages were added with clarifying footnotes. For consistency, Tables P-1 and P-2 were updated, as well. The four revised tables are provided in Appendix C, Attachment 3.

EXHIBIT R

Scenic and Aesthetic Values

RAI No. 1

Comment R1

Page R-4

Provide a copy of the management plan for the CRGNSA or relevant excerpts discussing the special management areas, key viewing areas and scenic values protected under the management plan.

Response

A copy of the Management Plan for the Columbia River Gorge National Scenic Area can be obtained on the following Web site:

http://www2.co.multnomah.or.us/Community_Services/LUT-Planning/urban/CRGNSAPlan/Home/NSAMP_Home.html

EXHIBIT S

Historic, Cultural, and Archaeological Resources

RAI No. 1

Reviewing Agency Comment (RAC) 3

Discuss your response to the SHPO comment letter from Mollie Manion (November 8, 2006). Call ODOE before submitting any locational information that might be exempt from public disclosure.

Response

The Applicant contacted Molly Manion at the Oregon State Historic Preservation Office (SHPO) to discuss how best to provide revised site records (personal communication between Molly Manion of SHPO and Robin McClintock of CH2M HILL on November 29, 2006)). The Applicant is revising the interpretation of the age of LJ-S-3 and providing additional physical descriptions of LJ-S-2. The Applicant will provide revised site records to Ms. Manion by December 31, 2006. The Applicant will provide a copy of this correspondence to ODOE.

RAI No. 2

Reviewing Agency Comment (RAC) 3

Please provide copies of the correspondence described in your response. If this correspondence includes location information of the resource sites, mark this information as "confidential." Submit the information to us with a cover letter in which you request that ODOE and EFSC keep the information confidential under ORS 192.502(4). State that the materials are of a type that reasonably should be kept confidential. In addition, in the cover letter, request that ODOE notify you if ODOE or EFSC receives a public records request that asks for the archaeological locational information. Also, if there are confidentiality agreements between PPM Energy and the entity that produced the information, those should be noted in the letter, as well. In addition, include information in the cover letter that demonstrates that the documents are also entitled to protection under ORS 192.501(11). We will agree to keep the information confidential to the extent permitted by law.

Response

A copy of the December 2006 correspondence between the Applicant and SHPO is provided in Appendix B, Attachment 9, appended to a letter to the Department requesting that the Department and EFSC keep the site location information confidential under ORS 192.502(4).

EXHIBIT T

Recreational Facilities and Opportunities

RAI No. 1

Comment T1

Page T-1

Please provide a revised Figure T-1 confirming the correct alignment of the Oregon Trail.

Response

The approximate alignment of the trail follows Alkali Canyon. Please see revised Figure T-1 in Appendix A, Attachment 16.

EXHIBIT U

Public Services/Socioeconomic Impacts

RAI No. 1

Comment U1

Page U-6

Please explain in more detail the need to apply for a permit from ODOT for construction of a "state highway approach" on Hwy 19. What information does ODOT require to apply for this permit? Who is the contact person at ODOT?

Response

A permit is required to establish a new approach to a state Highway or change the use of an existing approach, pursuant to Oregon Revised Statutes (ORS) Chapter 374. Specifically, an Application for State Highway Approach is required under the following circumstances:

- For a new road approach
- If the use of an existing approach road changes
- To modify of relocate an existing approach road
- To remove a restriction, such as farm use only, form an existing approach road
- Construction of a temporary approach for a limited time duration

Permits require satisfying the conditions species in Oregon Administrative Rule (OAR) 734 Division 51 (http://arcweb.sos.state.or.us/banners/rules.htm). For more information, refer to the following Web site:

http://www.oregon.gov/ODOT/HWY/ACCESSMGT/docs/BrochureMar04.pdf

The ODOT District Permit Specialist for this project would be located out of Region 4. Contact information is as follows:

District 9
3313 Bret Clodfelter Way
The Dalles, OR 97058
(541) 296-2215

Comment U2

Page U-6

Describe the current status of discussions with the Gilliam County Road Department regarding the need for improvements to Rattlesnake Road. Is Rattlesnake Road a public road? Are there other public roads within the site boundary that would be improved?

Response

Discussion status has not changed. The Applicant will not pursue further discussion of improvements until a construction contractor determines whether the road is needed. It is likely that the more cost-effective Stone Lane will be used instead of Rattlesnake Road, but the Applicant seeks flexibility in the application.

Yes, Rattlesnake Road is a county road.

No, the Applicant does not propose to improve other public roads within the site boundary.

Comment U3

Page U-8

What fire protection equipment would be maintained on site during operation of the facility?

Response

Hand-held fire extinguishers will be carried in each technician service vehicle. Additionally, a number of extinguishers will be mounted in various locations inside the O&M building. All other fire-related needs will be coordinated with the local fire departments.

Many of the Applicant's newer O&M buildings have fire alarm systems installed. The Applicant is reviewing the possibility of implementing individual wind turbine fire alarms using available communication circuits.

RAI No. 2

Comment U1

From your response, it appears that an ODOT road approach permit is needed. We believe this to be a state permit that should be addressed by the site certificate. Accordingly, your site certificate application must contain all information that would be needed by ODOT to issue the permit (although the Council will make the decision). Please contact ODOT to determine the information requirements and submit the required information to ODOE and to ODOT. Provide us with the name, phone number and e-mail address of the ODOT contact you are working with.

Response

A road approach permit would be needed from ODOT. The Applicant has contacted Patrick Smith at ODOT regarding the approach permit. A copy of the e-mail correspondence is included as Appendix B, Attachment 10.

Contact information for Patrick Smith is as follows:

Patrick Smith
Permit Specialist
ODOT District 9

Maintenance Office
541-296-2215
Patrick.e.smith@odot.state.us

Comment U2

Would improvements to Stone Lane be necessary, if, as suggested by your response, you use Stone Lane instead of Rattlesnake Road for access to the site? Is Stone Lane a county road?

Please provide a written statement from the appropriate Gilliam County officials regarding possible improvements or changes to these roads and whether such changes would require a local permit.

Response

Stone Lane is an existing private road that was improved during construction of Leaning Juniper I. The impact calculations provided in the ASC included impacts for temporarily widening this existing road to 35 feet.

Regarding Rattlesnake Road, Gilliam County issued a construction permit on September 23, 2005, for the straightening of Rattlesnake Road (see Appendix B, Attachment 11), indicating that the County has been receptive to these road improvements in the past. If during final road design, the construction contractor were to determine that road improvements to Rattlesnake Road are needed for construction of Leaning Juniper II, the certificate holder would consult with the Gilliam County Planning and Road Departments to amend the permit and transfer it from Leaning Juniper Wind Power LLC to Leaning Juniper Wind Power II LLC. The final road improvement designs would be provided to the County Roadmaster for final review and approval by the Gilliam County Road Department.

EXHIBIT X

Noise

RAI No. 1

Comment X1

Page X-5

Please confirm whether the sound power levels shown in Table X-6 are the warranted levels based on manufacturers' test data. Provide supporting documentation from the manufacturer or explain why the supporting documentation cannot be provided.

Response

The overall A-weighted levels are typically guaranteed and subject to a +/- 2 dBA uncertainty band when measured in accordance with IEC61400-11.

Supporting warranty documentation will be available when contract documents have been signed with the selected turbine vendor.

Comment X2

Page X-7

Table X-8 indicates that waivers have been obtained for R3, R4, R5 and R6. Please provide copies of the noise waivers obtained for these properties (and any other properties for which waivers have been obtained) with verification that the waiver documents have been recorded.

Response

Appendix A, Attachment 17 contains noise waivers for R3, R4, R5, and R6. Note that waivers for R3 and R4, owned by Waste Management, are contained in one waiver document. Verification that waiver documents have been recorded is provided on each waiver.

Comment X3

Page X-9

Confirm that you have identified all noise sensitive properties within the 36-dBA contour lines shown on Figures X-1 and X-2. For noise sensitive properties within the city of Arlington, provide revised Figures X-1 and X-2 showing the city limits and a discussion including the distance from the micrositing boundary to the nearest noise sensitive properties.

Response

Figures X-1 and X-2 have been revised to show all known noise-sensitive receptors and the City limits (see Appendix A, Attachment 18 for revised figures).

The micrositing boundary is immediately adjacent to the Arlington city limit boundary. However, all turbines will be sited sufficient distance from residences to ensure that no noise-sensitive properties are within the 50-dBA contour line. A safety setback will also be maintained. The safety setback will be equal to the total height of the turbine, or 389 to 492 feet depending on the turbine selected.

Under the 1.5-MW layout depicted on Figure X-1, the LJ II North turbine closest to a residence is G-1, which is located 1,598 feet (487 meters) from the closest receptor in Arlington. The LJ II South turbine closest to a residence is turbine J-11, which is 1,132 feet (345 meters) from sensitive receptor R5.

Under the current 3.0-MW layout, the LJ II North turbine closest to a residence is G-1, which is located 1,611 feet (491 meters) from the closest receptor in Arlington. The LJ II South turbine closest to a residence is turbine J-2, which is 1,424 feet (434 meters) from sensitive receptor R4.

Comment X4

Page X-9

Provide one or more turbine layouts that would comply with the noise regulations and a discussion of the restrictions on turbine placement within the micrositing corridors that would be necessary to ensure compliance based on the information that is currently available.

Response

Please refer to noise Figures X-3 and X-4 in Appendix A, Attachment 18. These figures show potential noise-compliant layouts. A discussion of the restrictions on turbine placement within the micrositing corridors that will be necessary to ensure compliance is provided below:

(XX) Before beginning construction of the facility the certificate holder shall identify the final design locations of all turbines to be built, perform a complete new noise analysis for all turbines, and generate a new table listing each noise sensitive property, as defined in OAR 340-035-0015(3), and the predicted maximum hourly L_{50} noise level at each noise sensitive property. The certificate holder shall perform the noise analysis using the same modeling methodology as in the application. If the certificate holder finds that modifications to the modeling methodology are warranted, results from both the approved and modified methodology will be presented.

The analysis of the final layout and turbine shall demonstrate that:

a) The hourly L_{50} noise levels caused by the facility will not exceed 50 dBA at any noise sensitive property

b) Where the hourly L_{50} noise levels caused by the facility will exceed 36 dBA but not exceed 50 dBA at any noise sensitive property the certificate holder will:

    i. have obtained a legally effective easement or real covenant pursuant to which the owner of the property authorizes the certificate holder's operation of the facility to increase ambient statistical L_{50} noise levels by more than 10 dBA at the appropriate measurement point. A legally effective easement or real covenant shall: (i) include a legal description of the burdened property (the noise sensitive property); (ii) be recorded in the real property records of the county; (iii) expressly benefit the certificate holder; (iv)

expressly run with the land and bind all future owners, lessees or holders of any interest in the burdened property; and (v) not be subject to revocation without the certificate holder's written approval.

ii. Submit analysis of measured noise levels that document the existing noise levels exceed the assumed ambient level of 26 dBA and that the project will not increase ambient statistical noise levels L50 by more than 10 dBA at the appropriate measurement point at any noise sensitive property in accordance with the ambient degradation portion of the noise rule.

RAI No. 2

Comment X1

You have not answered the question. Should we conclude that the sound power levels shown in Table X-6 are not the sound power levels warranted by GE and Vestas? If these are not the warranted sound power levels, how did you determine these numbers?

Response

Table X-6 shows the maximum sound power level determined in accordance with IEC61400-11. Table X-10, the basis for the modeling, shows the +2 dBA typical warranty uncertainty band. No turbine manufacturer is known to guarantee octave band levels. Rather, their warranty statement will address maximum A-weighted sound power level in accordance with IEC61400-11 and typically such guarantees include a +/- 2 dBA statement, which was taken into account in Table X-10.

Comment X3

From your response, it is clear that there are many potential noise sensitive properties in the Arlington area that lie within the 36-dBA contour under the "current" 1.5-MW and 3.0-MW layouts.

Have you made a list of all of the potentially-affected noise sensitive properties? If so, please submit a copy.

Response

Noise-compliant layouts were presented in RAI No. 1.

Comment X4

You have provided what we asked for; however, it appears that you are severely limited in the location of the H, I and J strings using wind turbines that have a maximum overall sound power level of 112 dBA. For example, Figures X-2 and X-4 show turbine J-9 at the very edge of the micrositing boundary. We will need specific distances from the noise sensitive properties to establish appropriate restrictions on the placement of turbines (for example, a condition might say: turbine J-9 cannot be located closer than __ feet from residence R5).

Figures X-3 and X-4 represent the "default" configurations if noise waivers are not obtained. Are these default configurations practical, or are they merely hypothetical? That is, if you were required by the site certificate to build the default configurations, are Figures X-3 and X-4 "buildable" considering terrain, construction access and infrastructure requirements?

The default configuration will have to be identified with greater specificity than shown on figures X-3 and X-4. In Klondike III, for example, we required specific turbine locations for the J-string and specified that the F-string turbines be located at least 7,990 feet from residence R5. A similar level of specificity about the default configuration will be needed for LJ-II.

The condition language that you have proposed may improperly delegate the compliance decision to the Department. We are seeking legal advice on this question. In the meantime, we note that the proposed condition is unclear about the modeling methodology to be used and about the input parameters that would be assumed (sound power level, temperature, humidity, ground effects, barrier effects).

Response

It may be more appropriate to impose such restrictions when the final layout has been finalized as the distances will depend not only on the closest turbine, but the number of turbines and their distance to other turbines given the cumulative nature of noise.

The purpose of this "default" arrangement was to demonstrate that the Facility is still viable should waivers not be obtained. The Applicant wishes to maintain micrositing ability to fully utilize wind resource.

Comment X5

Our noise consultant has requested the following information:

1. The location of the residence within the Arlington city limits nearest turbine G-1.
2. There are residence structure pictures shown in Revised Figures X-1 and X-2 and New Figures X-3 and X-4 in Attachment 18. However, there are no identifiers on the structures. Provide in those figures the residence identifiers for all residences where noise levels were predicted including the nearest residence in Arlington.
3. The predicted noise level from turbine H-9 through J-7 at Residence R3 and R4 with the 1.5 MW turbine layout.
4. The predicted noise level from turbine J-6 through J-16 at Residence R5 with the 1.5 MW turbine layout.
5. The predicted turbine noise level from turbine G-1 through G-7 at the nearest residence in Arlington for the 3.0 MW turbine layout.
6. The predicted noise level from turbine I-6 through J-5 at Residence R3 and R4 with the 3.0 MW turbine layout.
7. The predicted turbine noise level from turbine J-5 through K-1 at Residence R5 with the 3.0 MW turbine layout.
8. The predicted turbine noise level from turbine K-1 through K-4 at Residence R6 with the 3.0 MW turbine layout.
9. The predicted turbine noise level from turbine G-1 through G-8 and H-1 through H-3 at the nearest residence in Arlington for the 3.0 MW turbine layout.

Response

1. The residence nearest turbine G-1 is number 43. It is located 1,450 feet from the turbine.

2. Please refer to revised Figures X-1 through X-4 in Appendix B, Attachment 12, and Table X-11 in Appendix B, Attachment 13. The figures now show residence identifiers for all residences where noise levels were predicted, including the nearest residence in Arlington (number 43). Table X-11 shows the residence identifier and corresponding coordinate location of all residences.

3 and 4. Please refer to Table X-12 in Appendix B, Attachment 13 for predicted noise levels with the 1.5-MW layout.

5 through 9. Please refer to Table X-13 in Appendix B, Attachment 13 for predicted noise levels with the 3.0-MW layout.

Additional Request

In e-mails dated April 23 and 30, 2007, the Oregon Department of Energy acoustical consultant (Kerrie Standlee) requested noise analysis data absent from Applicant responses to the RAIs. The Applicant responded to his comments as documented below.

Comment

In Request #3 of my memo, I requested, for Receiver R3 and R4, the predicted sound levels from 1.5 MW turbines H-9, H-10, H-11, H-12, H-13, H-14, H-15, H-16, J-1, J-2, J-3, J-4, J-5, J-6 and J-7. We received the requested data for H-9 and H-10 and for J-6 and J-7. It appears we did not receive data for the rest of the turbines (H-11, H-12, H-13, H-14, H-15, H-16, J-1, J-2, J-3, J-4 and J-5).

Response

ID	R003	R004
LJ2N_H_11	**28.1**	**27.6**
LJ2N_H_12	**29.8**	**29.2**
LJ2N_H_13	**31.8**	**31.2**
LJ2N_H_14	**34.2**	**33.5**
LJ2N_H_15	**37.1**	**36.2**
LJ2N_H_16	**38.8**	**37.6**
LJ2S_J_1	**39**	**39.2**
LJ2S_J_2	**38.9**	**39.7**
LJ2S_J_3	**37.4**	**38.5**
LJ2S_J_4	**35.8**	**37.1**
LJ2S_J_5	**32.6**	**33.5**

Comment

In Request #5 of my memo, there was a mistake made in the turbine size related to the request. I stated that I wanted the predicted levels, at the nearest residence in Arlington, the 3.0 MW turbines G-1, G-2, G-3, G-4, G-5, G-6 and G-7. The request should have been for the 1.5 MW turbines instead of the 3.0 MW turbines. The response data happened to include the

predicted sound levels at the nearest residence in Arlington (identified as Receiver 43 in applicant's response to RAI #2) for 1.5 MW turbines G-5, G-6 and G-7. It appears we still need the predicted levels for 1.5 MW turbines G-1, G-2, G-3 and G-4.

Response

ID	R043
LJ2N_G_1	37.4
LJ2N_G_2	32.5
LJ2N_G_3	30.3
LJ2N_G_4	28.4

Comment

In Request #6 of my memo, I requested, for Receiver R3 and R4, the predicted sound levels from 3.0 MW turbines I-6, I-7, I-8, I-9, I-10, J-1, J-2, J-3, J-4 and J-5. It appears that we did not receive any of the requested data in the response to RAI #2.

Response

ID	R003	R004
LJ2N_I_10	42.3	41.5
LJ2N_I_6	30.1	29.8
LJ2N_I_7	31.4	31.1
LJ2N_I_8	35	34.6
LJ2N_I_9	37.2	36.8
LJ2S_J_1	40.5	40.4
LJ2S_J_2	43.1	44.1
LJ2S_J_3	39.3	40.2
LJ2S_J_4	36.5	37.2
LJ2S_J_5	32.7	33.2

Comment

In Request #7 of my memo, I requested, for Receiver R5, the predicted sound levels from 3.0 MW turbines J-5, J-6, J-7, J-8, J-9, K-1, K-2, K-3 and K-4.

We received data for J-7, J-8, J-9, K-1, K-2, K-3 and K-4. It appears we did not receive data for J-5 and J-6.

Response

ID	R005
LJ2S_J_5	34.4
LJ2S_J_6	36.8

Comment

In Request #9 of my memo, I requested, for the nearest residence in Arlington (identified as Receiver 43 in applicant's response to RAI #2), the predicted sound levels from 3.0 MW turbines G-1, G-2, G-3, G-4, G-5, G-6, G-7, G-8, H-1, H-2 and H-3. We received data for

turbines G-6, G-7 and G-8. It appears we did not receive data for turbines G-1, G-2, G-3, G-4, G-5, H-1, H-2 or H-3.

Response

ID	R043
LJ2N_G_1	43.4
LJ2N_G_2	40
LJ2N_G_3	34.9
LJ2N_G_4	32
LJ2N_G_5	30.2
LJ2N_H_1	28.3
LJ2N_H_2	26.9
LJ2N_H_3	23.8

EXHIBIT AA

Electric Transmission Line

RAI No. 1

Comment AA1

Explain how the aboveground 230-kV interconnection line complies with OAR 345-024-0090. You may incorporate by reference any relevant technical information cited by the Council in other site certificate proceedings. You may also assume that "areas accessible to the public" do not include the area within the perimeter fencing of the substation and Jones Canyon Switching station.

Response

As shown on revised Figure C-4 in Appendix A, Attachment 19, the Facility substation is located in the eastern half of Lot 3 directly adjacent to the existing LJ I substation that is located in the western half of Lot 3. The existing substation is located directly adjacent to the west side of the existing Bonneville Power Administration (BPA) Jones Canyon switching station, which is located in Lot 2. Both the LJ I substation and the Jones Canyon switching station are fenced, and the Facility substation will also be fenced. All poles will be inside the fences. No part of the substations will be accessible to the public. The 230-kV line will span the gap between the two stations. There will be no residences or occupied buildings within 200 feet of the Facility substation and 230-kV line.

Because the overhead 230-kV transmission line will be located within electromagnetic fields generated by the BPA Jones Canyon switching station and the Facility substation, any electromagnetic fields generated by the 230-kV line will be completely obscured by the fields generated by the stations. Therefore, any estimates of the alternating current electric fields and induced current from the line, as determined by the BPA Corona and Field Effects Model, will be invalid.

Nevertheless, the Applicant intends to provide appropriate grounding of fences surrounding the transmission line, and any metal-roofed buildings in proximity to the line. The certificate holder will take appropriate precautions to minimize the risk of electric shock from induced currents.

RAI No. 2

Comment AA1

The areas outside the substation fences might be considered areas "accessible to the public." Do the electric field levels at the fence line comply with the Council's standard of 9 kV per meter at one meter above ground, considering the existing BPA switching station and the LJ-I substation? Is Lot 1 unoccupied?

If the electric field levels at the fenceline are not already above 9 kV/m, would the addition of the LJ-II transmission line increase the field strength so as to exceed the standard?

Response

The electric field at any point at the substation fence is the vector sum of the field value from every inch of every energized part and conductor. In the past, the Applicant has performed simplified estimates of substation electric fields. Such estimates only considered the effects of the closest bus because this effect would predominate. The Applicant found that fields in the substation under the bus are higher than the center of a transmission line right-of-way because the ground clearance is low in substations compared to the phase spacing. However, at the fence, the electric field was found to be very low, and close to background levels. This is for the same reason; the phase spacing is small compared to the distance to the fence, providing efficient cancellation of fields.

The predominant electric field outside of a substation fence is typically caused by a transmission line entering the substation. If the small net electric field vector from substation equipment happens to add to the net transmission line field vector, then the total field at that point would be slightly higher. The probability that this would happen is small because the vectors are not likely to be pointed in the same direction, and are not likely to be of the same phase.

To answer the Department's questions rigorously would require a detailed computer model of the substation and transmission lines. However, from our experience, and from industry experience, the Applicant expects that the electric field caused by typical substation equipment, at a typical substation fence, would be far less than 9-kV/meter, and in most situations, not measurable. From an electric field aspect, the Applicant would put the LJI substation in the "typical" category.

The Applicant can state with certainty that the fields at the substation fence can not be expected to be measurably greater than the maximum transmission line electric field.

EXHIBIT BB

Other Information

RAI No. 1

Comment BB1

Page BB-2

OAR 345-024-0015 requires a finding by the Council regarding "cumulative adverse environmental impacts." Comments we have received on Klondike III and Biglow Canyon indicate a heightened awareness and concern in the region about "cumulative impacts." Please provide a discussion of whether the operation of the proposed facility, in combination with other wind energy facilities in the Columbia Basis that have been built or are in the permitting process, has a potential to cause cumulative adverse environmental impacts. If you believe that there would be no significant cumulative impacts, provide a justification for that conclusion and explain why the Council should reach a similar conclusion. If there is a potential for significant cumulative impacts, describe what those impacts might be, why they might be significant and the measures you would propose to reduce those impacts to the extent practicable.

Response

The Applicant recognizes the heightened concern regarding potential cumulative impacts resulting from wind energy development in the Columbia Basin region. The Applicant and its consultants thus far have found no information suggesting such a potential for the proposed facility. The Applicant agrees with ODOE that more detailed consideration of the potential for cumulative impacts should be focused through the Council's standards-based siting process. In light of these points, and for the technical and regulatory reasons set forth below, the Applicant is not currently able to present fully, and the Council is not yet in a position to evaluate, the potential for cumulative impacts from Columbia Basin wind energy projects.

From a technical perspective, while it is possible to calculate the potential impacts of the proposed facility, it is difficult to determine if these impacts would contribute to or create a level of cumulative impacts that are biologically significant. The primary reasons are described below.

To determine the level of cumulative direct avian and bat fatalities resulting from the operation of the proposed and other wind energy facilities in the Columbia Basin, a number of factors will need to be defined. The first step will be to identify all known and proposed wind energy projects in the region, including projects in Washington and non-EFSC jurisdictional projects in Oregon. After identifying the location and size of these projects, the number of known and expected avian and bat fatalities will be calculated. For existing facilities with formal fatality monitoring programs, the number of avian and bat fatalities

per MW per year could be obtained from the results of the monitoring programs. For existing projects without formal fatality monitoring, as well as future proposed projects, the number of fatalities will have to be estimated based on known fatality rates at other projects in the region, based on the assumption that new regional projects will have similar impacts to existing projects.

The BPA Final Environmental Impact Statement (FEIS) for the Klondike III / Biglow Canyon Integration Project conducted a similar analysis of cumulative avian fatalities for several wind projects in the region. As described in the BPA EIS, "the construction of multiple wind power and transmission facilities as well as other development in the project vicinity could cause cumulative impacts to some wildlife species. Cumulative impacts from the operation of the wind power and transmission line facilities on bird and bat species is more likely than impacts to terrestrial species, because these facilities have potential to harm or kill animals that strike them. A study of the potential cumulative impacts to bird and bat species was conducted in 2006 for the Klondike I and II, Klondike III, Biglow Canyon, and Orion South projects (WEST, *Cumulative Impacts Analysis for Avian Resources from Proposed Wind Projects in Sherman County, Oregon*, 2006). This study is included as Appendix A to [the BPA] EIS. This study did not include the full potential 279 MW of LJ II or the 750 MW Shepherd's Flat wind project, nor other projects currently in various stages of development or planning in Washington."

Once all wind projects that might contribute to avian mortality in the Columbia Basin are identified, the next step will be to identify all other major anthropogenic sources of avian mortality, to understand the range of factors contributing to avian mortality and population trends. Sources of mortality vary by species and habitat, but include vehicle, structure and electric distribution line collisions, domestic animals, and habitat loss.

Although the above analysis will provide a projection of cumulative, anthropogenic fatality numbers for broad groups of birds (such as all birds or all raptors), these numbers will not indicate whether the impacts represent a significant biological impact on the affected species, either on a local or regional population level. Species-specific population numbers will need to be obtained to answer this question. At this point, knowledge of Columbia Basin bird population sizes is very limited, and it will take a great deal of resources to determine a population size for a given species, much less for all affected species. The Applicant recently became aware of new research being conducted at the American Museum of Natural History using genetic tissue from large sample sizes of Hoary bats to estimate population numbers and genetic diversity of that particular species. However, we are not aware of similar work being done for avian species. Conducting a similar study on less common sensitive species such as Swainson's and Ferruginous hawks will be challenging, given the lack of genetic tissue, which is a result of the rarity of mortality events for these species.

In order to calculate cumulative impacts to native shrub-steppe and other wildlife habitat, the first step will be to identify all known and proposed projects and associated permanent and temporary footprints. For existing EFSC-jurisdictional facilities, the number of acres could be obtained from the application for site certificate and habitat mitigation plan. For existing projects without formal reporting of habitat impacts, as well as future proposed projects, the level of habitat impacts could be estimated based on a combination of publicly available habitat mapping and estimates of level of impacts based on known impacts at

other projects in the region. Because zoning and land use maps group native shrub-steppe and cultivated agricultural lands together as agricultural land, habitat in the Basin could be characterized using sources such as the USGS Gap Analysis Program (GAP) and aerial photography. The next step will be to describe the quantity and quality of native habitat currently available in the Columbia Basin, using the tools described above. The study will then compare the anticipated cumulative impacts resulting from wind facilities to the quantity and quality of the impacted habitat that exists in the Basin. However, it is important to note that determining the percent of each habitat type that may be affected by wind energy development may not fully answer the question of biological significance either. Other factors, such as the location of remaining native habitat, its integrity and its contiguity with other habitat (i.e., level of fragmentation) influence the usefulness of habitat to wildlife species.

To summarize from a technical perspective, the Applicant is aware of no studies or research suggesting that existing and proposed wind energy projects pose the potential for significant cumulative impacts to avian populations or to habitat in the Columbia Basin. More importantly, there is a fundamental lack of complex, regional data that will allow the Applicant, the Council, or any third party to determine whether such a potential exists.

From a regulatory and policy perspective, the Applicant's review of the Council's siting standards and application requirements suggests that the Council currently lacks the regulatory framework in which the potential for cumulative impacts could be presented thoroughly and evaluated fairly based on objective standards. The Council's Energy Generation Area rule, OAR 345-001-0200, is targeted at a question not related to ODOE"s question above: when do the impacts of several small projects create "accumulated effects" significant enough that the Council will exercise its siting jurisdiction over otherwise subjurisdictional facilities? The Council's siting standard for wind energy facilities, OAR 345-024-0015(3), is more narrowly targeted to the project's "vicinity" (rather than, for example, the "Columbia Basin"). Further, the standard is narrowly focused on practicable design and construction measures that might reduce cumulative impacts relating to other wind projects in the vicinity (largely, for example, using existing facilities that support other existing projects rather than constructing new facilities for each new project). This standard calls for a conceptual analysis of potential categories of cumulative impact, and an assessment of practicable design and construction measures that could reduce those types of impacts. Such an analysis was presented in the ASC for this project. Finally, the existing Council rules do not contain any guidance on one of the central questions in any cumulative impacts analysis: how to apportion responsibility, and mitigation duties, among the project proponent and the owners of all the other anthropogenic impacts on any given species.

Overall, there is neither sufficient technical information nor a sufficient regulatory framework in which to take up fairly and objectively the question of cumulative impacts—a question that is complex and sophisticated and therefore surely should be based on a thorough facts and clear policy. At the same time, the Applicant is both aware of the Council's interest in this issue, and concerned as a wind project proponent to develop projects that provide renewable power in an environmentally responsible manner. Accordingly, the Applicant is willing to participate in technical studies and regulatory processes designed to move the Council into a position where it can in future responsibly assess the issue.

Comment BB2

In an e-mail to the Applicant on December 1, 2006, John White of ODOE requested information to support findings by the Council as required under OAR 345-024-0010(2).

OAR 345-024-0010

* * *

(2) To issue a site certificate for a proposed wind energy facility, the Council must find that the applicant:

(a) Can design, construct and operate the facility to exclude members of the public from close proximity to the turbine blades and electrical equipment;

(b) Can design, construct and operate the facility to preclude structural failure of the tower or blades that could endanger the public safety and to have adequate safety devices and testing procedures designed to warn of impending failure and to minimize the consequences of such failure.

Response

Because LJ II will be located on private property, public access to the facility will be limited. Turbine towers will be located at least 250 feet from any public road and a distance equal to the total turbine height (389 to 492 feet, depending on turbine selected) from residences to ensure that in the unlikely event a turbine tower became dislodged from its foundation it will not cause a public safety risk. Turbine blade tips will be approximately 136 to 164 feet above ground at the closest point of rotation. Towers will be smooth steel structures with no exterior ladders or access to the turbine blades. Tower entry doors will be locked. There will be no access to the nacelles or turbine tower interiors or to the electrical equipment contained within the nacelles or turbine tower interiors. Step-up transformers will be located within locked cabinets at the base of each tower.

Towers and tower foundations, as well as aboveground transmission line support structures, will be designed according to applicable building codes to avoid failure or collapse. During construction of the facility, the Applicant will follow the manufacturers' recommended handling instructions and procedures to prevent damage to towers or blades that could lead to failure.

During operation of the Facility, the Applicant will have an operational safety-monitoring program and will inspect turbine blades on a regular basis for signs of wear. All turbines will have self-monitoring devices linked to sensors at the O&M facility to alert operators to potentially dangerous conditions.

Electric transformers and other equipment associated with the proposed substation will be enclosed by a fence with a locked gate and otherwise be made inaccessible to the public. Warning signs will be posted as required by law for the safety of the public.

APPENDIX A

Attachments to RAI No. 1

APPENDIX B

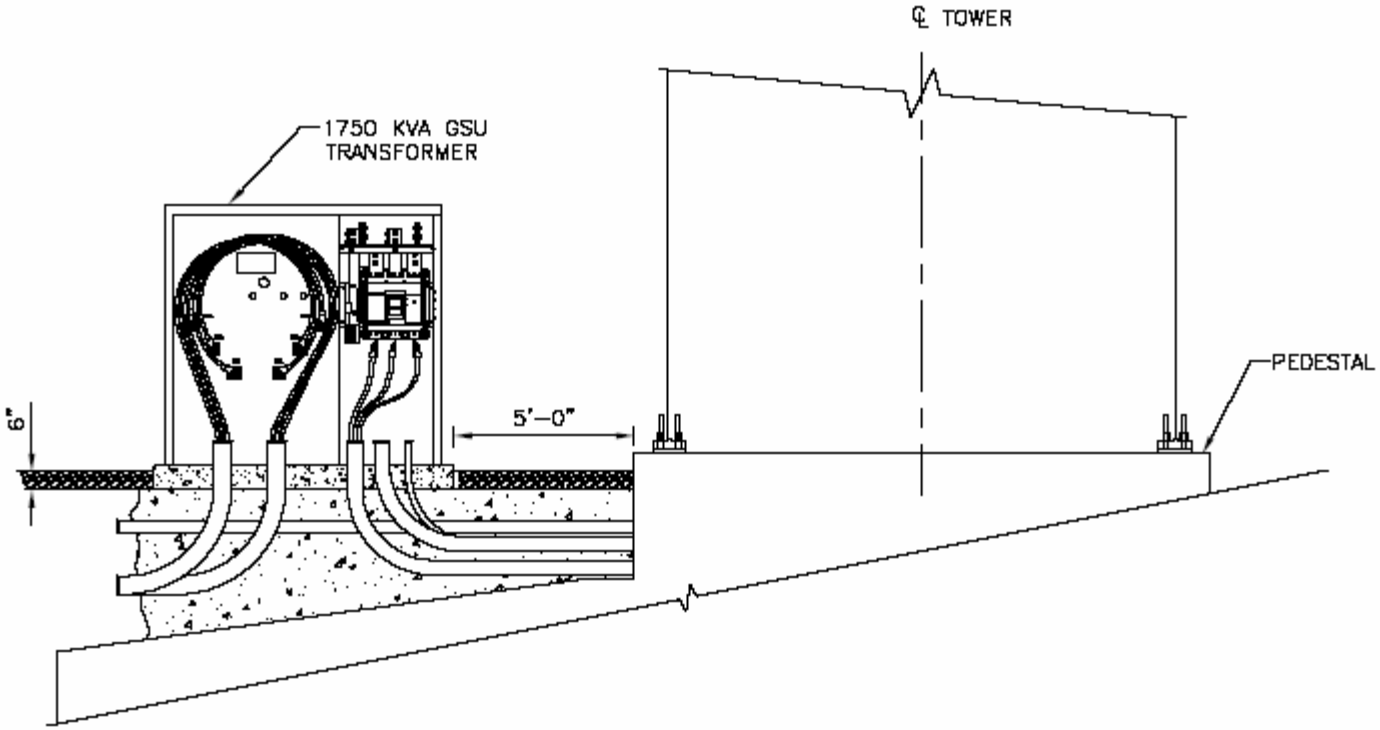
Attachments to RAI No. 2

APPENDIX C

Attachments to Additional Requests

APPENDIX A, ATTACHMENT 1

Figure B-3a



Not to scale

PPM Energy
A ScottishPower Company

FIGURE B-3a
Typical Transformer Foundation
LEANING JUNIPER II WIND POWER FACILITY RAI

APPENDIX A, ATTACHMENT 2

Figure C-3a

Figure C-3a

Facility Components (1.5-MW Layout)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Underground 12-kV Power Line
- Alternate Underground 12-kV Power Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
S

0 2,000 4,000 6,000 Feet

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure C-3a - Facility Components (15MW Layout).mxd, Date: December 7, 2006 9:15:34 AM

APPENDIX A, ATTACHMENT 3

Revised Tables C-4 and C-5

TABLE C-4
Leaning Juniper II Disturbance Calculations
Permanently Disturbed Areas

Facilities	Notes	Units of Measurement	LJ II—North				LJ II—South				North and South
			Dimensions per Unit	Number of Units	Acres	Other Unit	Dimensions per Unit	Number of Units	Acres	Other Unit	Acres
Turbine Pads/Towers	**1**	**Square feet per tower**	**1,660**	**40**	**1.52**		**1,660**	**93**	**3.54**		**5.07**
Substation/O&M Facility											
LJ II Collector Substation	2	Acres	3.6	1	3.60		3.6	1	3.60		3.60
O&M Facility	3	Acres	2.5	1	2.50		2.5	1	2.50		5.00
Meteorological Towers (self-supporting)	**4**	**Square feet per tower**	**900**	**1**	**0.02**		**900**	**3**	**0.06**		**0.08**
Electrical System Structures											
Overhead 34.5-kV Collector Line Structures	5,6	Square feet per pole	12	50	0.01	600 square feet	12	100	0.03	1,200 square feet	0.04
Overhead 230-kV Collector Line Structures	7	Square feet per pole	20	2	0.00	40 square feet	20	2	0.00	40 square feet	0.00
Access Roads and Turnarounds											
Improved Existing Roads to 20 feet	8	Square feet disturbed area per linear foot of road	10	13,005	2.99	2.46 miles	10	24,176	5.55	4.58 miles	8.54
New 16-foot turbine string roads and road to met tower(s)	9	Square feet disturbed area per linear foot of road	16	38,308	14.07	7.26 miles	16	74,859	27.50	14.18 miles	41.57
New 16-foot spur roads to each turbine	10	Square feet disturbed area per linear foot of road	35	1,120	0.90	0.21 miles	35	2,604	2.09	0.49 miles	2.99
Total Permanently Disturbed Area			**25.62 acres**				**44.87 acres**				**66.89 acres**

Notes:

1 Graveled area of pad, transformer, and disturbed area for each tower, excluding access road. The dimensions are based on a circular area of disturbance with a radius of 23 feet (includes a turbine tower with a radius of up to 8 feet and surrounding gravel area with a radius of up to 15 feet). These dimensions represent the 3.0-MW tower diameter and maximum graveled area.

2 Includes substation and surrounding gravel within the fenced property. No temporary disturbance will occur outside the fenced area. Total acreage for LJ II Collector Substation reflects construction of one substation only, with two transformers.

3 Includes building and graveled parking and storage areas.

4 Includes met tower measuring approximately 23 feet wide and surrounding gravel area.

5 Assumes poles are spaced an average of 350 feet apart. Disturbance area is also presented in square feet.

6 Assumes worst-case scenario with 9.9 miles of overhead collectors. Including the worst-case value results in double-couting of collector impacts because underground temporary disturbance also assumes the worst-case scenario.

7 A short transmission line will be constructed from the LJ II Collector Substation to the BPA Switching Station. The connection may require one support structure. However, this pole will be placed within the graveled, fenced substation area. (Transmission line poles are spaced an average of 700 feet apart.) Disturbance area is also presented in square feet.

8 Assumes maximum of 20 feet of travel lanes or 10 feet of improvements to existing 10-foot road. For roads that are already 20 feet in width, such as Stone Lane, there will be no permanent impacts beyond this width. These roads will only be temporarily widened for construction. Therefore, the length of existing roads needing improvements is greater for temporary impacts than permanent impacts.

9 Assumes maximum of 16 feet of travel lanes.

10 Assumes 35-foot spur road from the access road to each turbine that would be 60 feet long when measured from center of tower to center of sting road, which is equal to 60 feet - 8 feet (1/2 of access road width)—24 feet (distance from center of turbine to beginning of road).

TABLE C-5
Leaning Juniper II Disturbance Calculations
Temporarily Disturbed Areas

Facilities	Notes	Units of Measurement	LJ II—North				LJ II—South				North and South
			Dimensions per Unit	Number of Units	Acres	Miles	Dimensions per Unit	Number of Units	Acres	Miles	Acres
Substation/O&M Building											
LJ II Collector Substation	1	Acres	0.0	1	0.00		0.0	1	0.00		0.00
O&M Facility	2	Acres	1.0	1	1.00		1.0	1	1.00		2.00
Meteorological Towers (self-supporting)	**3**	**Square feet per tower**	**0**	**1**	**0.00**		**0**	**3**	**0.00**		**0.00**
Tower Construction/Laydown Areas											
Central laydown and storage areas for collector lines and other equipment		Acres	5	1	5.00		5	3	15.00		20.00
Laydown areas (usually 1 per string)		Acres	2	4	8.00		2	5	10.00		18.00
Laydown areas at each tower site	4	Square feet per tower site	84,545	40	77.64		84,545	93	180.50		258.14
Electrical											
Temporary Access for 12-kV powerline		Feet of width per linear foot	8	0	0.00	0	8	35,065	6.44	6.64	
Temporary access for collector line											
1 Collector	5	Feet of width per linear foot	24	39,493	21.76	7.48	24	98,767	54.42	18.706	76.18
2 Collectors	5	Feet of width per linear foot	32	0	0.00	0	32	14,313	10.51	2.71	10.51
3 Collectors	5	Feet of width per linear foot	40	3,058	2.81	0.579	40	10,489	9.63	1.987	12.44
4 Collectors	5	Feet of width per linear foot	48	0	0.00	0	48	7,631	8.41	1.445	8.41
5 Collectors	5	Feet of width per linear foot	56	0	0.00	0	56	1,866	2.40	0.353	2.40
Roads											
Temporarily disturbed area during road construction											
Existing road improvements (temporarily widened to 35 feet)	6	Feet of width per linear foot	15	13,005	4.48		15	80,220	27.62		32.10
New 16-foot turbine string roads and road to met tower(s) (temporarily widened to 35 feet)	7	Feet of width per linear foot	19	38,308	16.71		19	74,859	32.65		49.36
Crane Paths	**8**	**Feet of width per linear foot**	**35**	**14,834**	**11.92**	**2.810**	**35**	**0**	**0.00**	**0**	**11.92**
Total Temporarily Disturbed Area				**149.31 acres**				**358.59 acres**			**501.46 acres**

Notes:

1 Assumes contractor will permanently impact entire substation area. Therefore, no temporary impacts will occur.

2 Assumes contractor will temporarily impact a small area surrounding the permanent footprint of the operations and maintenance building(s) and parking area. This impact will be less than 1 acre.

3 Assumes contractor will gravel entire area used during construction. Therefore, no temporary impacts will occur.

4 Assumes a worst-case area of disturbance around towers for staging turbine blades based on the 3.0-MW turbine with a circular impact area of an approximate 164-foot radius for 328-foot-diameter (100-meter-diameter) rotors.

5 Assumes 12 feet on either side of the collector line trench for spoil and travel paths. Trenches are separated by 8 feet for heat dissipation. This distance includes the width of the actual collector line trenches.

6 Assumes the 10-foot existing road will be temporarily widened to 35 feet. The temporary disturbance will be equal to 35-foot total width during construction minus the 20-foot permanent width.

7 The temporary disturbance will be equal to 35-foot total width during construction minus the 16-foot permanent width.

8 A small portion of the temporary disturbance associated with crane paths is geographically located in Leaning Juniper II South. However, because these crane paths are necessary for construction of Leaning Juniper II North, the temporary disturbances are included in the Leaning Juniper II North total.

APPENDIX A, ATTACHMENT 4

Revised Tables C-2 and C-3, and Figure C-3c

Table C-2. Micrositing Corridors for Turbine Strings[1]

Description	Longitude	Latitude
A-string—Western Boundary	-120.3210935	
A-string—Eastern Boundary	-120.3107982	
B-D string—Western Boundary	-120.3017389	
B-D string—Eastern Boundary	-120.2686091	
E1-3—Western Boundary	-120.2611474	
E1-3—Eastern Boundary	-120.2500477	
E4-11—Northern Boundary		45.64662762
E4-11—Eastern Boundary	-120.2414496	
F1-5—Eastern Boundary	-120.2238475	
F1-5—Western Boundary	-120.2365971	
F6-13—Western Boundary	-120.2344746	
G String—Eastern Boundary	-120.195484	
H1-8—Western Boundary	-120.1922851	
H1-8—Eastern Boundary	-120.1848239	
H1-8—Northern Boundary		45.69452023
H1-8—Southern Boundary		45.6725221
I String—NW Corner	-120.1818659	45.68968116
I String—NE Corner	-120.1747899	45.69178413
I String—SW Corner	-120.1735608	45.67593476
I String—SE Corner	-120.1664095	45.67806005
H9-11—Western Boundary	-120.1859096	
H9-11—Eastern Boundary	-120.178417	
H9-11—Northern Boundary		45.67606262
H9-11—Southern Boundary		45.66796
H12-16 and J1-3 Eastern Boundary	-120.1719403	
H12-16 and J1-3 Northern Boundary		45.67115987
H12-16 and J1-3 Western Boundary	-120.1790375	
H12-16 and J1-3 Southern Boundary		45.655232
J4-16—Northern Boundary		45.66023208
J4-16—Western Boundary	-120.177838	
J-17—Western Boundary	-120.1981621	
J-17—Southern Boundary		45.61721147
J17—Eastern Boundary	-120.1902439	
J17—Northern Boundary		45.62241712

[1] Turbine string corridors are also adjacent to the lease boundaries. Legal descriptions for the lease boundaries are available on request.

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
1	Centerline of Alternate Collector Corridor Connecting J1-3 Turbine String Corridor to LJ I Easement	500		45.65764917	-120.184709
				45.65837155	-120.1808053
				45.65899633	-120.1791685
2	Centerline of Crane Path Corridor Connecting Access Road to H12 and 13	500		45.66270109	-120.1842465
				45.66536356	-120.1831584
				45.66623826	-120.1823774
				45.66710705	-120.1813575
				45.6678652	-120.1800045
3	Centerline of Northernmost Road Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500		45.68864792	-120.1812674
				45.68801958	-120.1849758
4	Centerline of Primary Collector Route Connecting F16 to F-17	500		45.63127598	-120.1776535
				45.62834378	-120.1822776
				45.62356555	-120.1849442
				45.62345681	-120.1851384
5	Centerline of Road Connecting D and E Strings	400		45.65477273	-120.2687447
				45.65377209	-120.2594687
6	Centerline of Road Corridor Connecting Access Road to F-1	500		45.65767811	-120.236452
				45.65468786	-120.2389854
7	Centerline of Southernmost Collector Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500		45.64916724	-120.2494657
				45.6824096	-120.1778171
8	Collector Connecting E1-3 to E4-11—Northeastern Edge of Corridor	630		45.64916724	-120.2494657
				45.64863259	-120.2488339
				45.64800059	-120.2484093
				45.64724968	-120.2482161
				45.64669198	-120.2481099
				45.64960668	-120.2500738
9	Crane Path Corridor Connecting G-string to H-string—Northern Boundary	500	N	45.69461058	-120.1939453
			S	45.69323968	-120.1940296
10	Expanded Corridor North of F6-13 Corridor	1,480	E		-120.2261001
			N	45.64893734	
			S	45.64597072	
			W		-120.2317406
11	Primary Access Road from East Entrance and Collector Corridor (Starting at West Side of J1-3 Corridor Ending at Lease Boundary)	500	N	45.66473767	-120.1797365
				45.66452299	-120.1805243
				45.66425543	-120.1811134
				45.66394674	-120.1816086
				45.66372868	-120.1818477
				45.66361072	-120.1824493
				45.6635676	-120.1830791

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.66312206	-120.1847009
				45.6648038	-120.178906
			S	45.66167623	-120.1847212
				45.66212187	-120.1830097
				45.66223863	-120.1825718
				45.66224965	-120.1821746
				45.66256684	-120.1807351
				45.66304937	-120.1801263
				45.66325572	-120.179769
				45.66339075	-120.178977
12	Road and Collector Corridor Connecting E-String to F-String	550	N	45.65470859	-120.2472878
				45.65408307	-120.2453707
				45.65406739	-120.244955
				45.65401453	-120.2446455
				45.65493285	-120.2417272
				45.65496912	-120.2410678
				45.65483272	-120.2399986
				45.65460837	-120.2379173
				45.65458134	-120.2373501
				45.65446946	-120.2368371
				45.65515673	-120.2498032
				45.6546751	-120.2490195
			S	45.65322436	-120.2498255
				45.6533354	-120.247641
				45.65293484	-120.2464726
				45.65260547	-120.2460019
				45.6524296	-120.2454318
				45.65241419	-120.2447198
				45.65257356	-120.2438702
				45.65340061	-120.2415855
				45.65348998	-120.241182
				45.65343975	-120.2407061
				45.65317065	-120.2389199
				45.65306437	-120.2382143
				45.65285768	-120.2377119
				45.65274244	-120.2371752
13	Road and Collector Corridor Connecting E4-11 to F6-13 strings	500. Increases to 1,380 where road splits.	N	45.63521851	-120.2416616
				45.63529252	-120.2411365
				45.63659708	-120.2385929
				45.63809273	-120.2365057
				45.63931883	-120.2345442
			S	45.63393405	-120.2400196

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.63411434	-120.239619
				45.63447353	-120.2393667
				45.63628215	-120.2362216
				45.63553383	-120.2347305
				45.63401158	-120.2348054
14	Road and Collector Corridor Connecting H8 to H9—Northeastern Boundary	500		45.67608998	-120.179524
				45.67657683	-120.1798506
				45.67910159	-120.184257
15	Road and Collector Corridor Connecting H-String to G-String	2,640	N	45.68135637	-120.1946997
			S	45.6741315	-120.1950336
16	Road and Collector Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500	N	45.68552972	-120.1851604
				45.68491344	-120.1789809
			S	45.68414517	-120.1851621
				45.68366819	-120.1803791
				45.68282221	-120.1788328
17	Road and Collector Corridor Connecting LJ II North to LJ II Collector Substation	500	N	45.67484208	-120.2127925
				45.67491891	-120.2122355
				45.67476584	-120.2117114
				45.67463177	-120.2095789
				45.67513745	-120.205686
				45.675961	-120.2040863
			S	45.67211845	-120.212634
				45.6726361	-120.2120636
				45.67285234	-120.2114765
				45.67329244	-120.2102406
				45.67325915	-120.2094326
				45.67374452	-120.2056757
				45.6739979	-120.2045957
				45.67482203	-120.2029948
18	Road Connecting E-String (At Lease Boundary) to Access Road to the North	540	N	45.65351704	-120.2547931
			S	45.65280956	-120.2543991
19	Western Access Road from Blalock Canyon Road to B-String	Varies on the west side of the A-string. Width between A and B is 500 feet.	N	45.63711534	-120.3297983
				45.63630636	-120.3280113
				45.63517001	-120.3264266
				45.63395561	-120.3247266
				45.63262578	-120.3232179
				45.63201347	-120.3212997
				45.6311251	-120.311029
				45.63124782	-120.3094919
				45.63114983	-120.3082258
				45.63092978	-120.3071075
				45.63108705	-120.3019835

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.63736069	-120.3315946
			S	45.63309464	
			W		-120.3345327
20	Rattlesnake Road Corridor (Existing Road)	20		-120.1849553	45.68961543
				-120.183686	45.69036821
				-120.1831715	45.69074216
				-120.1828249	45.69103459
				-120.1824473	45.69128387
				-120.1820693	45.69150057
				-120.1815954	45.69174243
				-120.1811745	45.69195314
				-120.1807216	45.69212005
				-120.1803476	45.69233172
				-120.1801458	45.69260513
				-120.1800348	45.69295129
			NW	-120.1801337	45.69323267
				-120.1803023	45.69357407
				-120.1804468	45.69381447
				-120.1806293	45.69404413
				-120.1800127	45.69638612
				-120.1797582	45.69650278
				-120.1795695	45.69668247
				-120.1794292	45.69692851
				-120.1794531	45.69724431
				-120.1795421	45.69776312
				-120.1795484	45.69788518
				-120.1795075	45.69806591
				-120.1794516	45.69838491
			SE	-120.1849509	45.6887425
				-120.1843591	45.68920673
				-120.1834268	45.68978268
				-120.1826517	45.69033131
				-120.1821914	45.69070797
				-120.1814918	45.69112456
				-120.1807246	45.69150326
				-120.1798643	45.69186374
				-120.1794642	45.69233201
				-120.1792737	45.69272228
				-120.1792593	45.69303956
				-120.1793943	45.69341363
				-120.1796184	45.69387074
				-120.1798604	45.69419624

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				-120.1785617	45.69858171
				-120.1786478	45.69846994
				-120.1786946	45.69818191
				-120.1787645	45.69783829
				-120.1787061	45.69753312
				-120.1786517	45.69710911
				-120.1786478	45.69689141
				-120.1787173	45.69668431
				-120.1788444	45.69646971
				-120.1790266	45.6962629
				-120.1792419	45.69608985
				-120.1794772	45.69596381
				-120.179696	45.69588128
				-120.1798283	45.69575968
21	Rattlesnake Road Corridor (Proposed Realignment)	500		-120.1806293	45.69404413
				-120.1811359	45.69419761
				-120.1814389	45.69451095
				-120.1816395	45.69514634
				-120.1823147	45.69728218
				-120.1823313	45.69780604
				-120.1820993	45.69834868
			NW	-120.1816884	45.69876958
				-120.1809797	45.69925379
				-120.1790376	45.70056792
				-120.1773506	45.70122226
				-120.1770683	45.7014559
				-120.1766021	45.70158778
				-120.1762862	45.70157922
				-120.176057	45.70153904
			SE	-120.1755037	45.70090798
				-120.1756475	45.70051386
				-120.1759626	45.7002195
				-120.1763957	45.70001293
				-120.176686	45.6997346
				-120.1770148	45.69966412
				-120.1772811	45.69969144
				-120.1778479	45.69947373
				-120.1775735	45.69923961
				-120.1774921	45.69897985
				120.1776584	45.69871512
				-120.1780485	45.69858508
				-120.1784799	45.69858614

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				-120.1794516	45.69838491
				-120.1802541	45.697834
				-120.1803822	45.6976519
				-120.1803415	45.69740327
				-120.1795522	45.69486659
				-120.1795548	45.69457699
				-120.1796924	45.69434818
				-120.179862	45.69419805

[1] The corridors for easements across nonleased land and improvements to existing roads are 200 feet wide. The corridors for new roads, collector cables, and crane paths are 500 feet wide.

[2] Legal descriptions for the easements and lease boundaries can be provided before construction begins.

Figure C-3c

Micrositing Corridors for Roads, Collector Cables, and Crane Paths

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
S

0 2,000 4,000 6,000
Feet

Slatt-John Day No 1 (500 kV)
McNary-Santiam No 2 (230 kV)
Slatt-Buckley No 1 (500 kV) & Ashe-Marion No 2 (500 kV)
Blalock Canyon Rd
Cedar Springs Rd
Rattlesnake Rd
Stone Ln
John Day
Met-1
Met-2
Met-3
Met-4

File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure X - Facility Corridor.mxd, Date: November 10, 2006 2:44:52 PM

APPENDIX A, ATTACHMENT 5

Letter from Oregon Department of Environmental Quality on Permitting Requirements for Washing Turbine Blades

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Eastern Region Bend Office
2146 NE 4th, Suite 104
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283

December 13, 2006

Sara McMahon
PPM Energy
1125 NW Couch, Suite 700
Portland, OR 97209

Re: Permitting Requirements For
Washing Turbine Blades
WQ – Gilliam County

Dear Ms. McMahon:

This letter is in response to your request regarding the Department's interpretation of deminimus washing activities as defined under our Water Pollution Control Facilities (WPCF) 1700-B Wash Water Permit (copy enclosed). Condition 3. of Schedule A in the general wash water permit describes deminimus washing activities that are not required to obtain a permit.

The Department believes that some washing activities are considered to have a deminimis impact on the environment. Therefore, these washing activities are allowed without obtaining a permit by the Department.

The Department considers washing of turbine blades for the removal of accumulated dirt as a deminimus washing activity provided there is no runoff off-site or discharges to surface waters, storm sewer, or dry wells. Washing under this interpretation shall be restricted to the exterior of the turbine blades. The use of acids, bases, or metal brighteners, is prohibited. The use of biodegradable, phosphate-free cleaners with cold water is allowed. Cleaning only with cold water is recommended. Chemicals, soaps or detergents shall be used sparingly.

If a facility is found to be adversely affecting water quality the Department will require a wash water permit to obtain obtained.

Please call me in Bend at (541) 388-6146 ext. 232 if you have any questions regarding this letter.

Sincerely,

Walter I. West, P.E.
Senior Environmental Engineer
Eastern Region - Bend Office

Enclosure (GEN 1700B PERMIT)

cc: Erin Toelke, CH2M HILL, Inc., 2020 SW 4th Ave., Suite 300, Portland, OR 97201

GENERAL PERMIT
WATER POLLUTION CONTROL FACILITIES
WASTEWATER DISCHARGE PERMIT

Department of Environmental Quality
811 Southwest Sixth Avenue, Portland, OR 97204
Telephone: (503) 229-5279

Issued pursuant to ORS 468B.050

ISSUED TO:

All Owners or Operators of Facilities
Conducting Activities that are Covered by this
Permit

SOURCES COVERED BY THIS PERMIT: Vehicle, equipment, building, and pavement cleaning activities that discharge wash water by means of evaporation, seepage and/or irrigation. This permit covers discharges from fixed washing operations and mobile washing operations.

ACTIVITIES NOT COVERED BY THIS PERMIT: This general permit does not cover the following: hydroblasting (See Schedule D for definition) or the use of abrasives to remove paint or oxidized metal; and washing the inside of trailers, railroad cars, and other large commodity-carrying containers. This permit also does not cover discharges from boat washing activities.

Michael T. Llewelyn, Administrator
Water Quality Division

Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to construct, install, modify, or operate a wastewater collection, treatment, control and disposal system in conformance with all the requirements, limitations, and conditions set forth in the attached schedules as follows:

All direct discharges to public waters are prohibited unless covered by NPDES permit.

SCHEDULE A

EXEMPTED ACTIVITIES

1. Any facility that **collects, treats, and recycles ALL wastewater with no discharge** to dry wells, surface waters or groundwater may operate without a permit from the Department of Environmental Quality (DEQ).

2. Any facility that **collects ALL wastewater and discharges to a municipal sanitary sewerage** system (see schedule D for definition) may operate without a permit from the DEQ. This includes those facilities that may collect and hold wastewater for later disposal to the municipal sewerage system. A permit for discharge to sanitary sewer may be required by the local city or county.

DEMINIMIS ACTIVITIES

3. The following washing activities are considered to have a **deminimis** impact on the environment and are allowed without obtaining a permit. However, any facility found to be adversely affecting water quality will be required to obtain a permit. Such a facility would then be subject to all terms and conditions of this permit.

   a) *ACTIVITIES WITH **NO** DISCHARGE TO SURFACE WATERS, STORM SEWERS OR DRY WELLS* - The use of acids, bases, metal brighteners, steam, or heated water is prohibited. The use of biodegradable, phosphate-free cleaners with cold water is allowed. However, cleaning only with cold water is recommended. Chemicals, soaps or detergents shall be used sparingly.

      i) The washing of **buildings** is permitted provided there is no runoff off-site or discharge to surface waters, storm sewer or dry wells.

      ii) The washing of **roads, parking lots, sidewalks, and other paved surfaces** is permitted provided surfaces are swept prior to washing and there is no runoff off-site or discharge to surface waters, storm sewer or dry wells.

      iii) The rinsing of the chute and exterior of **ready-mix concrete trucks** at the construction site is permitted provided there is no runoff off-site or discharge to surface waters, storm sewer or dry wells.

      iv) The washing of **construction equipment and vehicles** at construction sites, **logging equipment and vehicles** at the logging site, or **farming equipment and vehicles** at the agricultural or silvicultural site for the removal of accumulated dirt is permitted provided there is no runoff off-site or discharge to surface waters, storm sewer or dry wells. Washing shall be restricted to the exterior of the vehicle or equipment (no engines, transmissions, undercarriages, or interior surfaces of pesticide containers or spray solution tanks).

      v) The washing of **golf carts and mowing machines** is permitted provided there is no runoff off-site or discharge to surface waters, storm sewer or dry wells.

      vi) The washing of **new or used vehicles or equipment** awaiting **sale, lease or delivery** is permitted provided washing is restricted to the exterior of the vehicle or piece of equipment (no engines, transmissions, or undercarriages) and there is no runoff off-site or discharge to surface waters, storm sewer or dry wells. Rental vehicles and rented equipment are not included in this exemption.

vii) **Businesses** that wash **less than 8** vehicles or pieces of equipment per week are permitted provided there is no runoff off-site or discharge to surface waters, storm sewer or dry wells. Washing is restricted to the exterior of the vehicle or equipment (no engines, transmissions, or undercarriages). When washing large trucks, the tractor and trailer are counted as separate pieces.

For facilities that do not discharge to surface waters or storm sewers, the Department may allow 8 or more vehicles or pieces of equipment per week to be washed if the operator demostrates that this activity will not impact the soils and the groundwater at the site. This approval shall be obtained in writing from the Department.

b) *REFER TO 1700A PERMIT FOR DEMINIMIS ACTIVITIES WITH DISCHARGE TO SURFACE WATERS AND STORM SEWERS.*

c) *NON-PROFIT ACTIVITIES* - Vehicle washing by private citizens and fund-raising groups such as schools, churches, boy scouts, girl scouts, etc. is permitted. Fund-raising groups shall employ the best management practices outlined in the Department's fact sheet on non-profit activities.

LIMITATIONS

4. Prohibitions - The use of organic solvents or non-biodegradable chemicals, soaps and detergents is prohibited for all washing activities covered by this permit, including activities in Condition 3 above. All chemicals, soaps or detergents used shall be phosphate-free. The use of chemicals to maintain proper operation of treatment facilities is allowed.

5. Construction and Use of Dry Wells - **The construction of new dry wells for disposal of wash water is prohibited.** The use of existing dry wells is allowed provided written approval is obtained from the Department. Prior to discharge to an approved dry well, the wash water shall comply with the limitations established in Condition 9. The use of any chemicals, soaps, detergents, steam, or hot water *is prohibited* when discharging to existing dry wells.

6. On-Site Treatment/Disposal Systems - **The construction of new on-site treatment and disposal systems (i.e. septic tank & drainfields) for disposal of wash water is prohibited.** The use of approved systems that have been designed and constructed specifically to treat wash water is allowed provided the system is functioning properly.

7. Lagoons/Ponds - The Department may require lagoons/ponds to be lined in areas of shallow groundwater or highly permeable soils to prevent adverse impacts to ground water.

8. Groundwater Protection - No activities shall be conducted that could adversely impact groundwater quality. If adverse impacts to groundwater quality are suspected from a facility covered by this permit, the Department may require the permittee to perform a groundwater investigation.

9. Limits for all washing activities covered by this permit except activities listed in Schedule A, Condition 3 - Wash water shall be collected and treated prior to disposal by seepage or land irrigation. The treated wash water shall comply with the following limitations:

Parameters	Limitations (Daily Maximum)
Oil & Grease	15 mg/l
pH	Shall be within 6.0 - 9.0 range

10. Engine Washing, Acid/Caustic/Metal Brightener Washing, or Steam/Heated Water Washing Activities. Facilities that conduct engine washing, acid/caustic/metal brightener washing, or steam/heated water washing shall conduct these operations on an **impermeable** surface.

11. When disposing of wash water by means of evaporation, seepage and/or irrigation, the permittee shall do so in a manner to prevent the following:
    a) Surface runoff or subsurface drainage through drainage tile.
    b) The creation of odors, fly and mosquito breeding or other nuisance conditions.
    c) The overloading of land with nutrients or organics.
    d) Contamination of the soil and/or ground water.

SCHEDULE B

MONITORING REQUIREMENTS

1. Excluding activities listed in Schedule A, Condition 3 (Deminimis Activities), all other washing operations covered by this permit shall monitor their discharge in accordance with the following frequency:

   For the first year of operation and until compliance is attained*:

Parameters	Frequency	Sample Type
Oil and Grease	1/month	Grab
pH**	1/month	Grab

   After the first year of operation if compliance is attained*:

Parameters	Frequency	Sample Type
Oil and Grease	1/quarterly	Grab
pH**	1/month	Grab

   * Compliance will be based on consistently meeting effluent limits over a six-month period.
   ** pH paper that has the capability of determining pH to one-tenths (0.1) standard units or a properly calibrated portable pH meter may be used to make field measurement of pH.

REPORTING REQUIREMENTS

3. The reporting period is the calendar year. Reports must be submitted to the Department by the 15th day of January of the following year. Once a facility has attained compliance (as defined above) with the effluent limits in the permit, the permittee shall notify the Department in its annual monitoring report that compliance with effluent limits has been achieved and the facility is monitoring at the reduced frequency.

4. The permittee shall install and operate any necessary treatment facilities in accordance with Schedule C of the permit. The permittee shall submit a letter to the Department stating that treatment facilities are installed and operational within 14 days after completion.

SCHEDULE C

COMPLIANCE CONDITIONS AND SCHEDULES

1. Existing facilities (i.e. facilities that are in operation at the time the permit is issued) shall have until September 15, 1998, to achieve compliance with the effluent limits in Schedule A, Condition 9 of this permit. An existing facility shall comply with all other conditions in the permit at the time of permit assignment. New facilities shall comply with all conditions in the permit upon commencement of discharge from the facility.

SCHEDULE D

SPECIAL CONDITIONS

1. The permittee shall implement whenever practicable the best management practices listed in the DEQ's guidance document titled *Recommended Best Management Practices for Washing Activities.*

2. The changing of vehicle fluids is prohibited in wash bay areas.

3. Catch basins and sediment traps shall be cleaned on a routine basis to prevent concentration of pollutants and re-contamination of the discharge.

4. Solids removed in any cleaning process shall be collected and disposed of in accordance with methods approved by DEQ and the local city or county.

5. Washing operations shall be conducted in a manner that will prevent erosion at the site.

6. The Director may revoke a general permit as it applies to any person and require such person to apply for and obtain an individual NPDES or WPCF permit if:

   a) The permitted source or activity is a significant contributor of pollution or creates other environmental problems;
   b) The permittee is not in compliance with the terms and conditions of this general permit; or
   c) Conditions or standards have changed so that the source or activity no longer qualifies for a general permit.

7. Any permittee not wishing to be covered or limited by this general permit may make application for an individual WPCF or NPDES permit in accordance with WPCF or NPDES procedures in OAR 340-14-020 and 340-45-030.

8. Definitions:

   Hydroblasting - The use of high pressure to remove paint or oxidized metals from a surface. Typically, pressures of 2000 psi and greater are used to remove paint or oxidized metal, however, lower pressures may also remove paint or oxidized metal. This permit does not cover hydroblasting activities.

   Storm sewer - A system that collects runoff from rainfall, snowmelt, and discharges from human activities (i.e., wash water). This water is typically discharged to nearby waterways with little or no treatment.

   Sanitary sewer - A system that collects wastewater from residential, commercial and industrial sources. The wastewater is then directed to a sewage treatment plant for treatment and subsequent discharge.

   Impermeable surface - A surface that prevents water from seeping into the ground and allows water to be collected. Examples of impermeable surfaces include paved areas using asphalt, concrete, or cement, and synthetic materials such as plastics.

SCHEDULE F
WPCF GENERAL CONDITIONS

SECTION A. STANDARD CONDITIONS

1. Property Rights
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws, or regulations.

2. Liability
The Department of Environmental Quality, its officers, agents, or employees shall not sustain any liability on account of the issuance of this permit or on account of the construction or maintenance of facilities because of this permit.

3. Permit Actions
After notice by the Department, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including but not limited to the following:

   a. Violation of any term or condition of this permit, any applicable rule or statute, or any order of the Commission;

   b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.

4. Transfer of Permit
This permit shall not be transferred to a third party without prior written approval from the Department. Such approval may be granted by the Department where the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of this permit and the rules of the Commission. A transfer application and filing fee must be submitted to the Department.

5. Permit Fees
The permittee shall pay the fees required to be filed with this permit application and to be paid annually for permit compliance determination as outlined in the Oregon Administrative Rules.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance
The permittee shall at all times maintain in good working order and properly operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

2. Standard Operation and Maintenance
All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

   a. At all times, all facilities shall be operated as efficiently as possible and in a manner which will prevent discharges, health hazards, and nuisance conditions.

   b. All screenings, grit, and sludge shall be disposed of in a manner approved by the Department such as to prevent any pollutant from such materials from reaching any waters of the state, creating a public health hazard, or causing a nuisance condition.

   c. Bypassing of untreated waste is generally prohibited. No bypassing shall occur without prior written permission from the Department except where unavoidable to prevent loss of life, personal injury, or severe property damage.

3. Noncompliance and Notification Procedures

In the event the permittee is unable to comply with all the conditions of this permit because of surfacing sewage, a breakdown of equipment or facilities, an accident caused by human error or negligence, or any other cause such as an act of nature, the permittee shall:

a. Immediately take action to stop, contain, and clean up the unauthorized discharges and correct the problem.

b. Immediately notify the Department's Regional office, so that an investigation can be made to evaluate the impact and the corrective actions taken and determine additional action that must be taken.

c. Within 5 days of the time the permittee becomes aware of the circumstances, the permittee shall submit to the Department a detailed written report describing the breakdown, the actual quantity and quality of resulting waste discharges, corrective action taken, steps taken to prevent a recurrence, and any other pertinent information.

Compliance with these requirements does not relieve the permittee from responsibility to maintain continuous compliance with the conditions of this permit or the resulting liability for failure to comply.

4. Wastewater System Personnel
The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and monitoring requirements to assure continuous compliance with the conditions of this permit.

SECTION C. MONITORING AND RECORDS

1. Inspection and Entry
The permittee shall, at all reasonable times, allow authorized representatives of the Department of Environmental Quality to:

a. Enter upon the permittee's premises where a waste source or disposal system is located or where any records are required to be kept under the terms and conditions of this permit;

b. Have access to and copy any records required to be kept under the terms and conditions of this permit;

c. Inspect any treatment or disposal system, practices, operations, monitoring equipment, or monitoring method regulated or required by this permit; or

d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

2. Averaging of Measurements
Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean, except for bacteria which shall be averaged as specified in the permit.

3. Monitoring Procedures
Monitoring must be conducted according to test procedures specified in the most recent edition of **Standard Methods for the Examination of Water and Wastewater**, unless other test procedures have been approved in writing by the Department and specified in this permit.

SECTION D. REPORTING REQUIREMENTS

1. Plan Submittal
Pursuant to Oregon Revised Statute 468B.055, unless specifically exempted by rule, no construction, installation or modification of disposal systems, treatment works, or sewerage systems shall be commenced until plans and specifications are submitted to and approved in writing by the Department. All

construction, installation or modification shall be in strict conformance with the Department's written approval of the plans.

2. Change in Discharge
Whenever a facility expansion, production increase, or process modification is anticipated which will result in a change in the character of pollutants to be discharged or which will result in a new or increased discharge that will exceed the conditions of this permit, a new application must be submitted together with the necessary reports, plans, and specifications for the proposed changes. No change shall be made until plans have been approved and a new permit or permit modification has been issued.

3. Signatory Requirements
All applications, reports or information submitted to the Department shall be signed and certified by the official applicant of record (owner) or authorized designee.

SECTION E. DEFINITIONS

1. BOD_5 means five-day biochemical oxygen demand.
2. TSS means total suspended solids.
3. FC means fecal coliform bacteria.
4. NH_3-N means Ammonia Nitrogen.
5. NO_3-N means Nitrate Nitrogen.
6. NO_2-N means Nitrite Nitrogen.
7. TKN means Total Kjeldahl Nitrogen.
8. Cl means Chloride.
9. TN means Total Nitrogen.
10. mg/l means milligrams per liter.
11. ug/l means micrograms per liter.
12. kg means kilograms.
13. GPD means gallons per day.
14. MGD means million gallons per day.
15. The term "bacteria" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and E. coli bacteria.
16. Total residual chlorine means combined chlorine forms plus free residual chlorine.
17. Grab sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
18. Composite sample means a combination of samples collected, generally at equal intervals over a 24-hour period, and apportioned according to the volume of flow at the time of sampling.
19. Week means a calendar week of Sunday through Saturday.
20. Month means a calendar month.
21. Quarter means January through March, April through June, July through September, or October through December.

APPENDIX A, ATTACHMENT 6

Revised Figure J-1

Figure J-1
Wetlands and Jurisdictional Waters

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

Focused Study Locations
- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Nonjurisdictional Waters
- CH2M HILL-Mapped Wetlands (W)
- NWI Wetlands (POWFX)
- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II
- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II
- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities
- Existing BPA Transmission Line
- Major Roads
- Existing LJ I Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000 Feet

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure J-1 - Wetlands & Jurisdictional Waters.mxd, Date: December 6, 2006 8:15:06 AM

APPENDIX A, ATTACHMENT 7

Revised Figure K-1

Figure K-1
Zoning Map

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Zoning
- Agriculture (Exclusive Farm Use)
- Industrial
- Open Space
- Residential

Slatt-John Day No 1 (500 kV)

McNary-Santiam No 2 (230 kV) & Slatt-Buckley No 1 (500 kV) & Ashe-Marion NO 2 (500 kV)

Blalock Canyon Rd

Rattlesnake Rd

Stone Ln

Cedar Springs Rd

John Day

19

Legend

Proposed Permanent Facilities
- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II
- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II
- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities
- Existing BPA Transmission Line
- Major Roads
- Existing LJ I Roads
- Railroads
- Streams
- Tax Lots
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000 Feet

Source:
Susan Anderson, Gilliam County
Economic Development Department

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure K-1 - Zoning Map.mxd, Date: December 5, 2006 1:56:19 PM

APPENDIX A, ATTACHMENT 8

Revised Attachment M-1, Legal Opinion Letter

PPM Energy
A ScottishPower Company

Please Reply To:

Toan-Hao B. Nguyen, Legal Counsel
Direct Dial (503) 241-3204
Fax (503) 796-6904

October 20, 2006

Oregon Department of Energy
625 Marion Street, N.E.
Salem, Oregon 97310

Re: Application of Leaning Juniper Wind Power II, LLC for Site Certificate

Dear Ladies and Gentleman

I am an in house attorney for Leaning Juniper Wind Power II, LLC, an Oregon limited liability company (the "Applicant"), and have also acted as counsel to the Applicant.

In that connection, I have examined originals or copies certified or otherwise identified to my satisfaction of the books and records of Applicant and such other documents, limited liability company records, certificates of public officials and other instruments regarding the Applicant as I have deemed necessary and appropriate for the purposes of this opinion.

In rendering this opinion expressed below, I have assumed (i) the authenticity of all documents submitted to me as originals and (ii) the conformity to original documents of all documents submitted to me as copies. As to factual matters, I have relied to the extent deemed proper, upon statements and certifications of officers and manager of the Applicant.

Based upon the foregoing, to the best of my knowledge, I am of the opinion that, subject to the Applicant's meeting all applicable federal, state and local laws (including all rules and regulations promulgated thereunder) the Applicant has the legal authority to construct and operate the up to 279 MW name-plate capacity wind generation facility and associated facilities located in the Gilliam County, Oregon (the "Project") that the Applicant proposes in its Applicant for Site Certificate to be filed with the Oregon Energy Facility Siting Council and in connection with which this opinion is rendered, without violating articles of organization covenants or similar agreements.

I am a member of the bar of the states of California, Oregon, and Washington and do not hold myself out as an expert in, and do not express any opinion with respect to, the law of any jurisdiction other than the law of the states of California, Oregon, and Washington.

PPM Energy
A ScottishPower Company

The foregoing opinion is limited solely to whether the Applicant has the authority under its operating agreements to construct, own and operate the Project. I express no opinion as to the applicability of any federal, state or local laws (including all rules and regulations promulgated thereunder) to such construction and operation or as to the effects of the foregoing laws on such construction and operation.

Please contact me if you have any additional questions regarding this matter.

Very truly yours,

PPM ENERGY, INC.

Toan-Hao B. Nguyen
Legal Counsel

APPENDIX A, ATTACHMENT 9

1201 Permit Application and Permit

APPLICATION FOR A PERMIT

To Appropriate the Ground Waters of the State of Oregon

I, the City of Arlington (Name of applicant)

of City Hall, Arlington (Postoffice Address), county of Gilliam,

state of Oregon, do hereby make application for a permit to appropriate the following described ground waters of the state of Oregon, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation

Incorporated in Salem, Oregon. Charter adopted on Oct. 17, 1913

1. Give name of nearest stream to which the well, tunnel or other source of water development is situated Columbia River (Name of stream) tributary of

2. The amount of water which the applicant intends to apply to beneficial use is 2.2 cubic feet per second or 1,000 gallons per minute.

3. The use to which the water is to be applied is Municipal Water Supply

No. 1

4. The well/or other source is located 1700.4 ft. N. (N. or S.) and 1055.43 ft. E. (E. or W.) from the W¼ corner of Sec. 28, Twp. 3 N., R. 21 E., W.M.; also being N. 22°-37' W. 96' from the (Section or subdivision)

N.W. corner of Lot 16, Block 22, Smith's Plat in Arlington, Oregon. Description for (If preferable, give distance and bearing to section corner)

Well No. 2 is on separate sheet.

(If there is more than one well, each must be described. Use separate sheet if necessary)

being within the NW¼ of the NW¼ of Sec. 28, Twp. 3 N., R. 21 E., W. M., in the county of Gilliam

5. The Municipal Distribution System (Canal or pipe line) to be xxxxxxxxxxxxx miles in length, terminating in the No definite terminus (Smallest legal subdivision) of Sec. , Twp. , R. , W. M., the proposed location being shown throughout on the accompanying map.

6. The name of the well or other works is Arlington Municipal Water Works

DESCRIPTION OF WORKS

7. If the flow to be utilized is artesian, the works to be used for the control and conservation of the supply when not in use must be described.

Not applicable

8. The development will consist of two wells (Give number of wells, tunnels, etc.) having a diameter of 1) 15" 2) 15 inches and an estimated depth of 1) 619' 2) 500 feet. It is estimated that 1) 76' 2) 100 feet of the well will require steel casing (Kind) casing. Depth to water table is estimated 1) 93'; (Feet) 2) 250'

9. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(b) At ..... miles from headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(c) Length of pipe, SEE REMARKS ..... ft.; size at intake, ... in.; in size at ..... ft. from intake ..... in.; size at place of use ..... in.; difference in elevation between intake and place of use, ... ft. Is grade uniform? ..... Estimated capacity, ... sec. ft.

10. If pumps are to be used, give size and type Deep well turbine pumps.

Existing Well #1 - Worthington 6" Type 10QE 6 Stage 400 g.p.m. SEE REMARKS

Give horsepower and type of motor or engine to be used 40 h.p. 440 volt 3 phase 60 cycle 1750 r.p.m. SEE REMARKS

11. If the location of the well, tunnel, or other development work is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development

Not applicable

12. Location of area to be irrigated, or place of use Corporate limits of City of Arlington

Township N. or S.	Range E. or W. of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be ~~Irrigated~~ Served
3 N.	2 East	20	Lot 1 in $SE\frac{1}{4}$ SE 1/4	28.0
"	"	21	$NW\frac{1}{4}$ of $SE\frac{1}{4}$	40.0
"	"	"	$SW\frac{1}{4}$ of $SE\frac{1}{4}$	40.0
"	"	"	$SE\frac{1}{4}$ of $SW\frac{1}{4}$	40.0
"	"	" NW 1/4	That part of Lot 1 of $NE\frac{1}{4}$ lying West of the Easterly city limits of the City of Arlington, Ore.	7.0
"	"	"	Lot 2 in $N\frac{1}{2}$ SW 1/4 NE 1/4 SE 1/4 NW 1/4	49.64
"	"	"	Lot 3 NE 1/4 in $SW\frac{1}{4}$	39.15
"	"	"	Lot 4 NW 1/4 SW 1/4 SW 1/4 in $SW\frac{1}{4}$	47.0
"	"	28	$NW\frac{1}{4}$ of $NE\frac{1}{4}$	40.0
"	"	"	$SW\frac{1}{4}$ of $NE\frac{1}{4}$	40.0
"	"	"	$NE\frac{1}{4}$ of $NW\frac{1}{4}$	40.0

(If more space required, attach separate sheet)

4. Well No. 2 is located S. 36°-18' E. 1269.49 feet from the W¼ corner of Section 28, Twp. 3 N., R. 21 E., W.M.; being within the NW¼ of the SW¼ of Sec. 28, Twp. 3 N., R. 21 E., W.M., in the County of Gilliam.

12. Location of area to be irrigated, or place of use (cont'd.)

Township N. or S.	Range E. or W. of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be Served
3 N.	East	28	NW¼ of NW¼	40.0
"	"	"	SE¼ of NW¼	40.0
"	"	"	SW¼ of NW¼	40.0
"	"	"	NW¼ of SE¼	40.0
"	"	"	NE¼ of SW¼	40.0
"	"	"	NW¼ of SW¼	40.0
"	"	29	NE¼ of NE¼	40.0
"	"	"	SE¼ of NE¼	40.0
"	"	"	NE¼ of SE¼	40.0
			Total Acreage Serves - - -	770.79

and an estimated population of 850 in 19 70.

ANSWER QUESTIONS 14, 15, 16, 17 AND 18 IN ALL CASES

14. Estimated cost of proposed works, $25,000.00

15. Construction work will begin on or before 1) June, 1948; (2) March, 1959

16. Construction work will be completed on or before 1) Jan. 1949; (2) Dec., 1959

17. The water will be completely applied to the proposed use on or before Jan., 1960

18. If the ground water supply is supplemental to an existing water supply, identify any application for permit, permit, certificate or adjudicated right to appropriate water, made or held by the applicant. None

City Recorder
(Signature of applicant)

Remarks: Both of these wells are proposed to discharge directly into the distribution system with the reservoir acting as storage tanks. Well #1 is an existing well which is providing the present entire supply of water for the City of Arlington. The existing pump is not of sufficient capacity to provide the required quantity for summer time useage and a study is under way to determine the most economical size pump which will provide this supply. Well #2 is a proposed well to be drilled in the event the construction of the John Day Dam will contaminate or otherwise render Well #1 useless. The City would like to secure an appropriation as specified for approximately 1,000 g.p.m. of water to be taken from either Well #1 or Well #2. In the event it is necessary to drill Well #2, the size and type of pump and motor to be used in Well #2 will depend upon the depth and quantity at which water is encountered. It will be determined after the well is tested.

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for completion

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before November 4, 1958

WITNESS my hand this 4th day of September, 1958

LEWIS A. STANLEY
STATE ENGINEER

County of Marion, } ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 2.2 *cubic feet per second measured at the point of diversion from the well or source of appropriation, or its equivalent in case of rotation with other water users, from* Wells Numbers 1 and 2.

The use to which this water is to be applied is municipal.

If for irrigation, this appropriation shall be limited to - - *of one cubic foot per second or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed* ..... *acre feet per acre for each acre irrigated during the irrigation season of each year;* .....

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The well shall be cased as necessary in accordance with good practice and if the flow is artesian the works shall include proper capping and control valve to prevent the waste of ground water.

The works constructed shall include an air line and pressure gauge or an access port for measuring line, adequate to determine water level elevation in the well at all times.

The permittee shall install and maintain a weir, meter, or other suitable measuring device, and shall keep a complete record of the amount of ground water withdrawn.

The priority date of this permit is January 6, 1959

Actual construction work shall begin on or before February 13, 1960 *and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 19*60

*Complete application of the water to the proposed use shall be made on or before October 1, 19*61

WITNESS my hand this 13th *day of* February *19*59

Lewis A. Stanley
STATE ENGINEER

Application No. G-1185
Permit No. G-1201

PERMIT

TO APPROPRIATE THE GROUND WATERS OF THE STATE OF OREGON

This permit was first received in the office of the State Engineer at Salem, Oregon, on the 6th *day of* January, *19*59, *at* 8 *o'clock* A *M.*

Applicant:

Recorded on the 23rd *day of* January, 1959

in book No. 5 *of permits on page* 1201

LEWIS A. STANLEY
STATE ENGINEER

Certificate No. 6 *page* 37

Salem, Oregon, State Printing

BC Extended to 10-1-94

Typed Rpt to Oct 1961

Extended to October 1, 1973

BEFORE THE WATER RESOURCES DEPARTMENT
OF THE
STATE OF OREGON

In the Matter of Permit Amendment T-9243, Gilliam County, Oregon	)))	**FINAL ORDER**

ORS 537.211 establishes the process in which a water right permit holder may submit a request to change the point of appropriation and/or place of use authorized under an existing water right permit.

Applicant

City of Arlington,
P.O. Box 68,
Arlington, Oregon 97812.

Findings of Fact

1. City of Arlington, filed an application to amend the point of appropriation of Well 2 under Permit G-1201. The Department assigned the application number T-9243.

2. The permit to be amended is as follows:

Permit:	G-1201, in the name of City of Arlington;
Use:	Municipal;
Priority Date:	January 6, 1959;
Quantity:	2.2 cubic feet per second;
Source:	Wells 1 and 2, in the Columbia River Basin.
Date Of Complete Application of Water:	October 1, 2004.

NOTICE OF RIGHT TO PETITION FOR RECONSIDERATION OR JUDICIAL REVIEW

This is an order other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-080 and OAR 690-01-005, you may either petition for judicial review or petition the Director for reconsideration of this order.

Authorized Points of Appropriation:

Township		Range		Meridian	Sec	¼ ¼		Lot	DLC	Location
3	N	21	E	W.M.	28	NW	NW			Well 1 – 1700.4 feet North and 1055.43 feet East from the W¼ Corner of Section 28
3	N	21	E	W.M.	28	NW	SW			Well 2 – S 36° 18' E 1269.49 feet from the W¼ Corner of Section 28

Authorized Place of Use:

Township		Range		Meridian	Sec	¼ ¼		Lot	DLC	Acres
3	N	21	E	W.M.	20	SE	SE	1		
3	N	21	E	W.M.	21	NW	SE			
3	N	21	E	W.M.	21	NW	NE	1		
3	N	21	E	W.M.	21	SW	NE	2		
3	N	21	E	W.M.	21	SE	NW	2		
3	N	21	E	W.M.	21	NE	SW	3		
3	N	21	E	W.M.	21	NW	SW	4		
3	N	21	E	W.M.	21	SW	SW	4		
3	N	21	E	W.M.	28	NW	NE			
3	N	21	E	W.M.	28	SW	NE			
3	N	21	E	W.M.	28	NE	NW			
3	N	21	E	W.M.	28	NW	NW			
3	N	21	E	W.M.	28	SW	NW			
3	N	21	E	W.M.	28	SE	NW			
3	N	21	E	W.M.	28	NE	SW			
3	N	21	E	W.M.	28	NW	SW			
3	N	21	E	W.M.	28	NW	SE			
3	N	21	E	W.M.	29	NE	NE			
3	N	21	E	W.M.	29	SE	NE			
3	N	21	E	W.M.	29	NE	SE			

3. Application T-9243 proposes to change the point of appropriation of Well 2 under the permit to:

Township		Range		Meridian	Sec	¼ ¼		Lot	DLC	Location
3	N	21	E	W.M.	28	NW	NW			Well 2 – 1250 feet South and 350 feet East from the NW Corner of Section 28

4. Notice of the application for permit amendment was published pursuant to ORS 540.520(5). No comments were filed in response to the notice.

5. The change would not result in injury to other water rights.

6. The change does not enlarge the permit.

7. The change does not alter all other terms of the permit.

Conclusion of Law

The change in point of appropriation of Well 2 proposed by Permit Amendment Application T-9243 is consistent with the requirements of ORS 537.211.

Now, therefore, it is ORDERED:

The change and subsequent use of water shall be subject to the following conditions:

1. The quantity of water diverted at the new point of appropriation (well) shall not exceed the maximum rate and duty allowed under Permit G-1201.

2. The water user shall install and maintain a headgate, an in-line flow meter, weir, or other suitable device for measuring and recording the quantity of water diverted. The type and plans of the headgate and measuring device must be approved by the Department prior to beginning construction and shall be installed under the general supervision of the Department.

3. Water shall be acquired from the same aquifer as the original point of appropriation.

4. All other terms and conditions of Permit G-1201 remain the same.

5. Permit G-1201, in the name of City of Arlington, is amended as described herein.

Dated at Salem, Oregon this 30th day of September, 2004.

Phillip C. Ward,
Acting Director

APPENDIX A, ATTACHMENT 10

Addenda Tables P-8 and P-9

TABLE P-8
Distance from Raptor Nests to Closest Facilities (2005)

Species ID	Species Type	Closest Turbine ID	Phase	Distance to GE Turbine (ft)	Distance to Micrositing Corridor (ft)	Closest Facility	Distance to Closest Facility (ft)	Distance (mi)
0	Golden Eagle	I-8	2 - North	26057.88384	25593.77681	Access Roads	26026.96	4.93
1	Inactive Nest	G-4	2 - North	2558.492723	1994.340829	Collectors	2409.98	0.46
2	Burrowing Owl	D-1	2 - South	2770.237689	2242.681912	Access Roads	2757.12	0.52
3	Red-Tailed Hawk	G-11	2 - North	9679.111042	8148.888266	Substation	7610.48	1.44
4	Inactive Nest	C-1	2 - South	4176.536881	2843.364835	Collectors	4161.75	0.79
5	Red-Tailed Hawk	I-5	2 - North	483.9773426	0	Access Roads	362.94	0.07
6	Red-Tailed Hawk	F-1	2 - South	2482.793226	1252.312039	Collectors	1391.54	0.26
7	Prairie Falcon	F-1	2 - South	4413.055684	3456.530393	Access Roads	4104.10	0.78
8	Inactive Nest	C-1	2 - South	8591.061908	7319.77283	Collectors	8556.07	1.62
9	Swainson's Hawk	D-12	2 - South	1022.052134	312.8981173	Access Roads	947.78	0.18
10	Large Stick Nest	E-4	2 - South	1938.792886	695.1182222	Collectors	1761.51	0.33
11	Burrowing Owl	D-1	2 - South	9090.227551	8314.165163	Access Roads	9075.01	1.72
12	Inactive Nest	G-8	2 - North	2725.372059	1981.357925	Collectors	2590.76	0.49
13	Swainson's Hawk	G-7	2 - North	3503.507283	2798.551104	Collectors	3357.84	0.64
14	Red-Tailed Hawk	G-11	2 - North	3479.815979	2604.182355	Collectors	3350.81	0.63
15	Swainson's Hawk	F-1	2 - South	6604.747071	6097.727078	Substation	5681.10	1.08
16	Common Raven	D-16	2 - South	1111.550461	608.0413598	Access Roads	1018.90	0.19
17	Common Raven	B-15	2 - South	8613.847819	7559.517573	Access Roads	7559.52	1.43
18	Inactive Nest	A-5	2 - South	10527.21478	6338.435266	Access Roads	6838.39	1.30
19	Red-Tailed Hawk	A-6	2 - South	10942.11275	6786.201567	Access Roads	7286.10	1.38
20	Swainson's Hawk	A-1	2 - South	7766.31483	4913.921343	Access Roads	5413.85	1.03
21	Inactive Nest	C-1	2 - South	8697.243957	7403.192875	Collectors	8662.84	1.64
22	Inactive Nest	C-1	2 - South	8670.398047	7400.546406	Collectors	8635.37	1.64
23	Inactive Nest	C-1	2 - South	8613.250933	7368.933869	Collectors	8577.66	1.62
24	Swainson's Hawk	E-4	2 - South	1252.144241	527.3317079	Collectors	924.55	0.18
25	Inactive Nest	J-6	2 - South	2593.329096	942.3218051	Collectors	1615.32	0.31
26	Inactive Nest	I-6	2 - North	4048.71494	3603.460397	Access Roads	4012.71	0.76
27	Swainson's Hawk	F-6	2 - South	6951.90952	1177.836293	Collectors	1312.64	0.25
28	Red-Tailed Hawk	J-6	2 - South	5651.051947	977.9081072	Collectors	1103.05	0.21
29	Red-Tailed Hawk	D-16	2 - South	1986.019126	588.5743689	Access Roads	1557.38	0.29
30	Swainson's Hawk	J-7	2 - South	992.7997808	0	Staging Area	867.10	0.16
31	Inactive Nest	J-16	2 - South	5722.019931	4827.820356	Access Roads	5523.82	1.05
32	Swainson's Hawk	J-16	2 - South	3919.512105	3189.787552	Turbine	3914.51	0.74
33	Red-Tailed Hawk	J-17	2 - South	10399.11874	9293.985069	Access Roads	9772.00	1.85
34	Swainson's Hawk	J-16	2 - South	5017.459132	3877.250296	Access Roads	3929.63	0.74
35	Ferruginous Hawk	J-17	2 - South	4776.134516	3038.439095	Access Roads	3222.99	0.61
36	Inactive Nest	F-13	2 - South	8118.435379	7812.432239	Collectors	8097.12	1.53
37	Red-Tailed Hawk	F-13	2 - South	5567.193412	5201.991202	Collectors	5555.54	1.05
38	Swainson's Hawk	F-13	2 - South	5386.186392	4369.81293	Met Tower	5338.79	1.01
39	Red-Tailed Hawk	J-17	2 - South	3866.950322	3038.960999	Collectors	3825.94	0.72
40	Great Horned Owl	J-3	2 - South	447.703139	0	Collectors	178.58	0.03

TABLE P-8
Distance from Raptor Nests to Closest Facilities (2005)

Species ID	Species Type	Closest Turbine ID	Phase	Distance to GE Turbine (ft)	Distance to Micrositing Corridor (ft)	Closest Facility	Distance to Closest Facility (ft)	Distance (mi)
41	Swainson's Hawk	J-1	2 - South	1150.235631	0	Collectors	386.97	0.07
42	Ferruginous Hawk	F-5	2 - South	3626.063933	1779.942138	Collectors	2499.16	0.47
43	Burrowing Owl	F-5	2 - South	3492.661971	1702.094604	Collectors	2990.00	0.57
44	Raptor or Other Larg	J-14	2 - South	933.9384424	134.1793853	Collectors	422.89	0.08
45	Raptor or Other Larg	D-13	2 - South	734.3050913	263.7249949	Access Roads	673.04	0.13
46	Raptor or Other Larg	J-14	2 - South	4688.612875	1632.95306	Collectors	1824.12	0.35
47	Raptor or Other Larg	J-1	2 - South	840.9330406	58.09037598	Staging Area	156.71	0.03
48	Raptor or Other Larg	J-3	2 - South	5522.204908	1278.116933	Collectors	1405.06	0.27
49	Large Stick Nest	J-14	2 - South	2827.730921	1143.868137	Collectors	1347.75	0.26
50	Raptor or Other Larg	J-14	2 - South	2994.778749	1233.760245	Collectors	1426.66	0.27
51	Raptor or Other Larg	J-17	2 - South	954.5119595	646.9370252	Collectors	910.65	0.17
52	Raptor or Other Larg	F-3	2 - South	1157.620057	0	Access Roads	268.64	0.05
53	Raptor or Other Larg	J-1	2 - South	1189.455472	163.9004243	Collectors	764.63	0.14
54	Raptor Nest—Red-Tailed Hawk	F-1	2 - South	5761.49235	2688.184269	Substation	2393.37	0.45
55	Burrowing Owl	J-6	2 - South	2363.341275	1218.339018	Collectors	1660.57	0.31

TABLE P-9
Distance from Raptor Nests to Closest Facilities (2006)

Species ID	Species Type	Closest Turbine ID	Phase	Distance to GE Turbine (ft)	Distance to Micrositing Corridor (ft)	Closest Facility	Distance to Closest Facility (ft)	Distance (mi)
4	Inactive Nest	C-1	2 - South	4176.536881	2843.364835	Collectors	4161.75	0.79
8	Inactive Nest	C-1	2 - South	8591.061908	7319.77283	Collectors	8556.07	1.62
9	Ferruginous Hawk	D-12	2 - South	1022.052134	312.8981173	Access Roads	947.78	0.18
17	Common Raven	B-15	2 - South	8613.847819	7559.517573	Access Roads	7559.52	1.43
18	Swainson's Hawk	I-8	2 - North	11887.09541	11393.33977	Access Roads	11858.78	2.25
18	Inactive Nest	A-5	2 - South	10527.21478	6338.435266	Access Roads	6838.39	1.30
19	Red-Tailed Hawk	A-6	2 - South	10942.11275	6786.201567	Access Roads	7286.10	1.38
20	Swainson's Hawk	A-1	2 - South	7766.31483	4913.921343	Access Roads	5413.85	1.03
21	Inactive Nest	C-1	2 - South	8697.243957	7403.192875	Collectors	8662.84	1.64
22	Inactive Nest	C-1	2 - South	8670.398047	7400.546406	Collectors	8635.37	1.64
23	Inactive Nest	C-1	2 - South	8613.250933	7368.933869	Collectors	8577.66	1.62
85	Common Raven	I-1	2 - North	11872.90121	9960.005224	Access Roads	10000.17	1.89
87	American Kestral	I-1	2 - North	5726.003222	4980.511621	Access Roads	5101.48	0.97
154	Common Raven	I-1	2 - North	6422.437203	4908.737817	Access Roads	4991.93	0.95
159	Red-Tailed Hawk	I-5	2 - North	483.9773426	0	Access Roads	362.94	0.07
299	Golden Eagle	I-8	2 - North	25865.49868	25400.33323	Access Roads	25834.63	4.89
301	Barn Owl	J-11	2 - South	23814.22227	23106.60273	Access Roads	23623.87	4.47
302	Inactive Large Stick	J-5	2 - South	24091.38404	23267.9429	Access Roads	23845.04	4.52
303	Inactive Large Stick	J-5	2 - South	24128.16612	23244.46613	Access Roads	23882.82	4.52
304	Inactive Large Stick	J-5	2 - South	24194.38835	23046.56859	Access Roads	23953.92	4.54
305	Unknown if Active or Not, No Raptors Present, Appears to have been repaired in 2006	J-5	2 - South	24868.18306	23619.65804	Access Roads	24630.12	4.66
306	Active, Unknown Species	J-5	2 - South	25891.10576	24939.03527	Access Roads	25646.62	4.86
307	Inactive Large Stick	J-11	2 - South	23102.15577	22593.35704	Access Roads	22691.76	4.30
308	Inactive Large Stick	J-11	2 - South	23197.97865	22687.68356	Access Roads	22808.88	4.32
309	Unknown if Active or Not, No Raptors Present, Appears to have been repaired in 2006	J-13	2 - South	19103.66731	18607.31579	Access Roads	18583.98	3.52
310	Swainson's Hawk	J-13	2 - South	15753.72352	15161.89636	Access Roads	15230.82	2.88
311	Inactive Raptor or Other Large Bird Nest	J-13	2 - South	14494.7153	13747.46415	Access Roads	13982.21	2.65
312	Inactive Large Stick	J-5	2 - South	17449.8036	16624.04597	Access Roads	17203.11	3.26
313	Inactive Large Stick	J-9	2 - South	18520.46293	17691.38509	Access Roads	18282.34	3.46
314	Inactive Large Stick	J-11	2 - South	18850.67258	18182.80434	Access Roads	18720.97	3.55
315	Inactive Large Stick	J-11	2 - South	19006.29894	18308.13932	Access Roads	18893.25	3.58
316	Inactive Large Stick	J-11	2 - South	19073.87692	18365.22427	Access Roads	18966.23	3.59
317	Inactive Large Stick	J-11	2 - South	19184.3107	18451.8023	Access Roads	19051.60	3.61
318	Inactive Large StickL	J-5	2 - South	19513.46489	18690.82162	Access Roads	19267.23	3.65
320	Inactive Large Stick	J-5	2 - South	18203.16964	17228.8246	Access Roads	17960.15	3.40
321	Inactive Large Stick	J-5	2 - South	18468.88997	17239.38092	Access Roads	18231.69	3.45
322	Swainson's Hawk	J-5	2 - South	18273.62999	17068.83571	Access Roads	18035.82	3.42
323	Inactive Large StickL	J-5	2 - South	17085.12997	16031.36493	Access Roads	16843.99	3.19
324	Swainson's Hawk	I-8	2 - North	20569.41242	19753.30234	Access Roads	20542.95	3.89

TABLE P-9
Distance from Raptor Nests to Closest Facilities (2006)

Species ID	Species Type	Closest Turbine ID	Phase	Distance to GE Turbine (ft)	Distance to Micrositing Corridor (ft)	Closest Facility	Distance to Closest Facility (ft)	Distance (mi)
325	Inactive Large Stick	I-8	2 - North	21744.85108	21247.44904	Access Roads	21717.08	4.11
327	Inactive Large Stick	I-8	2 - North	21680.29753	21182.74241	Access Roads	21652.55	4.10
328	Inactive Raptor or Other Large Bird Nest	J-5	2 - South	13401.39375	12581.57606	Access Roads	13155.81	2.49
329	Swainson's Hawk	J-5	2 - South	13415.65147	12573.64311	Access Roads	13171.64	2.49
330	Inactive Large Stick	J-9	2 - South	13171.80208	12430.87115	Access Roads	13059.92	2.47
332	Inactive Large Stick	J-16	2 - South	6927.691593	5986.626332	Access Roads	6523.13	1.24
333	Swainson's Hawk	J-16	2 - South	5118.625556	3951.73302	Access Roads	4009.23	0.76
334	Ferruginous Hawk	J-17	2 - South	4752.766951	3028.605192	Access Roads	3214.32	0.61
335	Inactive Large StickL	G-8	2 - North	2700.546214	1958.593581	Collectors	2562.35	0.49
336	Swainson's Hawk	G-7	2 - North	3501.860198	2795.248794	Collectors	3356.35	0.64
337	Inactive Large StickL	G-4	2 - North	2668.383644	2084.855048	Collectors	2510.96	0.48
338	Prairie Falcon	F-1	2 - South	4521.167662	3572.165947	Access Roads	4218.80	0.80
339	Inactive Large Stick	G-15	2 - North	2810.43291	147.5347964	Substation	358.57	0.07
340	Common Raven	H-4	2 - North	1160.771651	0	Staging Area	528.64	0.10
341	Inactive Raptor or Other Large Bird Nest	I-1	2 - North	6723.934272	5984.001062	Access Roads	6094.15	1.15
342	Prairie Falcon	I-1	2 - North	7380.12157	6990.244557	Access Roads	7255.71	1.37
345	Active, Unknown Species	I-8	2 - North	15902.30014	15481.24631	Access Roads	15869.96	3.01
346	Inactive Large StickL	I-8	2 - North	19407.8931	18965.5106	Access Roads	19376.08	3.67
347	Inactive Large Stick	I-8	2 - North	27296.52248	26810.05767	Access Roads	27267.26	5.16
358	Red-Tailed Hawk	J-13	2 - South	20656.39314	20161.47552	Access Roads	20135.76	3.81
360	Common Raven	J-5	2 - South	18214.44096	17391.43838	Access Roads	17968.13	3.40
361	Ferruginous Hawk	I-8	2 - North	26202.14846	25801.48343	Access Roads	26169.49	4.96
362	Inactive Raptor or Other Large Bird Nest	I-8	2 - North	26438.71006	26056.37773	Access Roads	26268.20	4.98
363	Inactive Raptor or Other Large Bird Nest	I-8	2 - North	26240.19631	25851.56173	Access Roads	25944.59	4.91
366	Red-Tailed Hawk	F-1	2 - South	5735.5527	2734.127427	Substation	2440.37	0.46
367	Swainson's Hawk	F-1	2 - South	6631.955875	6149.811447	Substation	5732.39	1.09
368	Red-Tailed Hawk	G-3	2 - North	10798.16029	10253.53463	Collectors	10666.94	2.02
376	Inactive Large Stick Nest	G-1	2 - North	1224.261104	574.5200925	Collectors	1129.46	0.21
377	American Kestral	G-3	2 - North	2363.984617	0	Access Roads	2327.13	0.44
378	Active, Unknown Species	H-1	2 - North	1836.07848	1103.19017	Access Roads	1353.11	0.26
379	Active, Unknown Species	I-1	2 - North	2139.595333	0	Access Roads	96.25	0.02
380	Swainson's Hawk	I-8	2 - North	2479.622862	2059.329035	Access Roads	2470.44	0.47
381	Inactive Raptor or Other Large Bird Nest	J-4	2 - South	2870.205173	1926.1106	Access Roads	2770.98	0.52
382	Inactive Raptor or Other Large Bird Nest	J-4	2 - South	3268.861279	2305.995385	Access Roads	3172.25	0.60
383	Inactive Large Stick	J-5	2 - South	4001.145224	3158.733889	Access Roads	3752.96	0.71
384	Inactive Large Stick	J-5	2 - South	4862.764891	3949.634075	Access Roads	4615.78	0.87
386	Barn Owl	G-1	2 - North	7156.164093	4927.310257	Access Roads	5489.87	1.04
387	Inactive Large Stick Nest	G-1	2 - North	10979.33383	9328.065196	Access Roads	10241.49	1.94
443	American Kestral	G-1	2 - North	26984.61712	23353.44323	Access Roads	23402.33	4.43

TABLE P-9
Distance from Raptor Nests to Closest Facilities (2006)

Species ID	Species Type	Closest Turbine ID	Phase	Distance to GE Turbine (ft)	Distance to Micrositing Corridor (ft)	Closest Facility	Distance to Closest Facility (ft)	Distance (mi)
444	Inactive Raptor or Other Large Bird Nest	I-1	2 - North	28830.41705	25303.62105	Access Roads	25347.31	4.80
445	Barn Owl	I-1	2 - North	29468.75781	25979.24051	Access Roads	26021.34	4.93
446	Prairie Falcon	I-1	2 - North	29403.64482	25912.20604	Access Roads	25954.38	4.92
447	Common Raven	I-1	2 - North	34185.0101	31070.09392	Access Roads	31097.54	5.89
506	Red-Tailed Hawk	F-1	2 - South	2387.225353	1245.325818	Collectors	1388.59	0.26
534	Inactive Large Stick	J-16	2 - South	5147.125544	4363.009014	Turbine	5142.13	0.97
535	Inactive Raptor or Other Large Bird Nest	J-16	2 - South	3826.327632	3105.200536	Turbine	3821.33	0.72
536	Red-Tailed Hawk	J-13	2 - South	2585.250197	2080.422856	Access Roads	2079.62	0.39
538	Swainson's Hawk	J-13	2 - South	22243.71572	21714.80635	Access Roads	21717.35	4.11
539	Inactive Raptor or Other Large Bird Nest	J-11	2 - South	25325.49765	24769.49179	Access Roads	25016.61	4.74
540	Inactive Large StickL	J-5	2 - South	25864.79541	24873.62425	Access Roads	25620.96	4.85
541	Inactive Large Stick	J-5	2 - South	27428.46041	26515.05804	Access Roads	27183.26	5.15
542	Swainson's Hawk	J-5	2 - South	27768.55081	26877.0945	Access Roads	27523.03	5.21
543	Inactive Large Stick	J-5	2 - South	28264.91496	27301.57529	Access Roads	28020.41	5.31
544	Swainson's Hawk	J-5	2 - South	31695.91722	30601.30539	Access Roads	31453.52	5.96
546	Inactive Large Stick	I-8	2 - North	27656.10229	26880.94897	Access Roads	27628.79	5.23
547	Inactive Raptor or Other Large Bird Nest	I-8	2 - North	26101.0735	25605.69285	Access Roads	26072.95	4.94
548	Inactive Large Stick	I-8	2 - North	26805.29775	26311.88357	Access Roads	26776.88	5.07
549	Inactive Large StickL	I-8	2 - North	29557.99695	29097.49268	Access Roads	29526.88	5.59
551	Inactive Large Stick	I-8	2 - North	29585.72982	29161.14212	Access Roads	29553.43	5.60
600	Inactive Raptor or Other Large Bird Nest	I-1	2 - North	1290.704122	0	Access Roads	452.93	0.09
601	Common Raven	I-8	2 - North	12250.92245	11824.66265	Access Roads	12218.70	2.31
602	Inactive Raptor or Other Large Bird Nest	I-1	2 - North	1658.622266	23.07893177	Access Roads	123.08	0.02

APPENDIX A, ATTACHMENT 11

Revised Tables P-10A and P-10B

TABLE P-10A
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland, escarpment)	WJ, ESC	<1	0.00	0.00
Category 2				
Escarpment	ESC	78	0.00	0.00
Open low shrub	SSB	27	0.52	0.37
Bitterbrush/Buckwheat, Bunchgrass-Annual grass	SSE	244	13.44	1.98
Perennial bunchgrass	GB	3	0.00	0.00
Category 3				
Old field	DB	4	0.00	0.00
Shrub-grass	SSA	14	0.30	0.23
Open low shrub	SSB	2,321	78.85	14.82
Category 4				
Old field[3]	DB	102	0.81	0.00
Exposed basalt	EB	44	4.58	0.77
Annual grass and weeds with residual native bunchgrass	GA	16	1.86	0.63
Category 5				
Old field	DB	85	7.19	1.20
Dryland wheat	DW	111	0.00	0.00
Category 6				
Farmyard	DF	25	0.29	0.23
Quarry	DQ	26	0.12	0.06
Other disturbed ground	DX	6	0.00	0.00

[1] Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, O&M facility or facilities, and permanent access roads.

[3] A small portion of the temporary disturbance associated with crane paths is geographically located in Leaning Juniper II South. However, because these crane paths are necessary for construction of Leaning Juniper II North, the crane paths temporary disturbances are included in the Leaning Juniper II North total. The total acres identified for the Old Field (DB)—Category 4 is the total for Leaning Juniper II South.

Note:
Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as represented in Tables C-4 and C-5. The total areas in Tables C-4 and C-5 are not exact estimates of the Facility's total impact to land and habitat. Tables C-4 and C-5 do not account for overlapping impact areas. Consequently, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using geographic information systems (GIS), overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

TABLE P-10B
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts (Worst Case)		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland, escarpment)	WJ, ESC	<1	0.00	0.00
Category 2				
Escarpment	ESC	78	0.00	0.00
Open low shrub	SSB	27	0.73	0.37
Bitterbrush/Buckwheat, Bunchgrass-Annual grass	SSE	244	20.73	2.29
Perennial bunchgrass	GB	3	0.00	0.00
Category 3				
Old field	DB	4	0.00	0.00
Shrub-grass	SSA	14	0.30	0.23
Open low shrub	SSB	2,321	103.17	15.57
Category 4				
Old field[3]	DB	102	0.81	0.00
Exposed basalt	EB	44	0.51	0.00
Annual grass and weeds with residual native bunchgrass	GA	16	2.47	0.63
Category 5				
Old field	DB	85	6.72	1.20
Dryland wheat	DW	111	0.00	0.00
Category 6				
Farmyard	DF	25	0.29	0.23
Quarry	DQ	26	0.12	0.06
Other disturbed ground	DX	6	0.13	0.00

[1] Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, Operations and Maintenance facility or facilities, and permanent access roads.

[3] A small portion of the temporary disturbance associated with crane paths is geographically located in Leaning Juniper II South. However, because these crane paths are necessary for construction of Leaning Juniper II North, the crane paths temporary disturbances are included in the Leaning Juniper II North total. The total acres identified for the Old Field (DB)—Category 4 is the total for Leaning Juniper II South.

Note:
Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as represented in Tables C-4 and C-5. The total areas in Tables C-4 and C-5 are not exact estimates of the Facility's total impact to land and habitat. Tables C-4 and C-5 do not account for overlapping impact areas. Consequently, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using GIS, overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

APPENDIX A, ATTACHMENT 12

Draft Habitat Mitigation Plan

Leaning Juniper II Wind Project: Habitat Mitigation Plan

[DECEMBER 7, 2006]

I. Introduction

This plan describes methods and standards for preservation and enhancement of an area of land 16 miles to the southeast of the Leaning Juniper II Wind Project (LJ II North and South) to mitigate for the permanent impacts of the LJ II North and South on wildlife habitat.[1] The certificate holder shall preserve and enhance the native habitat mitigation site as described in this plan. A conservation easement for this area will be in effect for the life of the LJ II North and South facility. The objective of the mitigation plan is to conserve the wildlife habitat from direct and indirect impacts and to improve the habitat value of the mitigation area for long-term (life of project facility) wildlife use.

This mitigation plan is based on anticipated Facility impacts, knowledge of the proposed sites, conversations with regional restoration experts, and comments from ODFW and ODOE. This plan has been prepared to guide the habitat mitigation efforts. The plan specifies monitoring procedures to evaluate conservation goals and enhancement success and recommended remediation if the planned enhancement efforts are unsuccessful in any part of the mitigation site.

II. Description of the Permanent and Temporary Impacts

The LJ II North and South would permanently affect approximately 21 and 44 acres, respectively. Approximately 19 acres of the North and South areas of permanent impact would be within currently cultivated agricultural fields. This area is lower-value habitat (Category 6). The LJ II North and South facility would occupy approximately 20 and 25 acres of non-cultivated higher-value habitat, respectively, based on a worst-case estimate. The "worst case" estimate is based on the acres impacted by the maximum number of turbines *and* the largest of the permanent footprints, as well as on a layout in which the turbines and permanent facilities to locations were moved within the micrositing corridor into the higher rated habitat than where the turbine is currently shown to be located. The actual area of each habitat category that the LJ II North and South will permanently occupy will depend on the final design layout of the facility after consideration of micrositing factors. The area of permanent impact includes habitat in Categories 2, 3, 4 and 5.

The LJ II North and South would temporarily affect approximately 136 and 328 acres, respectively. Approximately 1 and 159 acres of the North and South areas of temporary impact would be within currently cultivated agricultural fields or other developed areas, respectively. This area is lower-value habitat (Category 6). Construction of the LJ II North and South facility would impact approximately 123 and 168 acres of non-cultivated higher-value habitat, respectively, based on a worst-case estimate. The actual area of each habitat category that the LJ II North and South will temporarily disturb will depend on the final turbine selection and design layout of the facility after consideration of micrositing factors. The area of temporary impact includes habitat in Categories 2, 3, 4 and 5.

[1] This plan is incorporated by reference in the site certificate for the LJ II North and South and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

Data collected at other wind energy facilities indicate that the operation of wind turbines may adversely temporarily or permanently affect the quality of nearby habitat that is important or essential for grassland avian species. The certificate holder has developed a Grassland Bird Study with a goal of measuring obvious changes in presence of native grassland birds during the spring breeding season within a 1,100-acre portion of the leased land, as described in Attachment A of the Order. If the study concludes that a measurable adverse impact may have occurred from the operation of the facility to sensitive status species such as long-billed curlew and grasshopper sparrow, the certificate holder will consult with the ODFW and Department regarding additional mitigation. The affected habitat near the LJ II North and South wind turbines primarily includes grassland, open low-shrub and shrub/grass in Categories 2 and 3.

As defined by the fish and wildlife habitat mitigation goals and standards of the Oregon Department of Fish and Wildlife (ODFW), the affected habitat and corresponding mitigation goals are as follows:

- **Category 2:** essential habitat for a fish or wildlife species, population, or unique assemblage of species that is limited either on a physiographic province or site-specific basis depending on the individual species, population or unique assemblage.

  Mitigation Goal: no net loss of either habitat quantity or quality and provision of a net benefit of habitat quantity or quality.

  Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss of either pre-development habitat quantity or quality. In addition, a net benefit of habitat quantity or quality must be provided. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

- **Category 3:** essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

  Mitigation Goal: no net loss of either habitat quantity or quality.

  Mitigation of impacts, if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

- **Category 4:** important habitat for fish and wildlife species.

  Mitigation Goal: no net loss in either existing habitat quantity or quality.

Mitigation of impacts, if unavoidable, through reliable in-kind or out-of-kind, in-proximity or off-proximity habitat mitigation to achieve no net loss in either pre-development habitat quantity or quality. Progress towards achieving the mitigation goals and standards shall be reported on a schedule agreed to in the mitigation plan performance measures. The fish and wildlife mitigation measures shall be implemented and completed either prior to or concurrent with the development action.

- **Category 5:** habitat having high potential to become either essential or important habitat for fish and wildlife species.

  Mitigation Goal: net benefit in habitat quantity or quality.

  Mitigation of impacts, if unavoidable, through actions that contribute to essential or important habitat.

III. Mitigation Objectives

The objective of the mitigation site would be to mitigate for permanent impacts to native habitat and temporary impacts to native habitat with sagebrush or bitterbrush cover that may require 10 to 30 years to reach pre-construction conditions to sensitive wildlife species. The proposed habitat mitigation plan includes preservation of a greater number of acres of high quality native habitat than the number of acres permanently impacted by the Leaning Juniper II facility. By protecting and enhancing a greater number of acres of native shrub-steppe habitat of equal or better quality within the Columbia Basin Plateau than the number of acres permanent impacted by the Facility, the proposed habitat mitigation plan results in a net benefit related to permanent footprint impacts of the Facility. In addition, the Applicant has recognized that temporary impacts to some types of habitats (namely mature sage and bitterbrush) can take a number of years to restore, and that during the intervening years, some habitat function is lost or degraded. For that reason, the Applicant has also agreed to mitigate for that lost habitat function by protecting and enhancing additional habitat.. . The Applicant also proposes several measures to enhance the habitat for wildlife use.

Protection of remaining native habitat parcels in the Columbia Basin will benefit native flora and fauna of the region by ensuring dependable habitat availability in the area for the next 30 years, resulting in habitat security that would not occur except where land is protected except by federal, state, or other agency ownership. Loss of habitat is often cited as a primary reason for putting fish and wildlife species on the Threatened and Endangered Species List (NHI, 2006). Under the proposed HMP, ecosystem components that play a role in the overall health of the habitat will be protected from human-caused impacting activities. Proposed enhancement activities will accentuate habitat components needed by many Columbia Basin wildlife species, especially those that are dependant on big sagebrush for nesting, escape, migration resting, or thermal cover. In addition, opportunities may occur to conduct ecological research on the conservation easement, subject to landowner approval.

IV. Calculation of Mitigation Area

The area that is needed to mitigate for the amount of higher-value (non-cropland habitat in Categories 2-5) habitat occupied by LJ II North and South turbines and related facilities is

determined by the "footprint" of the LJ II North and South within each habitat category. It was assumed that the final design locations of wind turbines within the micrositing corridors would be such that the maximum area of native habitat would be affected (the "worst case"). The permanent footprint for the Facility equals approximately 64 acres under the worst case scenario, as described in Exhibit P.

Specifically for the permanent footprint within Category 2 habitat, the mitigation amount was calculated on a 3:1 ratio to meet the ODFW goal of a "no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality." For the footprint impacts in Category 3 and 4, the mitigation amount was calculated on a 1:1 ratio to meet the ODFW goal of "no net loss". For footprint impacts in Category 5, the mitigation amount was calculated based on a ratio of 1:1.

To mitigate for temporal "worst-case" impacts to sagebrush (SSA) and bitterbrush (SSE) habitat that is temporarily disturbed during construction and may require 10 to 30 years to reach maximum height and vertical branching, the mitigation amount was calculated on a 0.5:1 or 50% ratio.

The area of impact within each affected habitat category and the corresponding mitigation area for each category are as follows:

LJ II North

Category 2 (shrub-steppe habitat)
Permanent Footprint impacts: 2.67 acres
Temporary impacts to SSA or SSE: 20.73
Mitigation area: (2.67 acres x 3) + (20.73 x 0.5) = 18.36 acres

Category 3 (shrub-steppe habitat)
Permanent Footprint impacts: 15.80 acres
Temporary impacts to SSA: 0.30
Mitigation area: 15.80 + 0.30 x 0.5 = 15.95 acres

Category 4 (grassland)
Permanent Footprint impacts: 0.63 acres
Mitigation area: 0.63 acres

Category 5 (old field)
Permanent Footprint impacts: 1.20 acres
Mitigation area: 01.20 acres

Total mitigation area for LJ II North: 36.14 acres

LJ II South

Category 2 (shrub-steppe and grassland)
Permanent Footprint impacts: 16.44 acres
Temporary impacts to SSA: 41.15
Mitigation area: (16.44 acres x 3) + (41.15 x 0.50) = 69.90 acres

Category 3 (shrub-steppe and old field)

Permanent Footprint impacts: 6.65 acres
Temporary impacts to SSA: 4.33
Mitigation area: 6.65 + (4.33 x 0.50) = 8.81 acres

Category 4 (old field and grassland)
Permanent Footprint impacts: 1.48 acres
Mitigation area: 1.48 acres

Total mitigation area for LJ II South: 80.19 acres

Total mitigation area (rounded): 116

The amount of additional area needed to mitigate for a potential displacement effect is uncertain and cannot be precisely calculated. If the grassland bird study described above concludes that a significant adverse impact on the level of use by grassland birds during the breeding season may have occurred, the certificate holder will consult with the ODFW and Department regarding appropriate mitigation. Mitigation could be based on the results of this study as well as on data collected at the Stateline Wind Project and reported in the *Stateline Wind Project Wildlife Monitoring Final Report, July 2001 - December 2003* (2003 report).[2] If the ODFW recommends mitigation, the Department shall recommend appropriate mitigation to the Council, and the certificate holder shall implement mitigation as approved by the Council.

V. Description of the Mitigation Site

The certificate holder shall select a 116-acre mitigation site in proximity to the facility where habitat preservation and enhancement are feasible. The certificate holder shall determine the final location of the mitigation area consistent with this plan in consultation with ODFW and the affected landowners and subject to the approval of the Oregon Department of Energy (Department). The certificate holder shall acquire the legal right to create, maintain and protect the habitat mitigation area for the life of the facility by means of an outright purchase, conservation easement or similar conveyance and shall provide a copy of the documentation to the Department.

During the project planning phase several potential mitigation sites have been explored within the project site and elsewhere within the Columbia Basin Plateau. One primary site has tentatively been selected due to its size, overall quality and functionality for native grassland and shrub-steppe wildlife, diversity of soil types, topography and plant communities, lack of human or other disturbances, and enhancement opportunities.

The mitigation area of interest is within a large, 440-acre block of native habitat in a relatively remote setting and is surrounded by CRP grassland, native grassland and sagebrush dominated shrub-steppe habitat, an intermittent stream, and cropland. It is located approximately 16 to 18 miles southeast of the Facility in the Columbia Basin, and within the same Eight Mile Canyon watershed as Leaning Juniper II. The area is southeast of Olex, Oregon, in the "East half of Southeast Quarter Section 9, Township 2 North, Range 23 East," in Morrow County.

[2] The final survey data was collected at Stateline in 2006 and (if any Stateline 3 turbines are built) additional areas will be studied in 2010 *(insert reference, the Stateline WMP, revised January 20, 2006).*

According to the landowner, there has been one other landowner during the previous 27 years. Before that, the land was owned by the federal Bureau of Land Management (BLM). Grazing has been the primary use in the past. Eighty (80) acres of the 440-acre area are already being protected from development, domestic livestock grazing, or other land use activities as part of an existing conservation easement for Leaning Juniper Phase I.

The mitigation area for Leaning Juniper II North and South consists of native grassland and shrub-steppe habitat. Vegetation is variable and many Columbia Basin native plant communities are present onsite. Native plant communities include (dominant plant species listed): bluebunch wheatgrass, western needle-and-thread grass, Sandberg's bluegrass, sagebrush, with snakeweed and buckwheat species scattered intermittently throughout. Lithosol with forbs and sparse grass is found on steeper slopes and rim edges. There are several dry drainages with small seeps onsite, and one drainage had small pools of water at the end of July. Basalt outcroppings and basalt rim edges are also present (potential nesting habitat for raptors, roosting by bats).

Weeds are limited in the area. Although non-native cheatgrass is found onsite like most areas in the Columbia Basin, native vegetation persists and out-competes undesirable plants and grasses, setting the area apart from most rangeland sites visited in the region. The protective soil surface biotic crust (cryptogam) is in excellent condition and offers opportunities for ecology studies to further the knowledge of this under-studied, but important, unique biotic feature.

Wildlife use was assessed at the proposed mitigation area during two site visits in March and July 2006 and a walk-though in November 2006. In March 2006, sage sparrows were seen onsite, although no visits occurred during the typical wildlife breeding season to confirm nesting. In late July, the following species were observed: Western meadowlarks, horned lark, vesper sparrow, savannah sparrow, two species of swallows, loggerhead shrike, rock wren, American kestrel, side-blotched lizard, fence lizard, (3) mule deer and (2) elk. Swallow nesting occurs just off the property and swallows were foraging throughout the 440-acre parcel. There are historical (1990) Washington ground squirrel (WGS) records within 2 miles of the parcel, and the soils and vegetation onsite are suitable for WGS. While no colonies have been confirmed, there could be a colony onsite. In November, a potential ferruginous hawk nest was discovered near the border of the existing Leaning Juniper I and proposed LJ II mitigation sites.

While the overall ecological condition is very good in the area, there are some areas of lower quality habitat that could benefit from supplemental sagebrush planting. A hard freeze appears to have occurred in limited portions of the mitigation area, affecting some of the sagebrush cover in certain areas. Sage plantings could speed the recovery of sagebrush. Grazing by domestic livestock has been light in recent years. Eliminating all current and potential domestic livestock (cattle, horses, sheep, llamas) grazing would be appropriate to alleviate the site of any unnecessary trampling by heavy-hoofed animals which could result in disturbance of soil surface and native mature and recovering vegetation which is cover for a variety of wildlife.

Topography in the area is variable. Deep soils are present on upper slopes and plateaus and consist of Ritzville silt-loam, Mikkalo silt loam. Soils on steeper slopes are Lickskillet stony loam (lithosol) and Lickskillet rock outcrop complex. The shallower soil sites (Lickskillet) have pockets of deeper soil in swales and drainages.

Additional detail and photos of the representative habitat types are found in Attachment P-4 of the Application for Site Certificate, Proposed Habitat Mitigation Plan for Leaning Juniper II Wind Power Facility."

VI. Habitat Enhancement Methods

The objective of the HMP is to facilitate selection of mitigation sites that are functional for wildlife and have not been significantly degraded by human-caused or other (e.g., hot wildfires) impacts, yet still offer portions that are ideal for enhancement of vegetative structure or other habitat values for grassland and shrub-steppe dependant wildlife species. The certificate holder has proposed to conserve two mitigation sites, one for LJ II North and one for LJ II South, within a contiguous mitigation area that is a relatively intact, high quality native habitat parcel. The mitigation area is currently functional for some special status species identified within the Facility lease boundary, and contains similar soils and vegetation as the facility site.

The primary goal of establishing the habitat mitigation sites would be to ensure the conservation of the sites from loss of quality or functionality by protecting the site from domestic livestock grazing pressure, plowing or other impacting disturbances and developments. In addition, for portions of the area that currently have lesser quality vegetative conditions but yet provide opportunities for enhancement, the goal would be protection and enhancement. This combined approach provides a net-benefit for species through obvious benefits such as increasing the amount of important wildlife cover (sagebrush and native bunchgrass) and, other less obvious but immediate benefits such as retention of valuable native habitat for a long period (30 years).

The enhancement measures would proceed in phases. Before or during construction of the LJ II North and South, the certificate holder shall begin the enhancement measures. The first phase is to determine enhancement needs in the spring of 2007 or later. During this initial spring-season site assessment, the qualified investigator will also conduct avian surveys and note any sign of mammals, especially Washington ground squirrels. The avian survey will be conducted during the morning on days with low or no wind and will occur between April 21 and May 21. It will consist of an "area search" whereby the surveyor records all birds seen and heard in specific "areas". These areas could be square or circular plots consisting of 5 to 10 acres in size. The number of plots will be determined in consultation with ODFW. The investigator will also map and describe the overall health of patches of poor-quality sagebrush or weedy patches, both being targeted for enhancement actions. Based on the initial site assessment, the following steps summarize the anticipated vegetative enhancement process:

1) Modification of Livestock Grazing Practices. Eliminating livestock grazing on the parcels will enable recovery of native bunchgrass and sagebrush in areas where past grazing has occurred, resulting in better vegetative structure and complexity for a variety of wildlife. Livestock grazing can be used as a vegetation management tool in future years, subject to approval of ODFW, should it be determined this action will accentuate wildlife cover and other values. If approved, the number of cattle will be limited and grazing would be limited to a short period, February 1 through April 15, before most ground-nesting nesting birds initiate nesting.

2) Shrub Planting. At this time, it appears that supplementing the disturbed sagebrush portions with sagebrush seedlings would assist the recovery of this valuable shrub-steppe

component that appears to have been grazed hard or impacted by a hard freeze. Approximately 5 to 6 acres would be planted. Sagebrush shrubs will be planted in the fall or early winter, so they can soak up moisture during the winter. Young sagebrush in 10" containers will be planted in clusters at a rate of approximately 200/acre. The shrubs will be obtained from a qualified nursery. An option will be explored during the early winter prior to the year of planting for hand-collecting native sagebrush seeds from the habitat conservation site and growing them in containers at a nursery for planting at the site 6-8 months later. This insures that plants with the same genetic material will be on site. The planted sagebrush clusters will be sufficiently marked at planting for monitoring purposes with either wooden markers or uniquely-marked rocks. After the young shrubs show signs of being well-established (likely determined by the fourth year after planting) the quality of the habitat will be maintained for the life of the LJ II North and South by continued weed control and fire control.

3) Weed Control. Weed control on the mitigation site will contribute to lessening noxious weed expansion on the site and on any nearby grassland, CRP or cultivated agricultural land. Weed control would also result in lessening competition to the desirable native vegetation and planted sagebrush. Weeds would be controlled with herbicides, which can reduce persistent weeds after seeding. The landowner will be briefed on which chemicals will be used on site and when spraying will occur. Hand-pulling weeds can also be very effective for small areas but would be limited to noxious weeds listed by Gilliam County. Spot-spraying can be used instead of total area spray to protect locations where young desirable forbs that may be growing. Spot-spraying of persistent and potentially problematic weeds that are not designated as "noxious" by the County will also be done where needed. While onsite planting shrubs and during the vegetation-monitoring years, experienced restoration specialists or botanists will inspect the parcel for sign of noxious weeds and will hand-pull or spot-spray these areas as needed during that year (one to two applications).

4) Fire Control. The certificate holder will develop a fire control plan for wildfire suppression on the mitigation site for the life of the LJ II North and South projects. This plan will be finalized by the start of operations of the Facility.

5) Nest platforms – The certificate holder will construct artificial raptor nest platforms on the mitigation site tailored to the needs of the site, using best professional judgment of raptor use in the general area.

VII.Monitoring

1. Monitoring Procedures

In the year following the shrub planting and continuing as described below, the certificate holder shall hire a qualified investigator (an independent botanist, wildlife biologist or revegetation specialist) to conduct a comprehensive monitoring program focusing on vegetative recovery and use by avian and mammal species during the wildlife breeding season. This consists of the following tasks:

1) Recording of environmental factors such as precipitation at the time of surveys and precipitation levels for the year,

2) Examination of the recovery of native bunchgrass and natural recruitment of sagebrush resulting from removal of livestock grazing pressure,

3) Inspection for weed control needs

4) Repeat of the "area search" avian surveys,

4) Recording of any use by special status species, and

4) Inspection of the site's perimeter fence for effectiveness for excluding potential trespass cattle, if neighboring parcels are being grazed.

The planted sagebrush clusters will be sufficiently marked at planting for monitoring purposes with either wooden markers or uniquely-marked rocks. Several planted clusters will be identified for photo monitoring and a close-up and long-distance digital image will be taken during each monitoring year. The number of clusters to be monitored will be based on the final number of areas planted. ODFW will be consulted for input on monitoring design. Photo plots of naturally recovering sagebrush (as noted in 2006) and native bunchgrass will be established during the first year and photos taken each monitoring year to assess trends in vegetative structure recovery and growth. The investigator will inspect all shrub-planted areas to assess establishment of shrubs (survival rate, etc.). The investigator will also collect information on the growth and health of young plants within the selected monitoring plots. During the appropriate time for weed growth and proper identification, meandering transects will be walked through the mitigation site to assess presence of noxious weeds and the need for weed control. Due to the need to spray weeds while they are young, the Facility owner will be notified immediately if spraying should occur that season. A detailed monitoring plan will be developed in consultation with shrub restoration specialists and ODFW, after the final planting plan is designed.

The qualified investigator shall revisit the mitigation area during the first growing season after initial planting and every other year for first four years or until the certificate holder and the Department agree that the area is trending toward meeting the success criteria. Detailed notes will be recorded during the fourth year of monitoring and will include overall health and vigor of native bunchgrass, and the range in height and extent of branching of the naturally recovering sagebrush and each surviving planted shrub. Thereafter, the qualified investigator shall revisit the mitigation area every five years for the life of the LJ II North and South projects to assess vegetation cover and success and note any weed infestation. No specific wildlife surveys will be conducted during these monitoring years but any use by special status species (avian and mammal) will be recorded. Any special status rare plant species discovered will also be reported as part of the annual reporting to the Department.

The certificate holder shall report the investigator's findings and recommendations regarding habitat mitigation progress and success to the Department following each monitoring year. In the non-monitoring years, any notable changes in the habitat at the mitigation site would be reported on an annual basis as part of the annual report on the LJ II North and South.

2. **Success Criteria**

The habitat mitigation site will be considered successful if it mitigates for project impacts in accordance with the definition of mitigation under OAR 635-415-0005 (16d) and OAR 635-415-0025.

As described previously, for LJ II North there are 2.67 acres of permanent impacts to Category 2 shrub-steppe habitat and 20.73 acres of temporary impacts to Category 2 mature shrub habitat. To meet a "net benefit" for this permanently impacted Category 2 habitat, the number of mitigation acres was increased to from 2.67 to 8. To meet a "net benefit" for temporarily impacted Category 2 mature shrub habitat, the number of mitigation acres was increased from 0 to 10.36. Restoration of temporarily impacted Category 2 shrub-dominated habitat will also occur, following an approved Revegetation Plan. For LJ II South there are 16.44 acres of permanent impacts to Category 2 shrub-steppe and grassland habitat and 41.15 acres of temporary impacts to Category 2 mature shrub habitat. To meet a "net benefit" for this permanently impacted Category 2 habitat, the number of mitigation acres was increased from 16.44 to 49.32. To meet a "net benefit" for temporarily impacted Category 2 mature shrub habitat, the number of mitigation acres was increased from 0 to 20.58. Restoration of temporarily impacted Category 2 shrub-dominated habitat will also occur, following an approved Revegetation Plan. Combined, for LJ II North and LJ II South, an additional 25.91 acres protected and enhanced.

The habitat mitigation parcel consists of a mosaic of high-quality and lesser quality grassland and shrub-dominated habitat. Details of the monitoring methods and associated success criteria will be prepared in consultation with ODFW. The enhancement goal for the "net benefit" will be attained when 85% of the whole site is at Category 3 or better and 15% is at Category 2 or better. These percentages are approximate, depending on the final Facility configuration. The following describes each method and success criteria that can be used to determine trends towards recovery.

Modification of Grazing Practices will be implemented throughout the site. Cattle grazing will be eliminated starting with the first year of implementation of this HMP. Improvement in habitat quality resulting from lack of livestock grazing is likely to be subtle in the current higher-quality areas and more measurable in the lesser quality areas. Photo plots of the native perennial bunchgrass will be established for the monitoring period. Success criteria will be when native bunchgrass shows signs of more abundant seed production. In each monitored plot (size to be determined), 75% of the individual bunchgrass clumps will show measurable increase in seed production.

Shrub Planting will occur in clusters. Based on past experience of restoration specialists for other sagebrush planting projects monitoring indicates a success rate as high as 50% can be achieved if there are years of high soil moisture. A more typical response in normal precipitation periods may be 2 shrubs per 10 planted that survive to an age of 4 years (the last year of proposed monitoring).

Weed Control is needed but will occur in small, previously disturbed areas. Non-native broad-leafed forbs will be targeted for spraying. Success criteria will be when these undesirable plants have been eliminated or, as a minimum, reduced by 75% (or are controlled to a tolerable, non-competing level, depending on the weed species).

After native perennial bunchgrass and sagebrush vegetation has been restored to a higher quality, the investigator shall verify, during subsequent visits, that the plant communities within the mitigation site continue to meet the success criteria for restoration and enhancement. In

addition, the investigator, in consultation with ODFW, shall evaluate the percentage of the mitigation site that has been enhanced so that, where lesser-quality habitat exists, there is a positive trend toward a higher-quality vegetative stage Category 2 quality. This is defined as progressing toward mature sagebrush and more abundant production of bunchgrass seed. Based on the results of the initial year of avian surveys, results of future monitoring year's surveys will be compared to the initial year to note any increase in species diversity or abundance.

If all or part of the habitat within the site falls below the revegetation or enhancement success criteria levels, the investigator shall recommend corrective measures. The Department may require supplemental planting or other corrective measures in those areas that do not meet the success criteria.

VIII. Amendment of the Plan

This Habitat Mitigation Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.

APPENDIX A, ATTACHMENT 13

Draft Revegetation Plan

Leaning Juniper II Wind Project: Revegetation Plan

[DECEMBER 11, 2006]

I. Introduction

This plan describes methods and standards for restoration of areas temporarily disturbed during the construction, maintenance or repair of the Leaning Juniper II Wind Project (LJ II North and South).[1] The objective of revegetation is to restore the temporarily disturbed areas to pre-construction condition or better. Restoration of these areas is required by the site certificate for the facility.

An estimated 124 acres of land will be temporarily affected during construction of the LJ II North portion of the facility.[2] The majority of the temporarily disturbed area is grassland or shrub-steppe range land zoned as exclusive agricultural farmland. Less than one acre is cultivated or used for active farming. For LJ II South, up to 328 acres of land will be temporarily affected during construction.[3] Approximately 159 acres of the temporarily disturbed area is cultivated or otherwise developed agricultural land and the remainder is grassland, shrub-steppe or old field (may be previous CRP land[4]). The intensity of the temporary impacts is expected to vary, based on results of past construction activity at projects in similar habitats and topography. Some areas may receive light impacts whereas others may be impacted to the degree that none of the original vegetative cover remains. The certificate holder shall maintain erosion and sediment control measures put in place during construction until the affected areas are restored as described in this plan and the risk of erosion has been eliminated.

This plan has been prepared to guide the revegetation efforts. Seed mixes, planting methods and weed control techniques have been developed for the project area in consultation with the Oregon Department of Fish and Wildlife (ODFW). The plan specifies monitoring procedures to evaluate revegetation success and recommended remediation if revegetation appears unsuccessful in certain areas.

II. Description of the Project Area

The facility is located in Gilliam County, Oregon. The project area is on private agricultural land used primarily for livestock grazing and some dry land winter wheat production. Soils are typically loess formations of well-drained, moderately permeable, fertile silt loams over basalt. The area receives approximately 11 inches of precipitation annually, most of which occurs between October 1 and March 31.

The project area is within the Columbia Plateau physiographic province. The Facility is located on an upland plateau at elevations ranging up to 980 feet msl, with relief of about 130 feet. The Facility is bounded on the south by the east-west trending Alkali Canyon and to the east by the Chemical Waste Management, Inc., facility. Most of the native vegetation in the project area has been modified by recent patchy hot fires coupled with periods of lower than normal precipitation. Very little extensive intact sagebrush habitat exists, occurring

[1] This plan is incorporated by reference in the site certificate for the LJ II and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.
[2] In addition to the area permanently occupied by LJ II North facility structures (approximately 21 acres).
[3] In addition to the area permanently occupied by LJ II South facility structures (approximately 44 acres).
[4] "CRP" is formerly cultivated land that the landowner has enrolled in the Conservation Reserve Program.

predominantly along the plateau margins and steep side slopes of Juniper Woodland Canyon. Category 2 open low shrub, shrub-steppe habitat is present in the eastern portion of LJ II South, and some Category 2 bitterbrush shrub-steppe habitat is present in the northern portion of LJ II North. Plant communities in these areas consist of low-stature snakeweed and rabbitbrush dominated shrub lands with patches of sagebrush and native bunchgrass grasslands, each with varying degrees of non-native invasive type grass and forb species.

III. Revegetation Methods

The certificate holder shall restore areas of temporary disturbance by preparing the soil and seeding using common application methods. The certificate holder shall use mulching and other appropriate practices to control erosion and sediment during facility construction and during revegetation work. The certificate holder shall restore agricultural topsoil to pre-construction condition. The certificate holder shall select the grass, shrub, forb seed mix to apply based on the pre-construction land use, as described below.

1. Seed Planting Methods

Restoration of temporarily disturbed areas should begin as soon as possible after completion of facility construction, maintenance or repair activity in the area to be restored. Planting should be done at the appropriate time of year based on weather conditions and the time of year when ground disturbance occurs. The certificate holder shall choose planting methods based on site-specific factors such as slope, erosion potential and the size of the area in need of revegetation. Disturbed ground may require chemical or mechanical weed control before weeds have a chance to go to seed. Two common application methods are described as follows.

(a) Broadcasting

Broadcast the seed mix at the specified application rate. Where feasible, apply half of the total mix in one direction and the second half of mix in direction perpendicular to first half. Apply weed free straw from a certified field or sterile straw at a rate of two tons per acre immediately after applying seed. Crimp straw into the ground to a depth of two inches using a crimping disc or similar device. As an alternative to crimping, a tackifier may be applied using hydroseed equipment at a rate of 100 pounds per acre. Prior to mixing the tackifer, visually inspect the tank for cleanliness. If remnants from previous hydroseed applications exist, wash tank to remove remnants. Include a tracking dye with the tackifier to visibly aid uniform application. Broadcasting should not be used if winds exceed five miles per hour.

(b) Drilling

Using an agricultural or range seed drill, drill seed at 70 percent of the recommended application rate to a depth of ¼ inch or as recommended by the seed supplier. Where feasible, apply half of the total mix in one direction and the second half of mix in direction perpendicular to first half. If mulch has been previously applied, seed may be drilled through the mulch provided the drill is capable of penetrating the straw resulting in seed-to-soil contact conducive for germination.

2. Seed Mix

(a) Seed Mix 1 – Dry Land Wheat

The certificate holder shall seed temporarily disturbed agricultural areas with wheat or other crop seed. The certificate holder shall consult with the landowner and farm operator to determine species composition, seed and fertilizer application rates and application methods. In areas scheduled for fallow for the period when restoration occurs, no seeding will be required.

(b) Seed Mix 2 – Grassland and Shrub-Steppe

The certificate holder shall apply Seed Mix 2 to all temporarily disturbed grassland, old field and shrub-steppe areas that are not cultivated farmland or areas. The composition and application rate of Seed Mix 2 will be determined in consultation with ODFW and the landowners and will be subject to the approval of the Oregon Department of Energy (Department). The certificate holder shall use seed provided by a reputable supplier and complying with the Oregon Seed Law. The mix should contain native species selected based on relative availability and compatibility with local growing conditions. Factors that will be taken into consideration are soil erosion potential, soil type, seed availability and the need for using native or native-like species. Bitterbrush shrub habitat (LJ North) that is temporarily impacted will be seeded the same as other sites but in this area, bitterbrush seeds will be included in the mix.

IV. Monitoring

1. Monitoring Procedures

In the year following each seeding, the certificate holder shall employ a qualified investigator (an independent botanist or revegetation specialist) to examine all seeded shrub-steppe, grassland and old field areas to assess vegetation cover (species, structural stage, etc.) and progress toward meeting the success criteria. The qualified investigator shall revisit the revegetation areas on an annual basis for the first five years after construction or until the certificate holder and the Department agree that the areas are trending toward meeting the success criteria. Thereafter, the qualified investigator shall revisit the revegetation areas every five years for the life of LJ II North and South or until the land use practices convert habitat to other uses to assess vegetation cover and success. The certificate holder shall report the investigator's findings and recommendations regarding revegetation progress and success to the Department on an annual basis as part of the annual report on the LJ II North and South.

In consultation with the ODFW, the certificate holder's qualified investigator shall choose reference sites near the revegetated areas to represent the target conditions for the revegetation effort. The target conditions for each revegetated area are conditions that would be realistically attainable for the area. Land use patterns, soil type, local terrain and noxious weed densities should be considered in selecting reference sites. It is likely that several reference sites will be necessary to adequately represent the various habitat conditions within the project area.

Once the reference sites are chosen, they will be used for comparison during all subsequent monitoring visits, unless some event (such as wildfire or tilling) significantly changes vegetation conditions so that a particular reference site no longer represents a realistically

attainable goal for the associated revegetated area. In that case, the qualified investigator shall choose a new reference site.

At each monitoring location, the investigator shall evaluate the following parameters (both within the revegetated area and within the reference site):

- Degree of erosion due to construction activities (high, moderate or low).
- Average number of stems of desirable vegetation per square foot or an ocular assessment (visual scan) of the area, noting overall recovery status.

The investigator shall evaluate the revegetated area and compare to the reference site to determine revegetation success.

2. Success Criteria

A temporarily disturbed grassland, old field or shrub-steppe area is successfully revegetated when the average desirable vegetation stem density within the revegetated area is greater than, or equal to, that observed in the comparable reference site. Desirable vegetation means those species included in the seed mix or native or naturalized species common to similar areas.

In each monitoring report to the Department, the certificate holder shall provide an assessment of revegetation success in grassland old field and shrub-steppe restoration areas. The Department may require reseeding or other corrective measures in those areas that do not meet the success criteria. Landowner use of the old field parcels will need to be taken into consideration. The Department may exclude small areas from the reseeding requirement, if erosion from construction activities is low, if total vegetative cover (of native and non-native species together) exceeds 30% and if weed encroachment has made native seed establishment impossible.

Cultivated agricultural areas are successfully revegetated if the replanted areas achieve crop production comparable to adjacent non-disturbed cultivated areas. The certificate holder shall consult with the landowner or farmer to determine whether these areas have been successfully revegetated and shall report to the Department on the success of revegetation in these areas.

V. Amendment of the Plan

This Revegetation Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council ("Council"). Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan. The Department shall notify the Council of all amendments, and the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the Department.

APPENDIX A, ATTACHMENT 14

Draft Grassland Bird Study

ATTACHMENT P-3

Leaning Juniper II Grassland Bird Study

Introduction

This document describes the proposed approach to a 2-year, postconstruction evaluation of grassland bird use and potential change in that level of use in the Leaning Juniper II Wind Power Facility (the Facility) area.

Leaning Juniper Wind Power II, LLC (the Applicant) proposes to construct the Facility in Gilliam County, Oregon. The proposed Facility will have a generating capacity of up to approximately 279 megawatts (MW), and will consist of two main components: (1) Leaning Juniper II North (the north portion of the Facility with up to 93 MW), and (2) Leaning Juniper II South (the south portion of the Facility with up to 186 MW).

Background

The Applicant is proposing placement of wind turbines and supporting facilities in native habitat suitable for various ground-nesting grassland, open low shrub habitat birds. This group includes long-billed curlew (a shorebird) and several others, generally referred to as passerines or songbirds. Grassland birds that were documented onsite (and likely nesting onsite) during protocol-level surveys conducted in 2006 were long-billed curlew, grasshopper sparrow, savannah sparrow, Western meadowlark, and horned lark. The loggerhead shrike was not recorded although it was suspected to occur. While the diversity of species found on the site is not high, this avian species assemblage is typical for the general Facility area in similar habitats located in low-elevation, low-precipitation zones of northeastern and north-central Oregon.

The long-billed curlew, grasshopper sparrow, and loggerhead shrike (and one mammal, Washington ground squirrel) were the target species for preconstruction breeding season surveys. The data resulting from the year 2006 surveys were used for determining potential Facility-related impacts to these special-status species and for quality rating of the habitat types, as required for the EFSC Application. As described in Exhibit P of the Application for Site Certificate, 50- to 60-meter-wide (approximately 165- to 200-foot-wide) transects were walked twice during the peak period of activity for the target species (March-May). Specifically, at Leaning Juniper II North, all leased lands were surveyed with this method, whereas other portions of the Facility site were surveyed out a perpendicular distance of 300 meters (approximately 1,000 feet) from proposed facilities known at the time of surveys. These are generally referred to as survey corridors.

During the 2006 preconstruction surveys of Leaning Juniper II North, approximately 57 transect lines were surveyed within the two proposed postconstruction grassland bird study areas, totaling approximately 150 linear miles. These transect lines were tracked with GPS units. During these surveys, the primary objective was to document use by special status wildlife. However, all wildlife species along transect lines walked were recorded.

For sensitive species, locations of territorial male grasshopper sparrows were recorded with a GPS unit. Locations of (assumed) paired long-billed curlews or approximate location of the pair's primary activity area, and nests were recorded with a GPS unit. Abundant special status species that flew readily in the surveyor's presence were tracked visually. Surveyors also hand-marked up maps with notes on the general location of special status species use, and any noted behavior (for example, nesting, staging, courtship, nonbreeders foraging in loose groups).

For common species, all detections, whether visual, auditory, or sign of use, were noted for blocks of areas surveyed (several transects combined). GPS points were not recorded for these observations. Surveyors tracked abundant species that flew readily in the surveyor's presence, but focused on special status species. The presence of common species was noted on field data forms but these individuals were not counted.

Experienced surveyors with Northwest Wildlife Consultants, Inc. conducted the surveys, and qualified biologists will conduct the post-construction grassland study. Because there is just one landowner of the property, planning multiple-year field studies will be simplified.

Objective

The objective of this qualitative postconstruction grassland bird study is as follows:

> Within 1,100 acres of representative habitat, determine if there are noticeable changes in the presence and overall use by special status native grassland bird species from those recorded prior to construction in 2006 and those recorded after construction during the two year postconstruction grassland bird study. A comparison may provide useful data for a discussion with Oregon Department of Fish and Wildlife (ODFW) and Department of Energy persistence (or not) of nesting/breeding grassland and open shrub-grass dependant species in an area developed and operated for wind power. By surveying a large area that includes the undisturbed area between turbine strings, the study could provide information on whether the project discourages use of the entire 1,100 acre area by sensitive species such grasshopper sparrows or long-billed curlews, which could be used as indicator species.
>
> The study will also record postconstruction data on the location of common species at distances near and far from turbines and other facilities, which could also be used to discuss whether wind turbines have an affect on species use of habitat adjacent or in close proximity to the turbines if sufficient numbers of individuals are observed for this level of interpretation. Common species such as western meadowlark, savannah sparrow, and horned lark will be recorded during postconstruction surveys for each transect and numbers will be estimated. Although this data cannot be directly compared to the preconstruction data due to different data collection methods, it will provide information on the presence and distribution of these species within the study area where turbines will be placed.

Method

The Applicant proposes to replicate the 2006 survey method used for censusing birds and also collect more specific locational and abundance data on common (no special status) avian species.

Study Area Descriptions

The study area is located within the Leaning Juniper II North lease boundary, and covers approximately 1,100 acres, as shown on Figure 1. For purposes of this discussion, the area north of Rattlesnake Road is referred to as the "north study area," and the area south of the road is referred to as the "south study area."

The north study area is triangular and bound by the leased land boundary on the northeast and west sides and Rattlesnake Road on the southeast side, encompassing 1,000 acres. The south study area is 100 acres, and is bound by an existing powerline on the west, and natural topography on the other sides. The exact shape of this additional area could be modified based on consultation with the ODFW and ODOE.

The north study area selected is large and will likely contain two turbine strings of potentially 12 to 17 turbines (G 1-15 and H 1-3), associated access roads and one crane path between the strings (temporary disturbance only). The smaller south study area will not have as extensive turbine development but will likely include access roads and one or two turbines (H-10 and H-11). This study area includes potential burrowing owl dens not found in the north study area and was added in response to comments from ODFW. The habitat in the north study area is primarily shrub-steppe and large wildfires have removed mature shrubs in places, resulting in an open low shrub, mostly grassland-like vegetative recovery stage. The south study area includes relatively flat ground like the north study area but also includes gentle slopes and a dry drainage. Habitat for both the north and south study areas is not highly variable and is representative of a large portion of the remainder of the LJ II North lease boundary where up to 22 additional turbines may be installed. Habitat types are presented in Exhibit P, Figures P-1 and P-2.

As a result of wildfires and land use, the habitat is structurally an open low shrub, grassland-like, early recovery stage area. Some shrubs remain but the habitat is relatively open. The north study area also contains bitterbrush habitats, which is used by shrub-grassland-type birds (western meadowlark). The more shrub-dependant loggerhead shrike may also use this habitat for nesting. Habitat categories with the north and south study area include Categories 2, 3 and 4.

This areas were selected because of the representative habitat types and corresponding avifauna, some of which are classified by the ODFW as Sensitive. The areas are somewhat removed from human activity (except Facility roads and one main Gilliam County road with low traffic use), and also include a large area of grassland/shrub-steppe (mapped as SSB) that is not proposed to be altered during project construction or operations.

Surveys

The postconstruction grassland bird surveys would repeat the same transects surveyed as part of the 2006 preconstruction surveys. The study would include a repetition of the

approximately 57 transects walked prior to construction, and would include two transects per year; one in April, one in May. The same north-south oriented transect lines used during the 2006 preconstruction surveys will be used for all postconstruction monitoring surveys. Further details are provided below.

For sensitive species, the post-construction surveys would record data on the location and abundance of grasshopper sparrow and long-billed curlew (the species most likely to occur), using the same methodology used in 2006. For sensitive species, locations of territorial male grasshopper sparrows will be recorded with a GPS unit. Locations of (assumed) paired long-billed curlews or approximate location of the pair's primary activity area, and nests will be recorded with a GPS unit. Abundant special status species that fly readily in the surveyor's presence will be tracked visually to attempt to determine defended territories and to limit potential double-counting of individuals. Surveyors will also hand-mark up maps with notes on the general location of special status species use as indicated by behavior (for example, defensive responses, nesting, staging, courtship, non-breeders foraging in loose groups). This plotted data will provide information on the location of sensitive species at distances near and far from turbines and other facilities.

For common species, surveyors will record more information than was recorded in 2006. Surveyors will record data on the location and abundance of common species. All detections, whether visual, auditory, or sign of use will be recorded along the transect line with a GPS unit. Abundant common species that fly readily in the surveyor's presence will be tracked visually to avoid double counting. GPS locations of all common grassland species will be recorded with the exception of the horned lark, a very abundant bird. Horned lark observations will be totaled for each survey area completed in one survey day. This relative abundance and distribution data will provide some information on the location of common species at distances near and far from turbines and other facilities.

Two complete walking transect surveys of the areas would be conducted, one in April and one in May during each of the two survey years. If the surveyor determines a third visit is needed to specific potential burrowing owl dens (2006 data and any new ones) to confirm use, a third visit to these sites will be conducted during the late May to early July period, focusing on noting presence of juveniles or other sign to confirm use.. The April and May time period is the seasonal period to span the periods of the range of activities for a variety of species. These activities include staging (prenesting) of long-billed curlews in April, and the major period of territorial calling of grasshopper sparrows, which also coincides with the nesting period for long-billed curlews and other species in May.

The first year of postconstruction surveys will be conducted in the first spring following the initial operation of the Facility. The second survey will take place 2 to 5 years after the first survey, once it has been ascertained that the seeded, temporarily disturbed construction zones have reestablished grassland cover.

Products and Other Data Collected

A draft summary report will be prepared for the first year's monitoring results and a second, more comprehensive report will be prepared after completion of the second year of surveys. For each monitoring year maps will be prepared showing transects walked, and specific areas of use by grasshopper sparrows, long-billed curlews, loggerhead shrikes and

common species (except horned larks). After the Facility is built and a final Facility map prepared, a grid system will be overlaid on the study area for describing results by area(scale of area to be determined after facilities are known).

Vegetation will be described relative to preconstruction (2006) conditions. This description is likely to include notes on changes in land use by landowner, wildfire influences, and cattle aggregations, among other groups, causing areas of intense vegetation impact. Vegetation communities will be sampled by the transect method and a description of plant communities will be provided for each survey year.

The summary report will provide notes on obvious changes in use by special status grassland birds (long-billed curlew, grasshopper sparrow) will be provided. For example, the report will compare the location and number of grasshopper sparrows plotted during the preconstruction surveys in the north study area (14 individuals, see Figure P-6 of Application) to the location and number of this species plotted during the monitoring years.

Use by new species not previously recorded will also be provided. For example, in addition to looking for burrowing owls while conducting walking transect surveys, burrows with characteristics of potential burrowing owl use that were discovered in 2006 will be checked during each monitoring year and if burrowing owls are discovered their locations will be mapped. This may require up to three visits.

GPS locations for common species such as western meadowlark (excluding horned larks) will be provided. From these data points distance from turbines or other facilities can be calculated. Data on common species will not be compared to preconstruction data because the 2006 surveys did not record the location or abundance of these species by transect line.

These qualitative-level descriptions will then be reviewed to identify noticeable changes on a landscape (study area) scale in particular for long-billed curlew, grasshopper sparrow, and loggerhead shrike and their primary areas of use (occupied territories) and proximity to their proximity to the Facility will be reviewed. The comparison of pre and postconstruction data will provide some information on the persistence (or not) of nesting/breeding grassland and open shrub-grass dependant species in an area developed and operated for wind power. By surveying a large area that includes the undisturbed area between turbine strings, the study could provide information on whether the project discourages use of the entire 1,100 acre area by grasshopper sparrows or long-billed curlews.

In addition, the post-construction gradient data on the location of common species at distances near and far from turbines and other facilities could also be used to discuss whether wind turbines have an affect on species use of habitat adjacent to and in close proximity to the turbines.

Figure 1

Area to be studied for Grasslands Birds during Operations Phase

Leaning Juniper II
Wind Power Facility

Habitat Subtypes

- (DB) Oldfield
- (DC) CRP
- (DF) Farmyard, residence, or outbuildings including surrounds
- (DL) Landfill
- (DQ) Quarry
- (DW) Dryland Wheat whether sowed or fallow
- (DX) Other
- (EB) Exposed Basalt
- (ESC) Escarpment
- (GA) Annual Grass
- (GB) Perennial Bunchgrass
- (SD) Sandy soils, very limited vegetation, shifts with erosion
- (SSA) Sagebrush-Rabbitbrush-Snakeweed/bunchgrass-annual grass
- (SSB) Rabbitbrush-Snakeweed-Erigonum/bunchgrass
- (SSC) Erigonum/Poa sandbergii-Annual Grass
- (SSD) Purple sage/Poa sandergii-Annual Grass
- (SSE) Bitterbrush/eriogonum, native bunchgrass, non-native annual grass
- (SSU) Shrub-steppe undetermined sub-type
- (WJ) Juniper Woodland
- (WL) Black Locust Woodlot

Slatt-John Day No 1 (500 kV)

Legend

- Grassland Bird Study Area

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Substation

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Major Roads
- Existing LJ I Roads
- Existing Road - Not Used for Construction
- Railroads
- Existing Transmission Line
- Intermittent Streams
- 1-mile Habitat Study Area
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

PPM Energy
A ScottishPower Company

0 1,000 2,000
Feet

* Note:
-Habitat boundaries not surveyed.

Field Data Collected by:
Northwest Wildlife Consultants, Inc.

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\Misc\Figure 1 - Area to be studied for Grasslands Birds during Operations Phase.mxd, Date: November 10, 2006 7:29:13 AM

APPENDIX A, ATTACHMENT 15

Draft Wildlife Monitoring and Mitigation Plan

Leaning Juniper II Wind Project: Wildlife Monitoring and Mitigation Plan

[DECEMBER 12, 2006]

This plan describes wildlife monitoring that the certificate holder shall conduct during operation of the Leaning Juniper II Wind Project (LJ II North and South).[1] The monitoring objectives are to determine whether the facility causes significant fatalities of birds and bats and to determine whether the facility results in a loss of habitat quality. The LJ II North and South facility consists of up to 133 wind turbines, four non-guyed meteorological towers and other related or supporting facilities as described in the site certificate.

The certificate holder shall use experienced personnel to manage the monitoring required under this plan and properly trained personnel to conduct the monitoring, subject to approval by the Oregon Department of Energy (Department) as to professional qualifications. For all components of this plan except PPM Energy's Leaning Juniper II Wind Project Wildlife Reporting and Handling System, the certificate holder shall hire an independent third party (not employees of the certificate holder) to perform monitoring tasks.

The Wildlife Monitoring and Mitigation Plan for the Leaning Juniper II Wind Project has the following components:

1) Fatality monitoring program including:
    a) Removal trials
    b) Searcher efficiency trials
    c) Fatality search protocol
    d) Statistical analysis
2) Raptor nesting surveys
3) Washington ground squirrel surveys
4) PPM Energy's Leaning Juniper II Wind Project Wildlife Reporting and Handling System

Following is a discussion of the components of the monitoring plan, statistical analysis methods for fatality data, data reporting and potential mitigation.

The selection of the mitigation actions that the certificate holder may be required to implement under this plan should allow for flexibility in creating appropriate responses to monitoring results that cannot be known in advance. If the Department determines that mitigation is needed, the certificate holder shall propose appropriate mitigation actions to the Department and shall carry out mitigation actions approved by the Department, subject to review by the Oregon Energy Facility Council (Council).

[1] This plan is incorporated by reference in the site certificate for the LJ II North and South and must be understood in that context. It is not a "stand-alone" document. This plan does not contain all mitigation required of the certificate holder.

1. Fatality Monitoring

(a) Definitions and Methods

Seasons

This plan uses the following dates for defining seasons:

Season	Dates
Spring Migration	March 16 to May 15
Summer/Breeding	May 16 to August 15
Fall Migration	August 16 to October 31
Winter	November 1 to March 15

Search Plots

The certificate holder shall conduct fatality monitoring within search plots. The certificate holder, in consultation with the Oregon Department of Fish and Wildlife (ODFW), shall select search plots based on a systematic sampling design that ensures that the selected search plots are representative of the habitat conditions in different parts of the site. Each search plot will contain one turbine. Search plots will be square or circular. Circular search plots will be centered on the turbine location and will have a radius equal to the maximum blade tip height of the turbine contained within the plot. "Maximum blade tip height" is the turbine hub-height plus one-half the rotor diameter. Square search plots will be of sufficient size to contain a circular search plot as described above. If fatality monitoring results at this facility or at other wind projects indicates that the majority of fatalities are found within a certain distance from the tower, the certificate holder may propose a reduction in search plot size for consideration by the Department. The certificate holder shall provide maps of the search plots to the Department before beginning fatality monitoring at the facility. The certificate holder shall use the same search plots for each search conducted during a monitoring year.

Scheduling

In each monitoring year, the certificate holder shall conduct fatality monitoring searches at the rates of frequency shown below. Over the course of one monitoring year, the certificate holder would conduct 16 searches, as follows:

Season	Frequency
Spring Migration	2 searches per month (4 searches)
Summer/Breeding	1 search per month (3 searches)
Fall Migration	2 searches per month (5 searches)
Winter	1 search per month (4 searches)

Sample Size

The sample size for fatality monitoring is the number of turbines searched per monitoring year. During each monitoring year, the certificate holder shall search a minimum of one-third of the total number of turbines that are built.

As described in the site certificate, the certificate holder may choose to build the LJ II North and South using turbine types in two size classes:

- Small: turbines having a rotor diameter of 82 meters or less
- Large: turbines having a rotor diameter greater than 82 meters

If the final design of the LJ II North and South includes both small and large turbines, the certificate holder shall, at a minimum, sample one-third of the total number of turbines in each monitoring year. Before beginning fatality monitoring, the certificate holder shall consult with an independent expert with experience in statistical analysis of avian fatality data to determine whether it would be possible to sample a sufficient number of the LJ II North and South turbines in each size class to allow a statistical comparison of fatality rates for all birds as a group. The certificate holder shall submit the expert's written conclusions to the Department. If sampling of one-third of the total number of all turbines in each monitoring year would provide a sufficient number of turbines in each size class to allow the comparison, the certificate holder will sample the appropriate number of turbines from each class and conduct the analysis. The certificate holder may choose to sample more than one-third of the total number of all turbines in each monitoring year to allow the comparison.

(b) Removal Trials

The objective of the removal trials is to estimate the length of time avian and bat carcasses remain in the search area. Carcass removal studies will be conducted during each season in the vicinity of the search plots. Estimates of carcass removal rates will be used to adjust carcass counts for removal bias. "Carcass removal" is the disappearance of a carcass from the search area due to predation, scavenging or other means such as farming activity. Removal rates will be estimated by habitat and season.

The certificate holder shall conduct carcass removal trials within each of the seasons defined above during the years in which fatality monitoring occurs. During the first year in which fatality monitoring occurs, trials will occur in at least eight different calendar weeks in a year, with at least one calendar week between starting dates. Trials will be spread throughout the year to incorporate the effects of varying weather, farming practices and scavenger densities. At least one trial will be started in each season. Each trial will use at least 20 carcasses. For each trial, at least 10 small bird carcasses and at least 10 large bird carcasses will be distributed throughout the project area, for a total of approximately 80 trial carcasses.

The "small bird" size class will use carcasses of house sparrows, starlings, commercially available game bird chicks or legally obtained native birds to simulate passerines. The "large bird" size class will use carcasses of raptors provided by agencies, commercially available adult game birds or cryptically colored chickens to simulate raptors, game birds and waterfowl. If fresh bat carcasses are available, they may also be used.

To avoid confusion with turbine-related fatalities, planted carcasses will not be placed in fatality monitoring search plots. Planted carcasses will be placed in the vicinity of search plots but not so near as to attract scavengers to the search plots. The planted carcasses will be located randomly within the carcass removal trial plots.

Carcasses will be placed in a variety of postures to simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture (e.g., thrown over the shoulder), 2) hidden to simulate a crippled bird (e.g., placed beneath a shrub or tuft of grass) and, 3) partially

hidden. Trial carcasses will be marked discreetly for recognition by searchers and other personnel. Trial carcasses will be left at the location until the end of the carcass removal trial.

It is expected that carcasses will be checked as follows, although actual intervals may vary. Carcasses will be checked for a period of 40 days to determine removal rates. They will be checked approximately every day for the first 4 days, and then on day 7, day 10, day 14, day 20, day 30 and day 40. This schedule may vary depending on weather and coordination with the other survey work. At the end of the 40-day period, the trial carcasses and scattered feathers will be removed.

(c) Searcher Efficiency Trials

The objective of searcher efficiency trials is to estimate the percentage of bird and bat fatalities that searchers are able to find. The certificate holder shall conduct searcher efficiency trials on the fatality monitoring search plots in both grassland/shrub-steppe and cultivated agriculture habitat types. Searcher efficiency will be estimated by habitat type and season. Estimates of searcher efficiency will be used to adjust carcass counts for detection bias.

Searcher efficiency trials will be conducted in each season as defined above, during the years in which the fatality monitoring occurs. Trials will be spread throughout the year to incorporate the effects of varying weather, farming practices and scavenger densities. At least two trials will be conducted in each season. During each season approximately 25 carcasses will be used. During each trial the number used will vary so that the searcher will not know the total number of trial carcasses being used in any trial. For each trial, both small bird and large bird carcasses will be used in approximately equal numbers. “Small bird” and “large bird” size classes and carcass selection are as described above for the removal trials. A greater proportion of the trial carcasses will be distributed in cultivated agriculture habitat than in non-cultivated habitat (grassland/shrub steppe). In a year, approximately 100 carcasses will be distributed throughout the plots being searched. The number of searcher efficiency carcasses may be reduced to 80 carcasses during the second year of fatality monitoring, subject to approval by the Department, if the certificate holder can demonstrate that the calculation of fatality rates will continue to have statistical validity with the reduced sample size.

The need for, and scope of, searcher efficiency trials for subsequent phases may be modified based on the variability of results of searcher efficiency trials for the first phase, subject to the approval of the Department.

Personnel conducting searches will not know in advance when trials are conducted; nor will they know the location of the trial carcasses. If suitable trial carcasses are available, trials during the fall season will include several small brown birds to simulate bat carcasses. Legally obtained bat carcasses will be used if available.

On the day of a standardized fatality monitoring search (described below) but before the beginning of the search, efficiency trial carcasses will be placed at random locations within areas to be searched. If scavengers appear attracted by placement of carcasses, the carcasses will be distributed before dawn.

Efficiency trials will be spread over the entire season to incorporate effects of varying weather and vegetation growth. Carcasses will be placed in a variety of postures to simulate a range of conditions. For example, birds will be: 1) placed in an exposed posture (thrown over the shoulder), 2) hidden to simulate a crippled bird and 3) partially hidden.

Each non-domestic carcass will be discreetly marked so that it can be identified as an efficiency trial carcass after it is found. The number and location of the efficiency trial carcasses found during the carcass search will be recorded. The number of efficiency trial carcasses available for detection during each trial will be determined immediately after the trial by the person responsible for distributing the carcasses.

If new searchers are brought into the search team, additional detection trials will be conducted to ensure that detection rates incorporate searcher differences.

(d) Coordination with other nearby Wind Farms

The proposed Pebble Springs Wind Farm is located adjacent to the Leaning Juniper II Wind Power Project on similar terrain and habitat. The existing Leaning Juniper I Wind Farm is also located adjacent to the proposed facility. If the Council approves a site certificate for LJ II North and South, coordination of removal trials and searcher efficiency trials with the owners of the other projects would be possible. Subject to the approval of both owners and the Department, the number of trials and trial carcasses used at Leaning Juniper II North and South can be reduced by combining the removal data and efficiency data from this facility with the other projects, if the certificate holder can demonstrate that the calculation of fatality rates would continue to have statistical validity for both facilities and that combining the data would not affect any other requirements of the monitoring plans for either facility.

(e) Fatality Monitoring Search Protocol

The objective fatality monitoring is to estimate the number of bird and bat fatalities that are attributable to facility operation. The goal of bird and bat fatality monitoring is to obtain a precise estimate of the fatality rate and associated variances. The certificate holder shall conduct fatality monitoring using standardized carcass searches. The certificate holder shall conduct fatality monitoring for two years (32 searches), beginning one month after the start of commercial operation of the facility.

The certificate holder shall use a worst-case analysis to resolve any uncertainty in the results and to determine whether the data indicate that additional mitigation should be considered. The Department may require additional, targeted monitoring if the data indicate the potential for significant impacts that cannot be addressed by worst-case analysis and appropriate mitigation. On an annual basis, the certificate holder shall report an estimate of fatalities in seven categories: 1) all birds, 2) small birds, 3) large birds, 4) raptors, 5) grassland birds, 6) nocturnal migrants, 7) State Sensitive Species listed under OAR 635-100-0040 and 8) bats. If there is sufficient sampling of large and small turbines, the certificate holder shall compare the fatality rates in the “all birds” category for each of the turbine size classes. The certificate holder shall calculate fatality rates using the statistical methods described in Section (f).

The certificate holder shall estimate the number of avian and bat fatalities attributable to operation of the facility based on the number of avian and bat fatalities found at the facility site. All carcasses located within areas surveyed, regardless of species, will be recorded and, if possible, a cause of death determined based on blind necropsy results. If a different cause of death is not apparent, the fatality will be attributed to facility operation. The total number of avian and bat carcasses will be estimated by adjusting for removal and searcher efficiency bias.

Personnel trained in proper search techniques ("the searchers") will conduct the carcass searches by walking parallel transects within the search plots.[2] Transects will be initially set at 6 to 12 meters apart in the area to be searched. A searcher will walk at a rate of approximately 45 to 60 meters per minute along each transect searching both sides out to three meters for casualties. Search area and speed may be adjusted by habitat type after evaluation of the first searcher efficiency trial. The searchers will record the condition of each carcass found, using the following condition categories:

- Intact – a carcass that is completely intact, is not badly decomposed and shows no sign of being fed upon by a predator or scavenger
- Scavenged – an entire carcass that shows signs of being fed upon by a predator or scavenger, or portions of a carcass in one location (e.g., wings, skeletal remains, legs, pieces of skin, etc.)
- Feather Spot – 10 or more feathers at one location indicating predation or scavenging or 2 or more primary feathers

All carcasses (avian and bat) found during the standardized carcass searches will be photographed, recorded and labeled with a unique number. Each carcass will be bagged and frozen for future reference and possible necropsy. A copy of the data sheet for each carcass will be kept with the carcass at all times. For each carcass found, searchers will record species, sex and age when possible, date and time collected, location, condition (e.g., intact, scavenged, feather spot) and any comments that may indicate cause of death. Searchers will photograph each carcass as found and will map the find on a detailed map of the search area showing the location of the wind turbines and associated facilities. The certificate holder shall coordinate collection of state endangered, threatened or protected species with ODFW. The certificate holder shall coordinate collection of federal endangered, threatened or protected species with the U.S. Fish and Wildlife Service (USFWS). The certificate holder shall obtain appropriate collection permits from ODFW and USFWS.

The searchers might discover carcasses incidental to formal carcass searches (e.g., while driving within the project area). For each incidentally discovered carcass, the searcher shall identify, photograph, record data and collect the carcass as would be done for carcasses within the formal search sample during scheduled searches. If the incidentally discovered carcass is found within a formal search plot, the fatality data will be included in the calculation of fatality rates. If the incidentally discovered carcass is found outside a formal search plot, the data will be reported separately. The certificate holder shall coordinate collection of incidentally discovered state endangered, threatened or protected species with ODFW. The certificate holder shall coordinate collection of incidentally discovered federal endangered, threatened or protected species with the USFWS.

Any injured native birds found on the facility site will be carefully captured by a trained project biologist or technician and transported to Lynn Thompkins (wildlife rehabilitator), the Blue Mountain Wildlife Rehabilitation Center in Pendleton or the Audubon Bird Care Center in Portland in a timely fashion. [3] The certificate holder shall pay costs, if any, charged for time and

[2] Where search plots are adjacent, the search area may be rectangular.

[3] The people and centers listed here may be changed with Department approval.

expenses related to care and rehabilitation of injured native birds found on the site, unless the cause of injury is clearly demonstrated to be unrelated to the facility operations.

(f) Statistical Methods for Fatality Estimates

The estimate of the total number of wind facility-related fatalities is based on:

(1) The observed number of carcasses found during standardized searches during the two monitoring years for which the cause of death is attributed to the facility.[4]
(2) Searcher efficiency expressed as the proportion of planted carcasses found by searchers.
(3) Removal rates expressed as the estimated average probability a carcass is expected to remain in the study area and be available for detection by the searchers during the entire survey period.

Definition of Variables

The following variables are used in the equations below:

c_i	the number of carcasses detected at plot *i* for the study period of interest (e.g., one year) for which the cause of death is either unknown or is attributed to the facility
n	the number of search plots
k	the number of turbines searched (includes the turbines centered within each search plot and a proportion of the number of turbines adjacent to search plots to account for the effect of adjacent turbines on the search plot buffer area)
$\bar{c}$	the average number of carcasses observed per turbine per year
s	the number of carcasses used in removal trials
s_c	the number of carcasses in removal trials that remain in the study area after 40 days
se	standard error (square of the sample variance of the mean)
t_i	the time (days) a carcass remains in the study area before it is removed
$\bar{t}$	the average time (days) a carcass remains in the study area before it is removed
d	the total number of carcasses placed in searcher efficiency trials
p	the estimated proportion of detectable carcasses found by searchers
I	the average interval between searches in days
$\hat{\pi}$	the estimated probability that a carcass is both available to be found during a search and is found
m_t	the estimated annual average number of fatalities per turbine per year, adjusted for removal and observer detection bias
C	nameplate energy output of turbine in megawatts (MW)

[4] If a different cause of death is not apparent, the fatality will be attributed to facility operation.

Observed Number of Carcasses

The estimated average number of carcasses ($\bar{c}$) observed per turbine per year is:

$$\bar{c} = \frac{\sum_{i=1}^{n} c_i}{k}. \quad (1)$$

Estimation of Carcass Removal

Estimates of carcass removal are used to adjust carcass counts for removal bias. Mean carcass removal time ($\bar{t}$) is the average length of time a carcass remains at the site before it is removed:

$$\bar{t} = \frac{\sum_{i=1}^{s} t_i}{s - s_c}. \quad (2)$$

This estimator is the maximum likelihood estimator assuming the removal times follow an exponential distribution and there is right-censoring of data. Any trial carcasses still remaining at 40 days are collected, yielding censored observations at 40 days. If all trial carcasses are removed before the end of the trial, then s_c is 0, and $\bar{t}$ is just the arithmetic average of the removal times. Removal rates will be estimated by carcass size (small and large) and season.

Estimation of Observer Detection Rates

Observer detection rates (i.e., searcher efficiency rates) are expressed as *p*, the proportion of trial carcasses that are detected by searchers. Observer detection rates will be estimated by carcass size and season.

Estimation of Facility-Related Fatality Rates

The estimated per turbine annual fatality rate (m_t) is calculated by:

$$m_t = \frac{\bar{c}}{\hat{\pi}}, \quad (3)$$

where $\hat{\pi}$ includes adjustments for both carcass removal (from scavenging and other means) and observer detection bias assuming that the carcass removal times t_i follow an exponential distribution. Under these assumptions, this detection probability is estimated by:

$$\hat{\pi} = \frac{\bar{t} \cdot p}{I} \cdot \left[\frac{\exp\left(I / \bar{t} \right) - 1}{\exp\left(I / \bar{t} \right) - 1 + p} \right]. \quad (4)$$

The estimated per MW annual fatality rate (m) is calculated by:

$$m = \frac{m_t}{C}. \quad (5)$$

The certificate holder shall calculate fatality estimates for: (1) all birds, (2) small birds, (3) large birds, (4) raptors, (5) grassland birds, (6) nocturnal migrants 7) State Sensitive Species listed under OAR 635-100-0040 and 8) bats. If there is sufficient sampling of large and small turbines, the certificate holder shall compare the fatality rates in the "all birds" category for each of the turbine size classes. The final reported estimates of *m*, associated standard errors and 90% confidence intervals will be calculated using bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for calculating point estimates, variances and confidence intervals for complicated test statistics. For each iteration of the bootstrap, the plots will be sampled with replacement, trial carcasses will be sampled with replacement and $\bar{c}$, $\bar{t}$, p, $\hat{\pi}$ and m will be calculated. A total of 5,000 bootstrap iterations will be used. The reported estimates will be the means of the 5,000 bootstrap estimates. The standard deviation of the bootstrap estimates is the estimated standard error. The lower 5^{th} and upper 95^{th} percentiles of the 5000 bootstrap estimates are estimates of the lower limit and upper limit of 90% confidence intervals.

Nocturnal Migrant and Bat Fatalities

Differences in observed nocturnal migrant and bat fatality rates for lit turbines, unlit turbines that are adjacent to lit turbines and unlit turbines that are not adjacent to lit turbines will be compared graphically and statistically.

(g) Mitigation

Mitigation may be appropriate if fatality rates exceed a "threshold of concern." For the purpose of determining whether a threshold has been exceeded, the certificate holder shall calculate the average annual fatality rates for species groups after two years of monitoring. Based on current knowledge of the species that are likely to use the habitat in the area of the facility, the following thresholds apply to the Leaning Juniper II facility:

Species Group	**Threshold of Concern** (fatalities per MW)
Raptors (All eagles, hawks, falcons and owls, including burrowing owls.)	0.09
Raptor species of special concern (Swainson's hawk, ferruginous hawk, peregrine falcon, golden eagle, bald eagle, burrowing owl and any federal threatened or endangered raptor species.)	0.06
Grassland species (All native bird species that rely on grassland habitat and are either resident species, occurring year round, or species that nest in the area, excluding horned lark, burrowing owl and northern harrier.)	0.59
State sensitive avian species listed under OAR 635-100-0040 (Excluding raptors listed above.)	0.2
Bat species as a group	2.50

If the data show that a threshold of concern for a species group has been exceeded, the certificate holder shall implement additional mitigation if the Department determines that

mitigation is appropriate based on analysis of the data, consultation with ODFW and consideration of any other significant information available at the time. In addition, mitigation may be appropriate if the Department determines that fatality rates for individual avian or bat species (especially State Sensitive Species) are higher than expected and at a level of biological concern. If the data show that a threshold of concern for a species group has been exceeded or that the fatality rate for any individual species is at a level of biological concern, mitigation shall be required if the Department determines that mitigation is appropriate based on analysis of the data and any other significant information available at the time. If mitigation is appropriate, the certificate holder, in consultation with the Department and ODFW, shall propose mitigation measures designed to benefit the affected species. This may take into consideration whether mitigation required or provided for other impacts, such as raptor nesting or changes in species-specific (grasshopper sparrow, long-billed curlew) grassland bird use, would also benefit the affected species. The certificate holder shall implement mitigation as approved by the Council. The Department may recommend additional, targeted data collection if the need for mitigation is unclear based on the information available at the time. The certificate holder shall implement such data collection as approved by the Council.

Mitigation should be designed to benefit the affected species group. Mitigation may include, but is not limited to, protection of nesting habitat for the affected group of native species through a conservation easement or similar agreement. Tracts of land that are intact and functional for wildlife are preferable to degraded habitat areas. Preference should be given to protection of land that would otherwise be subject to development or use that would diminish the wildlife value of the land. In addition, mitigation measures might include: enhancement of the protected tract by weed removal and control; increasing the diversity of native grasses and forbs; planting sagebrush or other shrubs; constructing and maintaining artificial nest structures for raptors; improving wildfire response; and conducting local research that will aid in understanding more about the species and conservation needs.

If the threshold for bats species as a group is exceeded, the Certificate Holder shall contribute to Bat Conservation International or to a Pacific Northwest bat conservation group ($10,000 per year for three years) to fund new or ongoing research in the Pacific Northwest to better understand impacts to the bat species impacted by the facility and to develop possible ways to reduce impacts to the affected species.

2. Raptor Nest Surveys

The objectives of raptor nest surveys are to estimate the size of the local breeding populations of tree or other above-ground-nesting raptor species in the vicinity of the facility and to determine whether operation of the facility results in a reduction of nesting activity or nesting success in the local populations of the following raptor species: Swainson's hawk, golden eagle and ferruginous hawk.

(a) Survey Protocol

For the species listed above, aerial and ground surveys will be used to gather nest success statistics on active nests, nests with young and young fledged. The certificate holder will share the data with state and federal biologists. The certificate holder will conduct two years of post-construction raptor nest surveys. One year of surveys will be done in the first nesting season after

construction is completed. The second year of surveys will be done in the fourth year after construction is completed.

During each monitoring year, the certificate holder will conduct a minimum of one helicopter survey in late May or early June and additional surveys as described in this section. All nests discovered during pre-construction surveys and any nests discovered during post-construction surveys, whether active or inactive, will be given identification numbers. Nest locations will be recorded on U.S. Geological Survey 7.5-minute quadrangle maps. Global positioning system coordinates will be recorded for each nest. Locations of inactive nests will be recorded as they may become occupied during future years.

The certificate holder shall conduct the aerial surveys within the Leaning Juniper II site and a 2-mile buffer around the turbines to determine nest occupancy. Determining nest *occupancy* will likely require two helicopter visits to each nest. For occupied nests, the certificate holder shall determine nesting *success* by a minimum of one ground visit to determine species, number of young and nesting success. "Nesting success" means that the young have successfully fledged (the young are independent of the core nest site). Nests that cannot be monitored due to the landowner denying access will be checked from a distance where feasible.

(b) Mitigation

The certificate holder shall analyze the raptor nesting data collected after two monitoring years to determine whether a reduction in either nesting success or nest use has occurred in the vicinity of the Leaning Juniper II facility. If the analysis indicates a reduction in nesting success by Swainson's hawk, golden eagle or ferruginous hawk within 2 miles of the facility, then the certificate holder shall propose appropriate mitigation and shall implement mitigation as approved by the Council. At a minimum, if the analysis shows that any of these species has abandoned a nest territory within ½ mile of the facility or has not fledged any young over the two-year period within a ½ mile of the facility, the certificate holder shall assume the abandonment or unsuccessful fledging is the result of the facility unless another cause can be demonstrated convincingly. In the event that LJ II facility and nearby wind facilities, such as the existing Leaning Juniper I wind project, are both required to provide mitigation for the same nest by the Council and Gilliam County, the certificate holder shall coordinate the required mitigation with the other owner with the approval of the Department.

Given the very low buteo nesting densities in the area, statistical power to detect a relationship between distance from a wind turbine and nesting parameters (e.g., number of fledglings per reproductive pair) will be very low. Therefore, impacts may have to be judged based on trends in the data, results from other wind energy facility monitoring studies and literature on what is known regarding the populations in the region.

If the analysis shows that mitigation is appropriate, the certificate holder shall propose mitigation for the affected species in consultation with the Department and ODFW. Mitigation should be designed to benefit the affected species or contribute to overall scientific knowledge and understanding what stimulates nest abandonment. Mitigation may be designed to proceed in phases over several years. It may include, but is not limited to, additional raptor nest monitoring, protection of natural nest sites from human disturbance or cattle activity (preferably within two miles of the facility) or participation in research projects designed to improve scientific understanding of the needs of the affected species. Mitigation may take into consideration

whether mitigation required or provided for other impacts, such as fatality impacts or grassland bird displacement, would also benefit the raptor species whose nesting success was adversely affected.

(c) Long-term Raptor Nest Monitoring and Mitigation Plan

In addition to the two years of post-construction raptor nest surveys described in paragraph (a), the certificate holder shall conduct long-term raptor nest surveys at five-year intervals for the life of the facility. The certificate holder shall conduct the first long-term raptor nest survey in the ninth year after construction is completed. In conducting long-term surveys, the certificate holder shall follow the same survey protocol that is described above in paragraph (a) unless the certificate holder proposes an alternative protocol that is approved by the Department. In developing an alternative protocol, the certificate holder shall consult with ODFW and may collaborate with the certificate holder for any other wind energy facility.

The certificate holder shall analyze the long-term survey data as described above in paragraph (b). If the analysis shows that mitigation is appropriate, the certificate holder shall propose mitigation for the affected species in consultation with the Department and ODFW as described in paragraph (b) and shall implement mitigation as approved by the Council. Any reduction in nesting success could be due to operation of the LJ II North and South, operation of another wind facility in the vicinity or some other cause. The reduction shall be attributed to the LJ II North and South if the wind turbine closest to the affected nest site is a LJ II North and South turbine unless the certificate holder demonstrates, and the Department agrees, that the reduction was due to a different cause.

3. Washington ground squirrel surveys

Post-construction monitoring of Washington ground squirrel (WGS) sites will also be conducted in compliance with the Incidental Take Permit. A qualified professional biologist will monitor the WGS sites identified in 2005 with a buffer of an additional 500 feet in all directions in suitable habitat within the lease boundary. Surveys will be conducted during the year following construction and every three years thereafter for the life of the project. Surveyors will walk transects twice between late March and late May and record level of use, notes on natal sites, and the extent of the sites.

4. PPM Energy's Leaning Juniper II Wind Project Wildlife Reporting and Handling System

PPM Energy's Leaning Juniper II Wind Project Wildlife Reporting and Handling System (WRHS) is a monitoring program to search for and handle avian and bat casualties found by maintenance personnel during construction and operation of the facility. A similar system is in place for Klondike I and II. Construction and maintenance personnel will be trained in the methods. This monitoring program includes the initial response, the handling and the reporting of bird and bat carcasses discovered incidental to construction and maintenance operations ("incidental finds").

All carcasses discovered by maintenance personnel will be photographed and recorded. If maintenance personnel discover incidental finds at turbines that are not within search plots for the fatality monitoring searches, the data will be reported separately from fatality monitoring

data. For such incidental finds, the maintenance personnel will notify a project biologist. The project biologist must be a qualified independent professional biologist who is not an employee of the certificate holder. The project biologist (or the project biologist's experienced wildlife technician) will collect the carcass or will instruct maintenance personnel to have an on-site carcass handling permittee collect the carcass. The certificate holder's on-site carcass handling permitee must be a person who is listed on state and federal scientific or salvage collection permits and who is available to process (collect) the find on the day it is discovered. The find must be processed on the same day as it is discovered.

If maintenance personnel discover carcasses within search plots, the data will be included in the calculation of fatality rates. The maintenance personnel will notify a project biologist. The project biologist will collect the carcass or will instruct maintenance personnel to have an on-site carcass handling permittee collect the carcass. As stated above, the on-site permittee must be available to process the find on the day it is discovered. The certificate holder shall coordinate collection of state endangered, threatened or protected species with ODFW. The certificate holder shall coordinate collection of federal endangered, threatened or protected species with the USFWS.

5. Data Reporting

The certificate holder will report the monitoring data and analysis to the Department. Monitoring data include fatality data, raptor nest survey data, and data on incidental finds by fatality searchers and LJ II North and South personnel. The report may be included in the annual report required under OAR 345-026-0080 or may be submitted as a separate document at the same time the annual report is submitted. In addition, the certificate holder shall provide to the Department any data or record generated in carrying out this monitoring plan upon request by the Department.

The certificate holder shall notify USFWS and ODFW immediately in the event that any federal or state endangered or threatened species are killed or injured on the facility site.

The public will have an opportunity to receive information about monitoring results and to offer comment. Within 30 days after receiving the annual report of monitoring results, the Department will make the report available to the public on its website and will specify a time in which the public may submit comments to the Department.[5]

6. Amendment of the Plan

This Wildlife Monitoring and Mitigation Plan may be amended from time to time by agreement of the certificate holder and the Council. Such amendments may be made without amendment of the site certificate. The Council authorizes the Department to agree to amendments to this plan and to mitigation actions that may be required under this plan. The Department shall notify the Council of all amendments and mitigation actions, and the Council retains the authority to approve, reject or modify any amendment of this plan or mitigation action agreed to by the Department.

[5] The certificate holder may establish a Technical Advisor Committee (TAC) but is not required to do so. If the certificate holder establishes a TAC, the TAC may offer comments to the Council about the results of the monitoring required under this plan.

APPENDIX A, ATTACHMENT 16

Revised Figure T-1

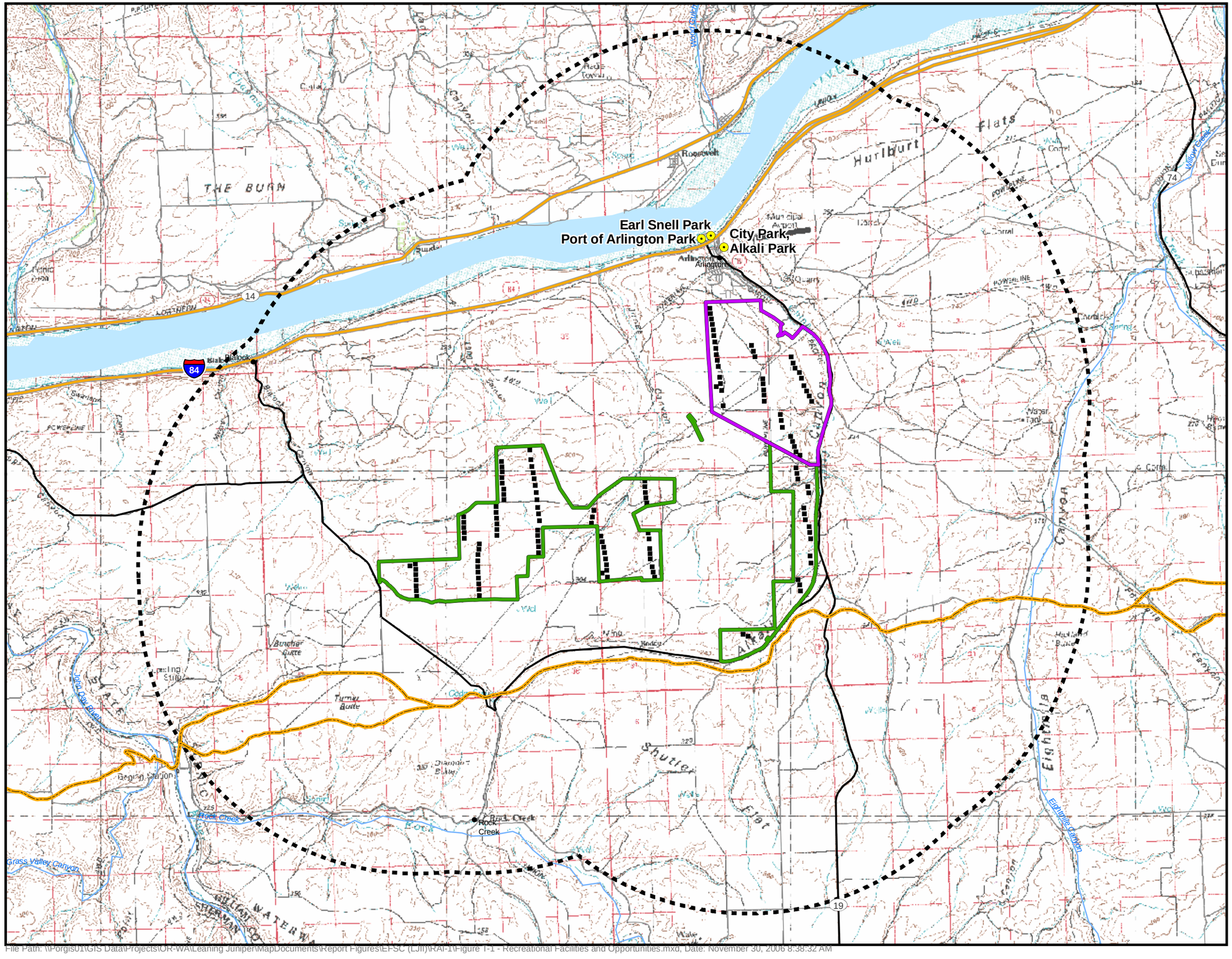


Figure T-1
Recreational Facilities and Opportunities

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- Recreational Facilities and Opportunities
- Proposed Turbines
- Highways
- Major Roads
- Local Roads
- Lakes & Rivers
- Oregon National Historic Trail (Approximate Location)
- 5-mile Recreational Opportunity Buffer
- Leaning Juniper II - North
- Leaning Juniper II - South

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File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure T-1 - Recreational Facilities and Opportunities.mxd, Date: November 30, 2006 8:38:32 AM

APPENDIX A, ATTACHMENT 17

Noise Waivers for R3, R4, R5, and R6

AFTER RECORDING, RETURN TO:

PPM Energy, Inc.
1125 NW Couch, Suite 700
Portland, OR 97209
Attn: Mr. Andrew O'Connell

STATE OF OREGON } ss.
County of Gilliam } INDEXED

I hereby certify that the within instrument was certified for record AUGUST 24, 2006 at 1:10 P M and assigned No. M-74-591
Fees $81.00
Witness my hand and seal of county affixed.

RENA JO KENNEDY
County Clerk
By Rena M Dudley

NOISE EASEMENT AGREEMENT

This NOISE EASEMENT AGREEMENT (this "Agreement") is made and entered into as of July 10, 2006 (the "Effective Date"), by and between Waste Management Disposal Services of Oregon, Inc., a Delaware Oregon corporation ("Grantor") and Leaning Juniper Wind Power LLC, an Oregon limited liability company, its successors and assigns ("Grantee"), with reference to the following recitals.

RECITALS

A. Grantee is a wind farm developer that desires to develop, construct and operate a renewable wind power project consisting of wind-powered turbines and generators capable of producing electricity and associated appurtenances, equipment, facilities and roadways that will produce and transmit electrical energy, including without limitation related power lines, and other equipment and facilities used or useful in connection with the production and transmission of electrical energy (the "Wind Project") on lands located in the County of Gilliam, State of Oregon as more particularly described on Exhibit A (the "Wind Project Property").

B. Grantor is the owner of that certain property located in Gilliam County, Oregon, more particularly described on Exhibit B (the "Residence Property"), upon which Grantor maintains residences which are depicted as Houses 3 and 4 on the map attached as Exhibit C.

C. Grantor has been advised and is of the opinion that construction, operation, and maintenance of the Wind Project (collectively, "Wind Project Operations") on the Wind Project Property may subject the Residence Property to noise influence that may exceed noise level standards established by the Oregon Department of Environmental Quality ("DEQ") for new industrial or commercial noise sources (hereinafter, the "DEQ New Noise Source Standards"); that these present and future noise influences might be annoying to users of the Residence Property and might interfere with the unrestricted use and enjoyment of the Residence Property in its intended use; that these noise influences might change over time by virtue of construction activities, maintenance, seasonal wind variations, and time-of-day wind variations; that changes in Wind Project Operations could result in increased noise influences; and that Grantor's or the user's own personal perceptions of the noise exposure could change and that Grantor's sensitivity to Wind Project noise could increase.

D. Grantee wishes to obtain from Grantor, on the terms stated below, a nonexclusive easement to allow the Wind Project and the Wind Project Operations to increase

the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point on the Residence Property (but not above limits specified in Table 8 of OAR Chapter 340, Division 035 (2005)). Grantor is willing to grant Grantee the easement on the terms and provisions set forth herein.

AGREEMENT

NOW, THEREFORE, in accordance with Oregon Administrative Rule ("OAR") 340-035-0035(1)(b)(B)(iii), Grantor conveys to the Grantee, a nonexclusive easement and waiver as follows:

1. Grant of Easement. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by Grantor, Grantor hereby conveys and grants to Grantee a nonexclusive easement (the "Noise Easement") to allow the Wind Project and the Wind Project Operations to increase the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point on the Residence Property (but not above limits specified in Table 8 of OAR Chapter 340, Division 035 (2005)) ("Permitted Noise Levels"). The Noise Easement shall burden the Residence Property and benefit the Wind Project Property.

2. Waiver. Grantor, for and on behalf of themselves, their successors and assigns, waives and releases any right, claim, or cause of action which Grantor has now, or which Grantor may have during the term of this Agreement against, and covenants not to sue, Grantee and/or its past, present, and future officers, officials, directors, employees, agents, sublessees, predecessors, successors and assigns, as a direct or indirect result of the Permitted Noise Levels on the Residence Property that may be caused by the Wind Project or the Wind Project Operations.

3. Term. The term of this Agreement shall commence on the Effective Date and shall continue so long as Grantee, including its successors and assigns, operates the Wind Project on the Wind Project Property. This Agreement and the Noise Easement shall terminate upon termination of the Wind Project, whether by operation of law, by agreement, or by abandonment of the Wind Project.

4. Governing Law. This Agreement shall be governed by the laws of the State of Oregon.

5. Authority. The signatories hereto warrant that they have the authority to execute this Agreement on behalf of Grantor and Grantee, as the case may be, and that any entity on whose behalf they are signing has executed this Agreement pursuant to its governing documents or a resolution of those having the power to control its affairs of this nature.

6. Successors and Assigns. This Agreement shall inure to the benefit of and be binding on the heirs, successors, assigns and personal representatives of the parties hereto. If Grantee sells, conveys, leases or assigns all or any portion of its interest in the Wind Project to one or more third parties, Grantee shall have the right without Grantor's consent to sell, convey, lease or assign all or any portion of its rights and obligations under this Agreement and/or the

Noise Easement to such third parties, as is necessary to comply with DEQ New Noise Source Standards then in effect.

7. Continuing Nature. Grantor, for and on behalf of itself, its successors and assigns, further acknowledges that this Agreement contemplates and includes all existing and future Wind Project Operations on the Wind Project Property, so long as the operations are conducted in compliance with the requirements of applicable laws and regulations.

8. Further Acts and Assurances. Each party shall execute such additional documents or instruments, and shall undertake such actions as are reasonably necessary and appropriate to effectuate the intent of this Agreement.

9. Attorneys' Fees. In the event suit, arbitration or action is instituted to interpret or enforce the terms of this Agreement or to rescind this Agreement, the prevailing party shall be entitled to recover from the other party such sum as the court may adjudge reasonable as attorneys' fees at trial, on any appeal, and on any petition for review, in addition to all other sums provided by law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first set forth above.

GRANTOR:

Waste Management Disposal Services of Oregon, Inc.

By _____
Its Vice President

GRANTEE:

Leaning Juniper Wind Power LLC

WBK #0

By _____
Its ~~Senior~~ Vice President

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 18 day of July, 2006 by Donald Furman, VP of Leaning Juniper Wind Power LLC, an Oregon limited liability company.

OFFICIAL SEAL
CARRIE A. TRACY
NOTARY PUBLIC-OREGON
COMMISSION NO. 387604
MY COMMISSION EXPIRES DECEMBER 12, 2008

_____
Notary Public for Oregon
My commission expires 12/12/08

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

The foregoing instrument was acknowledged before me this 10th day of July, 2006 by Calvin R. Palmer, Vice President of Waste Management Disposal Services of Oregon, Inc.

Notary Public
State of Washington
NANCY L PELUSO
My Appointment Expires Aug 3, 2008

Notary Public for Washington
My commission expires: _____
Commission No.: 104556

EXHIBIT A
WIND PROJECT PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

Parcel 1:

Deed Document number M-68-236, Gilliam County Deed Records being, all of the following described property located in Township 2 North, Range 20 East, W.M., and in Township 2 North, Range 21 East, W.M., which lies east of a North-South division line; said line being described as follows:

Beginning at a point on the south line of the northwest one-quarter of Section 22, Township 2 North, Range 20 East, W.M., said point being 2,740 feet West of the East one-quarter corner of said Section 22; thence running North 3,960 feet more or less to the center of a private road; thence along the centerline of said private road Northeasterly 3,040 feet, more or less, to an intersection with the section line between Sections 14 and 15; thence East 1,060 feet; thence North 5,280 feet and terminating at a point on the North line of the South one-half of Section 11, said point of termination being 1,060 feet East of the West one-quarter corner of said Section 11.

A parcel located in Township 2 North, Ranges 20 and 21 East, W.M., and described (as being East and Southerly of the above described division line) as follows:

The South one-half of Section 11, Township 2 North, Range 20 East, except the West 1,060 feet thereof, all of Section 14 except the West 1,060 feet of the Northwest one-quarter, a strip of land 100 feet wide located in Sections 15 and 22, Township 2 North, Range 20 East, lying adjacent to and East of the above described division line, the Northeast one-quarter of said Section 22, that portion of the Southeast one-quarter of said Section 15, which lies Southerly of the private road, the center-line of which is the division line as described.

The North one-half of Section 23, the South one-half of Section 12, all of Section 13, all in Township 2 North, Range 20 East, W.M., the West one-half of Section 18, the West one-half of the East one-half of Section 18, Township 2 North, Range 21 East, W.M.

A parcel of land lying and being in government lot 4 and the Southeast one-quarter of the Southwest one-quarter and Southwest one-quarter of the Southeast one-quarter of Section 7, Township 2 North, Range 21 East, W.M. bounded as follows:

Beginning at the Southwest corner of Section 7 of the above mentioned Township and Range; running thence East along the South boundary line of said Section 7, a distance of approximately 4,100 feet to a point where said South boundary line intersects the right of way of the county road now established and traveled over and across said Section 7; thence running Northerly along the West boundary of said right of way a distance of 870 feet (when measured at right angles); thence running West on a line parallel with the South boundary line of said Section 7 a distance of approximately 4,100 feet to a point on the west boundary of said Section 7, which point is 870 feet North of the Southwest corner of said Section 7; running thence south to the place of beginning.

Township 2 North, Range 20 East, W.M.:

Section 21: s½.
22: s½.
23: n½; sw¼; nw¼se¼; n½n½sw¼se¼.

26: all.
27: all.
28: all.

Excepting from Sections 21, 26, 27, and 28 that parcel described in warranty deed, including the terms and provisions thereof, dated February 1, 1994, recorded February 2, 1994, in Gilliam county deed records as m-69-36. Grantor: waste management disposal services of Oregon, inc. Fka Oregon water systems, inc. Grantee: Herbert r. Holzapfel, Virginia w. Holzapfel, Robert s. Holzapfel, Judith l. Holzapfel, Jan h. Foglesong and Ivan e. Foglesong,

Township 2 North, Range 21 East, W.M.:
Section 7: that part of se¼ lying South and East of the county road.
8: s½.
9&10: commencing at the Northwest corner of Section 9, running thence South to the Southwest corner of Section, running thence East one mile and three quarters to the Southeast corner of the sw¼se¼ of Section 10, running thence in a Northwesterly direction to the Northwest corner of Section 9, the place of beginning.
15: all, except all land lying and being on the East side of the john day highway in ne¼ne¼; and all land lying and being on the East side of the Oregon-Washington railroad & navigation co. Right of way, Condon branch, in the se¼ne¼ and e½se¼.
16: all.
17: all except: a tract of land located in the se¼ of Section 17, Township 2 North, Range 21 East, Willamette meridian, Gilliam county, Oregon and being more particularly described as follows:

Beginning at a 5/8-inch iron rod on the South line of said Section 17 which bears North 89° 47' 52" West 1124.52 feet from a brass cap at the Southeast corner of said Section 17; thence along the South line of said Section 17 North 89° 47' 52" West 1315.01 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 146.48 feet to a 5/8-inch iron rod; thence North 90° 00' 00" East 740.00 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 269.00 feet to a 5/8-inch iron; thence North 90° 00' 00" East 575.00 feet to a 5/8-inch iron rod; thence South 00° 00' 00" East 420.12 feet to a 5/8-inch iron rod and the point of beginning.
18: e1/2e1/2.
19: e1/2; e1/2w1/2; lots 1, 2, 3, and 4, except:
a parcel which commences at the Northwest corner of Section 30, Township 2 North, Range 21 East, W.M.; thence North 85° 20' 32" East a distance of 1114.76 feet; thence North 86° 38'03" East a distance of 2,925.68 feet; thence South 00° 00' 40" West to the North boundary of the said Section 30; thence due West along the said North boundary to the point of beginning.
21: all.
22: all, except that part of e½ lying and being East of the right of way of the Oregon-Washington railroad & navigation co.
27: that part North & West of the right of way of the Oregon-Washington railroad & navigation co, save and except the right of way of cedar springs county road.
28: all.
33: all that portion lying and being north of the right of way of cedar springs county road. Except a parcel of land conveyed by warranty deed, recorded august 26, 1998, in Gilliam county deed records as m-71-437 and further described as follows:

Beginning at a point located South 84°19'08" East a distance of 4,548.79 feet from the Northwest corner of said Section 33, said point being the true point of beginning of this description; thence South 50°08'45" East a distance of 250.00 feet to a point on the Northwesterly right of way margin line of cedar springs lane county road #529; thence South 39°51'15" West following the said Northwesterly right of way margin line a distance of 250.00 feet to a point; thence North 50°08'45" West a distance of 250.00 feet to a point; thence North 39°51'15" East a distance of 250.00 feet to the true point of beginning of this description.

34: all that portion lying north of the said cedar springs county road right of way.

Excepting therefrom the rights of way for the union pacific rail road, Oregon state highway no. 19; and cedar springs county road.

Parcel 2:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 2 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

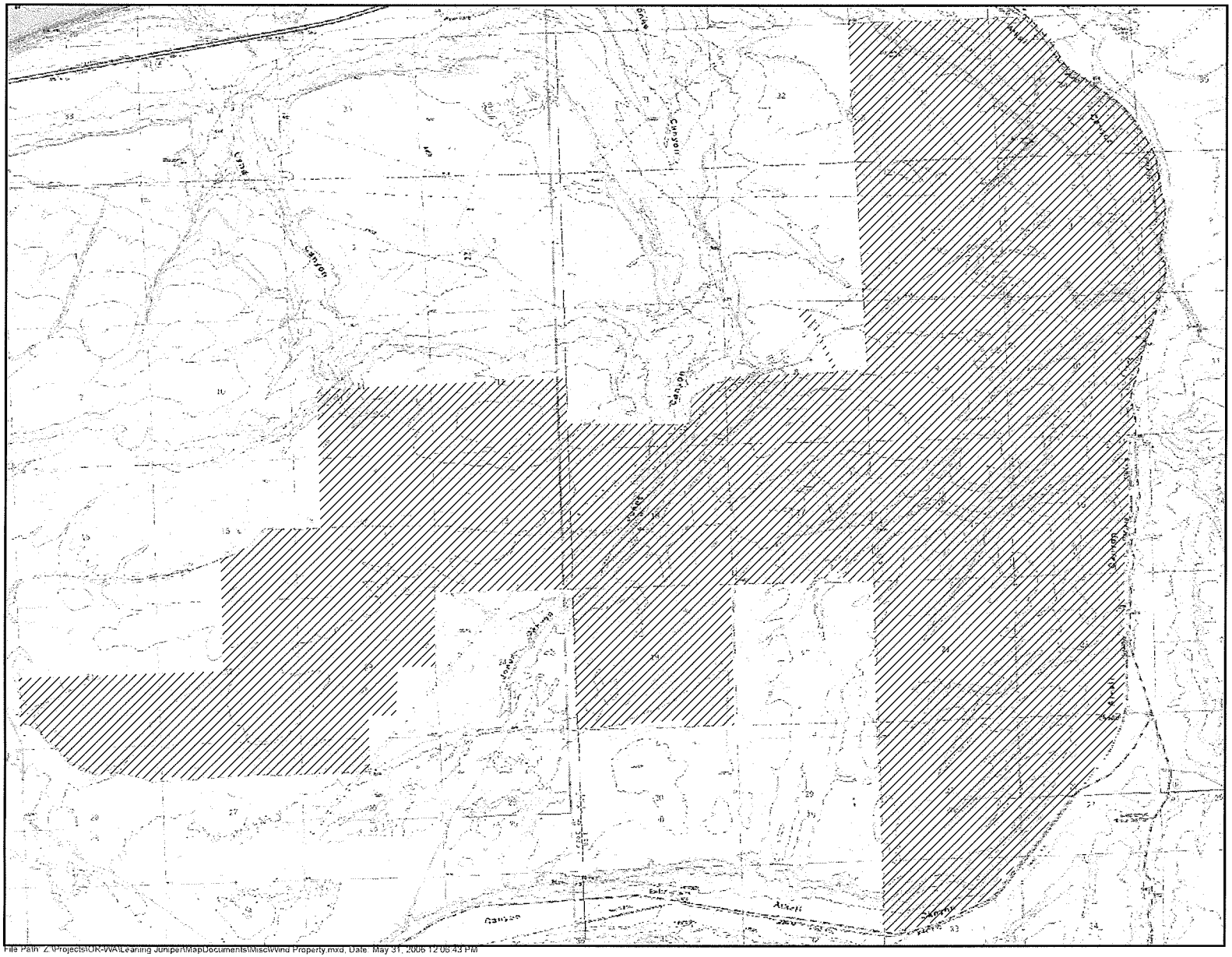
Subject to existing easements and rights of way.

Parcel 3:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 1 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

Subject to existing easements and rights of way.



File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Misc\Wind Property.mxd, Date: May 31, 2006 12:05:43 PM

Figure 1

Wind Property

Leaning Juniper Wind Project

PPM Energy

Legend

Wind Property

N

W E

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Miles

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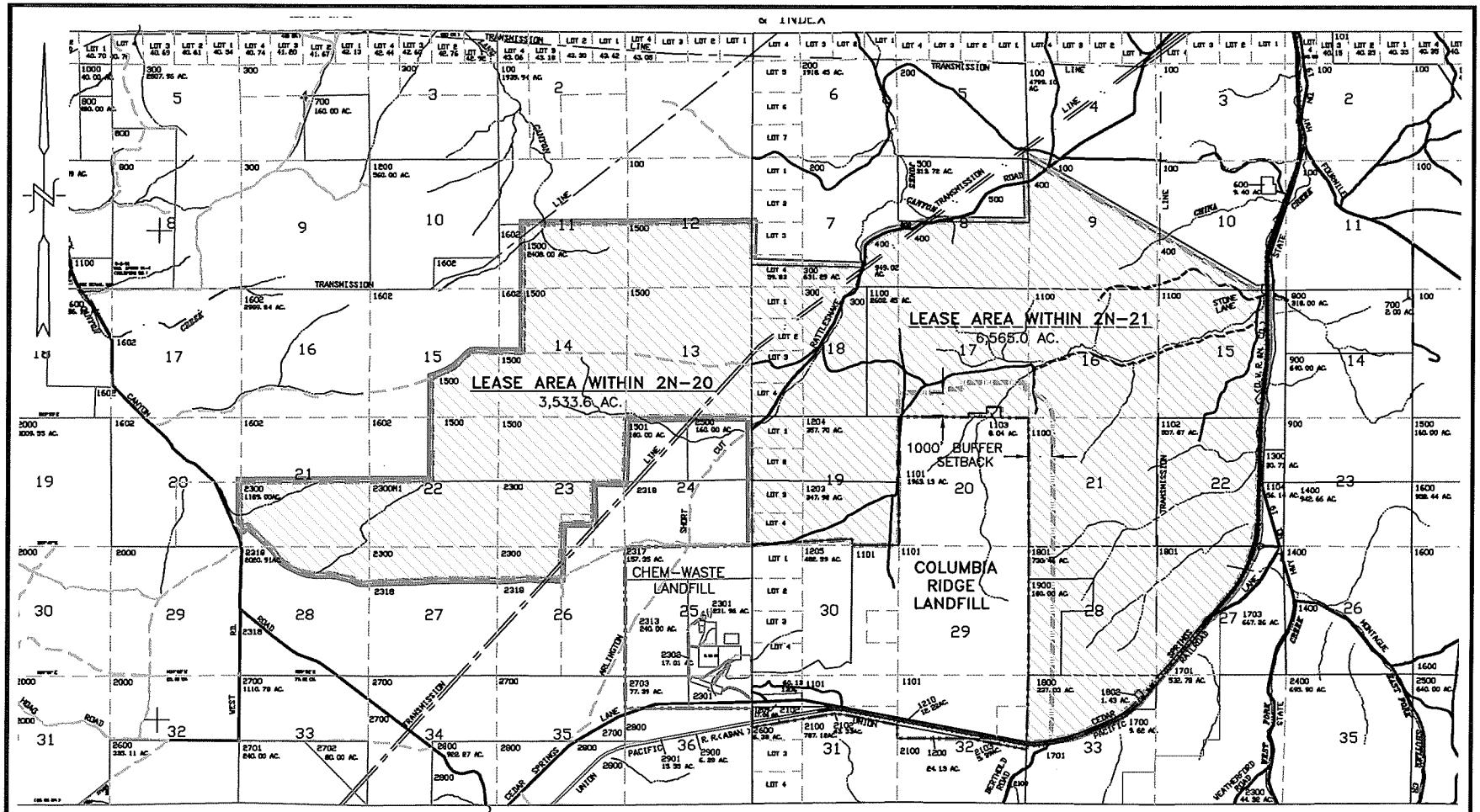
EXHIBIT B
RESIDENCE PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

Section 15, Township 2 North, Range 21 East, Willamette Meridian, except all land lying and being on the East side of the John Day Highway in NE¼NE¼; and all land lying and being on the East side of the Oregon-Washington Railroad & Navigation Co. Right of way, Condon branch, in the SE¼NE¼ and E½SE¼.



L E G E N D :

- WASTE MANAGEMENT BOUNDARY LINE
- BUFFER AREA BOUNDARY LINE
- CHEM-WASTE MANAGEMENT OF THE NW LANDFILL
- WIND PROPERTY

TENNESON ENGINEERING CORP.
CONSULTING ENGINEERS
409 LINCOLN STREET
THE DALLES, OREGON 97058
541-296-9177 FAX 541-296-6657

Survey	Calc.	App.
T.E.C.	B.B.B.	B.B.B.
Drawn	**Date**	**Scale**
S.D.H.	1/17/2005	1"=6000'
Dwg. No.	**Work Order No.**	**Sheet**
8909wind	8909	1 of 1

ARLINGTON WIND PROJECT LEASE AREA

FOR

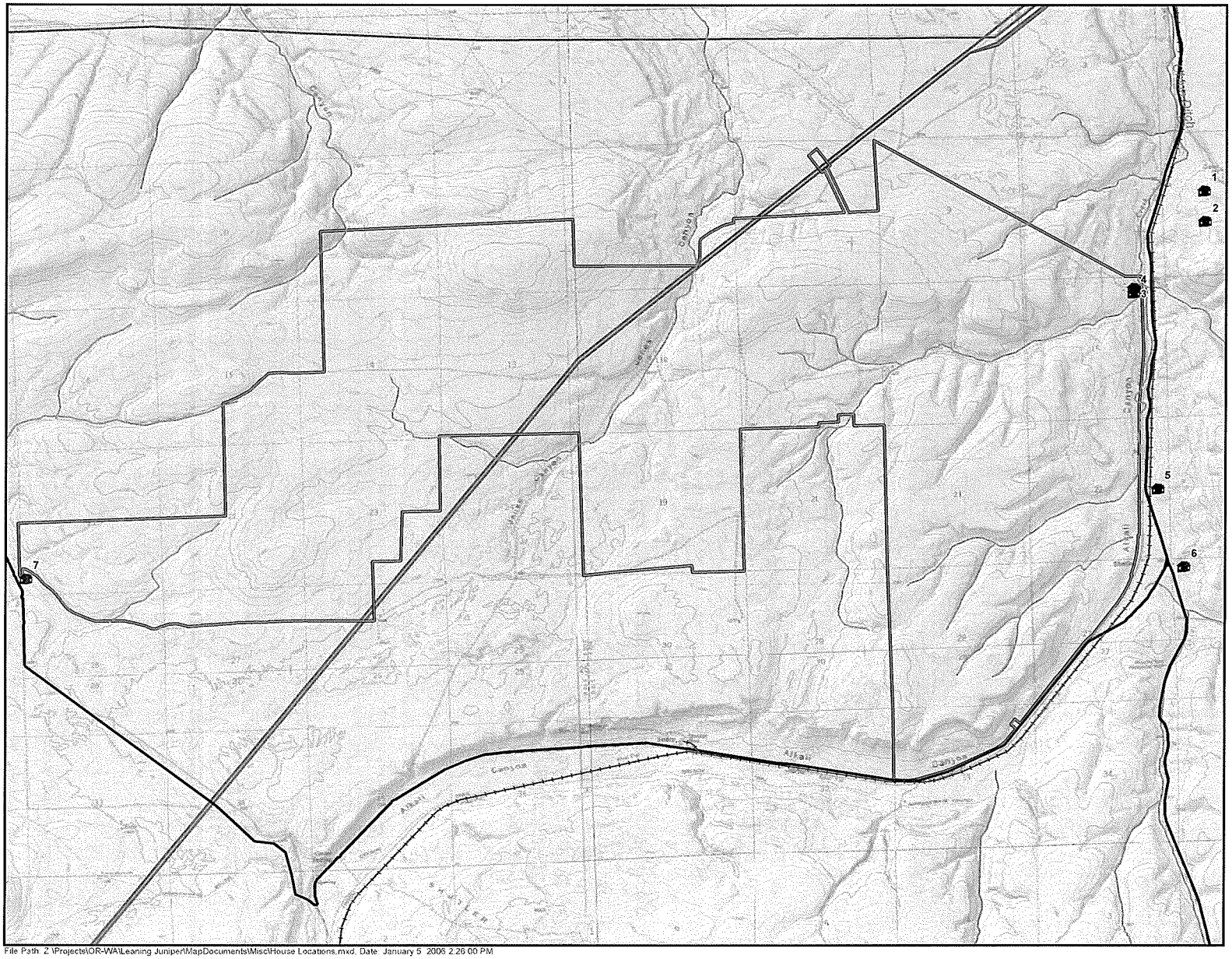
FOR WASTE MANAGEMENT OF THE N.W.

ASSESSOR'S MAPS 2N-20E AND 2N-21E

GILLIAM COUNTY, OREGON

EXHIBIT C
Affected House

House #3&4 located in Gilliam County, Oregon



House Locations

Leaning Juniper
Wind Power Facility

PPM Energy

Legend

- Houses
- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Site Boundary

N
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0 2,000 4,000 6,000
Feet

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Misc\House Locations.mxd, Date: January 5, 2006 2:26:00 PM

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STATE OF OREGON } ss.
County of Gilliam }

INDEXED

I hereby certify that the within instrument was certified for record AUGUST 24, 2006 at 1:00 P M and assigned No. M-74-590 Fees $76.00

Witness my hand and seal of county affixed.

RENA JO KENNEDY
County Clerk
By Rena M Duckey

AFTER RECORDING, RETURN TO:

PPM Energy, Inc.
1125 NW Couch, Suite 700
Portland, OR 97209
Attn: Mr. Andrew O'Connell

NOISE EASEMENT AGREEMENT

This NOISE EASEMENT AGREEMENT (this "Agreement") is made and entered into as of June 28, 2006 (the "Effective Date"), by and between W.C. and Joyce Hickerson ("Grantor") and Leaning Juniper Wind Power II LLC, an Oregon limited liability company, its successors and assigns ("Grantee"), with reference to the following recitals.

RECITALS

A. Grantee is a wind farm developer that desires to develop, construct and operate a renewable wind power project consisting of wind-powered turbines and generators capable of producing electricity and associated appurtenances, equipment, facilities and roadways that will produce and transmit electrical energy, including without limitation related power lines, and other equipment and facilities used or useful in connection with the production and transmission of electrical energy (the "Wind Project") on lands located in the County of Gilliam, State of Oregon as more particularly described on Exhibit A (the "Wind Project Property").

B. Grantor is the owner of that certain property located in Gilliam County, Oregon, more particularly described on Exhibit B (the "Residence Property"), upon which Grantor maintains residences which is depicted as House 5 on the map attached as Exhibit C.

C. Grantor has been advised and is of the opinion that construction, operation, and maintenance of the Wind Project (collectively, "Wind Project Operations") on the Wind Project Property may subject the Residence Property to noise influence that may exceed noise level standards established by the Oregon Department of Environmental Quality ("DEQ") for new industrial or commercial noise sources (hereinafter, the "DEQ New Noise Source Standards"); that these present and future noise influences might be annoying to users of the Residence Property and might interfere with the unrestricted use and enjoyment of the Residence Property in its intended use; that these noise influences might change over time by virtue of construction activities, maintenance, seasonal wind variations, and time-of-day wind variations; that changes in Wind Project Operations could result in increased noise influences; and that Grantor's or the user's own personal perceptions of the noise exposure could change and that Grantor's sensitivity to Wind Project noise could increase.

D. Grantee wishes to obtain from Grantor, on the terms stated below, a perpetual, nonexclusive easement to allow the Wind Project and the Wind Project Operations to increase the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point on the Residence Property (but not above limits specified in Table 8 of OAR

Chapter 340, Division 035 (2005)). Grantor is willing to grant Grantee the easement on the terms and provisions set forth herein.

AGREEMENT

NOW, THEREFORE, in accordance with Oregon Administrative Rule ("OAR") 340-035-0035(1)(b)(B)(iii), Grantor conveys to the Grantee, a nonexclusive easement and waiver as follows:

1. Grant of Easement. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by Grantor, Grantor hereby conveys and grants to Grantee a perpetual, nonexclusive easement (the "Noise Easement") to allow the Wind Project and the Wind Project Operations to increase the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point on the Residence Property (but not above limits specified in Table 8 of OAR Chapter 340, Division 035 (2005)) ("Permitted Noise Levels"). The Noise Easement shall burden the Residence Property and benefit the Wind Project Property.

2. Waiver. Grantor, for and on behalf of themselves, their successors and assigns, waives and releases any right, claim, or cause of action which Grantor has now, or which Grantor may have in the future, against, and covenants not to sue, Grantee and/or its past, present, and future officers, officials, directors, employees, agents, sublessees, predecessors, successors and assigns, as a direct or indirect result of the Permitted Noise Levels on the Residence Property that may be caused by the Wind Project or the Wind Project Operations.

3. Governing Law. This Agreement shall be governed by the laws of the State of Oregon.

4. Authority. The signatories hereto warrant that they have the authority to execute this Agreement on behalf of Grantor and Grantee, as the case may be, and that any entity on whose behalf they are signing has executed this Agreement pursuant to its governing documents or a resolution of those having the power to control its affairs of this nature.

5. Successors and Assigns. This Agreement shall inure to the benefit of and be binding on the heirs, successors, assigns and personal representatives of the parties hereto. Grantee shall have the right without Grantor's consent to sell, convey, lease, or assign all or any portion of its interest under this Agreement and/or the Noise Easement to one or more persons or entities.

6. Continuing Nature. Grantor, for and on behalf of itself, its successors and assigns, further acknowledges that this Agreement contemplates and includes all existing and future Wind Project Operations on the Wind Project Property, so long as the operations are conducted in compliance with the requirements of applicable laws and regulations.

7. Further Acts and Assurances. Each party shall execute such additional documents or instruments, and shall undertake such actions as are reasonably necessary and appropriate to effectuate the intent of this Agreement.

8. Attorneys' Fees. In the event suit, arbitration or action is instituted to interpret or enforce the terms of this Agreement or to rescind this Agreement, the prevailing party shall be entitled to recover from the other party such sum as the court may adjudge reasonable as attorneys' fees at trial, on any appeal, and on any petition for review, in addition to all other sums provided by law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first set forth above.

GRANTOR:

W.C. and Joyce Hickerson

By W. C. Hickerson
Its Joyce Hickerson

GRANTEE:

Leaning Juniper Wind Power II LLC

By
Its VICE PRESIDENT

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 24 day of July, 2006 by Donald Furman VP of Leaning Juniper Wind Power II LLC, an Oregon limited liability company.

OFFICIAL SEAL
CARRIE A. TRACY
NOTARY PUBLIC-OREGON
COMMISSION NO. 387604
MY COMMISSION EXPIRES DECEMBER 12, 2008

Notary Public for Oregon
My commission expires 12/12/08

STATE OF OREGON)
) ss.
COUNTY OF Gilliam)

The foregoing instrument was acknowledged before me this 26 day of June, 2006 by W.C. and Joyce Hickerson of W.C. and Joyce Hickerson.

OFFICIAL SEAL
SHERYL A WALTERS
NOTARY PUBLIC - OREGON
COMMISSION NO. 405431
MY COMMISSION EXPIRES MAY 6, 2010

Notary Public for Oregon
My commission expires: 5-6-10
Commission No.: 405431

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EXHIBIT A
WIND PROJECT PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

Parcel 1:

Deed Document number M-68-236, Gilliam County Deed Records being, all of the following described property located in Township 2 North, Range 20 East, W.M., and in Township 2 North, Range 21 East, W.M., which lies east of a North-South division line; said line being described as follows:

Beginning at a point on the south line of the northwest one-quarter of Section 22, Township 2 North, Range 20 East, W.M., said point being 2,740 feet West of the East one-quarter corner of said Section 22; thence running North 3,960 feet more or less to the center of a private road; thence along the centerline of said private road Northeasterly 3,040 feet, more or less, to an intersection with the section line between Sections 14 and 15; thence East 1,060 feet; thence North 5,280 feet and terminating at a point on the North line of the South one-half of Section 11, said point of termination being 1,060 feet East of the West one-quarter corner of said Section 11.

A parcel located in Township 2 North, Ranges 20 and 21 East, W.M., and described (as being East and Southerly of the above described division line) as follows:

The South one-half of Section 11, Township 2 North, Range 20 East, except the West 1,060 feet thereof, all of Section 14 except the West 1,060 feet of the Northwest one-quarter, a strip of land 100 feet wide located in Sections 15 and 22, Township 2 North, Range 20 East, lying adjacent to and East of the above described division line, the Northeast one-quarter of said Section 22, that portion of the Southeast one-quarter of said Section 15, which lies Southerly of the private road, the center-line of which is the division line as described.

The North one-half of Section 23, the South one-half of Section 12, all of Section 13, all in Township 2 North, Range 20 East, W.M., the West one-half of Section 18, the West one-half of the East one-half of Section 18, Township 2 North, Range 21 East, W.M.

A parcel of land lying and being in government lot 4 and the Southeast one-quarter of the Southwest one-quarter and Southwest one-quarter of the Southeast one-quarter of Section 7, Township 2 North, Range 21 East, W.M. bounded as follows:

Beginning at the Southwest corner of Section 7 of the above mentioned Township and Range; running thence East along the South boundary line of said Section 7, a distance of approximately 4,100 feet to a point where said South boundary line intersects the right of way of the county road now established and traveled over and across said Section 7; thence running Northerly along the West boundary of said right of way a distance of 870 feet (when measured at right angles); thence running West on a line parallel with the South boundary line of said Section 7 a distance of approximately 4,100 feet to a point on the west boundary of said Section 7, which point is 870 feet North of the Southwest corner of said Section 7; running thence south to the place of beginning.

Township 2 North, Range 20 East, W.M.:

Section 21: s½.
22: s½.
23: n½; sw¼; nw¼se¼; n½n½sw¼se¼.

26: all.
27: all.
28: all.

Excepting from Sections 21, 26, 27, and 28 that parcel described in warranty deed, including the terms and provisions thereof, dated February 1, 1994, recorded February 2, 1994, in Gilliam county deed records as m-69-36. Grantor: waste management disposal services of Oregon, inc. Fka Oregon water systems, inc. Grantee: Herbert r. Holzapfel, Virginia w. Holzapfel, Robert s. Holzapfel, Judith l. Holzapfel, Jan h. Foglesong and Ivan e. Foglesong,

Township 2 North, Range 21 East, W.M.:
Section 7: that part of se¼ lying South and East of the county road.
8: s½.
9&10: commencing at the Northwest corner of Section 9, running thence South to the Southwest corner of Section, running thence East one mile and three quarters to the Southeast corner of the sw¼se¼ of Section 10, running thence in a Northwesterly direction to the Northwest corner of Section 9, the place of beginning.
15: all, except all land lying and being on the East side of the john day highway in ne¼ne¼; and all land lying and being on the East side of the Oregon-Washington railroad & navigation co. Right of way, Condon branch, in the se¼ne¼ and e½se¼.
16: all.
17: all except: a tract of land located in the se¼ of Section 17, Township 2 North, Range 21 East, Willamette meridian, Gilliam county, Oregon and being more particularly described as follows:

Beginning at a 5/8-inch iron rod on the South line of said Section 17 which bears North 89° 47' 52" West 1124.52 feet from a brass cap at the Southeast corner of said Section 17; thence along the South line of said Section 17 North 89° 47' 52" West 1315.01 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 146.48 feet to a 5/8-inch iron rod; thence North 90° 00' 00" East 740.00 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 269.00 feet to a 5/8-inch iron; thence North 90° 00' 00" East 575.00 feet to a 5/8-inch iron rod; thence South 00° 00' 00" East 420.12 feet to a 5/8-inch iron rod and the point of beginning.
18: e1/2e1/2.
19: e1/2; e1/2w1/2; lots 1, 2, 3, and 4, except:
a parcel which commences at the Northwest corner of Section 30, Township 2 North, Range 21 East, W.M.; thence North 85° 20' 32" East a distance of 1114.76 feet; thence North 86° 38'03" East a distance of 2,925.68 feet; thence South 00° 00' 40" West to the North boundary of the said Section 30; thence due West along the said North boundary to the point of beginning.
21: all.
22: all, except that part of e½ lying and being East of the right of way of the Oregon-Washington railroad & navigation co.
27: that part North & West of the right of way of the Oregon-Washington railroad & navigation co, save and except the right of way of cedar springs county road.
28: all.
33: all that portion lying and being north of the right of way of cedar springs county road. Except a parcel of land conveyed by warranty deed, recorded august 26, 1998, in Gilliam county deed records as m-71-437 and further described as follows:

Beginning at a point located South 84°19'08" East a distance of 4,548.79 feet from the Northwest corner of said Section 33, said point being the true point of beginning of this description; thence South 50°08'45" East a distance of 250.00 feet to a point on the Northwesterly right of way margin line of cedar springs lane county road #529; thence South 39°51'15" West following the said Northwesterly right of way margin line a distance of 250.00 feet to a point; thence North 50°08'45" West a distance of 250.00 feet to a point; thence North 39°51'15" East a distance of 250.00 feet to the true point of beginning of this description.

34: all that portion lying north of the said cedar springs county road right of way.

Excepting therefrom the rights of way for the union pacific rail road, Oregon state highway no. 19; and cedar springs county road.

Parcel 2:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 2 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

Subject to existing easements and rights of way.

Parcel 3:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 1 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

Subject to existing easements and rights of way.

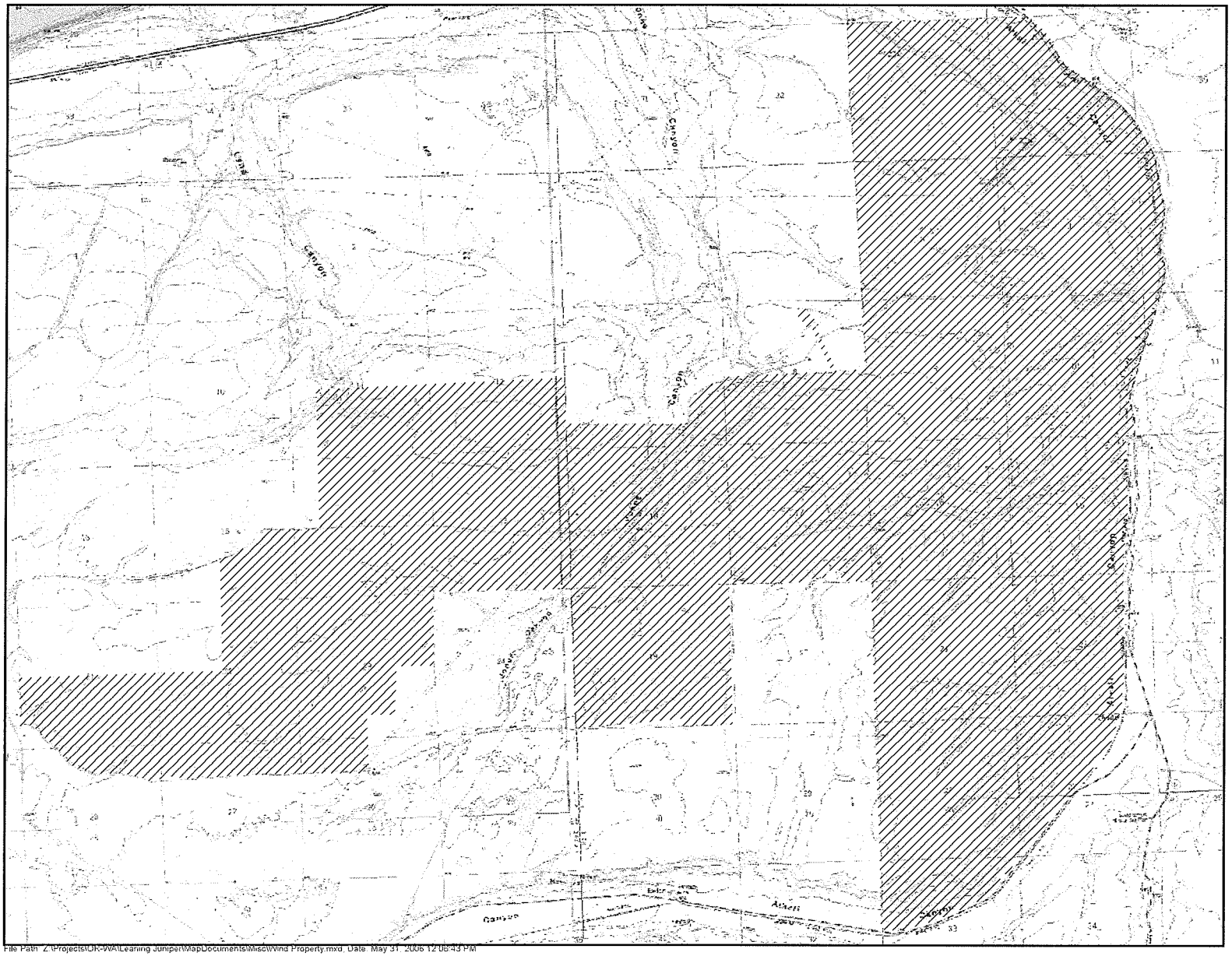

Figure 1

Wind Property

Leaning Juniper Wind Project

PPM Energy

Legend

Wind Property

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Miles

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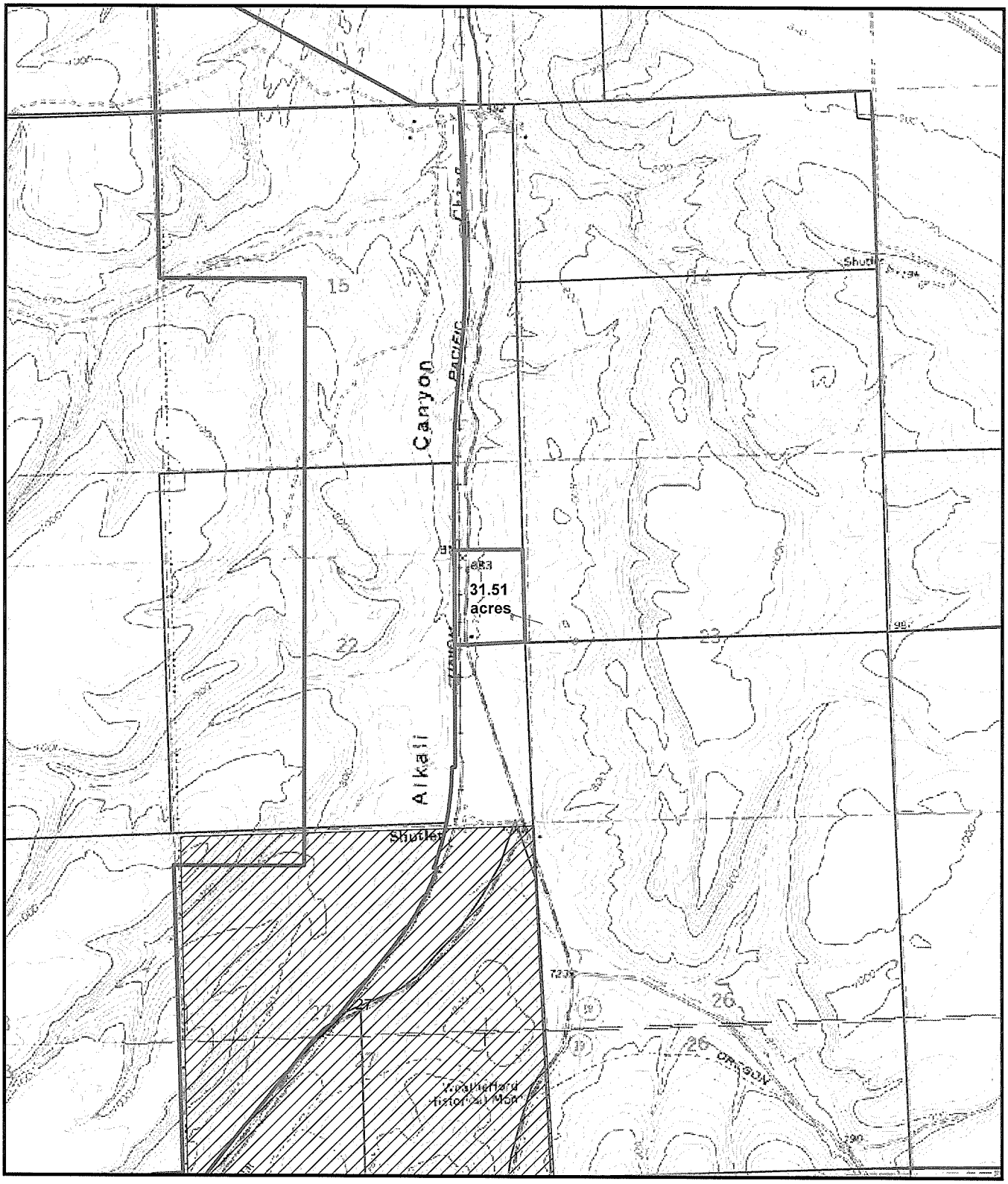
EXHIBIT B
RESIDENCE PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

All of the following described property located in Township 2 North, Range 21 East, W.M., volume 46, page 3, Gilliam county Deed Records, and being described as follows:

Sec. 22: All that portion of the SE1/4 of the NE1/4 lying and being east of the right of way of the Oregon-Washington Railroad & Navigation Co.

Subject to easements, rights of way and reservations as the same may exist of appear of record.



Legend

- Lease Area
- Taxlots
- Lease Area - Leaning Juniper I
- Restricted Area

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Feet

Exhibit B

Hickerson Property

Leaning Juniper

PPM Energy
A ScottishPower Company

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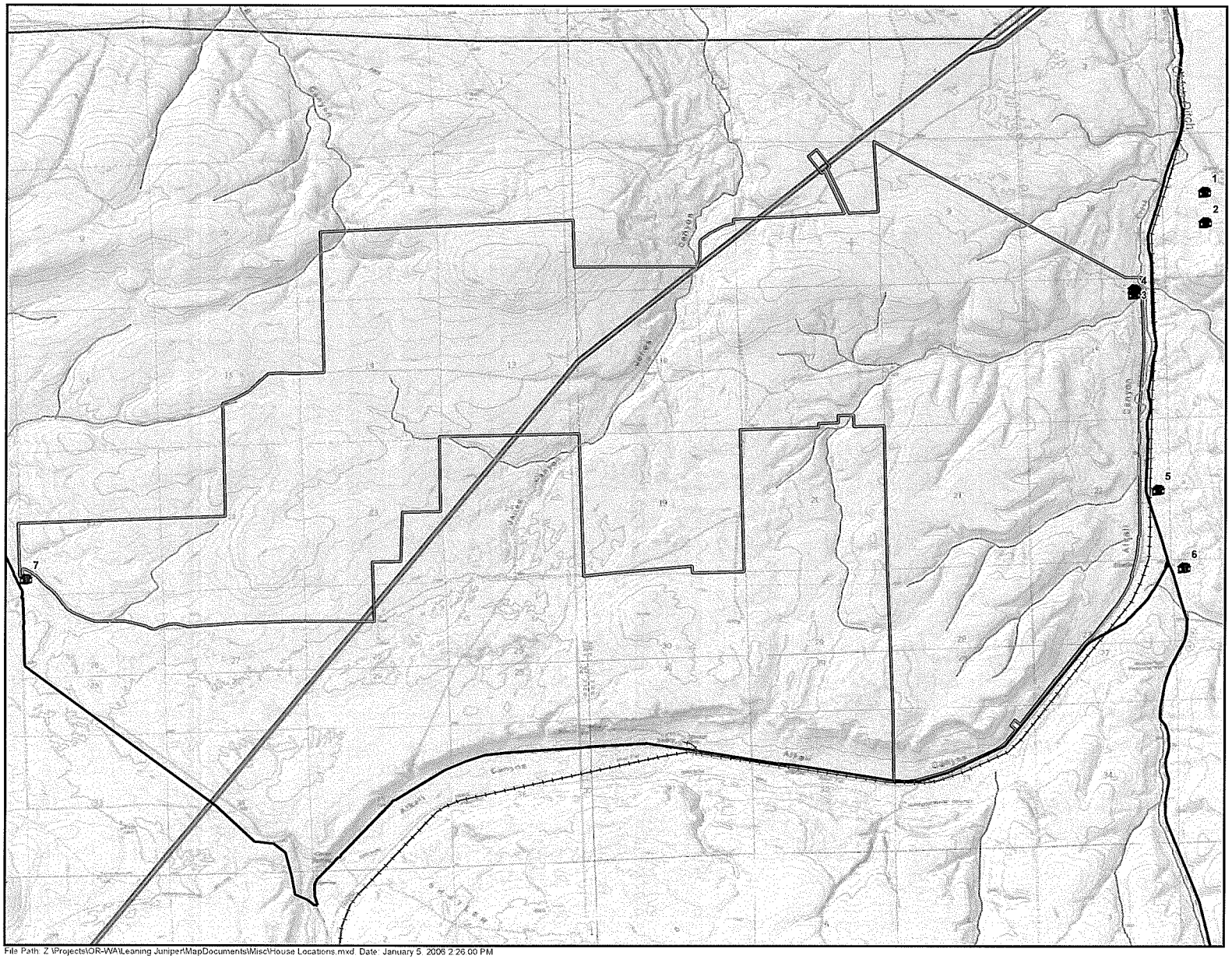
EXHIBIT C
Affected House

House #5 located in Gilliam County, Oregon



House Locations

Leaning Juniper
Wind Power Facility

PPM Energy

Legend

- Houses
- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Site Boundary

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Feet

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Misc\House Locations.mxd Date: January 5, 2006 2:26:00 PM

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STATE OF OREGON } SS.
County of Gilliam } INDEXED

I hereby certify that the within instrument was certified for record AUGUST 24, 2006 at 1:15 P M and assigned No. M-74-592
Fees $81.00
Witness my hand and seal of county affixed.
RENA JO KENNEDY
County Clerk
By Rena M Dudley

AFTER RECORDING, RETURN TO:

PPM Energy, Inc.
1125 NW Couch, Suite 700
Portland, OR 97209
Attn: Mr. Andrew O'Connell

NOISE EASEMENT AGREEMENT

This NOISE EASEMENT AGREEMENT (this "Agreement") is made and entered into as of 6-7-06, 2006 (the "Effective Date"), by and between Phyllis A. Sumner, Trustee of the Phyllis A. Sumner Living Trust ("Grantor") and Leaning Juniper Wind Power II LLC, an Oregon limited liability company, its successors and assigns ("Grantee"), with reference to the following recitals.

RECITALS

A. Grantee is a wind farm developer that desires to develop, construct and operate a renewable wind power project consisting of wind-powered turbines and generators capable of producing electricity and associated appurtenances, equipment, facilities and roadways that will produce and transmit electrical energy, including without limitation related power lines, and other equipment and facilities used or useful in connection with the production and transmission of electrical energy (the "Wind Project") on lands located in the County of Gilliam, State of Oregon as more particularly described on Exhibit A (the "Wind Project Property").

B. Grantor is the owner of that certain property located in Gilliam County, Oregon, more particularly described on Exhibit B (the "Residence Property"), upon which Grantor maintains residences which is depicted as House 6 on the map attached as Exhibit C.

C. Grantor has been advised and is of the opinion that construction, operation, and maintenance of the Wind Project (collectively, "Wind Project Operations") on the Wind Project Property may subject the Residence Property to noise influence that may exceed noise level standards established by the Oregon Department of Environmental Quality ("DEQ") for new industrial or commercial noise sources (hereinafter, the "DEQ New Noise Source Standards"); that these present and future noise influences might be annoying to users of the Residence Property and might interfere with the unrestricted use and enjoyment of the Residence Property in its intended use; that these noise influences might change over time by virtue of construction activities, maintenance, seasonal wind variations, and time-of-day wind variations; that changes in Wind Project Operations could result in increased noise influences; and that Grantor's or the user's own personal perceptions of the noise exposure could change and that Grantor's sensitivity to Wind Project noise could increase.

D. Grantee wishes to obtain from Grantor, on the terms stated below, a perpetual, nonexclusive easement to allow the Wind Project and the Wind Project Operations to increase the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate

measurement point on the Residence Property (but not above limits specified in Table 8 of OAR Chapter 340, Division 035 (2005)). Grantor is willing to grant Grantee the easement on the terms and provisions set forth herein.

AGREEMENT

NOW, THEREFORE, in accordance with Oregon Administrative Rule ("OAR") 340-035-0035(1)(b)(B)(iii), Grantor conveys to the Grantee, a nonexclusive easement and waiver as follows:

1. Grant of Easement. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by Grantor, Grantor hereby conveys and grants to Grantee a perpetual, nonexclusive easement (the "Noise Easement") to allow the Wind Project and the Wind Project Operations to increase the ambient statistical noise levels L10 and L50 by more than 10 dBA at the appropriate measurement point on the Residence Property (but not above limits specified in Table 8 of OAR Chapter 340, Division 035 (2005)) ("Permitted Noise Levels"). The Noise Easement shall burden the Residence Property and benefit the Wind Project Property.

2. Waiver. Grantor, for and on behalf of themselves, their successors and assigns, waives and releases any right, claim, or cause of action which Grantor has now, or which Grantor may have in the future, against, and covenants not to sue, Grantee and/or its past, present, and future officers, officials, directors, employees, agents, sublessees, predecessors, successors and assigns, as a direct or indirect result of the Permitted Noise Levels on the Residence Property that may be caused by the Wind Project or the Wind Project Operations.

3. Governing Law. This Agreement shall be governed by the laws of the State of Oregon.

4. Authority. The signatories hereto warrant that they have the authority to execute this Agreement on behalf of Grantor and Grantee, as the case may be, and that any entity on whose behalf they are signing has executed this Agreement pursuant to its governing documents or a resolution of those having the power to control its affairs of this nature.

5. Successors and Assigns. This Agreement shall inure to the benefit of and be binding on the heirs, successors, assigns and personal representatives of the parties hereto. Grantee shall have the right without Grantor's consent to sell, convey, lease, or assign all or any portion of its interest under this Agreement and/or the Noise Easement to one or more persons or entities.

6. Continuing Nature. Grantor, for and on behalf of itself, its successors and assigns, further acknowledges that this Agreement contemplates and includes all existing and future Wind Project Operations on the Wind Project Property, so long as the operations are conducted in compliance with the requirements of applicable laws and regulations.

7. Further Acts and Assurances. Each party shall execute such additional documents or instruments, and shall undertake such actions as are reasonably necessary and appropriate to effectuate the intent of this Agreement.

8. Attorneys' Fees. In the event suit, arbitration or action is instituted to interpret or enforce the terms of this Agreement or to rescind this Agreement, the prevailing party shall be entitled to recover from the other party such sum as the court may adjudge reasonable as attorneys' fees at trial, on any appeal, and on any petition for review, in addition to all other sums provided by law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first set forth above.

GRANTOR:

Phyllis A. Sumner, Trustee of the Phyllis A. Sumner Living Trust

By Phyllis A. Sumner
Its trustee

GRANTEE:

Leaning Juniper Wind Power II LLC

By
Its VICE PRESIDENT

STATE OF OREGON)
) ss.
County of Multnomah)

The foregoing instrument was acknowledged before me this 24 day of July, 2006 by Donald Furman, VP of Leaning Juniper Wind Power II LLC, an Oregon limited liability company.

OFFICIAL SEAL
CARRIE A. TRACY
NOTARY PUBLIC-OREGON
COMMISSION NO. 387604
MY COMMISSION EXPIRES DECEMBER 12, 2008

Notary Public for Oregon
My commission expires 12/12/08

STATE OF OREGON)
) ss.
COUNTY OF Gilliam)

The foregoing instrument was acknowledged before me this 7th day of June, 2006 by Phyllis A. Sumner, Trustee of Phyllis A. Sumner, Trustee of the Phyllis A. Sumner Living Trust.

OFFICIAL SEAL
SHERYL A WALTERS
NOTARY PUBLIC - OREGON
COMMISSION NO. 405431
MY COMMISSION EXPIRES MAY 6, 2010

Notary Public for Oregon
My commission expires: 5-6-10
Commission No.: 405431

EXHIBIT A
WIND PROJECT PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

Parcel 1:

Deed Document number M-68-236, Gilliam County Deed Records being, all of the following described property located in Township 2 North, Range 20 East, W.M., and in Township 2 North, Range 21 East, W.M., which lies east of a North-South division line; said line being described as follows:

Beginning at a point on the south line of the northwest one-quarter of Section 22, Township 2 North, Range 20 East, W.M., said point being 2,740 feet West of the East one-quarter corner of said Section 22; thence running North 3,960 feet more or less to the center of a private road; thence along the centerline of said private road Northeasterly 3,040 feet, more or less, to an intersection with the section line between Sections 14 and 15; thence East 1,060 feet; thence North 5,280 feet and terminating at a point on the North line of the South one-half of Section 11, said point of termination being 1,060 feet East of the West one-quarter corner of said Section 11.

A parcel located in Township 2 North, Ranges 20 and 21 East, W.M., and described (as being East and Southerly of the above described division line) as follows:

The South one-half of Section 11, Township 2 North, Range 20 East, except the West 1,060 feet thereof, all of Section 14 except the West 1,060 feet of the Northwest one-quarter, a strip of land 100 feet wide located in Sections 15 and 22, Township 2 North, Range 20 East, lying adjacent to and East of the above described division line, the Northeast one-quarter of said Section 22, that portion of the Southeast one-quarter of said Section 15, which lies Southerly of the private road, the center-line of which is the division line as described.

The North one-half of Section 23, the South one-half of Section 12, all of Section 13, all in Township 2 North, Range 20 East, W.M., the West one-half of Section 18, the West one-half of the East one-half of Section 18, Township 2 North, Range 21 East, W.M.

A parcel of land lying and being in government lot 4 and the Southeast one-quarter of the Southwest one-quarter and Southwest one-quarter of the Southeast one-quarter of Section 7, Township 2 North, Range 21 East, W.M. bounded as follows:

Beginning at the Southwest corner of Section 7 of the above mentioned Township and Range; running thence East along the South boundary line of said Section 7, a distance of approximately 4,100 feet to a point where said South boundary line intersects the right of way of the county road now established and traveled over and across said Section 7; thence running Northerly along the West boundary of said right of way a distance of 870 feet (when measured at right angles); thence running West on a line parallel with the South boundary line of said Section 7 a distance of approximately 4,100 feet to a point on the west boundary of said Section 7, which point is 870 feet North of the Southwest corner of said Section 7; running thence south to the place of beginning.

Township 2 North, Range 20 East, W.M.:

Section 21: s½.
22: s½.
23: n½; sw¼; nw¼se¼; n½n½sw¼se¼.

26: all.
27: all.
28: all.

Excepting from Sections 21, 26, 27, and 28 that parcel described in warranty deed, including the terms and provisions thereof, dated February 1, 1994, recorded February 2, 1994, in Gilliam county deed records as m-69-36. Grantor: waste management disposal services of Oregon, inc. Fka Oregon water systems, inc. Grantee: Herbert r. Holzapfel, Virginia w. Holzapfel, Robert s. Holzapfel, Judith l. Holzapfel, Jan h. Foglesong and Ivan e. Foglesong,

Township 2 North, Range 21 East, W.M.:
Section 7: that part of se¼ lying South and East of the county road.
8: s½.
9&10: commencing at the Northwest corner of Section 9, running thence South to the Southwest corner of Section, running thence East one mile and three quarters to the Southeast corner of the sw¼se¼ of Section 10, running thence in a Northwesterly direction to the Northwest corner of Section 9, the place of beginning.
15: all, except all land lying and being on the East side of the john day highway in ne¼ne¼; and all land lying and being on the East side of the Oregon-Washington railroad & navigation co. Right of way, Condon branch, in the se¼ne¼ and e½se¼.
16: all.
17: all except: a tract of land located in the se¼ of Section 17, Township 2 North, Range 21 East, Willamette meridian, Gilliam county, Oregon and being more particularly described as follows:

Beginning at a 5/8-inch iron rod on the South line of said Section 17 which bears North 89° 47' 52" West 1124.52 feet from a brass cap at the Southeast corner of said Section 17; thence along the South line of said Section 17 North 89° 47' 52" West 1315.01 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 146.48 feet to a 5/8-inch iron rod; thence North 90° 00' 00" East 740.00 feet to a 5/8-inch iron rod; thence North 00° 00' 00" East 269.00 feet to a 5/8-inch iron; thence North 90° 00' 00" East 575.00 feet to a 5/8-inch iron rod; thence South 00° 00' 00" East 420.12 feet to a 5/8-inch iron rod and the point of beginning.
18: e1/2e1/2.
19: e1/2; e1/2w1/2; lots 1, 2, 3, and 4, except:
a parcel which commences at the Northwest corner of Section 30, Township 2 North, Range 21 East, W.M.; thence North 85° 20' 32" East a distance of 1114.76 feet; thence North 86° 38'03" East a distance of 2,925.68 feet; thence South 00° 00' 40" West to the North boundary of the said Section 30; thence due West along the said North boundary to the point of beginning.
21: all.
22: all, except that part of e½ lying and being East of the right of way of the Oregon-Washington railroad & navigation co.
27: that part North & West of the right of way of the Oregon-Washington railroad & navigation co, save and except the right of way of cedar springs county road.
28: all.
33: all that portion lying and being north of the right of way of cedar springs county road. Except a parcel of land conveyed by warranty deed, recorded august 26, 1998, in Gilliam county deed records as m-71-437 and further described as follows:

Beginning at a point located South 84°19'08" East a distance of 4,548.79 feet from the Northwest corner of said Section 33, said point being the true point of beginning of this description; thence South 50°08'45" East a distance of 250.00 feet to a point on the Northwesterly right of way margin line of cedar springs lane county road #529; thence South 39°51'15" West following the said Northwesterly right of way margin line a distance of 250.00 feet to a point; thence North 50°08'45" West a distance of 250.00 feet to a point; thence North 39°51'15" East a distance of 250.00 feet to the true point of beginning of this description.

34: all that portion lying north of the said cedar springs county road right of way.

Excepting therefrom the rights of way for the union pacific rail road, Oregon state highway no. 19; and cedar springs county road.

Parcel 2:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 2 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

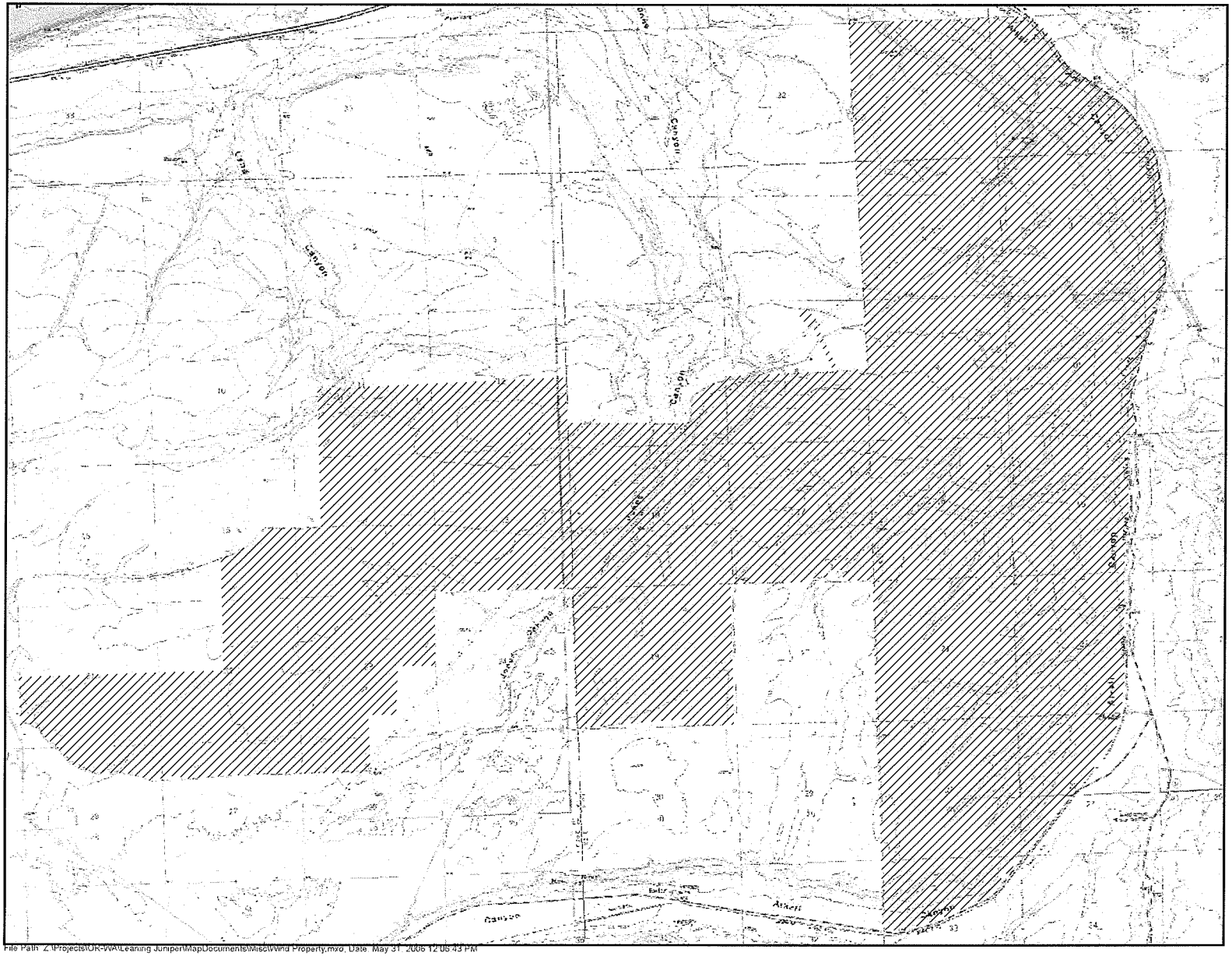
Subject to existing easements and rights of way.

Parcel 3:

A tract of land being a portion of that property conveyed to PPM Energy, Inc. by Warranty Deed recorded June 3, 2005 as Document No. M-74-235, Deed Records of Gilliam County, Oregon, said tract being located in Sections 8, Township 2 North, Range 21 East, Willamette Meridian, Gilliam County, Oregon, being more particularly described as follows:

All of Parcel 1 of the Partition Plat No. 2006-03, A Partition of Lot 3 Jones Canyon Subdivision, Plat Records of Gilliam County, Oregon.

Subject to existing easements and rights of way.



File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Misc\Wind Property.mxd, Date: May 31, 2006 12:06:43 PM

Figure 1

Wind Property

Leaning Juniper Wind Project

PPM Energy

Legend

Wind Property

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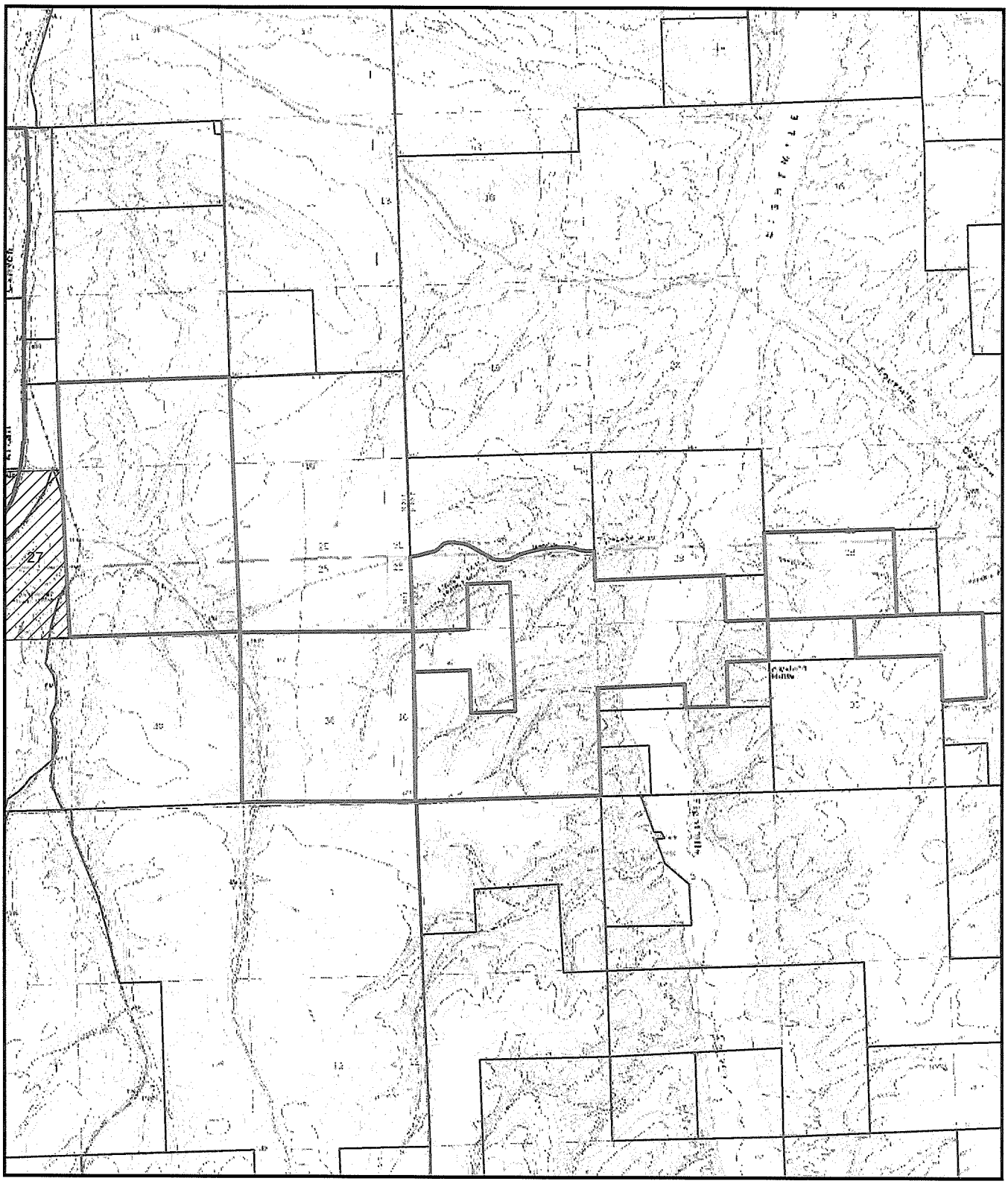
EXHIBIT B
RESIDENCE PROPERTY

All that real property located in Gilliam County, Oregon, described as follows:

All of Section 26, Township 2, North, Range 21 East, Willamette Meridian,

Subject to easements, rights of way and reservations as the same may exist or appear of record.



Legend

- Lease Area
- Lease Area - Leaning Juniper I
- Restricted Area
- Taxlots

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Exhibit B

Sumner Property

Leaning Juniper

PPM Energy
A ScottishPower Company

File Path: \\porgis01\gis data\Projects\OR-WA\Leaning Juniper\MapDocuments\O-Drive\Lease Status\Sumner Property.mxd, Date: May 22, 2006 8:43:03 AM

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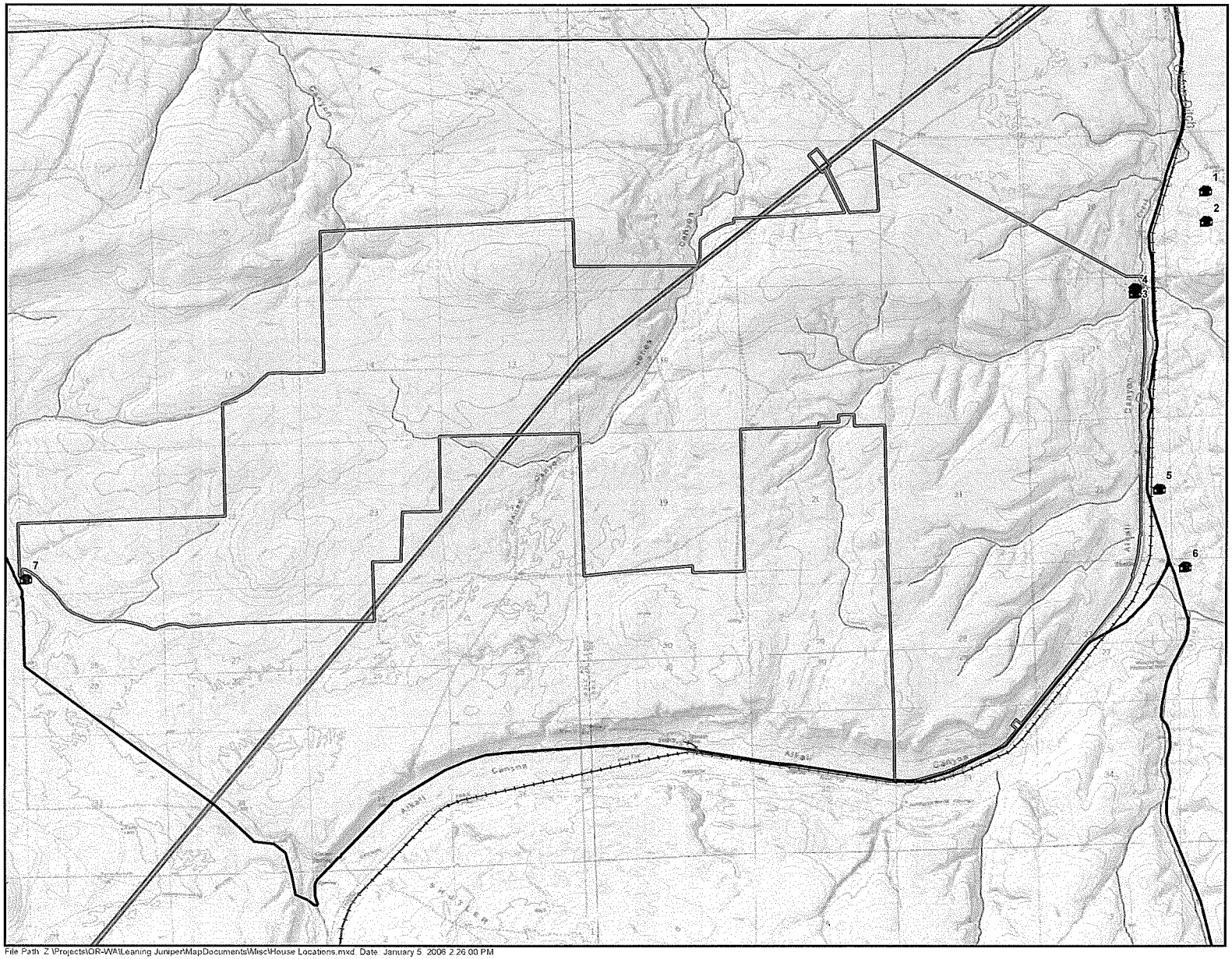
EXHIBIT C
Affected House

House #6 located in Gilliam County, Oregon



House Locations

Leaning Juniper
Wind Power Facility

PPM Energy

Legend

- Houses
- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Site Boundary

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APPENDIX A, ATTACHMENT 18

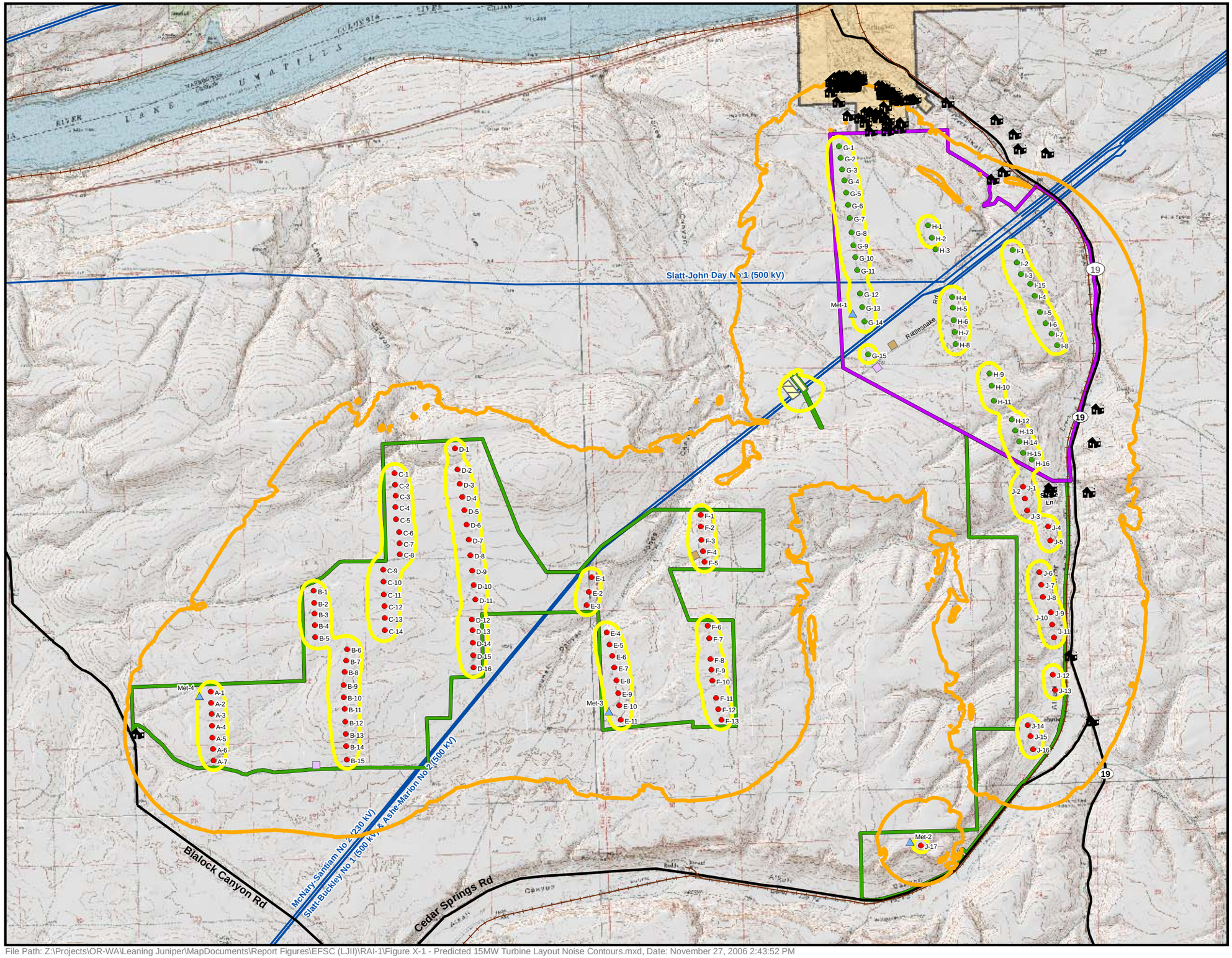
Revised Figures X-1 and X-2 and New Figures X-3 and X-4

Figure X-1

Predicted 1.5-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower
- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South
- City Limits

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File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure X-1 - Predicted 15MW Turbine Layout Noise Contours.mxd, Date: November 27, 2006 2:43:52 PM

Figure X-2

Predicted 3.0-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

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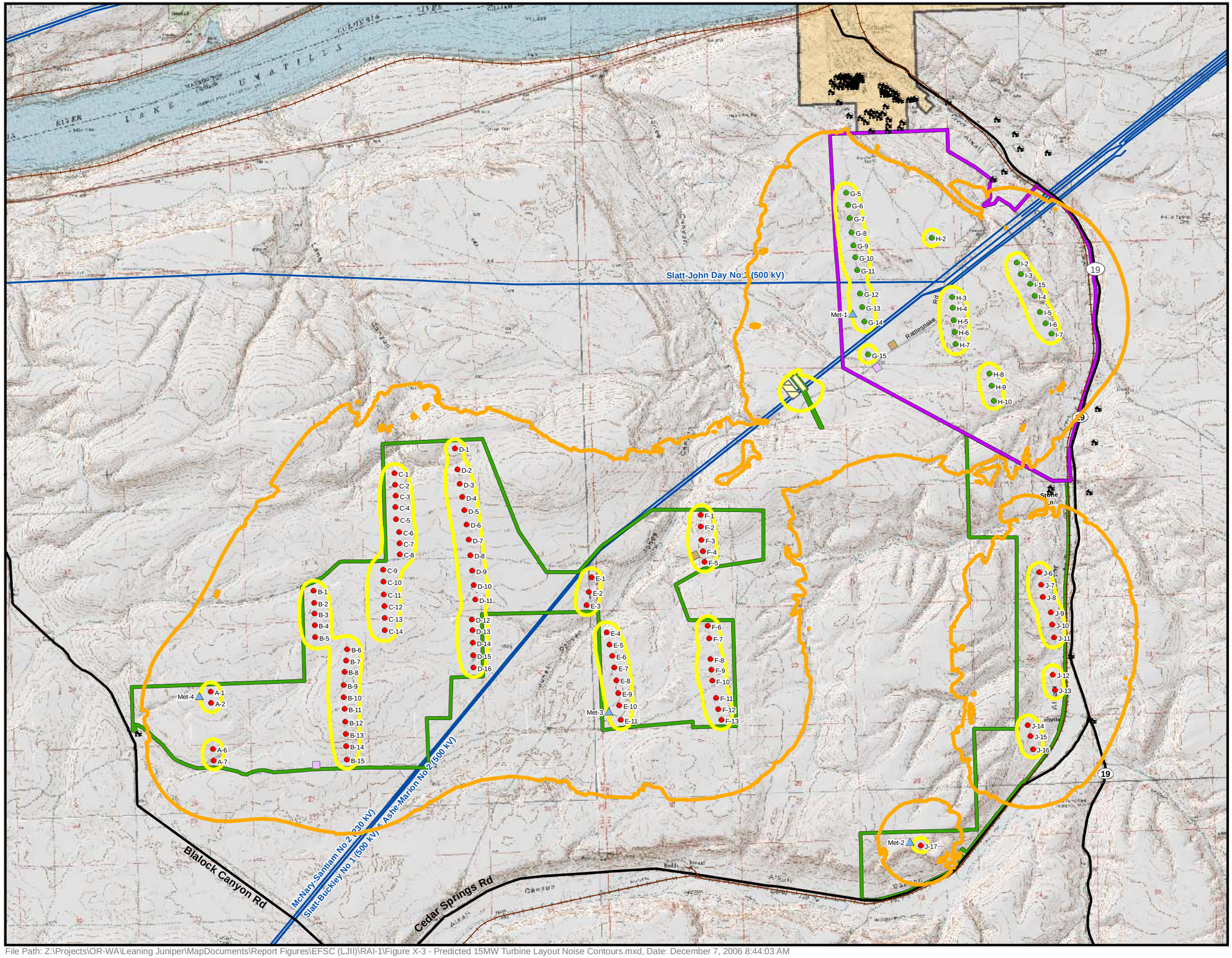
File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure X-2 - Predicted 3MW Turbine Layout Noise Contours.mxd, Date: November 27, 2006 2:42:57 PM

Figure X-3

Predicted Noise-Compliant 1.5-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- Proposed Permanent Met Tower
- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South
- City Limits

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File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure X-3 - Predicted 15MW Turbine Layout Noise Contours.mxd, Date: December 7, 2006 8:44:03 AM

Figure X-4
Predicted Noise-Compliant 3.0-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

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File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-1\Figure X-4 - Predicted Noise-Compliant 3MW Turbine Layout Noise Contours.mxd, Date: December 14, 2006 1:32:27 PM

APPENDIX A, ATTACHMENT 19

Revised Figure C-4

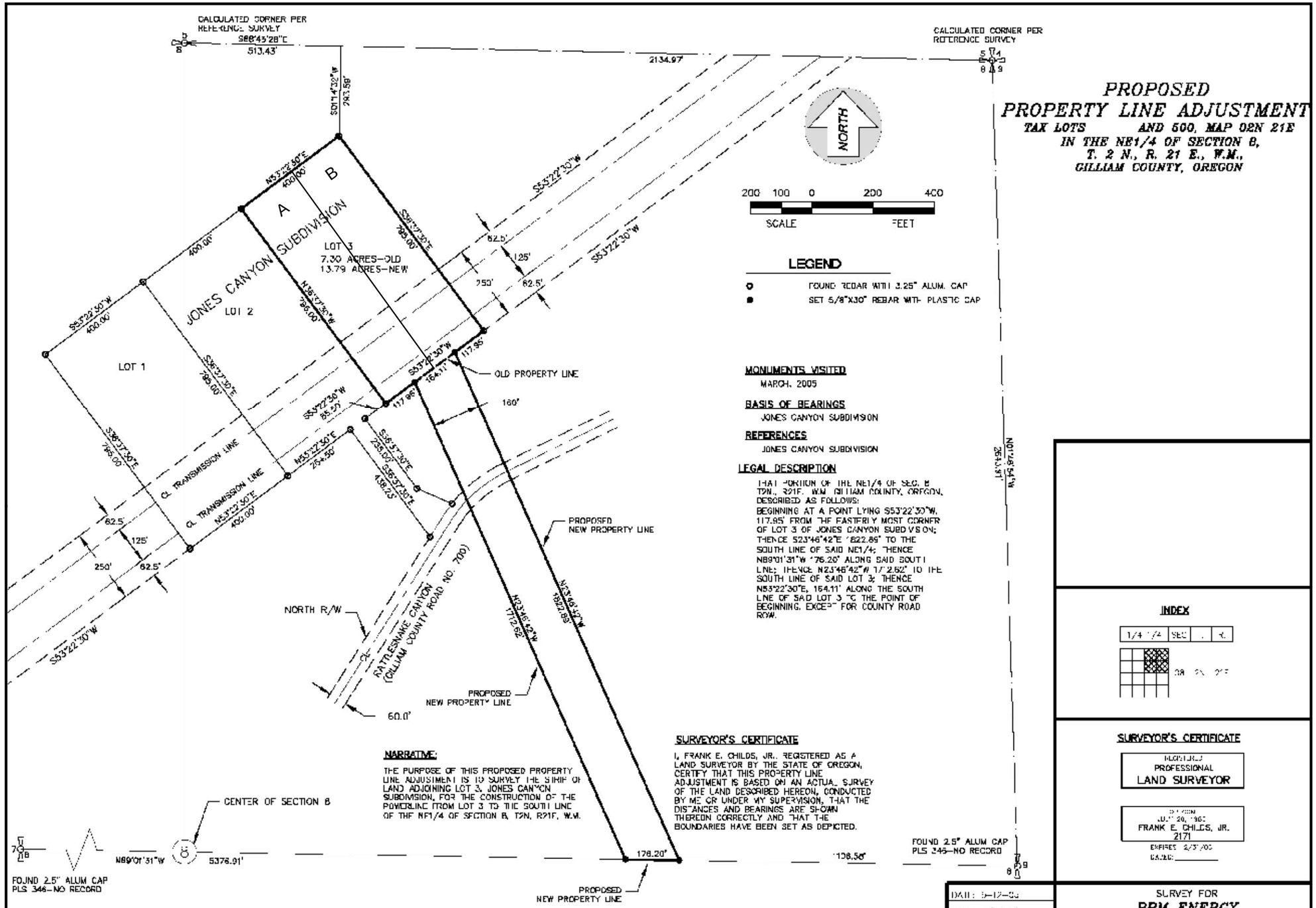

Figure C-4

Facility Substation and Interconnection

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

Lot 1 - Columbia Energy Partners Collector Substation

Lot 2 - BPA Jones Canyon Switching Station

Lot 3A - Leaning Juniper I Substation

Lot 3B - Leaning Juniper II Substation

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APPENDIX B, ATTACHMENT 1

Revised Tables C-5, P-10B, and P-15B

TABLE C-5
Leaning Juniper II Disturbance Calculations
Temporarily Disturbed Areas

Facilities	Notes	Units of Measurement	LJ II—North				LJ II—South				North and South
			Dimensions per Unit	Number of Units	Acres	Miles	Dimensions per Unit	Number of Units	Acres	Miles	Acres
Substation/O&M Building											
LJ II Collector Substation	1	Acres	0.0	1	0.00		0.0	1	0.00		0.00
O&M Facility	2	Acres	1.0	1	1.00		1.0	1	1.00		2.00
Meteorological Towers (self-supporting)	**3**	**Square feet per tower**	**0**	**1**	**0.00**		**0**	**3**	**0.00**		**0.00**
Tower Construction/Laydown Areas											
Central laydown and storage areas for collector lines and other equipment		Acres	5	1	5.00		5	3	15.00		20.00
Laydown areas (usually 1 per string)		Acres	2	4	8.00		2	5	10.00		18.00
Laydown areas at each tower site	4	Square feet per tower site	160,000	40	146.92		160,000	93	341.60		488.52
Electrical											
Temporary Access for 12-kV powerline		Feet of width per linear foot	8	0	0.00	0	8	35,065	6.44	6.64	
Temporary access for collector line											
1 Collector	5	Feet of width per linear foot	24	39,493	21.76	7.48	24	98,767	54.42	18.706	76.18
2 Collectors	5	Feet of width per linear foot	32	0	0.00	0	32	14,313	10.51	2.71	10.51
3 Collectors	5	Feet of width per linear foot	40	3,058	2.81	0.579	40	10,489	9.63	1.987	12.44
4 Collectors	5	Feet of width per linear foot	48	0	0.00	0	48	7,631	8.41	1.445	8.41
5 Collectors	5	Feet of width per linear foot	56	0	0.00	0	56	1,866	2.40	0.353	2.40
Roads											
Temporarily disturbed area during road construction											
Existing road improvements (temporarily widened to 35 feet)	6	Feet of width per linear foot	15	13,005	4.48		15	80,220	27.62		32.10
New 16-foot turbine string roads and road to met tower(s) (temporarily widened to 35 feet)	7	Feet of width per linear foot	19	38,308	16.71		19	74,859	32.65		49.36
Crane Paths	**8**	**Feet of width per linear foot**	**35**	**14,834**	**11.92**	**2.810**	**35**	**0**	**0.00**	**0**	**11.92**
Total Temporarily Disturbed Area				**218.60 acres**				**519.68 acres**			**731.84 acres**

Notes:

1 Assumes contractor will permanently impact entire substation area. Therefore, no temporary impacts will occur.

2 Assumes contractor will temporarily impact a small area surrounding the permanent footprint of the operations and maintenance building(s) and parking area. This impact will be less than 1 acre.

3 Assumes contractor will gravel entire area used during construction. Therefore, no temporary impacts will occur.

4 Assumes a worst-case area of disturbance around towers for staging turbine blades based on the 3.0-MW turbine with a circular impact area of an approximate 164-foot radius for 328-foot-diameter (100-meter-diameter) rotors.

5 Assumes 12 feet on either side of the collector line trench for spoil and travel paths. Trenches are separated by 8 feet for heat dissipation. This distance includes the width of the actual collector line trenches.

6 Assumes the 10-foot existing road will be temporarily widened to 35 feet. The temporary disturbance will be equal to 35-foot total width during construction minus the 20-foot permanent width.

7 The temporary disturbance will be equal to 35-foot total width during construction minus the 16-foot permanent width.

8 A small portion of the temporary disturbance associated with crane paths is geographically located in Leaning Juniper II South. However, because these crane paths are necessary for construction of Leaning Juniper II North, the temporary disturbances are included in the Leaning Juniper II North total.

TABLE P-10B
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts (Worst Case)		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland, escarpment)	WJ, ESC	<1	0.00	0.00
Category 2				
Escarpment	ESC	78	0.00	0.00
Sagebrush-Rabbitbrush-Snakeweed/bunchgrass-annual grass	SSA		0.74	
Open low shrub	SSB	27	1.43	0.37
Bitterbrush/Buckwheat, Bunchgrass-Annual grass	SSE	244	30.56	2.29
Perennial bunchgrass	GB	3	0.00	0.00
			32.73	
Category 3				
Old field	DB	4	0.03	0.00
Shrub-grass	SSA	14	0.30	0.23
Open low shrub	SSB	2,321	154.21	15.57
			154.54	
Category 4				
Old field[3]	DB	102	1.13	0.00
Exposed basalt	EB	44	2.92	0.00
Annual grass and weeds with residual native bunchgrass	GA	16	2.55	0.63
			6.60	
Category 5				
Old field	DB	85	10.82	1.20
Dryland wheat	DW	111	0.00	0.00
			10.80	
Category 6				
Oldfield	DB		0.77	
Farmyard	DF	25	0.24	0.23
Quarry	DQ	26	0.12	0.06
Other disturbed ground	DX	6	2.96	0.00
			4.09	
			208.76	

[1] Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

TABLE P-10B
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts (Worst Case)		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, Operations and Maintenance facility or facilities, and permanent access roads.

[3] A small portion of the temporary disturbance associated with crane paths is geographically located in Leaning Juniper II South. However, because these crane paths are necessary for construction of Leaning Juniper II North, the crane paths temporary disturbances are included in the Leaning Juniper II North total. The total acres identified for the Old Field (DB)—Category 4 is the total for Leaning Juniper II South.

Note:
Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as represented in Tables C-4 and C-5. The total areas in Tables C-4 and C-5 are not exact estimates of the Facility's total impact to land and habitat. Tables C-4 and C-5 do not account for overlapping impact areas. Consequently, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using GIS, overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

TABLE P-15B

Habitat Types and Categories in the Leaning Juniper II South Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts		
		Total Acres Within Lease Boundary	Temporary [1] Facilities (Acres Disturbed)	Permanent [2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland and escarpment)	WJ, ESC	<1	0.00	0.00
Annual grass and weeds with residual native bunchgrass	GA	4	0.00	0.00
Shrub-grass	SSA	21	0.00	0.00
Open low shrub	SSB	87	0.00	0.00
Category 2				
Perennial bunchgrass	GB	29	11.32	0.74
Shrub-grass	SSA	266	47.21	6.69
Open low shrub	SSB	1054	109.21	8.54
Purple sage/Sandberg's bluegrass with non-native annual grasses.	SSD	28	1.86	0.00
Juniper woodland	WJ	95	1.02	0.40
Deciduous woodland	WL	3	0.10	0.07
			170.72	16.44
Category 3				
Old field	DB	4	4.44	3.69
Annual grass and weeds with residual native bunchgrass	GA	221	0.00	0.00
Shrub-grass	SSA	18	5.00	0.00
Open low shrub	SSB	364	35.72	2.64
Open low shrub (buckwheat)/Sandberg's bluegrass with non-native annual grasses.	SSC	5	0.44	0.32
Purple sage/Sandberg's bluegrass with non-native annual grasses.	SSD	4	0.00	0.00
Shrub-Steppe	SSU		0.05	
			46.65	6.65
Category 4				
Old field	DB	100	16.91	1.04
Other disturbed ground.	DX	34	0.04	0.03

TABLE P-15B

Habitat Types and Categories in the Leaning Juniper II South Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts		
		Total Acres Within Lease Boundary	Temporary [1] Facilities (Acres Disturbed)	Permanent [2] Facilities (Acres Disturbed)
Annual grass and weeds with residual native bunchgrass.	GA	243	7.63	0.40
Erigonum/Poa Sandbergii—Annual Grass	SSC		0.21	
			24.79	1.48
Category 6				
Old field	DB	6	0.00	0.06
Farmyard	DF	22	0.35	
Landfill	DL	15	0.00	0.00
Quarry	DQ	19	0.71	0.00
Dryland wheat	DW	2871	246.68	18.87
Other disturbed ground	DX	17	0.92	0.11
			248.66	19.04
			490.82	43.61

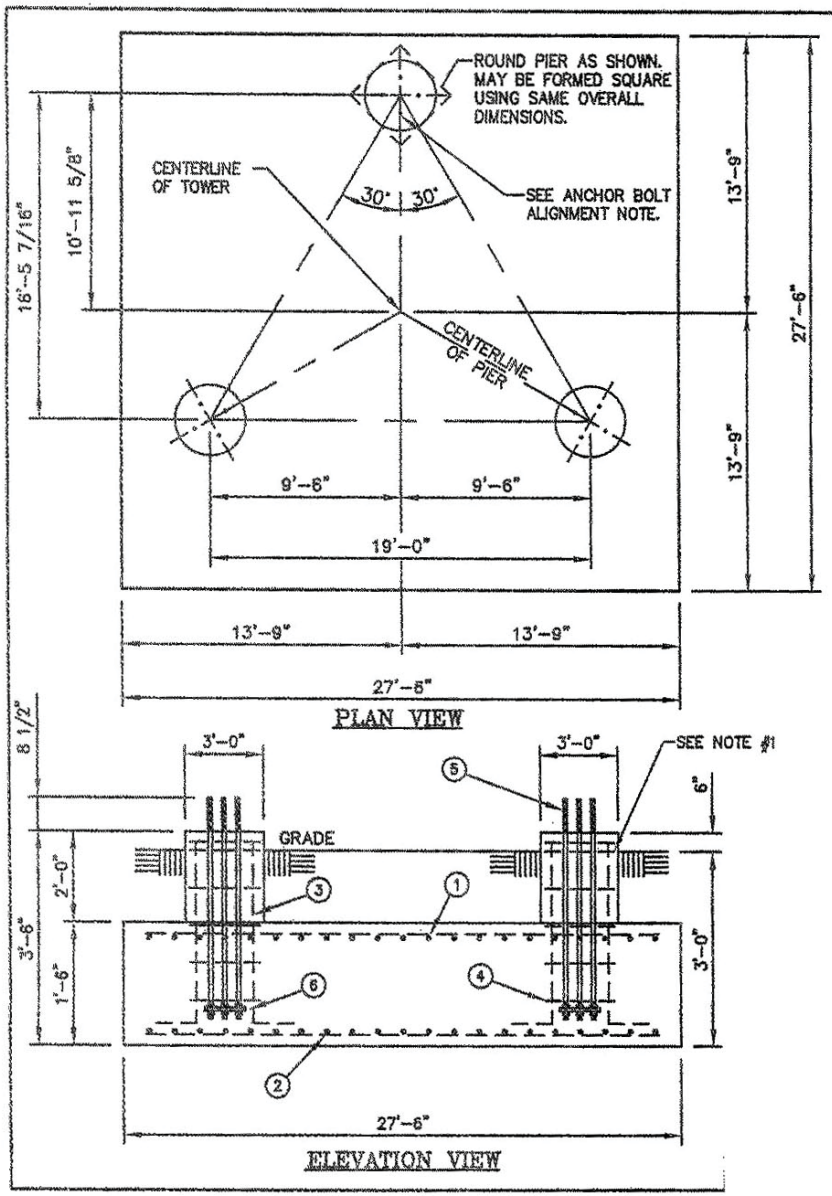
[1] Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, Operations and Maintenance facility or facilities, and permanent access roads.

[3] Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as shown in Tables C-4 and C-5. The total areas presented in Tables C-4 and C-5 do not provide a precise estimate of the Facility's total impact to land and habitat. Because Tables C-4 and C-5 do not account for overlapping impact areas, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using GIS, overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

APPENDIX B, ATTACHMENT 2

Meteorological Tower Foundation

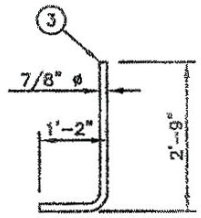


REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	76	EQUALLY SPACED	#8	27'-0"	2052'-0"	5479 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	76	EQUALLY SPACED	#8	27'-0"	2052'-0"	5479 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	42	EQUALLY SPACED	#7	3'-11"	164'-6"	336 LBS.	
④	PIER TIES	12	SPACED 12" C/C	#4	8'-9"	105'-0"	70 LBS.	2'-9"
					TOTAL REBAR WT.		11364 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041003	12	1 1/2 ø X 3'-4"	EQUALLY SPACED

TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139001	6	1'-8"

CONCRETE REQ'D	ROUND PIERS	SQUARE PIERS
PAD	42.01 CU. YDS.	42.01 CU. YDS.
PIERS	1.57 CU. YDS.	2.00 CU. YDS.
TOTAL	43.58 CU. YDS.	44.01 CU. YDS.



REBAR DETAIL
(PIER VERTICAL REBAR)

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI, IN ACCORDANCE WITH ACI 318-02. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL BORING BY NORTHERN, INC., PROJECT NO. 205-569, NOVEMBER 14, 2005.
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL)

PPM Energy
A ScottishPower Company

Meteorological Tower Foundation
LEANING JUNIPER II WIND POWER FACILITY
RAI No. 2

APPENDIX B, ATTACHMENT 3

Legal Descriptions

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 2

A 120 foot wide strip of land situated in a portion of Section 21 and 28, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 38°55'14" East, 3578.84 feet to the **POINT OF BEGINNING**;

Thence South 22° 03' 15" East, 128.18 feet to a point;
Thence South 47° 21' 51" West, 1744.16 feet to the beginning of a curve,
Said curve turning to the left through an angle of 86° 27' 51", having a radius of 1880.00 feet, and whose long chord bears South 04° 07' 56" West, 2575.43 feet to a point;
Thence South 39° 05' 60" East, 1528.51 feet to a point;
Thence North 64° 10' 25" East, 970.29 feet to a point;
Thence South 17° 43' 38" East, 121.21 feet to a point;
Thence South 64° 10' 25" West, 1048.20 feet to a point;
Thence North 39° 05' 60" West, 1623.50 feet to the beginning of a curve,
Said curve turning to the right through an angle of 86° 27' 50", having a radius of 2000.00 feet, and whose long chord bears North 04° 07' 56" East, 2739.82 feet to a point;
Thence North 47° 21' 51" East, a distance of 1789.22 feet to the **POINT OF BEGINNING**.

Containing 20.05 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 3

A 120 foot wide strip of land situated in a portion of Section 21 and 28, Township 2 North, Range 21 East,, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20 and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 01° 47' 25" West, 133.00 feet to the **POINT OF BEGINNING;**

Thence North 62° 39' 57" West, 1015.80 feet to a point on a line;
Thence South 40° 58' 36" West, 873.52 feet to a point on a line;
Thence North 88° 12' 37" West, 154.82 feet to a point on a line;
Thence North 40° 58' 36" East, 1065.70 feet to a point on a line;
Thence South 62° 39' 57" East, 1052.81 feet to the **POINT OF BEGINNING**;

Containing 5.52 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 4

A 60 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 30°53'54" East, 10277.80 feet to the **POINT OF BEGINNING**;

Thence, South 00° 06' 18" West, 77.21 feet to a point;
Thence, South 51° 05' 60" West, 2204.82 feet to a point;
Thence, North 89° 35' 28" West, 94.71 feet to a point;
Thence North 51° 05' 60" East, a distance of 2326.69 feet to the **POINT OF BEGINNING**.

Containing 3.12 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 5

A 120 foot wide strip of land situated in a portion of Section 8, 9, 10, 15, and 16, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence North 8°42'52" West, 8015.41 feet to the **POINT OF BEGINNING**;

Thence North 88° 40' 04" East, 140.38 feet to a point;
Thence South 32° 35' 35" East, 1730.35 feet to a point;
Thence South 44° 33' 04" East, 781.65 feet to the beginning of a curve;
Said curve turning to the left through 30° 43' 42", having a radius of 400.00 feet, and whose long chord bears South 59° 54' 55" East, 211.96 feet to the beginning curve;
Said curve turning to the right through an angle of 48° 19' 56", having a radius of 520.00 feet, and whose long chord bears South 51° 06' 48" East, 425.76 feet to a point;
Thence South 89° 12' 29" East, 1866.70 feet to a point;
Thence North 87° 26' 31" East, 1249.40 feet to a point;
Thence South 87° 53' 21" East, 982.92 feet to a point;
Thence North 76° 26' 39" East, 301.15 feet to a point;
Thence South 00° 20' 26" West, 118.32 feet to the beginning of a curve;
Said curve turning to the right through an angle of 04° 47' 45", having a radius of 1470.00 feet, and whose long chord bears South 74° 02' 47" West, 123.01 feet to a point;
Thence South 76° 26' 39" West, 268.14 feet to the beginning of a curve;
Said curve turning to the left through an angle of 30° 54' 01", having a radius of 230.00 feet, and whose long chord bears South 60° 59' 39" West, 122.54 feet to a point;
Thence South 45° 32' 38" West, 91.50 feet to the beginning of a curve;
Said curve turning to the right through 111° 10' 42", having a radius of 100.00 feet, and whose long chord bears North 78° 52' 01" West, 165.00 feet to the beginning of a curve;
Said curve turning to the left through an angle of 64° 36' 41", having a radius of 230.00 feet, and whose long chord bears North 55° 35' 00" West, 245.84 feet to a point;

Thence North 87° 53' 21" West, 357.96 feet to a point;
Thence South 87° 26' 31" West, 540.76 feet to a point;
Thence South 16° 49' 09" East, 1912.33 feet to a point;
Thence North 85° 17' 09" East, 1254.35 feet to a point;
Thence South 00° 20' 26" West, 120.47 feet to a point;
Thence South 85° 17' 09" West, 1340.73 feet to a point;
Thence North 16° 49' 09" West, 2039.82 feet to a point;
Thence South 87° 26' 31" West, 583.45 feet to a point;
Thence North 89° 12' 29" West, 1946.51 feet to a point;
Thence North 23° 40' 48" West, 47.98 feet to the beginning of a curve;
Said curve turning to the left through 53° 53' 06", having a radius of 400.00 feet, and whose long chord bears North 50° 37' 21" West, 362.48 feet to the beginning of a curve;
Said curve turning to the right through an angle of 33° 00' 49", having a radius of 400.00 feet, and whose long chord bears North 61° 03' 29" West, 227.30 feet to a point;
Thence North 44° 33' 04" West, 828.44 feet to a point;
Thence North 32° 35' 35" West, a distance of 1815.76 feet to the **POINT OF BEGINNING**;

Containing 31.33 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 6

A varied width strip of land situated in a portion of Section 8, and 17, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence North 46°54'07" West, 6372.93 feet to the **POINT OF BEGINNING**;

Thence North 45° 48' 24" East, 716.67 feet to the beginning of a curve;
Said curve turning to the right through an angle of 21° 24' 04", having a radius of 2700.00 feet, and whose long chord bears North 56° 30' 27" East, 1002.66 feet to a point;
Thence North 30° 27' 57" East, 579.97 feet to a point;
Thence North 41° 28' 34" East, 2613.48 feet to a point;
Thence South 25° 17' 35" East, 281.03 feet to a point;
Thence South 57° 24' 25" West, 503.68 feet to a point;
Thence South 41° 28' 34" West, 2006.72 feet to a point;
Thence South 30° 27' 57" West, 608.76 feet to the beginning of a curve;
Said curve turning to the left through an angle of 22° 16' 38", having a radius of 2580.00 feet, and whose long chord bears South 56° 56' 44" West, 996.84 feet to a point;
Thence South 45° 48' 24" West, 602.94 feet to a point;
Thence North 87° 39' 19" West, a distance of 165.33 feet to the **POINT OF BEGINNING**;

Containing 14.20 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 7

A 120 foot wide strip of land situated in a portion of Section 18 and 19, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 84°27'20" East, 5438.30 feet to the **POINT OF BEGINNING**;

Thence North 88° 12' 36" West, 120.06 feet to a point;
Thence North 00° 02' 59" East, 361.78 feet to a point;
Thence North 89° 51' 42" West, 379.99 feet to a point;
Thence North 18° 20' 43" West, 504.81 feet to a point;
Thence North 08° 36' 39" West, 870.51 feet to a point;
Thence North 17° 49' 50" West, 345.00 feet to a point;
Thence North 30° 04' 58" West, 349.07 feet to a point;
Thence North 83° 08' 48" East, 130.59 feet to a point;
Thence South 30° 04' 58" East, 310.45 feet to a point;
Thence South 17° 49' 50" East, 367.56 feet to a point;
Thence South 08° 36' 39" East, 869.97 feet to a point;
Thence South 18° 20' 43" East, 408.18 feet to a point;
Thence South 89° 51' 42" East, 413.39 feet to a point;
Thence South 00° 02' 59" West, a distance of 485.24 feet to the **POINT OF BEGINNING**;

Containing 7.80 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 8

A 120 foot wide strip of land situated in a portion of Section 8, 9, 16 and 21, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence North 79°34'27" West, 12034.04 feet to the **POINT OF BEGINNING**;

Thence North 77° 45' 18" West, 241.33 feet to the beginning of a curve,
Said curve turning to the left through an angle of 25° 26' 14", having a radius of 380.00 feet, and whose long chord bears South 89° 31' 35" West, 167.32 feet to a point;
Thence South 76° 48' 28" West, 250.44 feet to the beginning of a curve;
Said curve turning to the left through an angle of 08° 46' 10", having a radius of 380.00 feet, and whose long chord bears South 72° 25' 23" West, 58.10 feet to a point;.
Thence South 68° 02' 18" West, 109.46 feet to the beginning of curve;
Said curve turning to the right through an angle of 24° 42' 20", having a radius of 270.00 feet, and whose long chord bears South 80° 23' 28" West, 115.52 feet to a point;
Thence North 87° 15' 21" West, 239.43 feet to the beginning of a curve;
Said curve turning to the right through an angle of 06° 45' 19", having a radius of 2970.00 feet, and whose long chord bears North 83° 52' 41" West, 349.97 feet to a point;
Thence North 80° 30' 02" West, 485.73 feet to a point;
Thence North 32° 22' 11" West, 161.15 feet to a point;
Thence South 80° 30' 02" East, 593.29 feet to the beginning of a curve,
Said curve turning to the left through an angle of 06° 45' 19", having a radius of 2850.00 feet, and whose long chord bears South 83° 52' 41" East, 335.83 feet to a point;
Thence South 87° 15' 21" East, 239.43 feet to the beginning of a curve;
Said curve turning to the left through an angle of 24° 42' 20", having a radius of 150.00 feet, and whose long chord bears North 80° 23' 28" East, 64.18 feet to a point;
Thence North 68° 02' 18" East, 109.46 feet to the beginning of a curve;
Said curve turning to the right through an angle of 08° 46' 10", having a radius of 500.00 feet, and whose long chord bears North 72° 25' 23" East, 76.45 feet to a point;

Thence North 76° 48' 28" East, 250.44 feet to the beginning of a curve;
Said curve turning to the right through an angle of 25° 26' 14", having a radius of 500.00 feet, and whose long chord bears North 89° 31' 35" East, 220.16 feet to a point;
Thence South 77° 45' 18" East, 313.94 feet to a point;
Thence South 43° 25' 25" West, a distance of 140.26 feet to the **POINT OF BEGINNING.**

Containing 5.82 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 9

A 120 foot wide strip of land situated in a portion of Section 8, 9, 16 and 21, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence North 03°25'22" East, 10181.33 feet to the **POINT OF BEGINNING**;

Thence South 52° 59' 53" West, 568.20 feet to the beginning of a curve;
Said curve turning to the right through an angle of 24° 51' 48", having a radius of 560.00 feet, and whose long chord bears South 65° 25' 47" West, 241.11 feet to a point;
Thence North 01° 47' 35" West, 122.54 feet to the beginning of a curve;
Said curve turning to the left through an angle of 21° 59' 47", having a radius of 440.00 feet, and whose long chord bears North 63° 59' 47" East, 167.89 feet to a point;
Thence North 52° 59' 53" East, 517.56 feet to a point;
Thence South 59° 52' 45" East, a distance of 130.25 feet to the **POINT OF BEGINNING**;

Containing 2.06 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 10

A 120 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 41°41'54" East, 7890.81 feet to the **POINT OF BEGINNING**;

Thence, South 00° 06' 18" West, 138.32 feet to a point;
Thence, South 60° 16' 44" West, 1838.51 feet to a point;
Thence, South 64° 10' 25" West, 983.61 feet to a point;
Thence, North 17° 43' 38" West, 84.94 feet to a point;
Thence, North 00° 26' 50" East, 40.05 feet to a point;
Thence, North 64° 10' 25" East, 949.83 feet to a point;
Thence North 60° 16' 44" East, a distance of 1903.22 feet to the **POINT OF BEGINNING**;

Containing 7.83 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 COLLECTOR 11

A 120 foot wide strip of land situated in a portion of Section 8, 9, 16 and 21, Township 2 North, Range 21 East, of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 28, and 21, of Township 2 South, Range 21 East, said point being a found brass disc;

Thence South 40°28'32" East, 3256.76 feet to the **POINT OF BEGINNING**;

Thence South 66° 09' 53" East, 172.40 feet to a point;
Thence South 22° 03' 15" East, 1647.13 feet to a point;
Thence South 00° 45' 17" West, 1078.90 feet to a point;
Thence South 14° 01' 40" West, 381.15 feet to a point;
Thence South 04° 25' 16" West, 417.26 feet to a point;
Thence South 00° 26' 50" West, 1350.94 feet to a point;
Thence South 17° 43' 38" East, 614.90 feet to the beginning of a curve;
Said curve turning to the right through an angle of 44° 03' 56", having a radius of 620.00 feet, and whose long chord bears South 04° 18' 20" West, 465.17 feet to a point;
Thence South 26° 20' 18" West, 729.17 feet to a point;
Thence South 28° 45' 43" East, 238.32 feet to the beginning of a curve,
Said curve turning to the left through an angle of 68° 21' 35", having a radius of 180.00 feet, and whose long chord bears South 62° 56' 31" East, 202.25 feet to a point;
Thence North 82° 52' 41" East, 586.14 feet to a point;
Thence South 23° 16' 30" East, 1095.32 feet to a point;
Thence North 89° 35' 28" West, 131.04 feet to a point;
Thence North 23° 16' 30" West, 952.50 feet to a point;
Thence South 82° 52' 41" West, 495.96 feet to the beginning of a curve;
Said curve turning to the right through an angle of 68° 21' 35", having a radius of 300.00 feet, and whose long chord bears North 62° 56' 31" West, 337.08 feet to a point;
Thence North 28° 45' 43" West, 238.32 feet to the beginning of a curve;
Said curve turning to the right through an angle of 55° 06' 01", having a radius of 120.00 feet, and whose long chord bears North 01° 12' 43" West, 111.01 feet to a point;
Thence North 26° 20' 18" East, 729.17 feet to the beginning of a curve;

Said curve turning to the left through an angle of 44° 03' 55", having a radius of 500.00 feet, and whose long chord bears North 04° 18' 20" East, 375.14 feet to a point;
Thence North 17° 43' 38" West, 634.09 feet to a point;
Thence North 00° 26' 50" East, 1374.30 feet to a point;
Thence North 04° 25' 16" East, 431.51 feet to a point;
Thence North 14° 01' 40" East, 377.27 feet to a point;
Thence North 00° 45' 17" East, 1040.74 feet to a point;
Thence North 22° 03' 15" West, a distance of 1746.71 feet to the **POINT OF BEGINNING**;

Containing 24.39 acres more or less.

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid, scale factor = 1.0001519

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 1

A 60 foot wide strip of land situated in a portion of Section 8, 9, 17 and 16, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 44°24'31" East, 7587.94 feet to the True Point of Beginning;

thence, along a curve to the right through an angle of 04° 02' 15", having a radius of 1530.00 feet, and whose long chord bears South 74° 25' 32" West, 107.79 feet to a point;

thence, South 76° 26' 39" West, 268.14 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 30° 54' 01", having a radius of 170.00 feet, and whose long chord bears South 60° 59' 39" West, 90.58 feet to a point;

thence, South 45° 32' 38" West, 91.50 feet to a curve;

thence, along a curve to the right through an angle of 106° 12' 08", having a radius of 160.00 feet, and whose long chord bears North 81° 21' 18" West, 255.90 feet to a point;

thence, North 28° 15' 14" West, 29.35 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 59° 38' 07", having a radius of 170.00 feet, and whose long chord bears North 58° 04' 18" West, 169.06 feet to a point;

thence, North 87° 53' 21" West, 531.49 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 07° 37' 31", having a radius of 1470.00 feet, and whose long chord bears South 88° 17' 53" West, 195.49 feet to a point;

thence, South 84° 29' 07" West, 297.13 feet to a curve;

thence, along a curve to the right through an angle of 02° 57' 23", having a radius of 1530.00 feet, and whose long chord bears South 85° 57' 49" West, 78.94 feet to a point;

thence, South 87° 26' 31" West, 454.63 feet to a curve;

thence, along a curve to the right through an angle of 03° 20' 59", having a radius of 1530.00 feet, and whose long chord bears South 89° 07' 00" West, 89.44 feet to a point;

thence, North 89° 12' 29" West, 2006.17 feet to a point;

thence, North 24° 16' 21" West, 140.28 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 71° 06' 12", having a radius of 170.00 feet, and whose long chord bears North 59° 49' 27" West, 197.69 feet to a point;

thence, South 84° 37' 27" West, 143.12 feet to a curve;

thence, along a curve to the right through an angle of 11° 33' 35", having a radius of 1530.00 feet, and whose long chord bears North 89° 35' 46" West, 308.16 feet to a point;

thence, North 83° 48' 58" West, 319.37 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 04° 54' 05", having a radius of 1970.00 feet, and whose long chord bears North 86° 16' 00" West, 168.47 feet to a point;

thence, North 88° 43' 03" West, 1206.53 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 01° 56' 06", having a radius of 4970.00 feet, and whose long chord bears North 89° 41' 07" West, 167.86 feet to a point;

thence, South 89° 20' 50" West, 605.27 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 15° 06' 13", having a radius of 1470.00 feet, and whose long chord bears South 81° 47' 43" West, 386.39 feet to a point;

thence, South 74° 14' 37" West, 220.44 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 30° 24' 45", having a radius of 2720.00 feet, and whose long chord bears South 59° 02' 14" West, 1426.89 feet to a point;

thence, South 43° 49' 51" West, 356.44 feet to a curve;

thence, along a curve to the right through an angle of 02° 56' 58", having a radius of 5030.00 feet, and whose long chord bears South 45° 18' 20" West, 258.91 feet to a point;

thence, North 87° 39' 19" West, 84.52 feet to a curve;

thence, along a curve to the left through an angle of 03° 37' 54", having a radius of 4970.00 feet, and whose long chord bears North 45° 38' 48" East, 314.97 feet to a point;

thence, North 43° 49' 51" East, 356.44 feet to a curve;

thence, along a curve to the right through an angle of 30° 24' 45", having a radius of 2780.00 feet, and whose long chord bears North 59° 02' 14" East, 1458.37 feet to a point;

thence, North 74° 14' 37" East, 220.44 feet to a curve;

thence, along a curve to the right through an angle of 15° 06' 13", having a radius of 1530.00 feet, and whose long chord bears North 81° 47' 43" East, 402.16 feet to a point;

thence, North 89° 20' 50" East, 605.27 feet to a curve;

thence, along a curve to the right through an angle of 01° 56' 06", having a radius of 5030.00 feet, and whose long chord bears South 89° 41' 07" East, 169.88 feet to a point;

thence, South 88° 43' 03" East, 1206.53 feet to a curve;

thence, along a curve to the right through an angle of 04° 54' 05", having a radius of 2030.00 feet, and whose long chord bears South 86° 16' 00" East, 173.61 feet to a point;

thence, South 83° 48' 58" East, 319.37 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 11° 33' 35", having a radius of 1470.00 feet, and whose long chord bears South 89° 35' 46" East, 296.08 feet to a point;

thence, North 84° 37' 27" East, 143.12 feet to a curve;

thence, along a curve to the right through an angle of 71° 06' 12", having a radius of 230.00 feet, and whose long chord bears South 59° 49' 27" East, 267.46 feet to a point;

thence, South 24° 16' 21" East, 102.11 feet to a point;

thence, South 89° 12' 29" East, 1967.99 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 03° 20' 59", having a radius of 1470.00 feet, and whose long chord bears North 89° 07' 00" East, 85.93 feet to a point;

thence, North 87° 26' 31" East, 454.63 feet to a curve;

thence, along a curve to the left through an angle of 02° 57' 23", having a radius of 1470.00 feet, and whose long chord bears North 85° 57' 49" East, 75.85 feet to a point;

thence, North 84° 29' 07" East, 193.76 feet to point "B";

thence, North 84° 29' 07" East, 62.99 feet to a point;

thence, North 84° 29' 07" East, 40.39 feet to a curve;

thence, along a curve to the right through an angle of 07° 37' 31", having a radius of 1530.00 feet, and whose long chord bears North 88° 17' 53" East, 203.47 feet to a point;

thence, South 87° 53' 21" East, 531.49 feet to a curve;

thence, along a curve to the right through an angle of 59° 38' 07", having a radius of 230.00 feet, and whose long chord bears South 58° 04' 18" East, 228.73 feet to a point;

thence, South 28° 15' 14" East, 29.35 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 106° 12' 08", having a radius of 100.00 feet, and whose long chord bears South 81° 21' 18" East, 159.94 feet to a point;

thence, North 45° 32' 38" East, 91.50 feet to a curve;

thence, along a curve to the right through an angle of 30° 54' 01", having a radius of 230.00 feet, and whose long chord bears North 60° 59' 39" East, 122.54 feet to a point;

thence, North 76° 26' 39" East, 268.14 feet to a curve;

thence, along a curve to the left through an angle of 04° 47' 45", having a radius of 1470.00 feet, and whose long chord bears North 74° 02' 47" East, 123.01 feet to a point;

thence South 00° 20' 26" West a distance of 63.20 feet to the True Point of Beginning

Containing 14.74 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 2

A 60 foot wide strip of land situated in a portion of Section 9, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 03°24'31" East, 10100.15 feet to the southeasterly Right of Way of a county road, Rattlesnake Road, also being the True Point of Beginning;

thence, North 51° 54' 56" East, 60.03 feet along said Right of Way to a point;

thence, South 40° 02' 02" East, 463.96 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 21° 56' 56", having a radius of 270.00 feet, and whose long chord bears South 51° 00' 31" East, 102.80 feet to a point;

thence, South 61° 58' 59" East, 186.35 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 33° 18' 08", having a radius of 380.00 feet, and whose long chord bears South 45° 19' 55" East, 217.77 feet to a point;

thence, South 28° 40' 50" East, 639.76 feet to a point;

thence, South 34° 20' 50" East, 363.16 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 04° 04' 20", having a radius of 1030.00 feet, and whose long chord bears South 32° 18' 40" East, 73.19 feet to a point;

thence, South 30° 16' 30" East, 875.17 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 06° 38' 19", having a radius of 970.00 feet, and whose long chord bears South 33° 35' 40" East, 112.33 feet to a point;

thence, South 36° 54' 50" East, 1401.63 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 24° 33' 26", having a radius of 230.00 feet, and whose long chord bears South 24° 38' 07" East, 97.83 feet to a point;

thence, South 12° 21' 24" East, 495.21 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 10° 52' 21", having a radius of 320.00 feet, and whose long chord bears South 17° 47' 34" East, 60.63 feet to a point;

thence, South 23° 13' 45" East, 534.58 feet to a point;

thence, South 84° 29' 07" West, 62.99 feet to point "B";

thence, North 23° 13' 45" West, 515.41 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 10° 52' 21", having a radius of 380.00 feet, and whose long chord bears North 17° 47' 34" West, 72.00 feet to a point;

thence, North 12° 21' 24" West, 495.21 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 24° 33' 26", having a radius of 170.00 feet, and whose long chord bears North 24° 38' 07" West, 72.31 feet to a point;

thence, North 36° 54' 50" West, 1401.63 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 06° 38' 19", having a radius of 1030.00 feet, and whose long chord bears North 33° 35' 40" West, 119.28 feet to a point;

thence, North 30° 16' 30" West, 875.17 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 04° 04' 20", having a radius of 970.00 feet, and whose long chord bears North 32° 18' 40" West, 68.93 feet to a point;

thence, North 34° 20' 50" West, 343.38 feet to a point;

thence, South 74° 59' 22" West, 21.71 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 08° 39' 35", having a radius of 1030.00 feet, and whose long chord bears South 79° 19' 10" West, 155.53 feet to a point;

thence, South 83° 38' 58" West, 330.59 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 46° 19' 06", having a radius of 430.00 feet, and whose long chord bears North 73° 11' 29" West, 338.23 feet to a point;

thence, North 50° 01' 56" West, 526.12 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 04° 33' 45", having a radius of 1030.00 feet, and whose long chord bears North 47° 45' 04" West, 82.00 feet to a point;

thence, North 45° 28' 11" West, 542.87 feet to a point;

thence, North 01° 47' 35" West, 11.84 feet to a point on the southeasterly Right of Way of a County Road, Rattlesnake Road;

thence, along said Right of Way North 81° 37' 42" East, 2.92 feet to a point;

thence, continuing along said Right of Way North 76° 03' 27" East, 58.07 feet to a point;

thence, South 45° 28' 11" East, 519.31 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 04° 33' 45", having a radius of 970.00 feet, and whose long chord bears South 47° 45' 04" East, 77.22 feet to a point;

thence, South 50° 01' 56" East, 526.12 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 46° 19' 06", having a radius of 370.00 feet, and whose long chord bears South 73° 11' 29" East, 291.03 feet to a point;

thence, North 83° 38' 58" East, 330.59 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 08° 39' 35", having a radius of 970.00 feet, and whose long chord bears North 79° 19' 10" East, 146.47 feet to a point;

thence, North 74° 59' 22" East, 4.80 feet to a point;

thence, North 28° 40' 50" West, 603.07 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 33° 18' 08", having a radius of 320.00 feet, and whose long chord bears North 45° 19' 55" West, 183.39 feet to a point;

thence, North 61° 58' 59" West, 186.35 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 21° 56' 56", having a radius of 330.00 feet, and whose long chord bears North 51° 00' 31" West, 125.65 feet to a point;

thence North 40° 02' 02" West a distance of 466.00 feet to the True Point of Beginning;

Containing 10.43 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 3

A 60 foot wide strip of land situated in a portion of Section 15 and 22, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 88°17'43" East, 7335.79 feet to the True Point of Beginning;

thence, South 01° 47' 25" West, 61.52 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 66° 36' 42", having a radius of 125.00 feet, and whose long chord bears South 43° 04' 14" West, 137.28 feet to a point;

thence, South 09° 45' 52" West, 630.92 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 07° 36' 24", having a radius of 1030.00 feet, and whose long chord bears South 13° 34' 05" West, 136.65 feet to a point;

thence, South 17° 22' 17" West, 213.52 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 06° 43' 53", having a radius of 1030.00 feet, and whose long chord bears South 20° 44' 14" West, 120.94 feet to a point;

thence, South 24° 06' 11" West, 286.41 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 61° 56' 55", having a radius of 270.00 feet, and whose long chord bears South 06° 52' 17" East, 277.91 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 28° 19' 45", having a radius of 330.00 feet, and whose long chord bears South 23° 40' 52" East, 161.51 feet to a point;

thence, South 09° 30' 59" East, 142.12 feet to a point;

thence, South 78° 18' 46" East, 276.28 feet to a point;

thence, South 01° 47' 25" West, 60.91 feet to a point;

thence, North 78° 18' 46" West, 327.83 feet to a point;

thence, North 09° 30' 59" West, 152.67 feet to a point;

thence, North 09° 30' 59" West, 30.53 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 28° 19' 45", having a radius of 270.00 feet, and whose long chord bears North 23° 40' 52" West, 132.14 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 03° 05' 53", having a radius of 330.00 feet, and whose long chord bears North 36° 17' 48" West, 17.84 feet to the beginning of a curve also point "C";

thence, along a curve to the right through an angle of 10° 39' 39", having a radius of 330.00 feet, and whose long chord bears North 29° 25' 01" West, 61.31 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 48° 11' 22", having a radius of 330.00 feet, and whose long chord bears North 00° 00' 30" East, 269.44 feet to a point;

thence, North 24° 06' 11" East, 286.41 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 06° 43' 53", having a radius of 970.00 feet, and whose long chord bears North 20° 44' 14" East, 113.90 feet to a point;

thence, North 17° 22' 17" East, 213.52 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 07° 36' 24", having a radius of 970.00 feet, and whose long chord bears North 13° 34' 05" East, 128.69 feet to a point;

thence, North 09° 45' 52" East, 638.28 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 72° 41' 18", having a radius of 175.00 feet, and whose long chord bears North 46° 06' 32" East, 207.42 feet to a point;

thence North 82° 27' 11" East a distance of 4.11 feet to the True Point of Beginning;

Containing 3.46 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 4

A 60 foot wide strip of land situated in a portion of Section 22 and 27, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence South 43°55'45" East, 7946.41 feet to the True Point of Beginning;

thence North 88° 12' 37" West, 92.22 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 12° 47' 04", having a radius of 770.00 feet, and whose long chord bears North 47° 22' 08" East, 171.46 feet to a point;

thence North 40° 58' 36" East, 1006.96 feet to a point;

thence South 62° 39' 57" East, 1071.32 feet to a point;

thence South 01° 47' 25" West, 66.50 feet to a point;

thence North 62° 39' 57" West, 1052.81 feet to a point;

thence South 40° 58' 36" West, 959.78 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 07° 45' 48", having a radius of 830.00 feet, and whose long chord bears South 44° 51' 30" West, 112.38 feet to the True Point of Beginning;

Containing 3.01 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 5

A 60 foot wide strip of land situated in a portion of Section 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence South 42°02'02" East, 7839.61 feet to the True Point of Beginning;

thence South 00° 06' 18" West, 68.87 feet to a point;

thence South 60° 42' 35" West, 1224.69 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 01° 47' 09", having a radius of 4970.00 feet, and whose long chord bears South 59° 49' 00" West, 154.91 feet to a point;

thence, South 58° 55' 26" West, 336.63 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 05° 14' 59", having a radius of 3030.00 feet, and whose long chord bears South 61° 32' 55" West, 277.53 feet to a point;

thence, South 64° 10' 25" West, 722.40 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 11° 26' 23", having a radius of 630.00 feet, and whose long chord bears South 69° 53' 37" West, 125.58 feet to a point;

thence, South 75° 36' 49" West, 70.15 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 90° 26' 52", having a radius of 70.00 feet, and whose long chord bears South 30° 23' 23" West, 99.38 feet to a point;

thence, South 14° 50' 03" East, 210.99 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 10° 41' 30", having a radius of 570.00 feet, and whose long chord bears South 20° 10' 49" East, 106.21 feet to a point;

thence, South 25° 31' 34" East, 92.32 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 18° 24' 27", having a radius of 630.00 feet, and whose long chord bears South 16° 19' 20" East, 201.53 feet to a point;

thence, South 07° 07' 07" East, 154.50 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 40° 41' 00", having a radius of 330.00 feet, and whose long chord bears South 13° 13' 24" West, 229.43 feet to a point;

thence, South 33° 33' 54" West, 446.15 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 58° 09' 21", having a radius of 570.00 feet, and whose long chord bears South 04° 29' 13" West, 554.04 feet to a point;

thence, South 24° 35' 28" East, 32.15 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 72° 31' 51", having a radius of 320.00 feet, and whose long chord bears South 60° 51' 23" East, 378.58 feet to a point;

thence, North 82° 52' 41" East, 544.94 feet to a point;

thence, South 23° 16' 30" East, 939.13 feet to a point;

thence, North 89° 35' 28" West, 65.52 feet to a point;

thence, North 23° 16' 30" West, 867.73 feet to a point;

thence, South 82° 52' 41" West, 499.85 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 72° 31' 51", having a radius of 380.00 feet, and whose long chord bears North 60° 51' 23" West, 449.56 feet to a point;

thence, North 24° 35' 28" West, 32.15 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 58° 09' 21", having a radius of 630.00 feet, and whose long chord bears North 04° 29' 13" East, 612.36 feet to a point;

thence, North 33° 33' 54" East, 446.15 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 40° 41' 00", having a radius of 270.00 feet, and whose long chord bears North 13° 13' 24" East, 187.71 feet to a point;

thence, North 07° 07' 07" West, 51.46 feet to point "D";

thence, North 07° 07' 07" West, 60.00 feet to a point;

thence, North 07° 07' 07" West, 43.04 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 18° 24' 27", having a radius of 570.00 feet, and whose long chord bears North 16° 19' 20" West, 182.34 feet to a point;

thence, North 25° 31' 34" West, 92.32 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 10° 41' 30", having a radius of 630.00 feet, and whose long chord bears North 20° 10' 49" West, 117.39 feet to a point;

thence, North 14° 50' 03" West, 210.99 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 90° 26' 52", having a radius of 130.00 feet, and whose long chord bears North 30° 23' 23" East, 184.57 feet to a point;

thence, North 75° 36' 49" East, 70.15 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 11° 26' 23", having a radius of 570.00 feet, and whose long chord bears North 69° 53' 37" East, 113.62 feet to a point;

thence, North 64° 10' 25" East, 722.40 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 05° 14' 59", having a radius of 2970.00 feet, and whose long chord bears North 61° 32' 55" East, 272.04 feet to a point;

thence, North 58° 55' 26" East, 336.63 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 01° 47' 09", having a radius of 5030.00 feet, and whose long chord bears North 59° 49' 00" East, 156.78 feet to a point;

thence North 60° 42' 35" East a distance of 1258.49 feet to the True Point of Beginning;

Containing 9.66 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 6

A 60 foot wide strip of land situated in a portion of Section 21, 22 and 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence South 19°01'57" East, 8489.96 feet to point "D", also the True Point of Beginning;

thence, South 82° 19' 24" West, 428.44 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 09° 34' 32", having a radius of 1530.00 feet, and whose long chord bears South 87° 06' 40" West, 255.40 feet to a point;

thence, North 88° 06' 04" West, 244.93 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 48° 45' 42", having a radius of 230.00 feet, and whose long chord bears North 63° 43' 13" West, 189.89 feet to a point;

thence, North 39° 20' 22" West, 1640.14 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 54° 43' 02", having a radius of 2080.00 feet, and whose long chord bears North 11° 58' 50" West, 1911.77 feet to a point;

thence, North 15° 22' 41" East, 83.75 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 21° 46' 24", having a radius of 830.00 feet, and whose long chord bears North 26° 15' 53" East, 313.52 feet to a point;

thence, North 37° 09' 05" East, 283.58 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 14° 12' 50", having a radius of 6530.00 feet, and whose long chord bears North 44° 15' 31" East, 1615.82 feet to a point;

thence, North 51° 21' 56" East, 394.79 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 10° 58' 36", having a radius of 2030.00 feet, and whose long chord bears North 56° 51' 14" East, 388.31 feet to a point;

thence, North 62° 20' 32" East, 1852.06 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 66° 14' 41", having a radius of 1108.46 feet, and whose long chord bears South 62° 27' 42" East, 1211.39 feet to a point;

thence, North 84° 24' 57" East, 165.12 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 09° 40' 44", having a radius of 970.00 feet, and whose long chord bears North 79° 34' 35" East, 163.67 feet to a point;

thence, North 74° 44' 12" East, 308.51 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 26° 02' 22", having a radius of 2207.56 feet, and whose long chord bears North 61° 43' 01" East, 994.68 feet to a point;

thence, North 48° 41' 50" East, 366.49 feet to point "C", also the beginning of a curve;

thence, along a curve to the left through an angle of 10° 39' 39", having a radius of 330.00 feet, and whose long chord bears South 29° 25' 01" East, 61.31 feet to a point;

thence, South 48° 41' 50" West, 353.86 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 26° 02' 22", having a radius of 2267.56 feet, and whose long chord bears South 61° 43' 01" West, 1021.71 feet to a point;

thence, South 74° 44' 12" West, 308.51 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 09° 40' 44", having a radius of 1030.00 feet, and whose long chord bears South 79° 34' 35" West, 173.79 feet to a point;

thence, South 84° 24' 57" West, 165.12 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 63° 23' 04", having a radius of 1168.46 feet, and whose long chord bears North 63° 53' 31" West, 1227.72 feet to a point;

thence, South 62° 20' 32" West, 1795.25 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 10° 58' 36", having a radius of 1970.00 feet, and whose long chord bears South 56° 51' 14" West, 376.84 feet to a point;

thence, South 51° 21' 56" West, 394.79 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 14° 12' 50", having a radius of 6470.00 feet, and whose long chord bears South 44° 15' 31" West, 1600.98 feet to a point;

thence, South 37° 09' 05" West, 283.58 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 21° 46' 24", having a radius of 770.00 feet, and whose long chord bears South 26° 15' 53" West, 290.86 feet to a point;

thence, South 15° 22' 41" West, 83.75 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 54° 43' 02", having a radius of 2020.00 feet, and whose long chord bears South 11° 58' 50" East, 1856.62 feet to a point;

thence, South 39° 20' 22" East, 1640.14 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 48° 45' 42", having a radius of 170.00 feet, and whose long chord bears South 63° 43' 13" East, 140.35 feet to a point;

thence, South 88° 06' 04" East, 244.93 feet to the beginning of a curve,
thence, along a curve to the left through an angle of 09° 34' 32", having a radius of 1470.00 feet, and whose long chord bears North 87° 06' 40" East, 245.39 feet to a point;

thence, North 82° 19' 24" East, 429.02 feet to a point on a line.

thence South 07° 07' 07" East a distance of 60.00 feet to point "D" and the True Point of Beginning;

Containing 17.75 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 7

A 60 foot wide strip of land situated in a portion of Section 13, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 79°34'27" West, 12034.04 feet to the True Point of Beginning;

thence, South 43° 25' 25" West, 70.13 feet to a point;

thence, North 77° 45' 18" West, 205.02 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 25° 26' 14", having a radius of 320.00 feet, and whose long chord bears South 89° 31' 35" West, 140.90 feet to a point;

thence, South 76° 48' 28" West, 250.44 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 08° 46' 10", having a radius of 320.00 feet, and whose long chord bears South 72° 25' 23" West, 48.93 feet to a point;

thence, South 68° 02' 18" West, 109.46 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 24° 42' 20", having a radius of 330.00 feet, and whose long chord bears South 80° 23' 28" West, 141.20 feet to a point;

thence, North 87° 15' 21" West, 239.43 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 06° 45' 19", having a radius of 3030.00 feet, and whose long chord bears North 83° 52' 41" West, 357.04 feet to a point;

thence, North 80° 30' 02" West, 431.96 feet to a point;

thence, North 32° 22' 11" West, 80.57 feet to a point;

thence, South 80° 30' 02" East, 485.73 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 06° 45' 19", having a radius of 2970.00 feet, and whose long chord bears South 83° 52' 41" East, 349.97 feet to a point;

thence, South 87° 15' 21" East, 239.43 feet to the beginning of a curve;

thence, along a curve to the left through an angle of 24° 42' 20", having a radius of 270.00 feet, and whose long chord bears North 80° 23' 28" East, 115.52 feet to a point;

thence, North 68° 02' 18" East, 109.46 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 08° 46' 10", having a radius of 380.00 feet, and whose long chord bears North 72° 25' 23" East, 58.10 feet to a point;

thence, North 76° 48' 28" East, 250.44 feet to the beginning of a curve;

thence, along a curve to the right through an angle of 25° 26' 14", having a radius of 380.00 feet, and whose long chord bears North 89° 31' 35" East, 167.32 feet to a point;

thence South 77° 45' 18" East, 241.33 feet to the True Point of Beginning;

Containing 2.72 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 8

A 60 foot wide strip of land situated in a portion of Section 18 and 19, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 74°35'55" West, 6791.07 feet to the True Point of Beginning;

1. thence South 30° 04' 58" East, 232.42 feet to the beginning of a curve;

2. thence, along a curve to the right through an angle of 24° 49' 30", having a radius of 530.00 feet, and whose long chord bears South 17° 40' 13" East, 227.85 feet to a point;

3. thence South 05° 15' 28" East, 114.49 feet to the beginning of a curve,
4. thence, along a curve to the left through an angle of 06° 53' 43", having a radius of 470.00 feet, and whose long chord bears South 08° 42' 20" East, 56.53 feet to a point;

5. thence South 12° 09' 12" East, 713.78 feet to the beginning of a curve,
6. thence, along a curve to the left through an angle of 06° 11' 31", having a radius of 1970.00 feet, and whose long chord bears South 15° 14' 58" East, 212.80 feet to a point;

7. thence South 18° 20' 43" East, 315.02 feet to a point;

8. thence South 89° 51' 42" East, 619.88 feet to a point;

9. thence South 00° 02' 59" West, 546.97 feet to a point;

10. thence North 88° 12' 36" West, 60.03 feet to a point;

11. thence North 00° 02' 59" East, 485.24 feet to a point;

12. thence North 89° 51' 42" West, 603.18 feet to a point;

13. thence North 18° 20' 43" West, 358.23 feet to the beginning of a curve;

14. thence, along a curve to the right through an angle of 06° 11' 31", having a radius of 2030.00 feet, and whose long chord bears North 15° 14' 58" West, 219.28 feet to a point;

15. thence North 12° 09' 12" West, 713.78 feet to the beginning of a curve;

16. thence, along a curve to the right through an angle of 06° 53' 43", having a radius of 530.00 feet, and whose long chord bears North 08° 42' 20" West, 63.75 feet to a point;

17. thence North 05° 15' 28" West, 114.49 feet to the beginning of a curve,
18. thence, along a curve to the left through an angle of 24° 49' 30", having a radius of 470.00 feet, and whose long chord bears North 17° 40' 13" West, 202.05 feet to a point;

19. thence North 30° 04' 58" West, 258.18 feet to a point;

20. thence North 83° 08' 48" East a distance of 65.29 feet to the True Point of Beginning;

Containing 4.17 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

PROPERTY DESCRIPTION OF: WM-LJ2 ROAD 8

A 60 foot wide strip of land situated in a portion of Section 18 and 19, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 74°35'55" West, 6791.07 feet to the True Point of Beginning;

1. thence South 30° 04' 58" East, 232.42 feet to the beginning of a curve;

2. thence, along a curve to the right through an angle of 24° 49' 30", having a radius of 530.00 feet, and whose long chord bears South 17° 40' 13" East, 227.85 feet to a point;

3. thence South 05° 15' 28" East, 114.49 feet to the beginning of a curve,
4. thence, along a curve to the left through an angle of 06° 53' 43", having a radius of 470.00 feet, and whose long chord bears South 08° 42' 20" East, 56.53 feet to a point;

5. thence South 12° 09' 12" East, 713.78 feet to the beginning of a curve,
6. thence, along a curve to the left through an angle of 06° 11' 31", having a radius of 1970.00 feet, and whose long chord bears South 15° 14' 58" East, 212.80 feet to a point;

7. thence South 18° 20' 43" East, 315.02 feet to a point;

8. thence South 89° 51' 42" East, 619.88 feet to a point;

9. thence South 00° 02' 59" West, 546.97 feet to a point;

10. thence North 88° 12' 36" West, 60.03 feet to a point;

11. thence North 00° 02' 59" East, 485.24 feet to a point;

12. thence North 89° 51' 42" West, 603.18 feet to a point;

13. thence North 18° 20' 43" West, 358.23 feet to the beginning of a curve;

14. thence, along a curve to the right through an angle of 06° 11' 31", having a radius of 2030.00 feet, and whose long chord bears North 15° 14' 58" West, 219.28 feet to a point;

15. thence North 12° 09' 12" West, 713.78 feet to the beginning of a curve;

16. thence, along a curve to the right through an angle of 06° 53' 43", having a radius of 530.00 feet, and whose long chord bears North 08° 42' 20" West, 63.75 feet to a point;

17. thence North 05° 15' 28" West, 114.49 feet to the beginning of a curve,
18. thence, along a curve to the left through an angle of 24° 49' 30", having a radius of 470.00 feet, and whose long chord bears North 17° 40' 13" West, 202.05 feet to a point;

19. thence North 30° 04' 58" West, 258.18 feet to a point;

20. thence North 83° 08' 48" East a distance of 65.29 feet to the True Point of Beginning;

Containing 4.17 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

EXHIBIT A

PROPERTY DESCRIPTION OF: WM-LJ2 TRANS-LINE

A 200 foot wide strip of land situated in a portion of Section 8, 9, 16, 17, 21, 27 and 28, Township 2 North, Range 21 East of the Willamette Meridian, Gilliam County, Oregon, being a portion of that tract of land conveyed in the deed recorded as Document M-68-236, Gilliam County, Oregon more particularly described as follows:

Commencing at the common corner of Sections 17, 16, 20, and 21 of Township 2 South, Range 21 East, said point being a found brass disc;

thence North 07°48'05" West, 7999.91 feet to the True Point of Beginning;

thence South 25° 17' 35" East, 15090.82 feet to a point;

thence North 88° 12' 37" West, 112.32 feet to a point;

thence South 00° 06' 18" West, 233.15 feet to a point;

thence North 25° 17' 35" West, 15339.18 feet to a point;

thence North 88° 40' 04" East a distance of 218.86 feet to the True Point of Beginning;

Containing 69.56 acres more or less

Basis of Bearing is the Oregon state plane coordinate system (Oregon north zone) NAD 1983. All distances shown are grid. To convert grid distance to ground distance, multiply by scale factor 1.0001519.

APPENDIX B, ATTACHMENT 4

NPDES Permit Application with Erosion and Sediment Control Plan

CH2M HILL
2020 SW 4th Avenue
Suite 300
Portland, OR 97201-4953
Tel 503.235.5000
Fax 503.736.2000

February 23, 2007

Jackie Ray, Permit Coordinator
Department of Environmental Quality
700 S.E. Emigrant, Suite 330
Pendleton, OR 97801

Subject: 1200-C NPDES Permit Application for the Leaning Juniper II Wind Power Facility

Dear Ms. Ray:

Enclosed please find the application for a 1200-C NPDES General Stormwater Permit for the proposed wind energy project. The project involves development of the Leaning Juniper II Wind Power Facility, a wind energy generation project with a generating capacity of up to 279 megawatts (MW) of electricity in Gilliam County, Oregon. The project is adjacent to but distinct from the existing Leaning Juniper I project, which was permitted under NPDES file number 113-589.

Also enclosed are the erosion and sediment control plans for the Leaning Juniper II project.

This NPDES application is being submitted for a project undergoing review by the Oregon Energy Facility Siting Council (EFSC). Pursuant to ORS 469.378, EFSC projects do not require a Land Use Compatibility Statement (LUCS). Instead, DEQ is directed to commence its review without the LUCS, and to condition any appoval of the NPDES application on a determination by EFSC that the project satisfies the requirements of ORS 197.180. If you have any questions about this issue, please contact John White, the EFSC project officer for Leaning Juniper Wind Power II, LLC. His phone number is (503) 378-4040.

Please call (503) 872-4442 or e-mail erin.toelke@ch2m.com if you have any questions regarding the application and supporting materials.

Sincerely,

CH2M HILL

Erin E. Toelke

Erin Toelke

NPDES #1200-C Permit Application Form

Oregon Department of Environmental Quality
APPLICATION FOR NEW NPDES GENERAL PERMIT #1200-C
For stormwater discharges to surface waters from construction activities disturbing 1 acre or more.

Please answer all questions. No line may be left blank. An incomplete application will not be processed and will be returned. If the information requested is not applicable or not yet available, please indicate as such.

A. PROJECT INFORMATION

1. Leaning Juniper Wind Power II, LLC
Applicant (Owner, Developer, or General Contractor)

Andy Linehan
Contact Name

1125 NW Couch Street, Suite 700
Address

Portland | OR | 97209
City | State | ZIP

503-796-6955 | Andy.Linehan@ppmenergy.com
Telephone | E-Mail Address

2. If fee invoicing is different than Applicant, provide contact info:

Invoice Name

Address

City | State | Zip

Telephone | E-Mail Address

3. CH2M HILL
Architect/Engineering Firm (Erosion & Sediment Control Plan)

Erin Toelke
Project Manager

503-872-4442 | Erin.Toelke@ch2m.com
Telephone | E-Mail Address

4. PPM Energy
Applicant's Designated Erosion and Sediment Control Inspector

Billy Byrnes, PPM Construction Director
Contact Name

541-883-3118 | William.Byrnes@ppmenergy.com
Telephone | E-Mail Address

5. Leaning Juniper II Wind Power Facility
Name of Project

Address or Cross Street

1 mi S of Arlington | OR |
City | State | Zip

Gilliam
County

6. Nature of the Construction Activity

- ☐ Single Family (SIC Code 1521)
- ☐ Multi-Family Residential (SIC Code 1522)
- ☐ Commercial (SIC Code 1542)
- ☐ Industrial (SIC Code 1541)
- ☐ Highway (SIC Code 1611)
- ☒ Utilities (SIC Code 1623): Transmission lines
- ☒ Other: Wind energy facility (turbines and supporting facilities)

7. Site Location by Latitude and Longitude:

Latitude: 45 (Degrees) / 65 (Minutes) / 64.78 (Seconds)
Longitude: 120 (Degrees) / 24 (Minutes) / 78.59 (Seconds)

8. Project Size:

Total Site Acreage (acres): 8,565 acres

Total Construction Area (acres): 732 temp; 67 perm.

Disturbed Area for this phase, if multiple phases: 732 temp; 67 perm.

Total Number of Lots: 16

DEQ USE ONLY

App. #: _____ File #: _____ LLID #: _____ River Mile: _____
Date Received: _____ Amount: _____ Check Name: _____
Check #: _____ Deposit #: _____ Receipt #: _____ Legal Name Confirmed: ☐

A. PROJECT INFORMATION Continued

9. Runoff from proposed construction activities goes to:
   - ☒ Creek/Stream:
   - ☐ Municipal Storm Sewer or Drainage System
   - ☐ Infiltration device
   - ☒ Ditch: _____
   - ☒ Other: Sheet flow

10. ☐ Proposed site runoff discharges directly to, or into a storm sewer or drainage system that discharges to, a Total Maximum Daily Load (TMDL) or 303(d) listed water body for turbidity or sedimentation *(if applicable)*.

B. LAND USE COMPATIBILITY STATEMENT

Attach the *original* and complete Land Use Compatibility Statement (LUCS) signed by the local land use authority. The application will not be processed unless the local land use authority approves it and it meets statewide planning goals. (See Attachment C for the LUCS statement)

C. SIGNATURE OF LEGALLY AUTHORIZED REPRESENTATIVE

The legally authorized representative *must* sign the application. The following are authorized to sign the document:

- **Corporation** — president, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million that is assigned or delegated in accordance to corporate procedure to sign such documents
- **Partnership** — General partner
- **Sole Proprietorship** — Owner. If more than one person is the sole proprietor, each person must sign the form.
- **City, County, State, Federal, or other Public Facility** — Principal executive officer or ranking elected official
- **Limited Liability Company** — Member
- **Trusts**— Acting trustee

Please see 40 CFR 122.22 for more detail, if needed.

I hereby certify that the information contained in this application is true and correct to the best of my knowledge and belief. In addition, I agree to pay all permit fees required by Oregon Administrative Rules 340-045. This includes a renewal application fee to renew the permit and a compliance determination fee invoiced annually by DEQ to maintain the permit.

Andy Linehan	Wind Permitting Director
Name of Legally Authorized Representative (Type or Print)	**Title**
[signature]	2/23/07
Signature of Legally Authorized Representative	**Date**

In order to authorize permit registration, the following must be completed and submitted to DEQ office listed below or to a DEQ Agent (see Attachment A for list of Agents):

- ☒ Signed Application form.
- ☒ Land Use Compatibility Statement with signature of the local land use authority
- ☒ Stormwater Erosion and Sediment Control Plan Narrative
- ☒ Stormwater Erosion and Sediment Control Plan Drawings
- ☒ $771 fee (includes $380 for new permit application and $391 for first year annual fee) to the appropriate DEQ regional office and make the check payable to DEQ of Environmental Quality. If you are sending your application to a DEQ Agent, check with the DEQ Agent for the appropriate fees and make check payable to the DEQ Agent.

DEQ Northwest Region	**DEQ Western Region**	**DEQ Eastern Region**
2020 SW 4th Ave., Suite 400	750 Front St. NE, Suite 120	700 SE Emigrant, Suite 330
Portland, OR 97201-4987	Salem, OR 97301-1039	Pendleton, OR 97801
503-229-5263 or 1-800-452-4011	503-378-8240 or 1-800-349-7677	541-276-4063 or 1-800-452-4011

DEQ AGENT

(Note: See Table A-2 for appropriate local Agent contact information.)

Part I: ESCP Narrative Form

ESCP PARTS I - III FORMS AND SET OF EXAMPLE DRAWINGS

The information that is required in ***Part I, ESCP Narrative Form*** could also be included on the required ***ESCP Drawings in Part III***. However, all of the BMPs selected for your project in ***Part II, BMPs with Rationale and ESCP Implementation Schedule Form*** must be included on the required ***ESCP Drawings in Part III***. All of the information in both ***Part III. 1., Information Required on ESCP Drawings*** and ***Part III. 2. Required ESCP Drawing Standard Notes*** must be included on the ***ESCP Drawings***. The set of ***ESCP Drawings*** are provided as an example to help you prepare your project specific drawings.

If an applicant only submits the ***ESCP Drawings***, all information in Parts I – III must be included on the drawings including a rationale for the BMPs in Part II that were not selected for your project.

PART I: ESCP NARRATIVE FORM

1. Permit Registration Information

Date: February 23, 2007

Project Name: Leaning Juniper II Wind Power Facility

Prepared By: Erin Toelke

Company Name: CH2M HILL

E-mail Address: Erin.Toelke@ch2m.com

Please answer the following questions as indicated. If needed, additional space is provided for you at the end of this form. You may also attach any information you feel is pertinent to the project.

2. **Oregon Registered Professional Engineer Information and Stamp (for projects over 20 acres)**

Is your Erosion and Sediment Control Plan (ESCP) for an activity that covers 20 acres or more of disturbed land? (Schedule A.4.b.i)

☒ YES ☐ NO

Does your Erosion and Sediment Control Plan require engineered facilities such as settling basins and/or diversion structures? (Schedule A.4.b.ii)

☐ YES ☒ NO

If you answered "YES" to question #1 or #2 the plan must be prepared by an Oregon Registered Professional Engineer, Oregon Registered Landscape Architect, or Certified Professional in Erosion and Sediment Control (Soil and Water Conservation Society). Please provide the following information and use the space provided to imprint your seal.

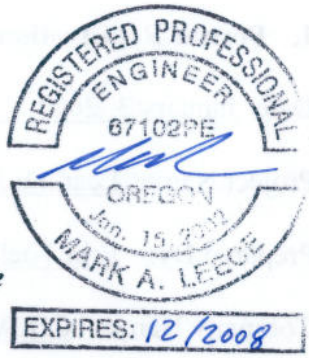
Name: Mark Leece

Address: 2020 SW 4th

Portland, OR 97201

Telephone: 503.8736.4242

Imprint Seal Above



3. **Inspector Qualifications Information**

Provide the following information on the Erosion and Sediment Control Inspector. This is a person that works for the applicant and not a government employee. If the inspector has not been selected yet, please provide the name of the consultant, general contractor, project manager, or person who prepared the ESCP. Upon designating an inspector(s), submit to DEQ or Agent an Action Plan, which is an addendum to the ESCP, that identifies their name(s), contact information and training and experience as required in (Schedule A.6.b.i-ii) of the permit.

The inspector is a person with training and experience in erosion prevention and sediment controls and best management practices and should have one of the following levels of skill. A copy of a certification, training, or level/hours of experience should be provided to DEQ or Agent in the form below:

a. Certified Professional in Erosion and Sediment Control (CPESC); or

b. Washington Department of Ecology's Contractor Erosion and Spill Control Lead (CESCL) Certification; or

c. An alternative, certification/training program designed for persons involved in any phase of erosion and sediment control work. Areas covered must include information on soils, the erosion process, sedimentation process, standards and specifications for vegetative and structural erosion

control practices, laws, regulations, construction inspection and field investigation requirements experience; or

d. Have at least 200 hours of on the job experience associated with installation, maintenance, and monitoring of erosion and sediment control work as outlined in #3 above.

Name: Bill Byrnes, PPM Construction Director Telephone: 541-883-3118

Address: PPM Energy, 4940 Hwy 97 S, Klamath Falls, OR 97603

E-Mail: William.Byrnes@ppmenergy.com

Certification: _____

Training: _____

Experience: Mr. Byrnes has over 30 years of experience in construction management. His projects include wind energy projects and non-renewable energy projects. Responsibilities have included development of plans and specifications packages, including erosion and sediment control plans and specifications; management and oversight of construction subcontractors to ensure conformance with the Plans and Specifications, including erosion and sediment control monitoring and inspection. Other responsibilities include: development of contingency plans during the construction season to address any changes to site BMPs needed to more effectively manage runoff and sediment control, and inspection of sites during the winter off-season to assess permanent erosion and sediment control measures.

4. Local Government Requirements

The ESCP must include any procedures necessary to meet applicable local government erosion and sediment control or stormwater management requirements and should include updates to the ESCP as necessary to reflect any revisions to applicable local requirements for soil and erosion control. (Schedule A.6.a)

Is the project located within a city, town, county or service district that has a local erosion and sediment control or stormwater ordinance or development standards that require the development of and implementation of an erosion and sediment control plan?

☐ YES ☒ NO

5. Narrative Site Description

a. Describe the nature of the construction activity and the final use of the site (Schedule A.6.c.i):

Leaning Juniper Wind Power II, LLC (the Applicant) proposes to construct a wind generation facility in Gilliam County, Oregon, with generating capacity of up to approximately 279 megawatts (MW). The Leaning Juniper II Wind Power Facility (the Facility) consists of two main components: (1) Leaning Juniper II North (the north portion of the Facility with up to 93 MW), and (2) Leaning Juniper II South (the south portion of the Facility with up to 186 MW). Up to 133 turbines will be located at the Facility site, depending on the final turbine size and vendor. The Facility is expected to provide up to 279 MW and 93 average megawatts (aMW) of energy.

Construction would involve the following tasks:

- Constructing roads, excavating for turbine transformer foundations, and leveling areas for setting the erection crane
- Performing dust and erosion control
- Pouring foundations for wind turbine and anemometer tower
- Trenching for underground utilities
- Placing underground electrical and communications cables in trenches
- Transporting tower sections to the site and erecting the towers
- Installing the nacelle and rotor on the wind turbine tower
- Constructing the project substation and switching station
- Constructing the maintenance building
- Commissioning and testing wind turbines
- Conducting final road grading, final erosion control, and site cleanup

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b. Describe the origin and nature of fill material to be used (Schedule A.6.c.iii):

All fill material will be obtained from the site or from a local gravel quarry as needed. The fill from the site includes compacted loess soil and fractured rock.

---

c. Describe the soils present on the site and erosion potential of the soils (Schedule A.6.c.iii):

1) Soil type(s): _____

The near-surface soils at the Facility site and vicinity were identified using the Natural Resources Conservation Service (NRCS) Soil Survey of Gilliam County, Oregon. The Soil Survey includes both general and detailed maps and descriptions of the major soil types (general soil units) and specific soil series that make up the soils of Gilliam County and the Facility area. Descriptions of the general soil units that underlie the Facility area are provided below.

Krebs—The Krebs series consists of deep, well-drained soils that formed in loess and old water lain sediments. The surface layer is grayish brown silty clay loam about 5 to 6 inches thick. Subsurface layers consist of grayish, dark and very dark grayish, brown, brown and pale brown and very pale brown silty clay loam terminating in a white or pale brown partially decomposed diatomite at 48 inches. Krebs soils are on uplands at elevations of 500

to 900 feet with slopes of 2 to 40 percent. They are well drained with medium to rapid runoff and slow permeability. The principle use is range. Native vegetation is needle-and-thread and bluebunch wheatgrass.

Olex—The Olex series consists of very deep, well-drained soils that formed in loess and very gravelly alluvial material. The surface layer is a brown to dark brown silt loam about 12 inches thick. Subsurface layers are brown and dark brown gravelly and extremely gravelly silt loam to 60 inches thick. The Olex soils are on uplands including terraces and terrace escarpments. Elevations are 300 to 1,100 feet. Slopes are 0 to 65 percent. They are well drained with slow runoff and moderate permeability. These soils are used primarily for livestock grazing. Other uses are wildlife and water supply purposes. Vegetation is mainly bunchgrass, forbs, and shrubs.

Ritzville—The Ritzville series consists of very deep and deep to duripan, well-drained soils formed in loess. They have a small amount, less than 20 percent, of volcanic ash in the surface layer. Ritzville soils are on uplands including plateaus, benches, and canyon side slopes. Elevations are 800 to 3,000 feet. Slopes range from 0 to 70 percent. Typically, the surface layer is brown silt loam and the subsoil is brown and pale brown silt loam. The substratum to a depth of 60 inches or more is pale brown silt loam. In some areas, depth to basalt ranges from 40 to 60 inches. Permeability of the Ritzville soil is moderate with medium runoff. Ritzville soils are used for dryland wheat production and some livestock grazing. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass, Wyoming big sagebrush, and yarrow.

Sagehill—The Sagehill series consists of very deep and deep, well-drained soils formed in lacustrine deposits with a mantle of loess or eolian deposits. The surface layer is a brown to dark brown very fine sandy loam. Subsurface layers are brown, dark, pale and light brownish gray silt and very fine sandy loam to 60 inches thick. Sagehill soils are on terraces and terrace escarpments at elevations of 400 to 2,600 feet in Oregon. Slopes are 0 to 60 percent. These soils are well drained with very slow to medium runoff and moderate permeability. Sagehill soils are used for dryland wheat and rye production, livestock grazing, and irrigated crop production. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass, Thurber needlegrass, needle-and-thread, Wyoming big sagebrush.

Warden—The Warden series consists of very deep and deep, well-drained soils formed in a thin mantle of loess over lacustrine sediments. Warden soils are on terraces and terrace escarpments at elevations of 500 to 1,300 feet. Slopes are 0 to 65 percent. The surface layer is light brownish gray, very fine sandy loam grading to light gray silt loam at a depth of 60 inches. Warden soils are well drained with very slow to rapid runoff and moderate permeability. Warden soils are used for irrigated cropland, livestock grazing, and some dryland cropland. Dryland crops are wheat and rye in a summer fallow system. Irrigated crops include wheat, grass legume hay, potatoes, dry beans, dry peas, tree fruit, hops, mint, and vegetables. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass, needle-and-thread, and big sagebrush.

Willis—The Willis series consists of moderately deep to a duripan, well-drained soils formed in loess containing volcanic ash. The surface layer is a grayish brown to very dark grayish brown silt loam to 8 inches thick. Subsurface layers consist of brown, dark brown and dark yellowish brown silt loam to 29 inches thick terminating lime-silica indurated duripan. The Willis soils are on uplands, alluvial fan terraces, and terraces at elevations of 500 to 3,000 feet. Slopes are 0 to 65 percent. These soils are well drained with slow or medium runoff and moderate permeability above the lime-silica cemented layer. Willis soils are used for production of small grains in a dryland winter wheat-summer fallow rotation and for grazing. The native vegetation is mainly bluebunch wheatgrass, Sandberg bluegrass, arrowleaf, balsamroot, yarrow, and big sagebrush.

Other—Other soils identified in the Facility area include Xeric Torrifluvents (very deep, well-drained, and somewhat excessively drained fine sandy loams) and soils associated with Roloff-Rock outcrop complex and Wrentham-Rock outcrop complex.

2) Erosion Potential:

The above-mentioned soils are well-drained, silt loam soils that have formed in loess on hills. The hazard of water erosion is moderate at slopes up to 12 percent and high at slopes greater than 12 percent. The hazard of wind erosion is moderate.

6. 303(d)/TMDL Requirements: Selected Option Description (Starts Oct. 1, 2006)

Effective October 1, 2006, there are more stringent requirements for construction projects that have the potential to discharge sediment or turbid water into water bodies that are listed for turbidity or sedimentation on the most recently EPA-approved Oregon 303(d) list or that have an established Total Maximum Daily Load (TMDL) for sedimentation or turbidity, (go to DEQ website for a map and list: http://www.deq.state.or.us/wq/stormwater/docs/tmdl303dsedturblist.pdf. Currently, this will directly affect 1% of the total universe of 1200-C permit registrants. Of the active 1200-C permitted sites affected by these requirements, nearly all of them are located in the Eagle Point area of Jackson County (Eagle Point is located adjacent to a Little Butte Creek, which is on the 303(d) list for sedimentation). **(Schedule A.2.)**

If your project is located within a 303(d)/TMDL listed watershed listed for sedimentation or turbidity, an applicant is required to indicate which option is chosen to be implemented:

- ☐ **<u>Option #1:</u> Will collect and analyze samples for turbidity in stormwater runoff from the construction site and compare the results to the benchmark value of 160 Nephelometric Turbidity Units (NTUs).** If any stormwater sample exceeds the benchmark, then the permit registrant must evaluate the best management practices (BMPs) and the adequacy of the ESCP and take corrective actions. If after such actions have been implemented and sample results still exceed the 160 NTU benchmark, the requirements of Option #2 below must be followed, and the permit registrant must submit an Action Plan to DEQ identifying the selected BMP(s) that will be implemented and the rationale for choosing the selected BMP(s).

- ☐ **<u>Option #2:</u> Will implement one or more of the following BMPs to control and treat sediment and turbidity:**
    - **i. Compost berms, compost blankets, or compost socks;**
    - **ii. Erosion control mats (rolled or blown);**
    - **iii. Tackifiers used in combination with perimeter sediment control BMPs;**
    - **iv. Established vegetated buffers sized at 50 feet plus 25 feet per 5 degrees of slope;**
    - **v. Water treatment by electro-coagulation, chemical flocculation, filtration; or**
    - **vi. Other substantially equivalent sediment or turbidity BMP approved by DEQ.**

The selected BMP(s) must be specifically identified in the ESCP as addressing this condition of the permit, and the rationale for choosing the selected BMP(s) must be provided.

Part II: BMP Table with Rationale and Schedule

Please refer to the Erosion and Sediment Control Drawings in Part III.

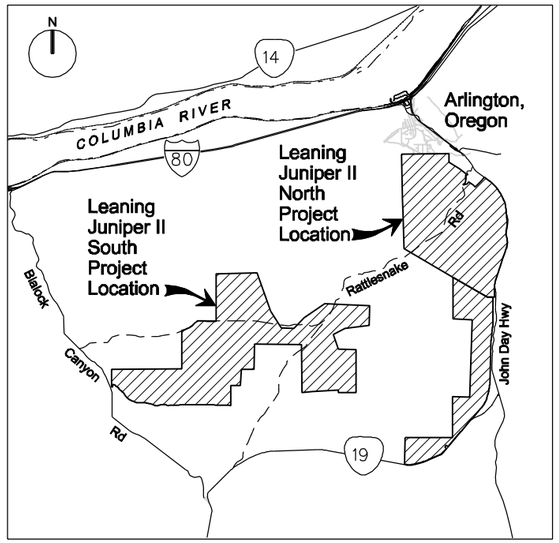
Part III: Erosion and Sediment Control Plan Drawings

PART III: REQUIRED ELEMENTS of ESCP DRAWINGS

1. Information Required on ESCP Drawings

INFORMATION REQUIRED ON ESCP DRAWINGS	YES	NO	NOT APPL.*
a. Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones and vegetation areas to be preserved. (Sch. A.5.b.i.(1))	X		
b. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Schedule A.5.b.i.(2))	X		
c. Site access areas (graveled and paved construction entrances, exits, roadways, equipment parking areas, etc.). (Schedule A.5.b.ii.(1))	X		
d. Location of any proposed fuel storage and fuel areas and other hazard materials and wastes including concrete truck and other concrete equipment washout areas and other non-stormwater controls prior to start of construction activities. (Schedule A.5.b.ii.(3))	X		
e. Identify soil types including erosion potential. (Schedule A.6.c.iii)	X		
f. Site location map. The site map must show sufficient roads and features to locate and access the site. (Can be separate from drawings.) (Schedule A.6.d.ii)	X		
g. Total property boundary including surface area of development. (Schedule A.6.d.iii)	X		
h. Location, size, and type of all soil disturbances (including, but not limited to, cut and fill areas and pre and post development elevation contours). (Schedule A.6.d.iv)	X		
i. Drainage patterns of pre- and post-development are clearly indicated by contours or drainage flow direction-arrows. (Schedule A.6.d.v)	X		
j. Location, size, and type of stormwater discharge points to receiving water(s) or stormwater conveyance systems. (Schedule A.6.d.vi) & (Schedule A.6.d.xiii)			X
k. Location of areas used for the storage of soils or wastes. (Schedule A.6.d.vii)	X		
l. Location of areas where vegetative erosion control practices are to be implemented. (Schedule A.6.d.viii)	X		
m. Location of all erosion and sediment control measures or structures. (Schedule A.6.d.ix)	X		
n. Location of impervious structures post-construction (Include buildings, roads, parking lots, outdoor storage areas, etc., as applicable.). (Schedule A.6.d.x)	X		
o. Location of springs, wetlands and other surface waters adjacent to and on-site. (Schedule A.6.d.xi)	X		
p. Boundaries of 100-year floodplains if determined and easily available. (Schedule A.6.d.xii)			X
q. Location of stormwater discharge points to receiving water(s) or stormwater conveyance systems if applicable. (Schedule A.6.d.xiii)			X
r. Location of storm drain catch basins and the location of catch basins with inlet protection and a description of the type of catch basins used (e.g., curb inlet, field inlet, grated drain, combination, etc.). (Sch. A.6.d.xiv)			X
s. Location of septic drain fields. (Schedule A.6.d.xv)			X
t. Location of existing or proposed drywells or other UICs. (Schedule A.6.d.xvi)			X
u. Location of drinking water wells. (Schedule A.6.d.vii)			X
v. Details of sediment and erosion controls including installation techniques. (Schedule A.6.d.xviii)	X		
w. Details of temporary or permanent sedimentation basins, detention ponds, storm drain piping, inflow and outflow details. (Schedule A.6.d.xix)			X
x. Verify that Standard Drawing Notes are provided on drawing and are correct.	X		

* Not Applicable



VICINITY MAP

1:100,000

PROJECT LOCATION

THE FACILITY IS LOCATED APPROXIMATELY THREE MILES SOUTHWEST OF ARLINGTON, OREGON, IN GILLIAM COUNTY.

DEVELOPER

PPM ENERGY INC.
CONTACT: SARA McMAHON
1125 NW COUCH STREET
PORTLAND, OR 97209
PHONE: 503-796-7732
E-MAIL: SARA.MCMAHON@PPMENERGY.COM

PLANNING FIRM

CH2M HILL
CONTACT: ERIN TOELKE
2020 SW 4TH AVE., 3RD FLOOR
PORTLAND, OR 97201
PHONE: 503-872-4442
FAX: 503-736-2000
E-MAIL: ERIN.TOELKE@CH2M.COM

NARRATIVE DESCRIPTION

THE WIND GENERATION FACILITY CONSISTS OF TWO MAIN COMPONENTS:
(1.) LEANING JUNIPER II NORTH, THE NORTH PORTION OF THE FACILITY WITH UP TO 93 MW, AND
(2.) LEANING JUNIPER II SOUTH, THE SOUTH PORTION OF THE FACILITY WITH UP TO 186 MW.

SOIL TYPES

THE NEAR-SURFACE SOILS AT THE FACILITY SITE AND VICINITY WERE IDENTIFIED USING THE U.S. DEPT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE SOIL SURVEY GEOGRAPHIC (SSURGO) FOR GILLIAM COUNTY, OREGON.

THE SOIL SURVEY INCLUDES BOTH GENERAL AND DETAILED MAPS AND DESCRIPTIONS OF THE MAJOR SOIL TYPES (GENERAL SOIL UNITS) AND SPECIFIC SOIL SERIES THAT MAKE UP THE SOILS OF GILLIAM COUNTY AND THE FACILITY AREA.

SOILS PRESENT IN THE PROJECT AREA INCLUDE BLALOCK LOAM, KREBS SILT LOAM, NANSENE SILT LOAM, OLEX SILT LOAM, OLEX GRAVELY SILT LOAM, RITZVILLE SILT LOAM, SAGEHILL FINE SANDY LOAM, WARDEN SILT LOAM, WILLIS SILT LOAM, AND XERIC TORRIFLUVENTS. THE ROLOFF-ROCK OUTCROP COMPLEX AND THE WRENTHAM-ROCK OUTCROP COMPLEX ARE ALSO LOCATED WITHIN THE PROJECT AREA.

SOILS ARE WELL DRAINED, SILT LOAM SOILS THAT HAVE FORMED IN LOESS ON HILLS. THE HAZARD OF WATER EROSION IS MODERATE AT SLOPES UP TO 12 PERCENT AND HIGH AT SLOPES GREATER THAN 12 PERCENT. THE HAZARD OF WIND EROSION IS MODERATE.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.5.B.I.(3))
2. THE ESCP MUST BE KEPT ONSITE AND ALL EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED IN SUCH A MANNER TO ENSURE THAT SEDIMENT OR SEDIMENT LADEN WATER THAT ENTERS OR IS LIKELY TO ENTER SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATER, ROADWAY, OR OTHER PROPERTIES DOES NOT OCCUR. (SCHEDULE A.3.A.) AND (SCHEDULE B.3.B.)
3. THE IMPLEMENTATION OF THE ESCP AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THE EROSION AND SEDIMENT CONTROL MEASURES IS THE RESPONSIBILITY OF THE PERMIT REGISTRANT UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL DEVELOPMENT AGENCY AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE PERMIT REGISTRANT SHALL BE RESPONSIBLE FOR MAINTENANCE UNTIL THE 1200-C PERMIT IS TERMINATED. (SCHEDULE A.4.A.) AND (SCHEDULE D.3.)
4. THE PERMIT REGISTRANT MUST BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, OR FEDERAL REGULATIONS. (SCHEDULE A.5.A.) AND (SCHEDULE A. 6.A.)
5. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING PERIMETER SEDIMENT CONTROL MUST BE IN PLACE BEFORE VEGETATION IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING PROTECTION FOR ACTIVE STORM DRAIN INLETS AND CATCH BASINS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS. (SCHEDULE A.5.B.II.(2)), (SCHEDULE A.5.B.II.(7)), (SCHEDULE A.7.D.I.(2)) & (SCHEDULE A.7.F.)
6. BEGIN LAND CLEARING, EXCAVATION, TRENCHING, CUTTING OR GRADING AND EARTHWORK-SURFACE ROUGHING AFTER INSTALLING APPLICABLE SEDIMENT, EROSION PREVENTION AND RUNOFF CONTROL MEASURES NOT IN THE DIRECT PATH OF WORK. (SCHEDULE A.5.B.II.(5)(A)), (SCHEDULE A.7.C.I.(1)) AND (SCHEDULE A.7.C.II.(1))
7. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.5.B.II.(5).(B), (SCHEDULE A.5.B.II.(5)(C) & SCHEDULE A.5.B.II.(6).)
8. WET WEATHER BMPS: CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND ON SLOPES GREATER THAN FIVE (5) PERCENT FROM OCTOBER 1 THROUGH MAY 31 EACH YEAR. (SCHEDULE A.7.A.I.)
9. WET WEATHER BMPS: TEMPORARY STABILIZATION OF THE SITE MUST BE INSTALLED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND OR AT THE END OF EACH WORKDAY IF RAINFALL IS FORECAST IN THE NEXT 24 HOURS AND EACH WEEKEND AND HOLIDAY. (SCHEDULE A.7.A.II.)
10. IDENTIFY, MARK, AND PROTECT (BY FENCING OFF OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. PRESERVE EXISTING VEGETATION AND RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. (SCHEDULE A.5.B.I.(1) & (2)) AND (SCHEDULE A.7.C.III.(1))
11. PROVIDE PERMANENT EROSION PREVENTION MEASURES ON ALL EXPOSED AREAS TO PREVENT FROM BECOMING A SOURCE OF EROSION AND REMOVE ALL TEMPORARY CONTROL MEASURES, UNLESS LOCAL ORDINANCES REQUIRE OTHERWISE, AS AREAS ARE STABILIZED. (SCHEDULE A.5.B.II.(8)) AND (SCHEDULE A.7.C.II.(2))
12. ALL TEMPORARY SEDIMENT CONTROLS MUST REMAIN IN PLACE UNTIL PERMANENT VEGETATION OR OTHER PERMANENT COVERING OF EXPOSED SOIL IS ESTABLISHED. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.C.III.(3)) & (SCHEDULE A.7.C.III.(4))
13. SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ALONG THE SITE PERIMETER ON ALL DOWN GRADIENT SIDES OF THE CONSTRUCTION SITE AND AT ALL ACTIVE AND OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION. (SCHEDULE A.7.D.I.(1) - (2))
14. PRIOR TO ANY LAND DISTURBING ACTIVITIES EACH SITE MUST HAVE GRAVELED, PAVED, OR CONSTRUCTED ENTRANCES, EXITS AND PARKING AREAS WITH EXIT TIRE WASH TO REDUCE THE TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS. (SCHEDULE A.7.D.III.(1))
15. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER WATER-TIGHT TRUCKS MUST BE USED OR LOADS MUST BE DRAINED ON-SITE UNTIL DRIPPING HAS BEEN REDUCED TO MINIMIZE SPILLAGE ON ROADS. (SCHEDULE A.7.D.III(3))
16. TEMPORARY STABILIZATION OR COVERING OF SOIL STOCKPILES AND PROTECTION OF STOCKPILE LOCATED AWAY FROM CONSTRUCTION ACTIVITY MUST OCCUR AT THE END OF EACH WORKDAY OR OTHER BMPS, SUCH AS DIVERSION OF UNCONTAMINATED FLOWS AND INSTALLATION OF SEDIMENT FENCES AROUND STOCKPILES, MUST BE IMPLEMENTED TO PREVENT TURBID DISCHARGES TO SURFACE WATERS. (SCHEDULE A.7.E.I.(1)) & (SCHEDULE A.7.E.II.(1) - (3))
17. BMPS THAT WILL BE USED TO PREVENT OR MINIMIZE STORMWATER FROM BEING EXPOSED TO POLLUTANTS FROM SPILLS, NO DISCHARGE OF CONCRETE TRUCK WASH WATER, VEHICLE AND EQUIPMENT CLEANING, VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE, OTHER CLEANING AND MAINTENANCE ACTIVITIES, AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
18. ANY USE OF TOXIC OR OTHER HAZARDOUS MATERIALS MUST INCLUDE PROPER STORAGE, APPLICATION, AND DISPOSAL. (SCHEDULE A.7.E.III.(2))
19. SOLID WASTE AND HAZARDOUS MATERIALS MANAGEMENT. FOLLOW PROJECT WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES; REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY; AND MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, MATERIAL USE, COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A.7.E.III(3))
20. THE PERMITTEE MUST PROPERLY MANAGE HAZARDOUS WASTES, USED OILS, CONTAMINATED SOILS, CONCRETE WASTE, SANITARY WASTE, LIQUID WASTE, OR OTHER TOXIC SUBSTANCES DISCOVERED OR GENERATED DURING CONSTRUCTION AND MEET ALL STATE AND FEDERAL REGULATIONS AND APPROVALS. (SCHEDULE A.7.E.III.(4))
21. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES MUST BE UPGRADED AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS. CHANGES TO THE ESCP MUST ALSO BE SUBMITTED IN THE FORM OF AN ACTION PLAN TO DEQ OR ITS AGENT FOR APPROVAL. (SCHEDULE A.7.F.)
22. SIGNIFICANT AMOUNTS OF SEDIMENT, WHICH LEAVES THE SITE, MUST BE CLEANED UP WITHIN 24 HOURS AND PLACED BACK ON THE SITE AND STABILIZED OR PROPERLY DISPOSED. THE CAUSE OF THE SEDIMENT RELEASE MUST BE FOUND AND PREVENTED FROM CAUSING A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIME FRAME. (SCHEDULE A.7.F.I.(1))
23. VACUUMING OR DRY SWEEPING MUST BE USED TO CLEAN-UP RELEASED SEDIMENT AND MUST NOT BE INTENTIONALLY WASHED INTO STORM SEWERS, DRAINAGE WAYS, OR WATER BODIES. (SCHEDULE A.7.F.I.(2))
24. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. TIME RELEASE FERTILIZERS SHOULD BE USED WITH CARE WITHIN ANY WATER WAY RIPARIAN ZONE. (SCHEDULE A.7.F.I.(3))
25. SEDIMENT MUST BE REMOVED FROM BEHIND A SEDIMENT FENCE WHEN IT HAS REACHED A HEIGHT OF 1/3 THE HEIGHT OF THE FENCE ABOVEGROUND AND BEFORE FENCE REMOVAL. (SCHEDULE A.7.F.II.(1))
26. SEDIMENT MUST BE REMOVED FROM BEHIND BIO BAGS AND OTHER BARRIERS IT HAS REACHED A HEIGHT OF TWO (2) INCHES AND BEFORE BMP REMOVAL. (SCHEDULE A.7.F.II.(2))
27. REMOVAL OF TRAPPED SEDIMENT IN A SEDIMENT BASIN OR SEDIMENT TRAP OR CATCH BASINS MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY (50)% AND AT COMPLETION OF PROJECT. (SCHEDULE A.7.F.II.(3) & (4))
28. DEQ MUST APPROVE OF ANY TREATMENT SYSTEM AND OPERATIONAL PLAN THAT MAY BE NECESSARY TO TREAT CONTAMINATED CONSTRUCTION DEWATERING OR SEDIMENT AND TURBIDITY IN STORMWATER RUNOFF. (SCHEDULE A.7.F.III.)
29. SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR THIRTY DAYS OR MORE, THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD. (SCHEDULE A.8.A.)
30. SHOULD CONSTRUCTION ACTIVITIES CEASE FOR FIFTEEN (15) DAYS OR MORE ON ANY SIGNIFICANT PORTION OF A CONSTRUCTION SITE TEMPORARY STABILIZATION IS REQUIRED FOR THAT PORTION OF THE SITE WITH STRAW, COMPOST, OR OTHER TACKIFIED COVERING THAT PREVENT SOIL OR WIND EROSION UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.8.B.)
31. DAILY INSPECTIONS WHEN RAINFALL AND RUNOFF OCCURS OF THE BMPS AND DISCHARGE OUTFALLS MUST BE THE PROJECT ESCP INSPECTOR. THESE INSPECTIONS AND OBSERVATIONS MUST BE RECORDED IN A LOG THAT IS AVAILABLE ON SITE. (SCHEDULE A.6.B.I.) & (SCHEDULE B.1.B(1))
32. BMPS MUST BE INSPECTED BEFORE, DURING, AND AFTER SIGNIFICANT STORM EVENTS. (SCHEDULE A.7.F.)
33. ALL ESCP CONTROLS AND PRACTICES MUST BE INSPECTED VISUALLY ONCE TO ENSURE THAT BMPS ARE IN WORKING ORDER PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY AND MUST BE INSPECTED VISUALLY ONCE EVERY TWO (2) WEEKS DURING INACTIVE PERIODS GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS. (SCHEDULE B.1.B.(2)-(3))
34. IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION DURING PERIODS WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER. (SCHEDULE B.1.B.(4))

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTES

GILLIAM COUNTY HAS NO SPECIFIC EROSION CONTROL REQUIREMENTS BEYOND THOSE ALREADY LISTED.

ATTENTION EXCAVATORS

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS BEFORE COMMENDING AN EXCAVATION. CALL 503-246-6699.

BMP MATRIX FOR CONSTRUCTION PHASES

	ACCESS ROAD CONSTRUCTION	TURBINE PAD CONSTRUCTION	UNDERGROUND UTILITY TRENCHING	STREAM CROSSING	SUBSTATION AND O&M BUILDING	FINAL STABILIZATION
EROSION PREVENTION						
PRESERVE NATURAL VEGETATION	X	X	X	X	X	X
GROUND COVER						
HYDRAULIC APPLICATIONS						
PLASTIC SHEETING						
STREAM SEDIMENT MAT				X		
DUST CONTROL	X					
TEMPORARY/ PERMANENT SEEDING	X	X	X	X	X	X
BUFFER ZONE						
OTHER:						
SEDIMENT CONTROL						
FILTER BERM/SOCK						
SILT FENCE		X		X	X	
STRAW WATTLES						
FILTER BERM						
INLET PROTECTION						
DEWATERING						
SEDIMENT TRAP	X	X	X	X	X	X
OTHER:						
RUN OFF CONTROL						
CONSTRUCTION ENTRANCE						
PIPE SLOPE DRAIN						
OUTLET PROTECTION						
SURFACE ROUGHENING						
CHECK DAMS						
OTHER:						
POLLUTION PREVENTION						
PROPER SIGNAGE						
HAZ WASTE MGMT	X	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X	X
CONCRETE WASHOUT AREA		X			X	
OTHER:						

** SIGNIFIES BMP WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S 1200-C PERMIT APPLICATION AND ESCP GUIDANCE DOCUMENT HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMPS WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS, TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS. AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESCP, AN ACTION PLAN WILL BE SUBMITTED.

THE SITE SPECIFIC EROSION CONTROL NOTES ARE THE BMPS THAT WERE CHOSEN FOR THIS SITE, AND REPRESENT THE BMPS THAT SHOULD BE FOLLOWED.

_____ INITIAL

DRAWING INDEX

REGISTERED PROFESSIONAL ENGINEER
67102PE
OREGON
Jan. 15, 2002
MARK A. LEECE
EXPIRES: 12/2008

PRELIMINARY

NOT FOR CONSTRUCTION

DSGN	RE BROWN
DR	RE BROWN
CHK	
APVD	

NO.	DATE	REVISION	BY	APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

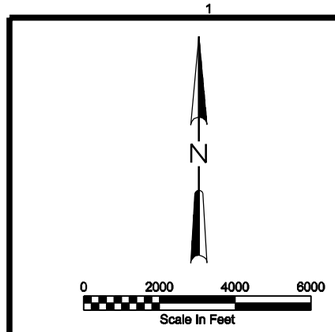
CH2MHILL

LEANING JUNIPER II
WIND POWER FACILITY
PPM ENERGY
ARLINGTON, OREGON

1200-C NPDES GENERAL PERMIT
EROSION CONTROL
COVER SHEET

SHEET	
DWG	EC-1
DATE	JAN 2007
PROJ	180506

FILENAME: kd-border_185216.dgn PLOT DATE: 08-SEP-2004 PLOT TIME: 11:59:16



LEGEND:

- EXISITNG FEATURES (LEANING JUNIPER I WIND FACILITY)
- PROPOSED WIND TURBINE
- PROPOSED ACCESS ROAD
- PROPOSED UNDERGROUND COLLECTOR LINE
- PROPOSED OVERHEAD COLLECTOR LINE
- PROPOSED MET TOWER
- (6) KEYED NOTES ON PLAN REFER TO EROSION CONTROL NOTES. SEE DRAWING EC-3 FOR CORRESPONDING NOTES.
- PROPOSED 2 & 5-ACRE TEMPORARY STAGING AREA
- PROPOSED O&M AND SUBSTATION FACILITY

NOTE:
ALTHOUGH NOT SHOWN ON THIS DRAWING, ANY ON-SITE SOIL DISPOSAL AREAS MUST MEET THE EROSION CONTROL REQUIREMENTS AS DESCRIBED IN KEYED NOTE 7, ON DRAWING EC-3.

LEANING JUNIPER II NORTH PROJECT BOUNDARY

LEANING JUNIPER II SOUTH PROJECT BOUNDARY

REGISTERED PROFESSIONAL ENGINEER
67102PE
OREGON
Jan. 15, 2002
MARK A. LEECE
EXPIRES: 12/2008

PRELIMINARY
NOT FOR CONSTRUCTION

DSGN	RE BROWN				
DR	RE BROWN				
CHK					
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LEANING JUNIPER II
WIND POWER FACILITY
PPM ENERGY
ARLINGTON, OREGON

1200-C NPDES GENERAL PERMIT
EROSION CONTROL PLAN

SHEET	
DWG	EC-2
DATE	JAN 2007
PROJ	180506

FILENAME: ljncl001d_180506.dgn PLOT DATE: 21-MAY-2006 PLOT TIME: 11:16:33

SITE SPECIFIC EROSION CONTROL NOTES

GENERAL NOTES:

1. THE PREDOMINANT SOIL TYPE IN THIS AREA IS HIGHLY PRONE TO BOTH WIND AND WATER EROSION. THEREFORE, THE IMPLEMENTATION OF EROSION CONTROL PRACTICES MUST BE AN INTEGRAL PART OF ALL PHASES OF CONSTRUCTION.

2. THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED, APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

3. THE EROSION CONTROL FACILITIES SHOWN ON THESE PLANS MUST BE CONSTRUCTED IN CONNECTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM OR ROADWAYS OUTSIDE OF PROJECT LIMITS, AND VIOLATE APPLICABLE WATER STANDARDS.

4. THE EROSION CONTROL FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE FACILITIES SHALL BE MAINTAINED AND UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.

5. TEMPORARILY STABILIZE EXISTING BARE SOIL AREAS BY SPREADING STRAW MULCH AND PUNCHING IT IN TO THE GROUND WITH A DISC. THE APPLICATION RATE FOR STRAW MULCH IS 2500 LBS/ACRE. IN THE FALL, WHEN SOIL MOISTURE IS ADEQUATE, SEED ALL IMPACTED AREAS WITH THE FOLLOWING SEED MIXES.

   RIPARIAN AREAS:

   a. SECAR BLUEBUNCH WHEATGRASS (6 LBS)
   b. SHERMAN BIG BLUEGRASS (6 LBS)
   c. CRITANA THICKSPIKE WHEATGRASS (6 LBS)
   d. WHITMAR BEARDLESS WHEATGRASS (6 LBS)
   e. SANDBERG'S BLUEGRASS (0.4 LBS)
   f. BASIN BIG SAGEBRUSH (0.4 LBS)
   g. WOOD'S ROSE (2 LBS)
   h. SERVICEBERRY (2 LBS)
   I. BLACK COTTONWOOD (4 LBS)
   WEIGHT OF SEED IS PURE, LIVE SEED PER ACRE.

   UPLAND AREAS:

   a. SECAR BLUEBUNCH WHEATGRASS (6 LBS)
   b. SHERMAN BIG BLUEGRASS (6 LBS)
   c. CRITANA THICKSPIKE WHEATGRASS (6 LBS)
   d. WHITMAR BEARDLESS WHEATGRASS (6 LBS)
   e. SANDBERG'S BLUEGRASS (0.4 LBS)
   f. BASIN BIG SAGEBRUSH (0.4 LBS)
   WEIGHT OF SEED IS PURE LIVE SEED PER ACRE.

6. THE CONSTRUCTION MANAGER IS RESPONSIBLE FOR LOCATING ANY NECESSARY DISPOSAL SITES. TO CONTROL THE RELEASE OF SEDIMENT FROM THE SITES, SILT FENCE WITH A STRAW BALE BARRIER SHALL BE INSTALLED ON THE DOWNSLOPE SIDE OF ALL DISPOSAL AREAS. SEE DETAIL. IF ADDITIONAL SEDIMENT OR EROSION CONTROL MEASURES ARE DETERMINED TO BE NECESSARY TO CONTROL THE RELEASE OF SEDIMENT FROM THE DISPOSAL SITES, THE CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE MEASURES.

7. PRIOR TO ANY LAND DISTURBING ACTIVITIES EACH SITE MUST HAVE GRAVELED, PAVED, OR CONSTRUCTED ENTRANCES, EXITS AND PARKING AREAS TO REDUCE THE TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS.

KEYED NOTES:

(1) ANY GRADING CHANGES MADE ALONG COUNTY ROADS (i.e. WIDENING AT INTERSECTIONS TO ACCOMODATE LARGE TRANSPORT VEHICLES) SHALL MEET COUNTY STANDARDS AND COUNTY APPROVAL. FOR IMPACTED AREAS ADJACENT TO THE ROADWAY, SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5. MAINTAIN EXISTING DRAINAGE.

(2) NEW TURBINE ACCESS ROADS TO BE GRADED AND ROCKED WITH A 2% CROSS SLOPE AND APPROXIMATELY LEVEL WITH EXISTING GROUND SO RUNOFF FROM UPSLOPE SHEET FLOWS ACROSS ROAD.
FOR IMPACTED AREAS ADJACENT TO THE ROADWAY, SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5.

(3) EXISTING ROAD TO BE IMPROVED AS TURBINE ACCESS ROADS ARE TO BE GRADED, ROCKED AND MULCHED AS DESCRIBED IN NOTE 4.

(4) TOWER SERVICE AREAS. FOR IMPACTED AREAS ADJACENT TO THE PADS, SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5. EXCAVATION MATERIALS TO BE STORED ADJACENT TO PADS FOR 14-28 DAYS WHILE CONCRETE CURES, PRIOR TO BACKFILL. INSTALL SEDIMENT FENCE ON DOWNSLOPE SIDE OF STORAGE PILES. PROMPTLY DISPOSE OF EXCESS EXCAVATION SPOILS IN DESIGNATED LOCATIONS.

(5) INSTALL SILT FENCE ON THE DOWNSLOPE SIDE OF AREA CLEARED FOR CONSTRUCTION OF O&M BUILDING AND PROJECT SUBSTATION. REMOVE WASTE MATERIAL PROMPTLY AFTER CONSTRUCTION. SPREAD EXCESS SOIL ON SITE. SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5.

(6) INSTALL SILT FENCE ON THE DOWNSLOPE SIDE OF THE STAGING AREA. SEE DETAIL ON FIGURE EC-4.

(7) INSTALL SILT FENCE WITH STRAW BALE BARRIER ON THE DOWNSLOPE SIDE OF ANY DISPOSAL AREAS. SEE DETAIL ON FIGURE EC-4.

(8) INSTALL SILT FENCE WITH STRAW BALE BARRIER ON DOWNSLOPE SIDE OF DRAINAGE CROSSINGS. FOR INTERMITTENT STREAMS, WHICH HAVE A DEFINED STREAM BED AND/OR STREAM BANK, INSTALL EROSION CONTROL MEASURES DESCRIBED IN KEYED NOTE 9.

(9) INSTALL TEMPORARY SEDIMENT TRAP DOWNSTREAM OF INTERMITTENT STREAM CROSSING. INSTALL "SEDIMAT" STREAM SEDIMENT MAT OR EQUAL DOWNSTREAM OF PERENNIAL STREAM CROSSINGS. FOR DETAILS, SEE FIGURE EC-4. REMOVE TRAP AND ANY ACCUMULATED SEDIMENT AFTER CROSSING IS COMPLETED AND UPSTREAM IMPACTED AREAS ARE WELL VEGETATED. DISPOSE OF SEDIMENT OUTSIDE OF STREAM CHANNEL.

(10) INSTALL SILT FENCE BETWEEN REGRADED ROAD AND INTERMITTENT STREAM WHERE ROAD IS ADJACENT TO STREAM CHANNEL.

(11) TRENCHES WILL BE 3 TO 5 FEET DEEP. AFTER CABLES ARE INSTALLED, TRENCHES WILL BE BACK FILLED WITH EXCAVATED MATERIAL, AND TOP SOIL WILL BE PLACED ON TOP. SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5.

(12) FINAL CLEANUP AND RESTORATION TO OCCUR IMMEDIATELY FOLLOWING CONSTRUCTION OF OVERHEAD TRANSMISSION LINES.
WASTE MATERIALS (BRUSH, ROCK, CONSTRUCTION MATERIALS) TO BE REMOVED FROM AREA AND EITHER RECYCLED OR DISPOSED AT APPROVED FACILITIES. EXCESS TOPSOIL TO BE TAMPED AROUND POLES OR SPREAD ON RIGHT OF WAY. SPREAD MULCH AND SEED ACCORDING TO GENERAL NOTE 5.

REGISTERED PROFESSIONAL ENGINEER
67102PE
OREGON
Jan. 15, 2002
MARK A. LEECE
EXPIRES: 12/2008

PRELIMINARY
NOT FOR CONSTRUCTION

DSGN	RE BROWN				
DR	RE BROWN				
CHK					
APVD					
NO.	DATE	REVISION	BY	APVD	

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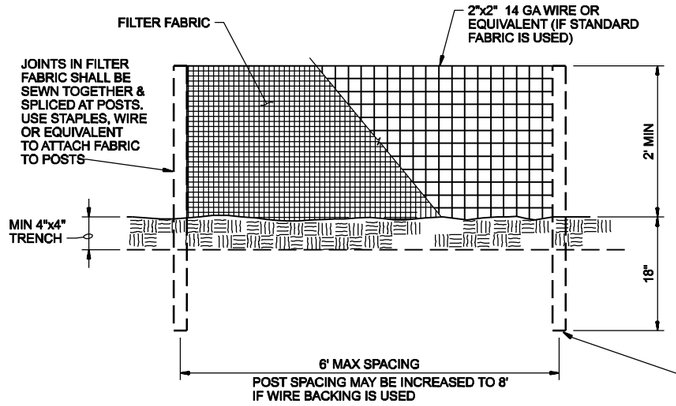
LEANING JUNIPER II
WIND POWER FACILITY
PPM ENERGY
ARLINGTON, OREGON

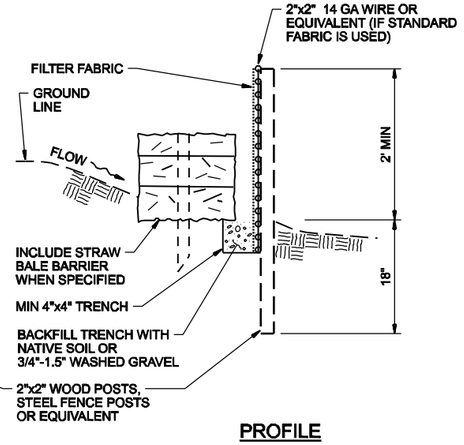
1200-C NPDES GENERAL PERMIT
EROSION CONTROL NOTES

SHEET	
DWG	EC-3
DATE	JAN 2007
PROJ	180506

FILENAME: ljec002d_180506.dgn PLOT DATE: 21-MAY-2006 PLOT TIME: 10:54:11



ELEVATION



PROFILE

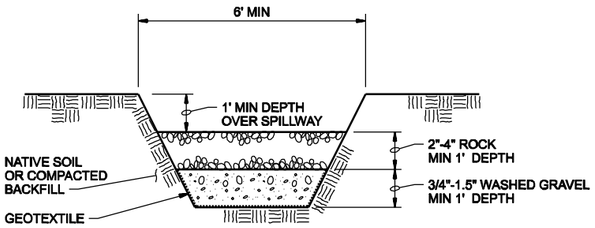
NOTES:

1. CONCENTRATED FLOWS MUST BE CONVEYED TO A SEDIMENT POND.
2. MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE SILT FENCE IS 100 FEET.
3. NO FLOWS GREATER THAN 0.5 CFS.
4. SILT FENCES SHALL BE LOCATED ON CONTOUR AS MUCH AS POSSIBLE. IF THE FENCE MUST CROSS CONTOURS (EXCEPT FOR ENDS) GRAVEL CHECK DAMS PLACED PERPENDICULAR TO THE BACK OF THE FENCE SHALL BE USED TO MINIMIZE CONCENTRATED FLOW AND EROSION ALONG THE BACK OF THE FENCE. THE SLOPE OF THE FENCE LINE WHERE CONTOURS MUST BE CROSSED SHALL NOT BE STEEPER THAN 3:1.

PLAN

FIELD FABRICATED SILT FENCE

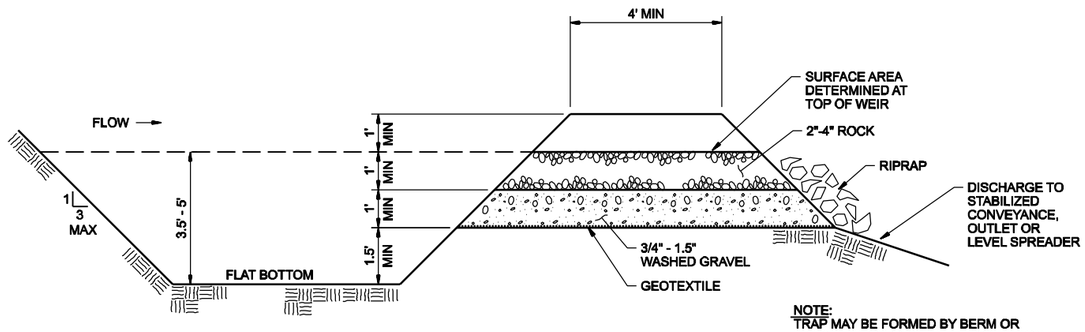
NTS



OUTLET

NOTES:

1. LIMIT GROUND AND VEGETATION DISTURBANCE. TRIM RATHER THAN REMOVE.
2. INSTALL TEMPORARY SEDIMENT TRAP BEFORE UPSTREAM GROUND DISTURBANCE OCCURS.
3. HAND-PLACE GEOTEXTILE AND RIPRAP. USE CLASS 100 (METRIC) RIPRAP.
4. FOLLOW MAINTENANCE SPECIFICATIONS STATED IN THE NARRATIVE PORTION OF THE STORMWATER POLLUTION PREVENTION PLAN IN THE SPECIAL PROVISIONS. PREVENT SEDIMENT RESUSPENSION WHEN PERFORMING MAINTENANCE AND WHEN REMOVING THE TRAP.
5. CLEAN OUT ACCUMULATED SEDIMENT AND REMOVE TRAP AFTER CONSTRUCTION IS COMPLETED.

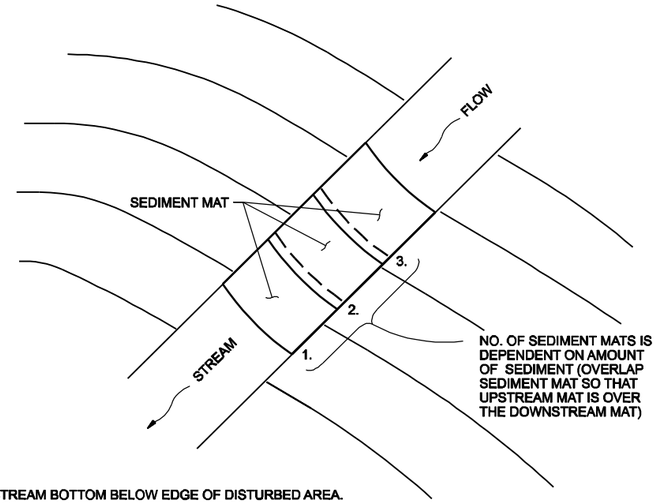


NOTE:
TRAP MAY BE FORMED BY BERM OR BY PARTIAL OR COMPLETE EXCAVATION.

CROSS-SECTION

SEDIMENT TRAP

NTS



CONSTRUCTION SPECIFICATIONS:

1. INSTALL MATS FLAT ON THE STREAM BOTTOM BELOW EDGE OF DISTURBED AREA. BEFORE STREAM DISTURBANCE. REMOVE IMMEDIATELY AFTER STREAM ACTIVITIES ARE COMPLETED.
2. OVERLAP THE TRAILING EDGE OF UPSTREAM MATS OVER THE LEADING EDGE OF DOWNSTREAM MATS BY AT LEAST 6". OVERLAP SIDES A MINIMUM OF 6".
3. HOLD THE LEADING EDGE OF THE MATS TIGHTLY TO STREAM CONTOURS BY ROCKS OR OTHER WEIGHTS.
4. WHEN WATER VELOCITIES GREATER THAN 3 FEET PER SECOND ARE ENCOUNTERED, STAKE UPSTREAM CORNERS AND CENTERS OF MATS IN THE STREAM BED USING WOOD STAKES.
5. ONCE WORK IS DONE, SEDIMENT MAT SHALL BE REMOVED FROM STREAM BED AND INSTALLED ON BANK. SEED MAT TO STABILIZE BANK.

STREAM SEDIMENT MAT

NTS

REGISTERED PROFESSIONAL ENGINEER 67102PE OREGON Jan. 15, 2002 MARK A. LEECE
EXPIRES: 12/2008

PRELIMINARY

NOT FOR CONSTRUCTION

DSGN	RE BROWN
DR	RE BROWN
CHK	
APVD	

NO.	DATE	REVISION	BY	APVD

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CH2MHILL

LEANING JUNIPER II
WIND POWER FACILITY
PPM ENERGY
ARLINGTON, OREGON

1200-C NPDES GENERAL PERMIT

EROSION CONTROL DETAILS

SHEET	
DWG	EC-4
DATE	JAN 2007
PROJ	180506

FILENAME: ljec002d_180506.dgn PLOT DATE: 21-MAY-2006 PLOT TIME: 10:54:11

APPENDIX B, ATTACHMENT 5

Concurrence Letter from Oregon Department of State Lands

Oregon
Theodore R. Kulongoski, Governor

Department of State Lands
Empire Corporate Park
20300 Empire Avenue, Suite 1
Bend, OR 97701
(541) 388-6112
FAX (541) 388-6480
www.oregonstatelands.us

April 15, 2005

PPM Energy, Inc.
Attn: TY Daul
1125 NW Couch St.
Portland, OR 97209

Re: DSL Removal/Fill Permit Application No. 33897
Leaning Juniper Wind Power Project
T. 2N, R. 20 and 21E, multiple sections, Arlington, Gilliam County

Dear Mr. Daul:

We have received your application to construct a ford crossing at an intermittent stream, identified as S8 in the application, in Jones Canyon, Section 18, Township 2N, Range 21E, Gilliam County, Oregon. The Department of State Lands requires a permit if you plan to remove, fill or alter 50 cubic yards or more of material within the banks of most waters of the state or designated wetlands. State-designated Essential Salmon Habitat streams and State Scenic Waterways are exceptions in that any amount of removal, fill or alteration typically requires a permit.

OAR 141-085-0015(2) states; To be subject to the requirements of the removal-fill law, the removal or fill must be within "waters of the state." The types of waters of the state and the physical limits of removal-fill jurisdiction are as follows: (c) Rivers, intermittent and perennial streams, lakes, ponds and all other bodies of water (except wetlands) subject to these rules, to the ordinary high water line, or absent readily identifiable field indicators, the bankfull stage. OAR 141-085-0010 (111) states that "Intermittent Stream" means any stream that flows during a portion of every year and which provides spawning, rearing or food-producing areas for food and game fish.

Based on your application the drainage/waterway at the project location (S8) does not meet the definition of an intermittent stream and thus does not qualify as a "water of the state" as defined in OAR 141-085-0015(2(c)). Therefore a state removal-fill permit is not required.

You must also receive authorization, when required, from the U.S. Army Corps of Engineers and local planning department before beginning construction.

This determination only applies to site S8, the area of proposed impact. A separate wetland delineation would need to be submitted to DSL wetland staff for review of those sites.

If you have any questions, please call Kevin Herkamp at (541) 388-6345.

Sincerely,

Nancy N. Pustis
Eastern Region Manager, Field Operations
Department of State Lands

Enclosure

cc: Mary Hoffman, Corps of Engineers
Carrie Haag, CH2M Hill (agent)
Gilliam County Planning Dept.

APPENDIX B, ATTACHMENT 6

Section 404 Permit Application

CH2M HILL
2020 SW 4th Avenue
Suite 300
Portland, OR 97201-4953
Tel 503.235.5000
Fax 503.736.2000

CH2MHILL

February 21, 2007

Jess Jordan
State of Oregon
Department of State Lands
20300 Empire Avenue
Bend, OR 97701

Subject: Leaning Juniper II Wind Energy Facility
Joint Permit Application

Enclosed please find a Joint Permit Application for impacts to jurisdictional waters associated with the proposed Leaning Juniper II Wind Energy Facility. The Facility is located in Sections 33, 34, 35, Township 3 North, Range 21 East, and in Sections 2, 3, 4, 8, 9, 10, 11, 15, 17, 18, 19, 22, 27, 28, 33, Township 2 North, Range 21 East, and Section 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, 28, Township 2 North, Range 20 East, near Arlington, in Gilliam County, Oregon.

The proposed Facility will have a generating capacity of up to 279 megawatts. Up to 133 wind turbines will be grouped in strings or linear groups of 1 to 12 connected by an underground and overhead electrical collector cable system. The Facility will have a permanent maintenance building, a substation and switching station, and six permanent meteorological towers. An access road and underground electrical line crossing at one intermittent stream drainage will be required.

The Facility was designed proactively to avoid wetlands and waters of the United States to the maximum extent practicable. The project will require installation of a culvert for improvements to an existing road crossing at an intermittent stream drainage, and installation of a ford crossing for a new road at a second intermittent drainage. Improvements to the existing road and construction of the new road will result in unavoidable fill totaling 0.016 acre (64 linear feet) at these two crossings.

The proposed Facility meets criteria for permitting under the *General Authorization for Certain Transportation-Related Structures*. Total impacts affect less than ½ acre and less than 5,000 cubic yards of removal plus fill. Impacts that are not temporary will be mitigated. A Wetland Delineation Report is provided in Attachment G of the Joint Permit Application to supplement the discussion of the impacted waterway. This report is intended as an addendum to the initial delineation report (January 10, 2005) and subsequent addendum (September 2, 2005) prepared by CH2M HILL and includes information specific to the additional sites only. In addition, a Compensatory Mitigation and Site Revegetation Plan is

provided in Attachment E of the Joint Permit Application to supplement the discussion of the mitigation measures, and the 2006 addenda to the initial cultural resources report are provided in Attachment D.

If you have any questions regarding this application, please contact me at 503.872.4803.

Sincerely,

CH2M HILL

Nichole Coulter

Nichole Coulter

CH2M HILL
2020 SW 4th Avenue
Suite 300
Portland, OR 97201-4953
Tel 503.235.5000
Fax 503.736.2000

CH2MHILL

February 21, 2007

Karla Ellis
District Engineer
ATTN: CENWP-CO-GP
PO Box 2946
Portland, OR 97208-2946

Subject: Leaning Juniper II Wind Energy Facility
Joint Permit Application

Dear Ms. Ellis:

Enclosed please find a Joint Permit Application for impacts to jurisdictional waters associated with the proposed Leaning Juniper II Wind Energy Facility. The Facility is located in Sections 33, 34, 35, Township 3 North, Range 21 East, and in Sections 2, 3, 4, 8, 9, 10, 11, 15, 17, 18, 19, 22, 27, 28, 33, Township 2 North, Range 21 East, and Section 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, 28, Township 2 North, Range 20 East, near Arlington, in Gilliam County, Oregon.

The proposed Facility will have a generating capacity of up to 279 megawatts. Up to 133 wind turbines will be grouped in strings or linear groups of 1 to 12 connected by an underground and overhead electrical collector cable system. The Facility will have a permanent maintenance building, a substation and switching station, and six permanent meteorological towers. An access road and underground electrical line crossing at one intermittent stream drainage will be required.

The Facility was designed proactively to avoid wetlands and waters of the United States to the maximum extent practicable. The project will require installation of a culvert for improvements to an existing road crossing at an intermittent stream drainage, and installation of a ford crossing for a new road at a second intermittent drainage. Improvements to the existing road and construction of the new road will result in unavoidable fill of a total of 0.016 acre (64 linear feet) at these two crossings.

The proposed Facility meets criteria for permitting under RGP C—*Utility Line Activities*, RGP E—*Linear Transportation Projects*, and RGP K—*Residential, Commercial, and Industrial Developments*. Total impacts affect less than ½ acre and less than 5,000 cubic yards of removal plus fill. Impacts that are not temporary will be mitigated. A Wetland Delineation Report is provided in Attachment G of the Joint Permit Application to supplement the discussion of the impacted waterway. This report is intended as an addendum to the initial

delineation report (January 10, 2005) and subsequent addendum (September 2, 2005) prepared by CH2M HILL and includes information specific to the additional sites only. In addition, a Compensatory Mitigation and Site Revegetation Plan is provided in Attachment E of the Joint Permit Application to supplement the discussion of the mitigation measures, and the 2006 addenda to the initial cultural resources report (January 2005) are provided in Attachment D.

If you have any questions regarding this application, please contact me at 503.872.4803.

Sincerely,

CH2M HILL

Nichole Coulter

Nichole Coulter

US Army Corps Of Engineers (Portland District)

Joint Permit Application Form

DATE STAMP

AGENCIES WILL ASSIGN NUMBERS

Corps Action ID Number | Oregon Department of State Lands No

SEND ONE SIGNED COPY OF YOUR APPLICATION TO EACH AGENCY

District Engineer
ATTN: CENWP-OD-GP
PO Box 2946
Portland, OR 97208-2946
503-808-4373

AND

West of the Cascades:
State of Oregon
Department of State Lands
PO Box 4395, Unit 18
Portland, OR 97208-4395
503-378-3805

OR

East of the Cascades:
State of Oregon
Department of State Lands
1645 NE Forbes Road, Suite 112
Bend, Oregon 97701
541-388-6112

(1) Applicant Name and Address	Sara McMahon PPM Energy, Inc. 1125 NW Couch St. Portland, Oregon 97209	Business Phone # Home Phone# FAX # E-mail:	503.796.7732 N/A (503)796-6901 sara.mcmahon@ppmenergy.com
Authorized Agent Name and Address ☒Consultant ☐Contractor	Nichole Coulter CH2M HILL, INC. 2020 SW Fourth Ave., Suite 300 Portland, OR 97201	Business Phone # Home Phone# FAX # E-mail:	503.872.4803 N/A 503.736.2000 ncoulter@ch2m.com
Property Owner Name and Address (If different than applicant)[1]	Andrew M. Kenefick Waste Management Disposal Services of Oregon, Inc. 18177 Cedar Springs Lane Arlington, OR 97812	Business Phone # Home Phone# FAX # E-mail:	541.454.2030 N/A 541.454.3312 N/A

(2) PROJECT LOCATION

Street, Road or other descriptive location	Legal Description *(attach tax lot map*)* See Attachment B			
The project is located south of Highway 84, west of the John Day Highway, north of Cedar Springs Road, and east of Blalock Canyon Road (see Figure 1, Attachment A).	Quarter/Quarter See Attachment B	Section See Attachment B	Township See Attachment B	Range See Attachment B

In or Near (City or Town) Arlington	County Gilliam	Tax Map # See Attachment B	Tax Lot #[2] See Attachment B

Wetland/Waterway Name (pick one)	River Mile (if known)	Latitude (in DD.DDDD format)	Longitude (in DD.DDDD format)
Unnamed intermittent streams in China Ditch and Jones Canyon.	N/A	45.6351	-120.3038

Directions to the site: I-84 to Exit #137 to Rattlesnake Road.

(3) PROPOSED PROJECT INFORMATION

Type: ☒Fill ☒Excavation (removal) ☐In-Water Structure ☐Maintain/Repair an Existing Structure

Brief Description: The purpose of the proposed Leaning Juniper II wind power facility (the Facility) is to develop a 279-megawatt (MW) wind energy facility. The project proposes to (1) replace an existing culvert at a stream crossing to construct a turbine string access road and install an underground electrical line, and (2) construct an access road and ford crossing at a second location.

Fill

☐Riprap ☒Rock ☒Gravel ☐Sand ☐Silt ☐Clay ☐Organics ☐Other:

Wetlands	Permanent (cy)	N/A		Temporary (cy)	N/A			Total cubic yards for project (including outside OHW/wetlands)	
	Impact Area in Acres	N/A	Dimensions (feet)	L' N/A	W' N/A	H' N/A			
Waters below OHW	Permanent (cy)	84.8 cy		Temporary (cy)	0				
	Impact Area in Acres	0.016	Dimensions (feet)	L' See Supplement to JPA	W' See Supplement to JPA	H' See Supplement to JPA			

[1] **If applicant is not the property owner, permission to conduct the work must be attached.**
[2] **Attach a copy of all tax maps with the project area highlighted.**
* ***Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.***

Removal										
☐Riprap ☒Rock ☒Gravel ☐Sand ☒Silt ☐Clay ☐Organics ☐Other:										
Wetlands	Permanent (cy)	N/A		Temporary (cy)		N/A			Total Cubic yards for project (including outside OHW/wetlands)	
	Impact Area in Acres	N/A	Dimensions (feet)	L' N/A		W' N/A		H' N/A		
Waters below OHW	Permanent (cy)	18.8cy		Temporary (cy)		0				
	Impact Area in Acres	0.016	Dimensions (feet)	L' See Supplement to JPA		W' See Supplement to JPA		H' See Supplement to JPA		

Total acres of construction related ground disturbance 347 (If 1 acre or more a 1200-C permit may be required from DEQ)

Is the disposal area upland? ☒Yes ☐No | Impervious surface created? ☒<1 acre? ☐>1 acre?

Are you aware of any state or federally listed species on the project site? *See attached Supplement to Joint Permit Application and Attachment C for further discussion.*	☐Yes ☒No	If yes, please explain in the project description (in block 4).
Are you aware of any Cultural/Historic Resources on the project site? *See attached Supplement to Joint Permit Application and Attachment D for further discussion.*	☐Yes ☒No	
Is the project site within a national Wild & Scenic River?	☐Yes ☒No	
Is the project site within a State Scenic Waterway ?*	☐*Yes* ☒*No*	

(4) PROPOSED PROJECT PURPOSE & DESCRIPTION

Project Purpose and Need:

*Provide a description of the public, social, economic, or environmental benefits of the project along with any supporting formal actions of a public body (e.g. city or county government), as appropriate.**

The purpose of the project is to develop a 279-MW wind energy facility. Power from the Facility will be sold to electric utilities to meet growing demand.

See attached Supplement to Joint Permit Application for further discussion.

Project Description: See attached Supplement to Joint Permit Application for further discussion.

Please describe in detail the proposed removal and fill activities, including the following information:

- ❑ Volumes and acreages of all fill and removal activities in waterway or wetland separately
- ❑ Permanent and temporary impacts
- ❑ Types of materials (e.g., gravel, silt, clay, etc.)
- ❑ How the project will be accomplished (i.e., describe construction methods, equipment, site access)
- ❑ *Describe any changes that the project may make to the hydraulic and hydrologic characteristics (e.g., general direction of stream and surface water flow, estimated winter and summer flow volumes.) of the waters of the state, and an explanation of measures taken to avoid or minimize any adverse effects of those changes.*
- ❑ Is any of the work already complete? ☐yes ☒no If yes, please describe the completed work.

In addition, for fish habitat or wetland restoration or enhancement activities, complete the information requested in supplemental Fish Habitat or Wetland Restoration and Enhancement form.

See Table 1 in the attached Supplement to Joint Permit Application.

Project Drawings:

State the number of project drawing sheets included with this application: Five – Figure 1: Vicinity Map, Figure 2: Facilities Map, Figure 3A: Typical Culvert Placement, Figure 3B: Typical Stream Crossing, Figure 4: Aerial Photo (see Attachment A).

A complete application must include a location map, site plan, cross-section drawings and recent aerial photo as follows and as applicable to the project:

- ❑ **Location map** (must be legible with street names)

- ❑ **Site plan** including;
  - ❑ Entire project site and activity areas
  - ❑ Existing and proposed contours
  - ❑ Location of ordinary high water, wetland boundaries or other jurisdictional boundaries
  - ❑ Identification of temporary and permanent impact areas within waterways or wetlands
  - ❑ Map scale or dimensions and north arrow
  - ❑ Location of staging areas
  - ❑ Location of construction access
  - ❑ Location of cross section(s), as applicable
  - ❑ Location of mitigation area, if applicable

- ❑ **Cross section drawing(s)** including;
  - ❑ Existing and proposed elevations
  - ❑ Identification of temporary and permanent impact areas within waterways or wetlands
  - ❑ Ordinary high water and/or wetland boundary or other jurisdictional boundaries
  - ❑ Map scale or dimensions

- ❑ **Recent Aerial photo** (1:200, or if not available for your site, the highest resolution available)

Will any construction debris, runoff, etc., enter a wetland or waterway? ☒Yes ☐No
If yes, describe the type of discharge and show the discharge location on the site plan.

See attached Supplement to Joint Permit Application.

Estimated Project Start Date: July 2007 Estimated Project Completion Date: July 2009

(5) PROJECT IMPACTS AND ALTERNATIVES

Alternatives Analysis:

Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterway or wetland. *(Include alternative design(s) with less impact and reasons why the alternative(s) were not chosen. Reference OAR 141-085-0025 (3(j)) and 141-085-0029 (4through 6) for more information.*)*

See attached Supplement to Joint Permit Application.

Measures to minimize impacts:

Describe what measures you will use (before and after construction) to minimize impacts to the waterway or wetland. These may include but are not limited to the following:

- ❑ *For projects with ground disturbance* i*nclude an erosion control plan or description of other best management practices (BMP's) as appropriate. (For more information on erosion control practices see DEQ's Oregon Sediment and Erosion Control Manual)*
- ❑ *For work in waterways where fish or flowing water are likely to be present, discuss how the work area will be isolated from the flowing water.*
- ❑ *If native migratory fish are present (or were historically present) and you are installing, replacing or abandoning a culvert or other potential obstruction to fish passage, complete and attach a statement of how the Fish Passage Requirements, set by the Oregon Department of Fish and Wildlife will be met.*

See attached Supplement to Joint Permit Application.

Description of resources in project area

Impact area is: ☐ Ocean ☐ Estuary ☐ River ☐ Lake ☒ Stream ☐ Freshwater Wetland

Describe the existing **physical and biological characteristics** of the wetland/waterway site by area and type of resource (Use separate sheets and photos, if necessary).

For wetlands, include, as applicable:

- *Cowardin and Hydrogeomorphic(HGM) wetland class(s)**
- *Dominant plant species by layer (herb, shrub, tree)**
- Whether the wetland is freshwater or tidal
- *Assessment of the functional attributes of the wetland to be impacted**
- Identify any vernal pools, bogs, fens, mature forested wetland, seasonal mudflats, or native wet prairies in or near the project area.)

For waterways, include a description of, as applicable:

- *Channel and bank conditions**
- *Type and condition of riparian vegetation**
- *Channel morphology (i.e., structure and shape)**
- *Stream substrate**
- Fish and wildlife (type, abundance, period of use, significance of site)
- *General hydrological conditions (e.g. stream flow, seasonal fluctuations)**

See attached Supplement to Joint Permit Application.

*Describe the existing **navigation, fishing and recreational** use of the waterway or wetland.**

Streams in the project area are not navigable. They are either intermittent or ephemeral drainages that have been heavily disturbed and impacted by surrounding land use (predominantly agricultural activities). ODFW StreamNet maps do not indicate the presence of fish species in China Ditch, Jones Canyon, or any of their associated tributaries.

Site Restoration/Rehabilitation

- ❑ *For temporary disturbance of soils and/or vegetation in waterways, wetlands or riparian areas, please discuss how you will restore the site after construction including any monitoring, if necessary**

See Compensatory Mitigation and Site Revegetation Plan in Attachment E.

Mitigation

*Describe the reasonably expected adverse effects of the development of this project and how the effects will be mitigated.**

- ❑ *For permanent impact to wetlands, complete and attach a Compensatory Wetland Mitigation (CWM) Plan. (See OAR 141-085-0121 to OAR 141-085-0176 for plan requirements)**
- ❑ *For permanent impact to waterways or riparian areas, complete and attach a Compensatory Mitigation (CM) plan (See OAR 141-085-0115 for plan requirements)**
- ❑ *For permanent impact to estuarine wetlands, you must submit an Estuarine Resource Replacement Plan. (See OAR 141-085-0240 to OAR 141-085-0257 for plan requirements)**

See Compensatory Mitigation and Site Revegetation Plan in Attachment E.

Mitigation Location Information *(Fill out only when mitigation is proposed or required)*

Proposed mitigation: *(Check all that apply)* ☒ *Onsite Mitigation* ☐ *Offsite Mitigation* ☐ *Mitigation Bank* ☐ *Payment to Provide*	*Type of mitigation:* ☐ *Wetland Mitigation* ☒ *Mitigation for impacts to other waters* ☐ *Mitigation for impacts to navigation, fishing, or recreation*

Street, Road or other descriptive location	*Legal Description (attach tax lot map*)*			
	Quarter/Quarter	*Section*	*Township*	*Range*
The mitigation area is located at the intersection of Cedar Springs Road and Blalock Canyon Road.	SE ¼ of NW 1/4	18	2N	21E

In or Near (City or Town) Arlington	*County* Gilliam	*Tax Map #* 02N21E	*Tax Lot #*[3] 300

Wetland/Waterway Name (pick one)	*River Mile (if known)*	*Latitude (in DD.DDDD format)*	*Longitude (in DD.DDDD format)*
Unnamed intermittent streams in Jones Canyon.	N/A	45.6559	120.2348

Name of waterway/watershed/HUC	*Name of mitigation bank (if applicable)*
Unnamed intermittent stream in Jones Canyon. a tributary of the Columbia River.	N/A

[3] **Attach a copy of all tax maps with the project area highlighted.**

**** Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.***

(6) ADDITIONAL INFORMATION

Adjoining Property Owners and Their Address and Phone Numbers *(if more than 5, attach printed labels*)*

See Attachment F.

Has the proposed activity or any related activity received the attention of the Corps of Engineers or the Department of State Lands in the past, e.g., wetland delineation, violation, permit, lease request, etc.? ☒Yes ☐No

This application addresses impacts associated with Leaning Juniper II. Leaning Juniper I is located adjacent to Leaning Juniper II and was permitted in 2005.

If yes, what identification number(s) were assigned by the respective agencies:
Corps #200500063 State of Oregon #33897 (Leaning Juniper I)

Has a wetland delineation been completed for this site?
(See Attachment G.) ☒*Yes* ☐*No*
*If yes, by whom**
Peggy O'Neill
CH2M HILL
2020 SW Fourth Avenue, 3rd Floor
Portland, OR 97201

Has the wetland delineation been approved by DSL or the COE? ☐*Yes* ☒*No*
*(If yes, attach concurrence letter.)**

7) *CITY/COUNTY PLANNING DEPARTMENT AFFIDAVIT (to be completed by local planning official)* *

I have reviewed the project outlined in this application and have determined that:

☐ This project is not regulated by the comprehensive plan and land use regulations.

☐ This project is consistent with the comprehensive plan and land use regulations.

☒ This project will be consistent with the comprehensive plan and land use regulations when the following local approval(s) are obtained.

☐ Conditional Use Approval ☐ Development Permit ☒ Other EFSC Approval

☐ This project is **not** consistent with the comprehensive plan. Consistency requires a

☐ Plan Amendment ☐ Zone Change ☐ Other

An application ☒ has ☐ has not been filed for local approvals checked above.

Susie Anderson	Susie Anderson	Planning Director	Gilliam	02/21/07
Local planning official name (print)	Signature	Title	City / County	Date

Comments: As LJII is going through the EFSC process, it is not necessary to obtain local land use approval such as a CUP etc.

(8) *COASTAL ZONE CERTIFICATION* *

If the proposed activity described in your permit application is within the Oregon coastal zone, the following certification is required before your application can be processed. A public notice will be issued with the certification statement, which will be forwarded to the Oregon Department of Land Conservation and Development for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program, contact the department at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0050.

CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

N/A	N/A
Print /Type Name	Title
Applicant Signature	Date

* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

(9) SIGNATURES FOR JOINT APPLICATION

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or Dept. of State Lands staff to enter into the above-described property to inspecting the project location and to determine compliance with an authorization, if granted. I herby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. *I understand that payment of the required state processing fee does not guarantee permit issuance. The fee for the state application must accompany the application for completeness. Amount enclosed $_____.**

Sara McMahon
Print /Type Name

Wind Permitting PM
Title

Sara A McMahon

Applicant Signature

February 21, 2007
Date

I certify that I may act as the duly authorized agent of the applicant.

Nichole Coulter
Print /Type Name

Associate Scientist
Title

Nichole Coulter

Authorized Agent Signature

February 21, 2007
Date

Landowner signatures: *For projects and /or mitigation work proposed on land not owned by the applicant, including state-owned submerged and submersible lands, please provide signatures below.*

*I certify that the applicant has my permission to conduct the project on my property.**

Print /Type Name

Title

Property Owner Signature

Date

*I certify that the applicant has my permission to conduct the proposed mitigation on my property. I also understand this may involve long term protection and monitoring of the mitigation area.**

Print /Type Name

Title

Mitigation Property Owner Signature

Date

*** Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.***

Supplement to Joint Permit Application

(3) Proposed Project Information

Table 1 summarizes anticipated impacts to waters of the U.S. and the State of Oregon from the proposed Leaning Juniper II Wind Power Facility (the Facility).

TABLE 1
Impacts to Waters of the U.S. and State of Oregon

Stream ID	Length (ft)	Width (ft)	Area (sf)	Area (ac)	Removal Depth (ft)	Removal Volume (cy)	Removal Material	Fill Depth (ft)	Fill Volume (cy)	Fill Material
S8A	50	5	250	0.006	0.6	7	Rock, gravel, silt	0.6	7	Rock, gravel, riprap
S27	14	32	448	0.01	0.6	11.8	Rock, gravel, silt, culvert	0.6	77.8	Rock, gravel, culvert
Key Totals	**64**		**698**	**0.016**		**18.8**			**84.8**	

(4) Project Purpose and Need

Many regional utilities are currently seeking to acquire new, renewable generating resources to meet their loads. The proposed Facility will help meet this growing regional demand for renewable, wind-generated electricity. The Facility will also provide significant economic benefits to Gilliam County in both the construction and operations phases.

Project Description

Leaning Juniper Wind Power II, LLC (the Applicant) proposes to build and operate a wind power facility at a site southwest of Arlington on private land in an unincorporated area of Gilliam County (see Figure 1 in Attachment A). Field surveys and analyses have been conducted to address impacts of up to 133 turbines.

The Leaning Juniper II Wind Power Facility (the Facility) consists of two main components: (1) Leaning Juniper II North (the north portion of the Facility with up to 93 MW), and (2) Leaning Juniper II South (the south portion of the Facility with up to 186 MW) (see Figure 2 in Attachment A). Up to 133 turbines will be located at the Facility site. The Facility is expected to provide up to 279 MW and 93 average megawatts (aMW) of energy.

The Facility will be connected to the Federal Columbia River Transmission System (the regional transmission grid) at Bonneville Power Administration's (BPA) Jones Canyon Switching Station. The connection into BPA's 230-kilovolt (kV) McNary-Santiam transmission line is currently under construction and is designed to serve several wind

projects, including the adjacent Leaning Juniper I project. The proposed Leaning Juniper II Facility Collector Substation (LJ II Substation) will be located immediately adjacent to the Jones Canyon Switching Station (see Figure 2 in Attachment A); the 230-kV overhead connection between the two substations is estimated to be less than 400 feet in length.

The turbines for Leaning Juniper II South will be located on land owned by Waste Management Disposal Services of Oregon, Inc., which surrounds the existing Arlington Landfill on three sides. This land functions as a buffer around the landfill and as a source of soils and rock for covering landfill cells as they are filled and closed. Portions of the land are used for cultivation of winter wheat. Other portions are used for cattle grazing. The turbines for Leaning Juniper II North will be located on land owned by a private landowner, J.R. Krebs. This land currently is used for farming and cattle grazing. Easements have also been negotiated with adjacent landowners for road and collector cable access.

The proposed Facility consists of the following components (see Figure 2 in Attachment A):

- Up to 133 wind turbines
- Approximately 22 miles of newly constructed access roads
- Four (4) permanent meteorological towers
- A 34.5-kilovolt (kV) collector cable system linking each turbine to the next and to the Facility substation. The collector cable system will include both underground and overhead sections. Using aboveground structures allows the collector cables to "span" canyons and intermittent streams and thus to reduce environmental impacts. Underground sections will be buried at least 3 feet below grade. Overhead sections will be installed on wooden pole structures.
- A Facility substation, at which power from Facility turbines is stepped up from 34.5 kV to 230 kV
- Up to two operations and maintenance (O&M) one-story buildings that house shop facilities, a kitchen, an office, and a washroom
- A short (estimated to be less than 400 feet) 230-kV overhead transmission line connecting the Facility substation to the existing BPA 230-kV transmission line

Construction

The proposed Facility construction schedule showing the major tasks and key milestones for Leaning Juniper II (up to 133 turbines) is provided in Table 2. It is expected that Facility construction will occur over a period of approximately 9 to 12 months from the time of permit approval to commercial operation.

TABLE 2
Facility Construction Schedule

Task/Milestone	Start*	Finish*
Road Construction	7/07	10/07
Foundations Construction	8/07	4/08
Electrical Collection System Construction	8/07	10/07
Operations and Maintenance (O&M) Facility Construction	9/07	4/09
Wind Turbine Assembly and Erection	10/07	5/09
Plant Energization and Commissioning	2/08	6/09
Plant Substantial Completion	3/08	6/09
Construction Punchlist Cleanup	3/08	6/09

* Start and finish dates are based on a best estimate construction schedule. Dates are subject to change.

Construction will involve the following tasks:

- Constructing roads, excavating for turbine transformer foundations, and leveling areas for setting the erection crane
- Performing dust and erosion control
- Pouring foundations for wind turbine and anemometer tower
- Trenching for underground utilities
- Placing underground electrical and communications cables in trenches
- Transporting tower sections to the site and erecting the towers
- Installing the nacelle and rotor on the wind turbine tower
- Constructing the Facility substation and switching station
- Constructing the maintenance building
- Commissioning and testing wind turbines
- Conducting final road grading, final erosion control, and site cleanup

The following sections describe the construction phases of Facility development.

Road Construction

Roads will be located to minimize disturbance and maximize transportation efficiency and to avoid sensitive resources and unsuitable topography. Existing private farm roads will be used to the maximum extent feasible.

New gravel roads will be constructed to provide access to wind turbine locations. New permanent roads will be 16 feet wide and existing roads will be improved to up to 20 feet wide. During construction, the shoulder of the road will be temporarily disturbed for a total

width of up to 35 feet. Roads will be compacted to meet design specifications for construction equipment and material deliveries.

Road work will be conducted in compliance with the Facility's erosion control plan, required as part of the Facility's NPDES Construction Stormwater Permit (issued by the Oregon Department of Environmental Quality). The erosion control plan will use general best management practices (BMPs) for erosion control facilities as necessary to allow stormwater passage without damage to local roads or to adjacent areas without increasing sedimentation of intermittent streams.

Foundation Construction

The wind turbines will be mounted on a reinforced concrete foundation. Foundations will be designed to meet the requirements of the turbine selected for the Facility. A typical foundation type will be similar to foundations based on GE Wind's load specification as required for the 1.5-sle, 389-foot turbine configuration. The foundations range from 15 to 24 m (42 to 80 ft) in width. A small portion of the foundation will be covered with gravel for fire protection (generally 10 to 15 feet of nonflammable groundcover around the towers on all sides). Tower foundations will use a spread footing design.

If bedrock is encountered, it is anticipated that the excavation will be approximately 19 feet deep, and explosives may be required to reach final depth.

The construction equipment used on site could vary, but will be substantially similar to the equipment listed in Table 3.

TABLE 3
Equipment Typically Used During Wind Facility Construction

Equipment	Use
Bulldozer	Road and pad construction
Grader	Road and pad construction
Water trucks	Compaction, erosion and dust control
Roller/compactor	Road and pad compaction
Backhoe/trenching machine	Digging trenches for underground utilities
Excavator	Foundation excavation
Heavy duty rock trencher	Underground trenching
Truck-mounted drilling rig	Drilling power pole holes
Concrete trucks/concrete pumps	Pouring tower and other structure foundations
Cranes	Tower/turbine erection
Dump trucks	Hauling road and pad material

TABLE 3

Equipment Typically Used During Wind Facility Construction

Equipment	Use
Flatbed and low-bed trucks	Hauling WTG towers, turbines and components, and construction equipment
Pickup trucks	General use and hauling minor equipment
Small hydraulic cranes/forklifts	Loading and unloading equipment
Four-wheel-drive all-terrain vehicles	Rough grade access and underground cable installation
Rough-terrain cranes/forklifts	Lifting equipment and pre-erection assembly

Trenching and Placement of Underground Cables

Underground electrical and communications cables will be placed in a 3- to 5-foot-wide and 3- to 5-foot-deep trench typically along the length of the proposed turbine access roads. Electric distribution and communications cables will be placed in the trench. Electrical cables will be installed first and the trench partially backfilled before placement of communications cables. The topsoil in the trench will be stripped and set aside, then the trench will be backfilled and topsoil will be replaced on top. The area will be reseeded with wheat or native gasses as appropriate to the location and treated to control noxious weeds or other plants.

Transport and Assembly of Towers

Turbine towers will be transported by trucks to each turbine/tower location, and then erected using a construction crane. The base section will be bolted to the circular ring of bolts on the foundation pedestal, the middle section will then be bolted to the base section, and the top section will then be bolted to the middle section.

Installation of Nacelle, Rotor, and Other Turbine Equipment

The tower sections, nacelle, hub, blades, and other turbine equipment will be delivered to each tower location. The tower sections are erected first with a construction crane. The nacelle is then lifted to the top of the tower and bolted in place. The rotor (hub and three blades) are assembled on the ground and then the whole rotor assembly is hoisted and attached to the turbine assembly.

Construction of Maintenance Building

A pre-engineered metal building up to approximately 3,000 to 5,000 square feet in size will be constructed for spare parts and balance of plant services. The building will have a foundation; heating, ventilation, and air conditioning (HVAC); and electrical systems. The building will also house all of the wind farm SCADA control systems. Water for the bathroom and kitchen in the O&M facility or facilities will be acquired from an onsite well constructed according to local and state requirements, and will remain below the threshold of 5,000 gallons per day for an exempt well.

Temporary Staging Areas

During tower construction and turbine installation, temporary laydown or staging areas will be required. These are areas where tower sections, nacelles, and other wind turbine components will be temporarily stored as each wind turbine is constructed. Approximately one 2-acre staging area will be located adjacent to each proposed turbine string, with several centrally located, 5-acre staging areas. These staging areas will also be used to park construction vehicles, construction employees' personal vehicles, and other construction equipment.

After completion of construction, the Applicant will restore these temporary laydown/staging areas back to their preconstruction conditions. The staging areas will consist of a crushed gravel surface that will be removed following construction. The disturbed areas will be restored to their preconstruction conditions, using seed mixes and techniques developed in consultation with the Oregon Department of Fish and Wildlife (ODFW) and Gilliam County Weed Control Board.

At each turbine location, an area of approximately 85,000 square feet will be required to place turbine blades and other turbine components and to station a construction crane as each tower is erected.

During the 9- to 12-month construction period, an estimated average of 167 people will be employed at the Facility. When the Facility is operational, an estimated 10 to 30 permanent full-time or part-time employees will be on the O&M staff. It is expected that the Facility will function for at least 30 years.

Endangered Species

Wildlife Species. The Washington Ground Squirrel (WGS) is the only listed species of concern with high potential for occurrence in the general Facility area. The Peregrine falcon may occasionally occur along the Columbia River corridor. The Peregrine falcon also is state listed but has low potential for occurrence due to lack of nest structure on site and in the immediate area. State sensitive status species with potential for occurrence are ferruginous hawk, Swainson's hawk, burrowing owl, loggerhead shrike, long-billed curlew, grasshopper sparrow, and sage sparrow. Listed and sensitive wildlife species of known or potential occurrence in the Facility area are presented in Attachment C. Each species has a specific habitat preference so not all species are likely to be found throughout the Facility area.

In November 2005, Northwest Wildlife Consultants (NWC) conducted a review of the site's potential to support a state endangered wildlife species, the Washington ground squirrel. NWC requested information on sensitive species in the Facility area from the Oregon Natural Heritage Information Center (referred to as ORNHIC) database. Based on this review, the database search returned 59 records of the WGS, several within Gilliam County. Only three were in proximity to the Facility area; none were actually on the Facility property.

In addition to the database searches, NWC conducted a field review in March 2005. Active WGS colonies were discovered in several locations within the surveyed corridors. Seven primary patches were located, one of which consisted of five smaller areas. Three of the seven primary patches identified during the survey were observed within the Leaning

Juniper II South lease boundary. The seven sites ranged in size from 3 to 74 acres and ranged from very low density to dense. During surveys in 2006, no WGS colonies were observed within the Leaning Juniper II North lease boundary.

The Facility components have been designed to avoid all known, occupied WGS areas.

Plant Species. On April 30, 2003, the ORNHIC issued the results of a database search for records of rare, threatened, and endangered plants and animals in and adjacent to the Facility area. One plant species, sessile mousetail (*Myosurus sessilis*), was identified by the ORNHIC as having been observed within 2 miles of the Facility site. It is listed as a Candidate species by the Oregon Department of Agriculture (ODA). It has no federal status.

In July 2005, the U.S. Fish and Wildlife Service (USFWS) issued an updated list of *Federally Listed and Proposed Endangered and Threatened Species, Candidate Species and Species of Concern That May Occur in Gilliam County*. The list identifies no federally listed threatened or endangered plant species as potentially occurring in Gilliam County. One plant species, Northern wormwood (*Artemisia campestris* ssp. wormskioldii), is identified as a *Candidate Species* for listing. Four *Species of Concern* are identified: Robinson's onion (*Allium robinsonii*), Laurence's milk-vetch (*Astragalus collinus* var. laurentii), disappearing monkey flower (*Mimulus evanescens*), and little mousetail (*Myosurus minimus* ssp. *apus* var. *sessiliflorus*). *Candidate Species* and *Species of Concern* are not currently regulated under ESA; however *Candidate Species* may be upgraded to *Threatened* or *Endangered* status at a later date. If this occurs before proposed Facility activities begin, federal ESA regulations and conservation measures will apply.

Both CH2M HILL and NWC conducted surveys in 2006. CH2M HILL conducted a reconnaissance-level survey in the spring of 2006 to determine if potential habitat existed to support rare plants. The survey included an evaluation of soils, hydrology, and vegetation to determine if appropriate habitat existed onsite for species listed as threatened or endangered under state and federal ESA regulations. CH2M HILLspecifically evaluated the site for potential habitat conditions that will support Sessile mouse-tail (*Myosurus sessilis)*. In addition, NWC looked for the Sessile mousetail in suitable habitats encountered during multispecies surveys throughout the leased land for Leaning Juniper II North.

Habitats observed in the course of CH2M HILL field investigation included cultivated wheat fields, shrub-steppe, and upland riparian shrub-steppe. Streams within the Facility area are intermittent or ephemeral. No surface water was present within the Facility site at the time of the field investigation. No alkali flat habitat was found within the study area. However, six vernal pools were identified within or adjacent to areas of proposed Facility activities.

Populations of sessile mousetail and little mousetail were identified in four of the vernal pools: W3, W4, W5, and W6 (see Figure 2 in Attachment A). Suitable habitat is present to support disappearing monkey flower. However, no individuals or populations of this species were observed during the field survey. No habitat was identified that might support northern wormwood or Robinson's onion.

CH2M HILL's field investigation concluded that sessile mousetail populations exist in several vernal pools within or adjacent to areas of proposed Facility activities. Sessile mousetail is a state Candidate species it is not currently subject to regulation under Oregon

ESA. However, if it is listed before Facility activities begin, federal ESA regulations and conservation measures will apply. The Facility was designed to avoid all identified populations of sessile mousetail.

Cultural Resources

A CH2M HILL team of archaeologists conducted a field survey of the Facility area in April 2006. No subsurface probes or excavations were conducted. Two archaeological sites were found and recorded. Neither of the two sites has been formally evaluated for listing on the National Register of Historic Places (NRHP). However, both sites are easily avoided by Facility construction and operation. The sites are located outside of the footprint of the proposed Facility. Both sites will be shown on all construction drawings and identified as "no entry" areas. In addition, these areas will be specifically called out in a preconstruction meeting to further ensure complete understanding of the requirement to avoid any activities in these areas. If the final turbine layout is within 200 feet of the site, the sites and a 50-foot buffer will be flagged in the field during construction. Should the Facility change such that these sites cannot be easily avoided, they will need to be formally evaluated for eligibility for listing on the NRHP. Appendix D contains a formal description of the field survey conducted in April 2006.

Will any material, construction debris, runoff, etc. enter a wetland or waterway?

The proposed project includes replacement of an existing culvert at one location and construction of an access road and ford crossing at another location within the Facility area. Replacement of the existing culvert will occur at a location where a turbine string access road and an underground electrical line cross stream drainage in China Ditch (identified in Attachment G, Figure 2, as crossing S27). The drainage is an intermittent stream in China Ditch. An existing road currently crosses the stream at this location. There is an existing 24-inch culvert crossing at this location. There was no flow present in the channel at the time of the field investigation (May and September).

Construction of the access road and underground electrical line crossing will involve excavation at the location of the existing road and culvert. The existing 16-foot road will be widened to a total width of 30 feet. The existing 24-inch-diameter culvert will be replaced with a new 37-foot-long culvert of the same diameter to accommodate the increased road width. Approximately 6 inches of bedding material will be placed under the new culvert. Clean native fill will be placed around the culvert. Minimum cover of 18 inches over the culvert will include the road surface of 3 inches top course over 9 inches base course. Inlet/outlet protection for each end of the culvert will consist of 18-inch-thick riprap, placed over geotextile fabric, extending 4 feet upstream/downstream. Final grading will match to existing (see Figure 3A in Attachment A).

Construction of the new access road will occur in Jones Canyon, where the proposed road crosses an intermittent stream that drains directly to the Columbia River approximately 3.5 miles north of the Facility site (identified in Attachment G, Figure 2, as crossing S8A). Road construction is needed to access proposed turbine string F (see Figure 2 in Attachment A). At this location, a slight depressional area becomes a marginally-defined shallow channel in places. However, no evidence of any regular flow was observed at the time of the field investigation (September 2005).

Construction of the ford crossing will involve excavation in the location of the existing road and areas up- and downstream for a length of 30 feet. Clean fill, consisting of ¾-inch minus crushed rock, 3-inch minus pit run rock, and class 100 riprap, will be placed in the channel to create the ford crossing. Finished elevation and contours will match the existing alignment (see Figure 3B in Attachment A).

Best management practices (BMPs) will be employed to ensure that temporary impacts to the stream area are avoided to the maximum extent practicable. BMPs may include the following:

- Prevent all construction materials and debris from entering waterway.
- Use filter bags, sediment fences, silt curtains, or other measures sufficient to prevent movement of soil.
- Use impervious materials to cover stockpiles when unattended or during rain event.
- Do not operate heavy machinery in waterway, where avoidable.
- Fence off planted areas to protect from disturbance and/or erosion.
- Flag or fence avoidable wetlands adjacent to the construction area for protection.

No temporary or permanent impacts to wetlands or vernal pools will occur as part of the proposed Facility activities.

(5) Project Impacts and Alternatives

Impacts to hydrology will result from construction of a culvert crossing and construction of an access road at two intermittent streams in the Facility area (identified in Attachment G, Figure 2, as crossings S8A and S27). A total of 64 linear feet of intermittent stream will be impacted to widen an existing road, replace an existing culvert, install an underground utility line, and construct a ford crossing (see Figures 3A and 3B in Attachment G). Total removal within the stream, below ordinary high water (OHW), accounts for 18.8 cubic yards of material. Total fill within the stream, below OHW, accounts for 84.8 cubic yards of material. The total impact area within the stream channel is 698 square feet or 0.016 acre.

Alternative Facility layouts with greater potential for stream crossing and wetland impacts were initially considered; however, the currently proposed Facility 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. Where impacts were unavoidable, the Facility was designed to minimize impacts. Efforts to avoid and/or minimize Facility impacts that were incorporated into the initial design include the following:

- Locating turbine strings, underground transmission cable, and Facility access roads to minimize number of stream crossings.
- Utilizing existing County and farm roads for Facility access and maintenance to the extent possible.
- Locating turbine strings, and underground transmission cable routes adjacent to existing County or farm roads as much as possible to minimize impacts associated with construction and maintenance of access roads.

- Locating new access roads, insofar as possible, adjacent to turbine towers. New access roads will serve a dual purpose of maintenance access for turbines and providing farmers with improved, all weather access to their agricultural fields.

Further efforts to minimize impacts from Facility construction include, but are not limited to, the following:

- Implementing BMPs (for further discussion, see section under (4) Project Purpose and Need titled: *Will any material, construction debris, runoff, etc. enter a wetland or waterway*)
- Preparing and implementing an Erosion Control Plan
- Locating staging areas at least 100 feet from waters of the State/U.S.
- Constructing the culvert crossing when the channel is dry. In the event of flow in the channel, work will cease and construction equipment removed from the channel.

(10) Supplemental Wetland Impact Information

Within the Leaning Juniper II North boundary, four potential stream crossings and five seasonal (vernal) pools were investigated to determine jurisdictional status (see the *Wetlands and Jurisdictional Waters Determination Report, Leaning Juniper Wind Energy Project, Gilliam County, Oregon* [PPM Energy, January 2005] and the addendum dated September 2, 2005). Three of the four potential stream crossings are mapped intermittent streams on the U.S. Geological Survey (USGS) map of the area. The fourth is a topographic drainage to a mapped intermittent stream. One of the streams (S25) was determined to be potentially jurisdictional under federal and state wetlands regulations. The other three were determined to be not jurisdictional within 500 feet of proposed Facility activities under federal and state regulations. All five vernal pools were determined to be potentially jurisdictional as wetlands under state and federal wetlands regulations. Three of the five vernal pools are located within 500 feet of proposed Facility activities.

Three potential stream crossings and one vernal pool in the Leaning Juniper II South area also were investigated. Both stream drainages are mapped intermittent streams on the USGS map of the area. Two of the streams (S8A and S27) were determined to be potentially jurisdictional under federal and state wetlands regulations. The other (S26) was determined to be not jurisdictional under federal and state regulations within 500 feet of proposed Facility activities. The vernal pool was determined to be potentially jurisdictional as a wetland under state and federal wetlands regulations. It is located within 500 feet of proposed Facility activities.

Potentially Jurisdictional Intermittent Streams that Will Not Be Impacted by Project Construction

The potentially jurisdictional intermittent streams discussed below come close to existing roads that are proposed to be widened; however, widening will be done on the upslope side and/or with no impact to the channels.

S14: The USGS map indicates an intermittent stream that is a headwater tributary to the stream in Blalock Canyon. The mapped drainage flows from the northeast and appears to continue in the same location as an existing gravel road for approximately 1 mile before

joining the main channel of Blalock Canyon. Field observations verified a potential drainage channel north of the road. However, the drainage ends at the roadway and there appears to be no current surface connection between this drainage and the channel of Blalock Canyon. The drainage is a narrow, shallow channel that is poorly defined in places. Defined bed and banks and presence of an apparent ordinary high water mark appear sporadically. No flow was present at the time of the field visit. It is likely that this is an ephemeral drainage. The NWI map indicates a palustrine emergent wetland upslope of this drainage; however, no evidence of wetland conditions was observed within 150 feet of the roadway. Potential wetland conditions were observed upslope of this point. The wetland was not delineated. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs including sagebrush, rabbitbrush, Russian thistle, and cheatgrass. Soils are dark brown (10YR 3/3) with no hydric features.

S25: The USGS map indicates an unnamed, intermittent stream adjacent to Rattlesnake Road in the northern portion of the Facility area. The channel flows in a narrow canyon from the southwest, parallel to Rattlesnake Road, draining to China Creek. No flow was present at the time of the field visit. Ordinary high water of the drainage was delineated within the Facility area. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs, including rabbitbrush (*Chrysothamnus nauseosus,* UPL), Russian thistle (*Salsola kaoli,* UPL), and cheatgrass (*Bromus tectorum,* UPL). Soils are dark brown (10YR 3/3) with no hydric features.

Potentially Jurisdictional Intermittent Streams that Will Be Impacted by Project Construction

The potentially jurisdictional intermittent streams discussed below cross an existing road that is proposed to be widened. Impacts at this location will include replacement of the existing culvert.

S8A: USGS and NWI maps indicate an intermittent stream channel meandering across the broad, flat canyon floor in this portion of the Facility area, draining directly to the Columbia River approximately 3.5 miles north of the Facility site. Located approximately 600 feet north of the road crossing at S8, conditions at S8A are similar to those at S8. At this location, a slight depressional area becomes a marginally-defined shallow channel in places. However, no evidence of any regular flow was observed. There were no indications of scouring or sedimentation, no water-borne debris, and no distinct change in vegetation between the depressional area/channel and the surrounding area. Vegetation consists entirely of upland shrub-steppe vegetation including big sagebrush (*Artemisia tridentate,* NOL), rigid sagebrush (*Artemisia rigida,* NOL), gray rabbitbrush (C*hrysothamnus nauseosus,* NOL), Russian thistle (*Salsola kali*, UPL), and cheatgrass (*Bromus tectorum*, UPL).

S27: The USGS map indicates an intermittent stream channel, China Ditch, flowing from southwest to northeast in the southeastern portion of the Facility area. An existing gravel road crosses this drainage with a 24-inch culvert crossing. The culvert is collapsed on the upstream side of the road. The channel drains to China Creek. No flow was present at the time of the field visit. Ordinary high water of the drainage was delineated within 500 feet of proposed Facility. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs with occasional juniper. Dominant shrubs and forbs include rabbitbrush, Russian thistle, bulbous bluegrass (*Poa bulbosa,* UPL), and cheatgrass. Soils are dark brown (10YR 3/3) with no hydric features.

References

CH2M HILL. 2006. Leaning Juniper II Wind Power Facility, Application for Site Certificate. Exhibit J: Wetlands. Submitted to the Oregon Energy Facility Siting Council. September 2006.

CH2M HILL. 2006. Leaning Juniper II Wind Power Facility, Application for Site Certificate. Exhibit S: Historic, Cultural, and Archaeological Resources. Submitted to the Oregon Energy Facility Siting Council. September 2006.

PPM Energy, CH2M HILL, and Northwest Wildlife Consultants, Inc. 2006. Leaning Juniper II Wind Power Facility, Application for Site Certificate. Exhibit Q: Threatened and Endangered Species. Submitted to the Oregon Energy Facility Siting Council. September 2006.

ATTACHMENT A

Figures

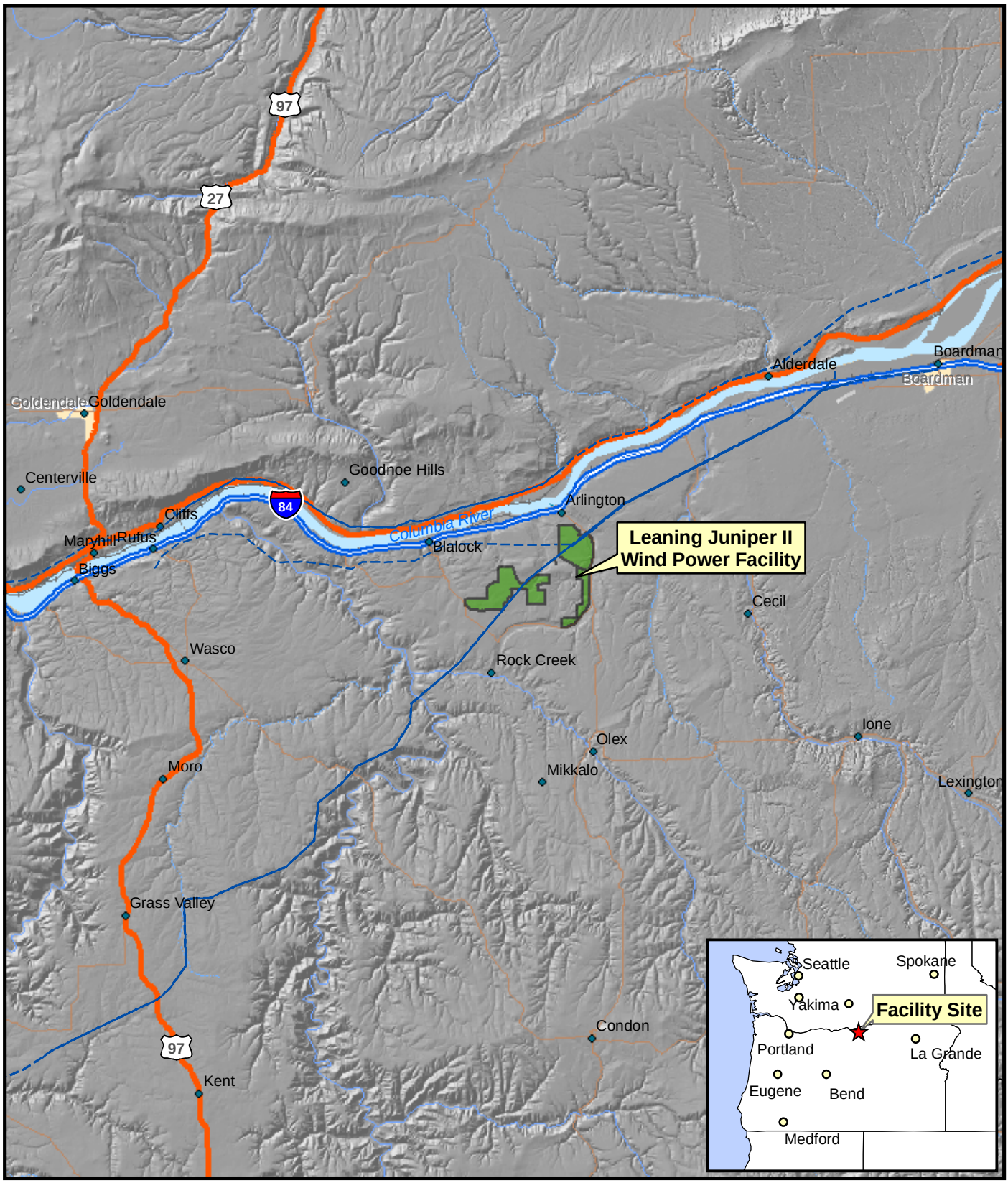

Figure 1

Vicinity Map

Leaning Juniper II
Wind Power Facility

- Cities
- Existing BPA Transmission Line
- Site Boundary

N

0 5 10 15

Miles

PPM Energy
A ScottishPower Company

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Figure 2

Facilities Map

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

Focused Study Locations

- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Non-Jurisdictional Waters
- Wetlands
- NWI Wetlands (POWFX)

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternative Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Substation

Proposed Temporary Facilities

- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Minor Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
S

0 2,000 4,000 6,000 Feet

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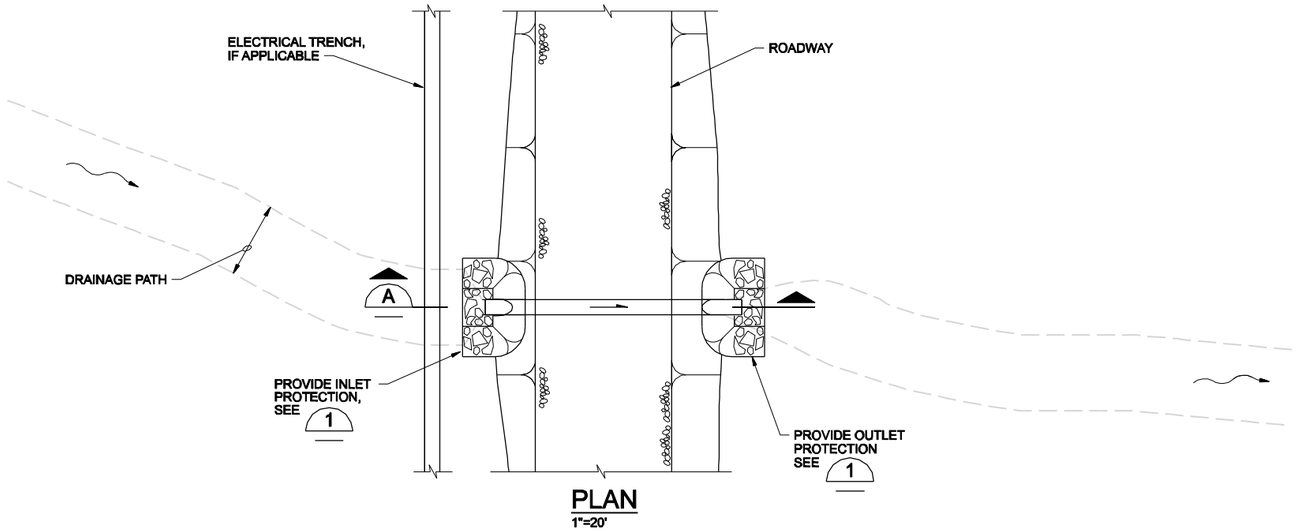

PLAN
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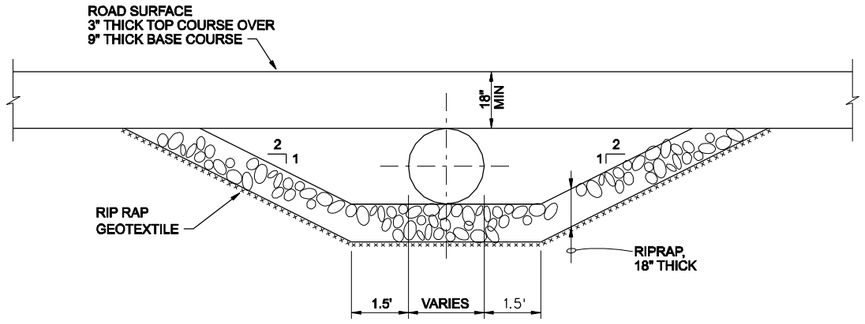

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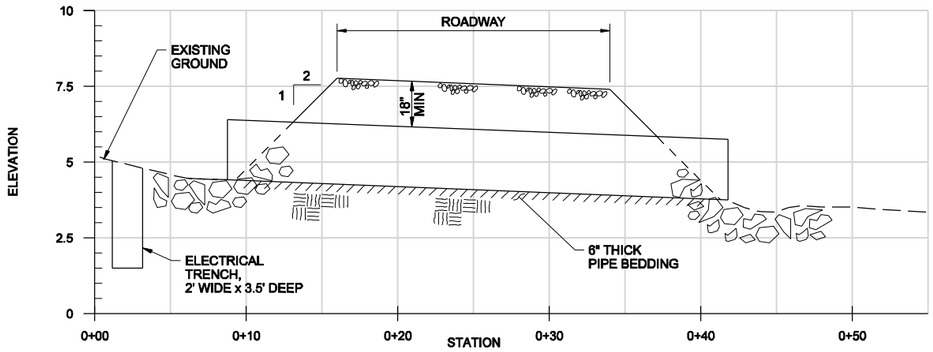

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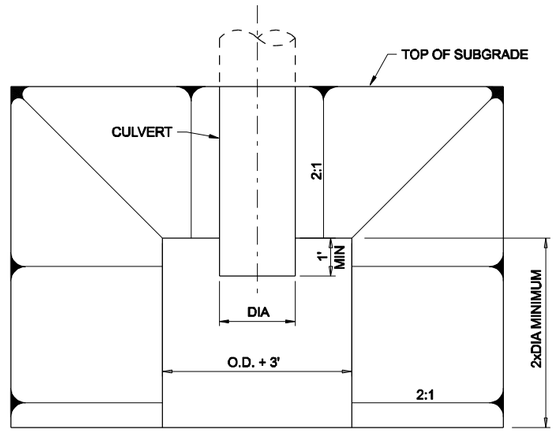
VERT: 1"=5'



PLAN

INLET/OUTLET PROTECTION DETAIL 1
1/4 "=1'

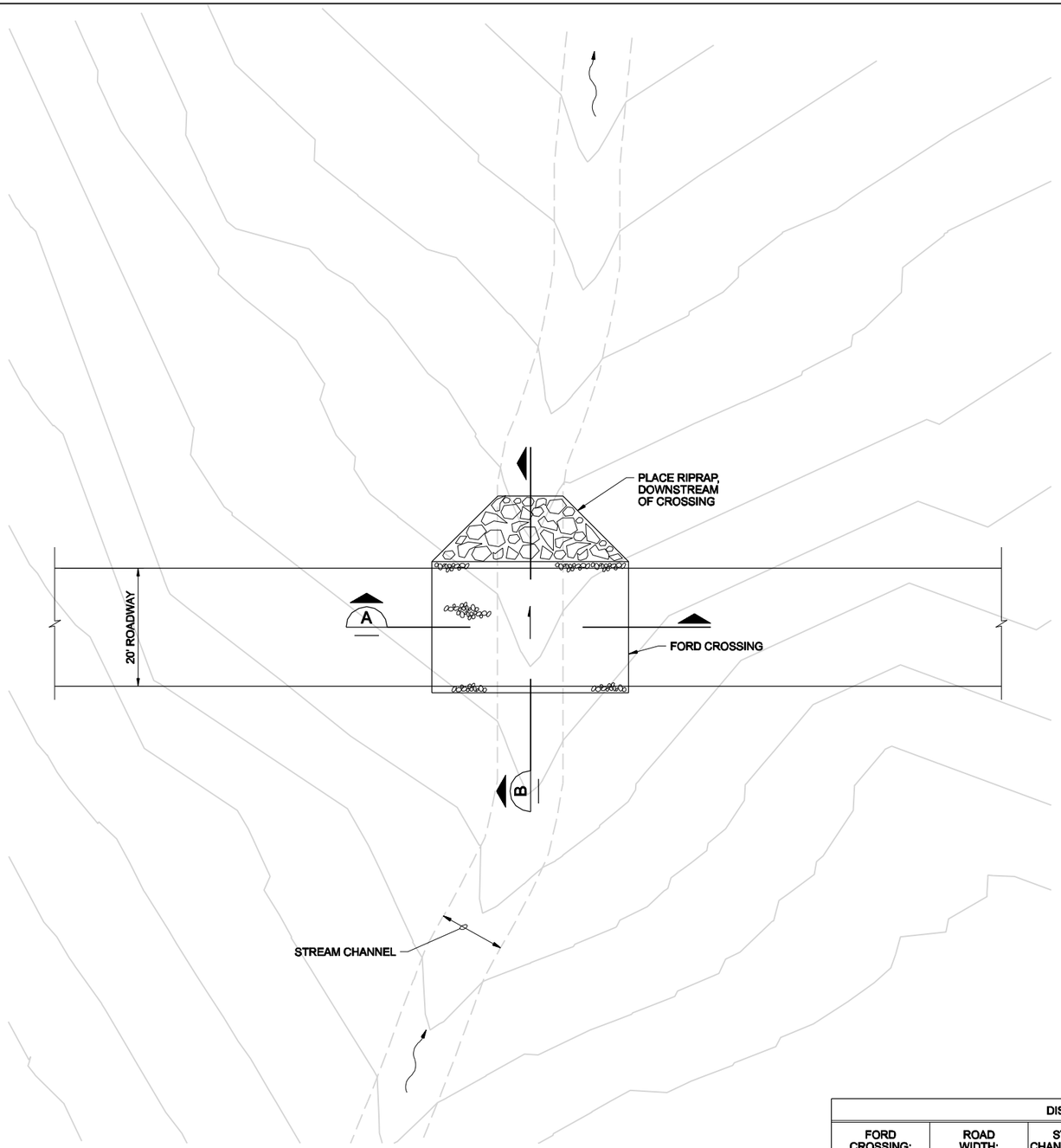
DISTURBED AREA WITHIN CHANNEL								
CULVERT PLACEMENT:	EXST ROAD WIDTH:	FINISHED ROAD WIDTH:	STREAM CHANNEL WIDTH:	IMPACT AREA WITHIN CHANNEL	REMOVAL (CUT) WITHIN CHANNEL	FILL WITHIN CHANNEL	WETLAND AREA IMPACT	WETLAND VOLUME CUT/ FILL
S27	16'	30'	32'	448 S.F.	10 C.Y.	76 C.Y.	N/A	N/A
ELECTRICAL CROSSING:	TRENCH WIDTH:		STREAM CHANNEL WIDTH:	DISTURBED AREA WITHIN	VOLUME (CUT)	VOLUME (FILL)		
S27	2'		7'	14 S.F.	1.8 C.Y.	1.8 C.Y.		

Figure 3A

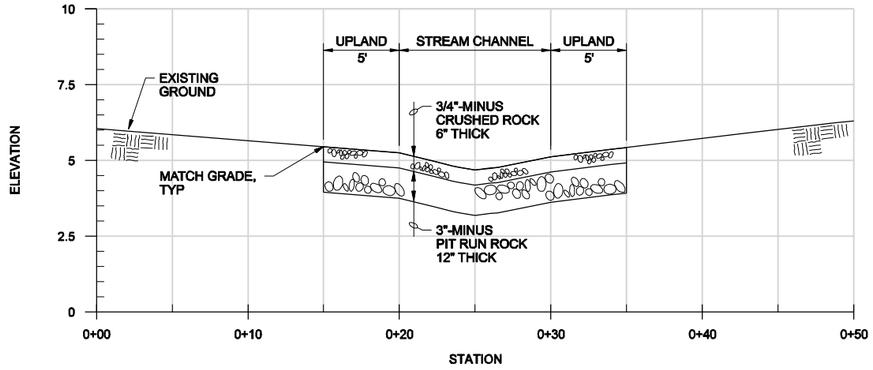
Typical Culvert Placement Plan and Cross-Sectional Views

Leaning Juniper II Wind Power Facility

CH2MHILL



PLAN
1"=20'



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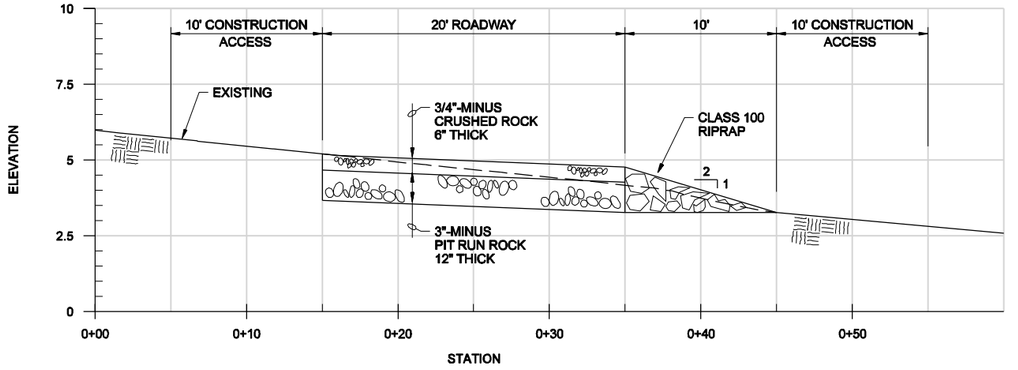
VERT: 1"=5'



SECTION B
HORIZ: 1"=10'
VERT: 1"=5'

DISTURBED AREA WITHIN CHANNEL					
FORD CROSSING:	ROAD WIDTH:	STREAM CHANNEL WIDTH:	IMPACT AREA WITHIN CHANNEL	VOLUME (CUT)	VOLUME (FILL)
S8A	20'	5'	250 S.F.	7 C.Y.	7 C.Y.

Figure 3B

Typical Stream Crossing Plan and Cross-Sectional Views

Leaning Juniper II Wind Power Facility

CH2MHILL

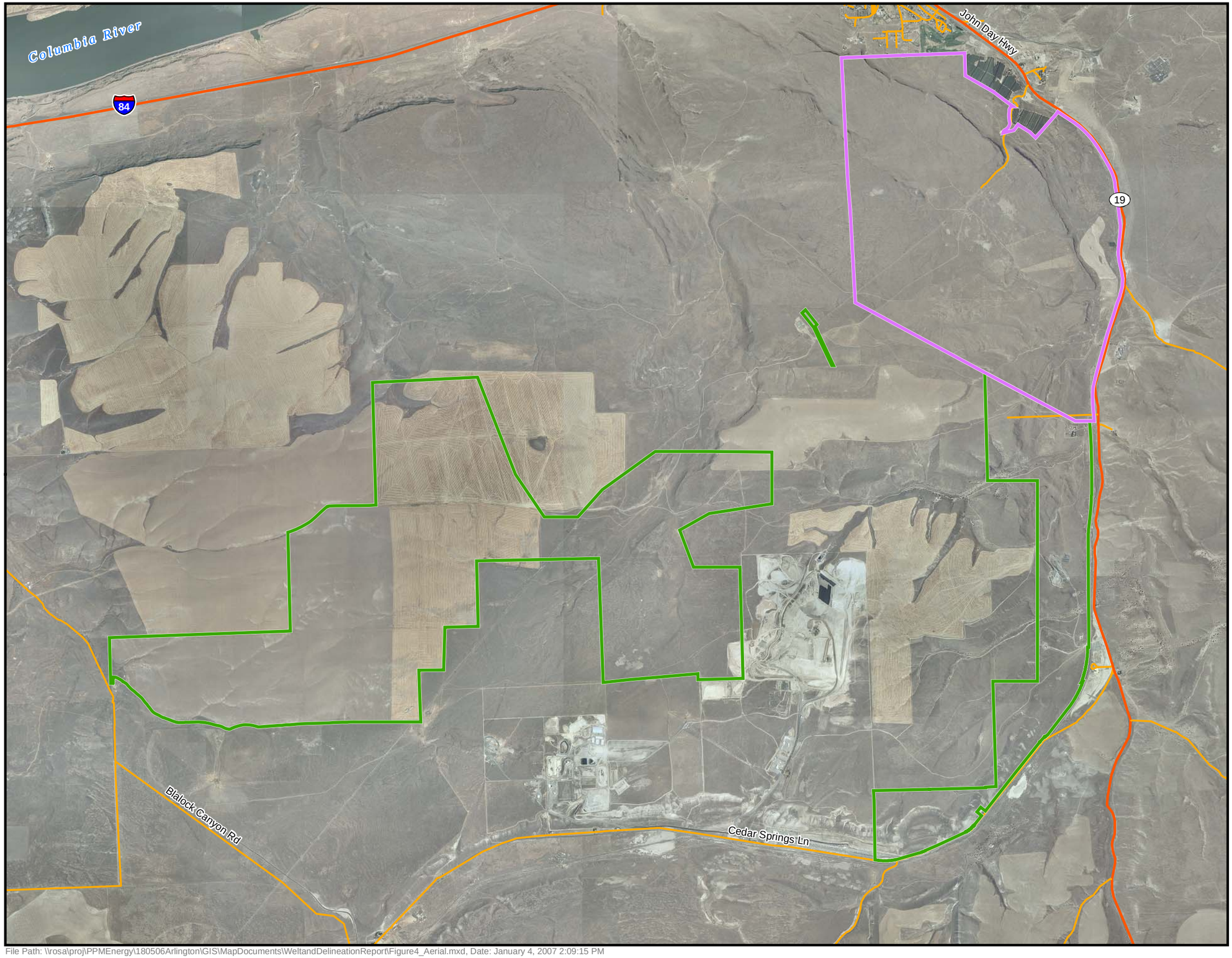


Figure 4

Aerial Photo (Source: USDA, 2005)

Leaning Juniper Wind Project

PPM Energy
A ScottishPower Company

Legend

- Leaning Juniper II North Site Boundary
- Leaning Juniper II South Site Boundary
- Roads
- Freeways and Highways

N
W E
S

0 2,000 4,000 6,000 8,000

Feet

CH2MHILL

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ATTACHMENT B

Legal Description of the Property and Tax Lot Maps

Attachment B

Legal Description of the Property			
Township	**Range**	**Section**	**Quarter Section**
3N	21E	35	SW
		34	NW, SW, SE
		33	NE, NW, SE, SW
2N	21E	2	NW, SW
		3	NE, NW, SE, SW
		4	NE, NW, SE, SW
		8	NE
		9	NE, NW, SE
		10	NE, NW, SE, SW
		11	NW
		15	NE, NW, SE, SW
		17	NW, SW
		18	NE, NW, SE, SW
		19	NE, NW, SE, SW
		22	NE, NW, SE, SW
		27	NE, NW, SW
		28	NE, SW, SE
		33	NE, NW, SW
2N	20E	11	SW, SE
		12	SW
		13	NE, NW, SE, SW
		14	NE, NW, SE, SW
		15	NE, SW, SE
		21	NE, NW, SE, SW
		22	NE, NW, SE, SW
		23	NE, NW, SE, SW
		26	NW
		27	NE, NW
		28	NE, NW

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

0 1,000 2,000 4,000 Feet

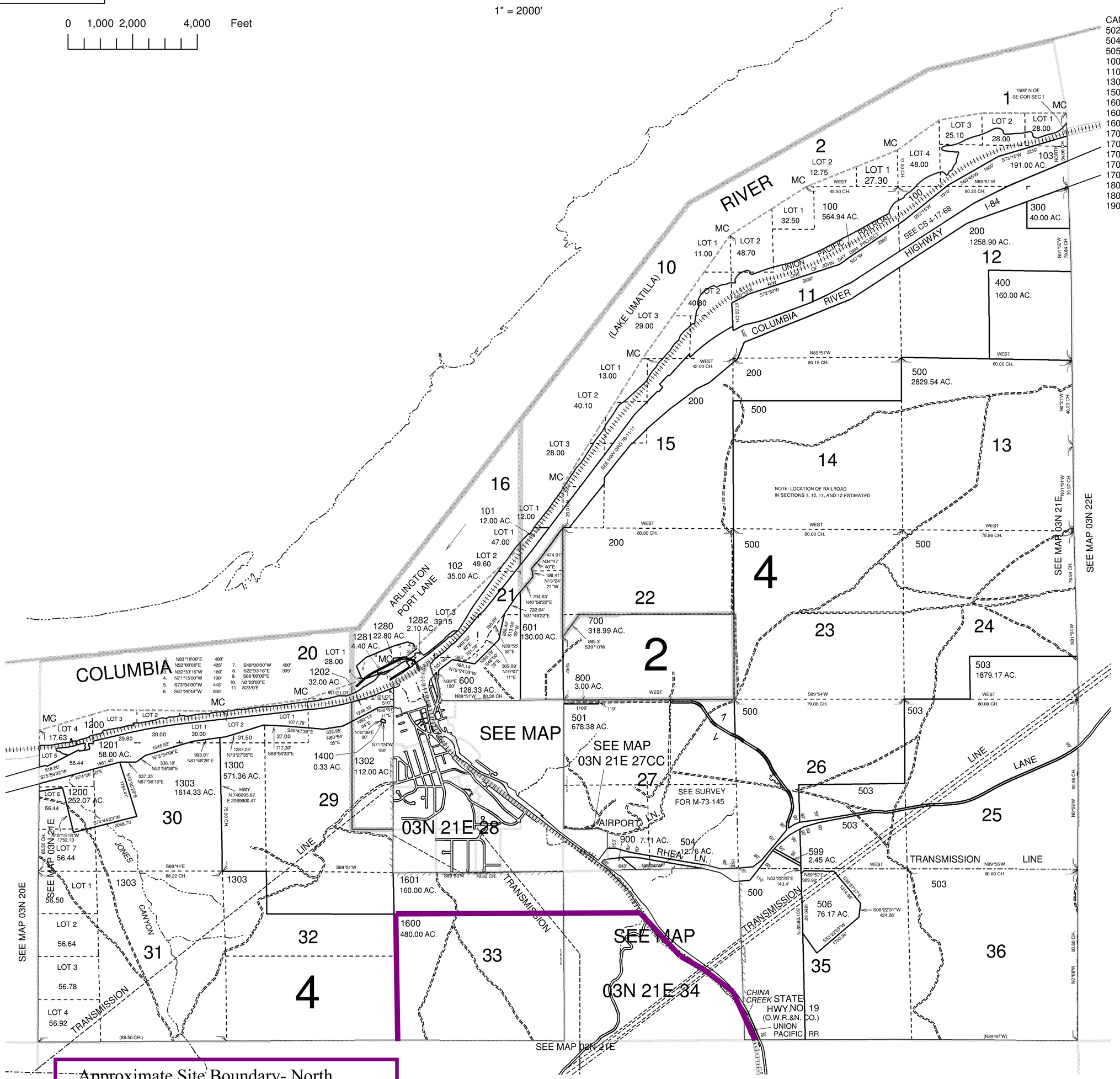
T.03N. R.21E. W.M.

GILLIAM COUNTY

1" = 2000'

03N 21E

CANCELLED NO.
502
504
505
1000
1100
1301
1500
1602
1603
1604
1700
1701
1702
1703
1704
1800
1801
1900



Approximate Site Boundary- North

Approximate Site Boundary- South

Printed by RT

Sep 24, 2003

03N 21E

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

T.2N . R.20E . W.M.
GILLIAM COUNTY

1"=2000'

SEE MAP 1N 20E

SCALE IN FEET 0 2000 4000

2N 20E & INDEX

CANCELLED NO.
200
400
500
600
1300
1301
1400
1401
1601
1700
1800
1900
2100
2200
2201
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2314
2315
2316
2400
2401
2703

SEE MAP 2N 19E

SEE MAP 2N 21E

SEE MAP 1S 20E

4-0

REVISED: GW
10/18/00

2N 20E & INDEX

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSE ONLY

T.02N. R.21E. W.M.
GILLIAM COUNTY

1"=2000'

SEE MAP 03N 21E

02N 21E

CANCELLED NO.
1200M1
1201M1
1202M1
1203M1
1204M1
1205M1
1206M1
1207
1208
1700M1
1702
1801M1
2000
2100M1
2101
2200

SCALE IN FEET 0 2000 4000

SEE MAP 02N 20E

SEE MAP 02N 22E

SEE MAP 01N 21E

PARCEL 600 SEC. 10
1 N77°30'W 483.84'
2 SOUTH 110'
3 WEST 600'
4 NORTH 700'
5 EAST 500'
6 SOUTH 300'
7 EAST 100'
8 SOUTH 249.02'
9 S77°30'W 495.88'
10 S17°04'W 40.12'

PARCEL 700 SEC. 14
1 WEST 208' 8.5"
2 SOUTH 417' 5"
3 EAST 208' 8.5"
4 NORTH 417' 5"

PARCEL 1205 SEC. 30
1 N79°54'09"W 138.82'
2 S57°57'15"W 347.30'
3 S83°58'39"W 609.36'
4 N37°35'30"W 461.89'
5 S60°36'16"W 925.77'
6 S82°39'08"W 683.01'
7 N83°43'45"W 156.85'
8 N84°21'25"W 429.83'
9 N85°45'51"W 865.67'

PARCEL 1101 SEC. 31
1 S0°18'39"W 366.23'
2 N79°27'54"W 626.60'
3 N79°06'22"W 799.93'
4 N79°26'18"W 562.47'
5 S89°55'24"E 1956.49'

PARCEL 1209 SEC. 31
1 N00°16'20"W 180.29" M/L
2 N86°39'23"E 1841.62'
3 R=1879.86' 461.23' ARC
4 S79°17'09"E 688.80'
5 S78°29'02"E 250.07'
6 S79°26'18"E 464.10' M/L
7 N89°55'24"W 3674.77'

CS FILE NO. 4-169-0101-71

REVISED: SD 03/03/03

02N 21E

ATTACHMENT C

Listed and Sensitive Plant and Wildlife Species

ATTACHMENT C

Special Status/Sensitive Animal and Plant Species List

TABLE C-1
Special Status/Sensitive Animal and Plant Species of Known or Potential Occurrence Within the Leaning Juniper II Facility Analysis Areas

Common Name and Scientific Name	Federal Status	ODFW Status*	Occurrence Within or Near the Facility Site Boundaries D = Documented N = Not Documented
Mammals			
White-tailed jackrabbit *Lepus townsendii*	–	SU	**D**—Recorded in the Facility area, infrequently observed. Historical records in the general area: observed 1-2 miles south of Facility area in 2001 (Kronner, personal field notes).
Pallid bat *Antrozous pallidis*	–	SV	**N**—The general habitat is correct; large crickets available as food; presence will depend on availability of deep rock crevices as other roost types are mostly lacking.
Townsend's big-eared bat *Corynorhinus townsendii*	SoC	SC	**N**—Appropriate roost sites are mostly lacking; has not been recorded in Gilliam County (although not an easily detected species); questionable moth population on ridges and sites where wind turbines will be placed. Closest known population in Klickitat County, WA.
Silver-haired bat *Lasionycteris noctivagans*	SoC	SU	**N**—Area lacks tree roost sites. Likely to occur during fall migration (based on fatality records at four regional wind projects and preconstruction sampling conducted in July and September 2000 for the Condon Wind Project, Gilliam County, OR).
Western small-footed myotis *Myotis ciliolabrum*	SoC	SU	**N**—Habitat is correct for both foraging and roosting, although use of ridges and sites where wind turbines will be placed is questionable.
Long-eared myotis Myotis evotis	SoC	SU	**N**—More common in forests than arid grassland and shrub-steppe.
Fringed myotis *Myotis thysanodes*	SoC	SV	**N**—Most common roosts are in caves, mines, and snags; there are no records of this species for the Columbia Basin.
Long-legged myotis *Myotis volans*	SoC	SU	**N**—More common in forests than arid grassland and shrub-steppe.

TABLE C-1
Special Status/Sensitive Animal and Plant Species of Known or Potential Occurrence Within the Leaning Juniper II Facility Analysis Areas

Common Name and Scientific Name	Federal Status	ODFW Status*	Occurrence Within or Near the Facility Site Boundaries D = Documented N = Not Documented
Yuma myotis *Myotis yumanensis*	SoC	–	**N**—Might roost in rock crevices or old abandoned buildings, but would most likely forage near or over the Columbia River. Documented August 25, 2005, through acoustical monitoring at the town of Arlington approximately 4.5 miles from Leaning Juniper Facility site.
Birds			
Greater sandhill crane *Grus canadensis tabida*	–	SV	**N**—Not observed. May occur as migrant during migration seasons.
Long-billed curlew *Numenius americanus*	–	SV	**D**—Recorded in the analysis area and known to occur in the general area. Nests in grassland flats and plateaus. Considered "Highly Imperiled" (U.S. and Canadian shorebird conservation plans) due to declines throughout its geographic range.
Golden eagle *Aquila chrysaetos*	EPA BoCC	–	**D**—Observed infrequently during avian use study of Leaning Juniper II South; none recorded during spring 2006 point count surveys of Leaning Juniper II North. A few nests are present within the general landscape: one long-term historical nest is located within 5 miles east of the Facility and was active in 2005 and 2006 (Kronner, personal field notes, 2005 and Pebble CUP 2006). Another historical nest is located approximately 5 miles northwest of Facility and a third is approximately 10 miles northeast of Facility.
American peregrine falcon *Falco peregrinus anatum*	NW BoCC	E	**N**—Has been seen in Arlington area (Morgan, pers. comm., 2004). Basalt cliffs along Columbia River within 5 to 7 miles are potentially suitable for nesting. Historical nest sites are present within 7 to 30 miles of the Facility. The nearest known active next in 2005 was located within 11 miles.
Ferruginous hawk *Buteo regalis*	SoC BoCC	SC FS	**D**—Nest structures on site are juniper trees. In 2005 and 2006, one active nest within the Facility boundary and one active nest southeast of Facility.
Swainson's hawk *Buteo swainsoni*	BoCC	SV	**D**—Nests onsite in junipers or isolated deciduous trees.
Western burrowing owl *Athene cunicularia*	SoC BoCC	SC	**D**—One confirmed nest observed nearby in 2005 – was not active in 2006. No nests observed within the analysis area..

TABLE C-1
Special Status/Sensitive Animal and Plant Species of Known or Potential Occurrence Within the Leaning Juniper II Facility Analysis Areas

Common Name and Scientific Name	Federal Status	ODFW Status*	Occurrence Within or Near the Facility Site Boundaries D = Documented N = Not Documented
Loggerhead shrike *Lanius ludovicianus*	BoCC	SV	**D**—Suitable nesting habitat present—sagebrush and junipers. Observed during in-transit travel in sagebrush and junipers. Not typically found in the Columbia Basin in winter. Observed along Hwy 19 approximately 8.5 miles south of Arlington in December 1999 (Kronner, personal field notes).
Sage sparrow *Amphispiza belli*	BoCC	SC FS	**N**—May occur during migration. Sagebrush shrub habitat onsite very limited and likely not extensive to support breeding populations. Breeds at Boardman Conservation Area several miles east.
Grasshopper sparrow *Ammodramus savannarum*	–	SV FS	**D**—Observed within the analysis area for Leaning Juniper II North during 2006 surveys. Some grasslands with good vertical structure for cover and perching.
Reptiles and Amphibians			
Northern sagebrush lizard *Sceloparus graciosus graciosus*	SoC	SV	**D**—Suitable habitat exists on the site in native habitat where there is less dense grass cover; also found in sandy soils with sagebrush and juniper or sagebrush and sand dunes. Observed within the analysis area for Leaning Juniper II south during 2005 surveys.
Western toad *Bufo boreus*	–	SV	**N**—No aquatic habitat, very limited potential for upland movements during wet periods. May be found around homes or Landfill Office where woody cover or ponds and domestic livestock watering sites may be present.
Plants			
None			

* Obtained from Oregon Natural Heritage Information Center Web Site on January 2005.

– = No listing.

Federal:

T	Threatened	SoC	Species of Concern
E	Endangered	NW	Not Warranted; delisted
C	Candidate	EPA	Eagle Protection Act

BoCC USFWS Birds of Conservation Concern (BCR 9, Great Basin).

Note: All migratory birds are protected by the Migratory Bird Treat Act (MBTA).

Sources for status = USFWS 2005, USFWS 2002

Oregon:

T	Threatened
E	Endangered
C	Candidate
SV	Sensitive Vulnerable; listing as threatened or endangered is not believed to be imminent and can

TABLE C-1
Special Status/Sensitive Animal and Plant Species of Known or Potential Occurrence Within the Leaning Juniper II Facility Analysis Areas

Common Name and Scientific Name	Federal Status	ODFW Status*	Occurrence Within or Near the Facility Site Boundaries D = Documented N = Not Documented

be avoided through continued or expanded use of adequate protective measures and monitoring.

SC Critical; listing as threatened or endangered is pending or may be appropriate if immediate conservation actions are not taken.

SU Undetermined; status is unclear, may be susceptible to population decline of sufficient magnitude that the species could qualify for endangered, threatened, critical, or vulnerable status. Additional information is required before a determination can be made.

SP Peripheral or naturally rare; low population due to naturally limiting factors; maintaining status quo for habitats and populations is minimum requirement.

FS Focal Species highlighted in the Draft John Day Subbasin Plan (CBMRCD/NWPPC, 2004)

State and Federal Status Definitions

EA—Bald and Golden Eagle Protection Act.

SoC—Species of Concern. Former Category 2 candidates for which additional information is needed in order to propose as threatened or endangered under the ESA; these species are under review for consideration as Candidates for listing under the ESA.

SC—State Sensitive-Critical. Species for which listing is pending; or those for which listing may be appropriate if immediate conservation activities are not taken. Also considered critical are some peripheral species which are at risk throughout their range, and some disjunct populations.

SV—State Sensitive-Vulnerable. Species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases the population is sustainable, and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.

SU—State Sensitive-Undetermined Status. Animals in this category are species whose status is unclear. They may be susceptible to population decline of sufficient magnitude that they could qualify for endangered, threatened, critical or vulnerable status, but scientific study would be required before a judgment can be made.

ONHP Definitions

List 1—taxa that are threatened with extinction or presumed to be extinct throughout their entire range.

List 2—taxa threatened with extirpation or presumed extirpated from Oregon; often peripheral or disjunct species which are of concern considering species diversity within Oregon; can be very significant in protecting the genetic diversity of the taxon; ONHP regards extreme rarity as a significant threat and has included species which are very rare in Oregon on this list.

List 3—taxa for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.

List 4—taxa which are of conservation concern but not currently threatened or endangered; including taxa that are very rare but considered secure as well as those declining in numbers or habitat but still too common to be proposed as threatened or endangered; these taxa require continued monitoring.

Ex—Presumed extirpated or extinct.

ATTACHMENT D

Cultural Resources Addendum

Confidential information.

ATTACHMENT E

Compensatory Site Mitigation Plan

Compensatory Mitigation and Site Revegetation Plan Leaning Juniper II Wind Power Facility Gilliam County, Oregon

PREPARED FOR: Sara McMahon/PPM Energy
Jess Jordan/Oregon Department of State Lands
Karla Ellis/U.S. Army Corps of Engineers

PREPARED BY: Nichole Coulter/CH2M HILL
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COPIES: Erin Toelke/CH2M HILL

DATE: February 13, 2007

1.0 Introduction

Unavoidable permanent impacts from the Leaning Juniper II Wind Power Facility (the Facility) to approximately 0.016 acre (64 linear feet of stream channel) of in-water habitat are anticipated. In-water habitat within the proposed Facility area consists of intermittent and ephemeral stream channels. Impacts will occur at one intermittent channel in conjunction with improvements to an existing road crossing and installation of an underground utility line at the drainage.

In accordance with Oregon Administrative Rule (OAR) 141-085-0115, compensatory mitigation is required to compensate for adverse impacts to water resources of the state. A Compensatory Mitigation Plan including mitigation goals and objectives must be submitted with the Joint Permit Application. The mitigation goals must describe the intent or purpose of the compensatory mitigation proposal. The compensatory mitigation objectives describe the direct actions necessary to achieve the compensatory mitigation goals. Mitigation objectives are performance based and measurable; they describe water regimes, vegetation structure, soil morphology, and/or habitat features that will be restored, enhanced, or created as a part of the compensatory mitigation plan. Compensatory mitigation may include onsite enhancement (e.g., planting or seeding riparian vegetation) of water resources of the state.

The resource replacement mitigation goal is to compensate for lost in-water habitat through planting of riparian vegetation along an intermittent stream course within the Facility area. This will be done in coordination with the mitigation efforts proposed as part of the Leaning Juniper I permit application.

A 20-foot-wide riparian corridor will be planted along a 70-foot length of stream in Jones Canyon approximately 25 feet up- and down-stream of Crossing S8, which was permitted as part of Leaning Juniper I (see Figure 2 in Attachment A). This area is generally a shrub-

steppe habitat that has been highly impacted by current and historical agricultural and grazing practices. The area will be planted with an approved native seed mix as rapidly as possible to promote development of natural habitat features and ecological functions.

The revegetation plan was developed using guidelines and plant lists provided by Michele Wanner, Range Conservation with the Natural Resources Conservation Service (NRCS) in Condon, Oregon. Plants selected for the revegetation were those recommended by NRCS for riparian habitat restoration along streams in the Columbia Plateau Major Land Resource Area (MRLA). MRLAs are geographically associated land types that have been developed for the nation and are characterized by a particular pattern of soils, climate, water resources, and land uses. In addition, because growing environments may differ within sites, seed mixes were selected to accommodate these differences as determined by the CH2M HILL biologist during the field investigation. Revegetation success criteria include a minimum of 80 percent vegetation cover over disturbed soil surfaces.

2.0 Project Area

2.1 Project Description

Leaning Juniper Wind Power II, LLC (the Applicant) proposes to build and operate a wind power facility at a site approximately 3 miles southwest of Arlington on private land in an unincorporated area of Gilliam County (see Figure 1 in Attachment A to the Joint Permit Application Supplement). The Facility area is approximately 18 square miles between Blalock and Alkali Canyons approximately 6 miles southwest of Arlington, Oregon. The Facility area lies entirely in Gilliam County, Oregon in T2N, R20E, Sections 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, and 28 and T2N, R21E, Sections 2, 3, 4, 8, 9, 10, 11, 15, 17, 18, 19, 22, 27, 28, and 33 and T3N, R21E, Sections 33, 34, and 35.

This application addresses impacts associated with Leaning Juniper II, which consists of the development of up to 279 megawatts (MW) and 133 turbines in the Facility area (see Figure 2 in Attachment A):

The proposed Facility consists of the following components:

- Up to 133 wind turbines
- Approximately 22 miles of newly constructed access roads
- Four permanent meteorological towers
- A 34.5-kilovolt (kV) collector cable system linking each turbine to the next and to the Facility substation. The collector cable system will include both underground and overhead sections. Using aboveground structures allows the collector cables to "span" canyons and intermittent streams and thus to reduce environmental impacts. Underground sections will be buried at least 3 feet below grade. Overhead sections would be installed on wooden pole structures.
- A Facility substation, at which power from Facility turbines is stepped up from 34.5 kV to 230 kV
- Up to two operations and maintenance (O&M) one-story buildings that house shop facilities, a kitchen, an office, and a washroom

- A short (estimated to be less than 400 feet) 230-kV overhead transmission line connecting the Facility substation to the existing BPA 230-kV transmission line

Proposed Facility impacts to jurisdictional waters include one location where both a turbine access road and an underground collector line cross an intermittent stream channel.

2.2 Physiography, Geology, and Soils

The site is located in the Arlington, Oregon-Washington (USGS, 1971), and Sundale, Oregon-Washington (USFWS, 1971) 7.5-minute quadrangles of the USGS topographic maps. The USGS maps indicate a total of 13 stream channels within the proposed Facility area. Topography consists of high plateaus and rolling hills dissected by stream drainages in canyons and draws. Elevation ranges from 600 feet mean sea level (msl) (W.M.) in the eastern portion of the Facility area to 1,340 feet on the high plateau west of Jones Canyon in the northern portion of the site.

Three major stream channels were identified within or adjacent to the proposed Facility area. All appear to be intermittent streams, channeling water seasonally. All three drain directly to the Columbia River. China Creek in Alkali Canyon, adjacent to the Facility site on the south and east, drains to the Columbia River at Arlington, approximately 4 miles northeast of the Facility site. Jones Canyon bisects the site, flowing southwest to northeast, then north to the Columbia. Blalock Canyon borders the westernmost portion of the Facility site and continues northwest to its confluence with the Columbia. All three of these streams are presumed to be fish-bearing for at least a portion of every year owing to their proximity to the Columbia River.

Ten unnamed intermittent or ephemeral stream drainages were also identified within the proposed Facility area. Six of these channels drain directly to China Creek, three to Blalock Canyon, and one to Jones Canyon. All are one order above these presumed fish-bearing streams.

The site is located within the Columbia Basin Province (Franklin and Dyrness, 1973, 1988). The Columbia Basin Province occupies the area between the Cascade Range and Blue Mountains in Oregon. Geology of this area is dominated by the Columbia River Basalt formation, a flood-basalt layer covering over 500,000 square kilometers in Oregon, Washington and Idaho. The Columbia River Basalt formation, ranging in total thickness from 600 to over 1,500 meters, is made up of numerous individual flows about 3 to 30 meters thick. Plio-Pleistocene loess deposits cover the Columbia River Basalt over extensive areas resulting in areas characterized by smoothly rolling hills and soils of high fertility.

Soils within the Facility area are primarily loess, or loess over basalt, that occurs on benches and ridgetops. Soils are well-drained with moderate permeability. Depth to bedrock is 20 to 60 inches.

2.3 Climate

The climate of the Facility area is characterized as arid to semiarid and is directly linked to the rainshadow effect of the Cascade Mountains. The annual rainfall is about 15 inches.

2.4 General Vegetation

Much of the land within the Facility area is planted in dryland wheat. Areas that are not under cultivation predominantly consist of heavily grazed shrub-steppe habitat. Shrub-steppe habitat is dominated by rabbitbrush (*Chrysothamnus sp.)*, sagebrush (*Artemesia sp.*), and various non-native species including Russian thistle (*Salsola kali*), and cheatgrass (*Bromus tectorum*). Occasional western juniper (*Juniperus occidentalis*) occurs along the larger stream drainages.

2.5 Land Use

The Facility area is entirely privately owned agricultural land with much of the land area planted in dryland wheat.

2.6 Environmental Conditions

Environmental conditions within the Facility area are generally conducive to the establishment of desirable plant species. While low precipitation and well-drained soils provide little available moisture for germinating seeds, timing of seeding to occur after the onset of seasonal rains should encourage good germination. Past and present disturbance to the vegetative communities has allowed the establishment of non-native, weedy species. These species could spread to areas disturbed by construction activities and compete with planted species for the limited resources. Noxious weeds present within the Facility area include cheatgrass.

3.0 Planting Plan

Permanent impacts to waters of the U.S. will result from replacement of an existing culvert and construction of an access road at two intermittent streams (S27 and S8A, respectively) (see Figure 2 in Attachment G). Total impacts in waters of the U.S. for these crossings are 0.016 acre and 64 linear feet. Regional General Permit (RGP) C- *Utility Line Activities* allows the construction of access roads for construction and maintenance of utility lines in nontidal waters of the U.S. provided the discharges do not cause the loss of greater than 0.5 acre of nontidal waters of the U.S. RGP E -*Linear Transportation Projects* allows the construction or improvement of linear transportation projects provided the discharges do not cause the loss of greater than 0.5 acre of nontidal waters of the U.S. Compensatory mitigation under RGP E is required only when preconstruction notification (PCN) is required. Impacts for the proposed Facility fall below the threshold of 0.1 acre for PCN. The proposed Facility meets criteria for permitting under the Department of State Lands (DSL) *General Authorization for Certain Transportation-Related Structures*. Total impacts are less than ½ acre and less than 5,000 cubic yards of removal plus fill.

Temporary impacts may occur 10 feet up- and downstream of the proposed culvert crossing. These impacts may include disturbance of the stream bed in conjunction with the adjacent excavation and fill for the crossing. If impacts occur, these areas will be restored to pre-existing conditions upon completion of the ford crossing.

The planting methods specified in sections 3.1 through 3.4 are to be used for all areas of temporary ground or vegetation disturbance throughout the Facility area. Resource replacement planting for 0.016 acre of permanent impacts to waters of the State/U.S. will

involve seeding of an approximately 600-square-foot area adjacent to an intermittent stream channel.

3.1 General

- No removal of woody vegetation is anticipated in conjunction with this Facility.
- Restoration areas will be maintained and monitored as stipulated in the monitoring and maintenance plans for the Facility to meet success criteria of 80 percent survival of planted species, and 80 percent cover of all disturbed soils.
- No topsoil, seeding, or mulch shall be installed in streamside areas below ordinary high water.

3.2 Seeding

One seed mixture was developed for use in revegetating disturbed areas (Table 1a). Disturbed agricultural areas will be replanted with dryland wheat. In order to re-establish plant communities of most value to wildlife, only native species will be used. Species were selected based on their tolerance to xeric conditions, the availability of their seed, and a variety of other factors. The following practices will be implemented:

- Disturbed soil surfaces will be stabilized with native seed mix immediately after road and bridge construction.
- Areas of soil disturbance will be seeded immediately upon Facility completion with native grasses or legumes, free of weed species. Landscape fabric or cellulose or straw mulch will be used according to manufacturer/supplier specifications for application for temporary erosion control.

TABLE 1A: SEED MIXTURE #1: TEMPORARILY DISTURBED UPLAND AREAS

Specified Seed Mix		**Minimum Pounds/Acre Pure Live Seed (PLS)***
Common Name	**Scientific Name**	
Secar Bluebunch Wheatgrass	*Pseudoroegneria spciata* ssp. *spicata*	6
Sherman Big Bluegrass	*Poa ampla (secunda)*	6
Critana Thickspike Wheatgrass	*Elymus lanceolatus*	6
Whitmar Beardless Wheatgrass	*Pseudoroegneria spicata* ssp. *inermis*	6
Sandberg's Bluegrass	*Poa sandbergii (secunda)*	0.4
Basin Big Sagebrush	*Artemisia tridentata*	0.4
	Total:	**24.8 lbs/acre**

Notes:

This seed mixture is for use in revegetating all areas of temporary ground disturbance within the Facility area.

*Include at least 10 percent of each species by weight. PLS is the amount of living, viable seed in a larger total amount of seed. The amount of seed to be applied is obtained by using the purity and germination percentages from the label on the actual bag of seed to be used on the Facility.

Table 1b shows a seed mixture for use in planting the identified resource replacement area.

TABLE 1B: SEED MIXTURE #1: UPLAND RIPARIAN RESOURCE REPLACEMENT

Specified Seed Mix		Minimum Pounds/Acre Pure Live Seed (PLS)*
Common Name	**Scientific Name**	
Secar Bluebunch Wheatgrass	*Pseudoroegneria spciata* ssp. *spicata*	6
Sherman Big Bluegrass	*Poa ampla (secunda)*	6
Critana Thickspike Wheatgrass	*Elymus lanceolatus*	6
Whitmar Beardless Wheatgrass	*Pseudoroegneria spicata* ssp. *inermis*	6
Sandberg's Bluegrass	*Poa sandbergii (secunda)*	0.4
Basin Big Sagebrush	*Artemisia tridentata*	0.4
Wood's Rose	*Rosa woodsii*	2
Serviceberry	*Amelanchier alnifolia*	2
	Total:	**28.8 lbs/acre**

Notes:

This seed mixture is for use in planting the identified resource replacement area.

*Include at least 10 percent of each species by weight. PLS is the amount of living, viable seed in a larger total amount of seed. The amount of seed to be applied is obtained by using the purity and germination percentages from the label on the actual bag of seed to be used on the Facility.

3.3 Seed Planting Methods

The following planting methods should be used within the Facility area. The choice of methods should be based on site-specific factors such as slope, erosion potential, and the size of the area in need of revegetation. Temporary seeding should be done in March-April (for disturbance that occurs during the winter and spring), and/or in October-November (for disturbance that occurs in the summer and fall). Permanent seeding should be done in October-November following the onset of seasonal rains. Disturbed, unseeded ground may require chemical or mechanical weed control in May or June, before weeds have a chance to go to seed.

3.3.1 Broadcast Method

1. Obtain the seed from a reputable source to avoid contamination;

2. Broadcast the seed mixture at the given rate;

3. Apply locally obtained, weed free straw at a rate of 2 tons per acre immediately after broadcasting the seed;

4. Crimp straw into the ground using a tractor-mounted straw crimper.

3.3.2 Hydroseed Method

1. Obtain the seed from a reputable source to avoid contamination;

2. Broadcast the seed mixture at the given rate;

3. Apply wood cellulose fiber mulch (mixed with a tackifier) at a rate of 1 ton per acre immediately after broadcasting the seed.

3.3.3 Drill Method

1. Obtain the seed from a reputable source to avoid contamination.

2. Plant seed mixture at ½ the rate given in Table 1 using a seed drill.

3. Apply locally obtained, weed free straw at a rate of 2 tons per acre immediately after broadcasting the seed.

4. Crimp straw into the ground using a tractor-mounted straw crimper.

3.4 Erosion Control

Erosion control measures will include filter bags, sediment fences, silt curtains, sediment traps, or other similar devices; impervious materials to cover stockpiles when unattended or during rainfall; and/or graveled construction access roads. Mats or pallets will be used at wetland accesses if soil compaction is a problem. Erosion control measures are to be implemented until soils are stable.

3.5 Mitigation and Monitoring

Mitigation for permanent impacts to 0.016 acre (64 linear feet) of waters of the State/U.S. will involve seeding 70 linear feet adjacent to an intermittent stream channel. Restoration of temporarily disturbed areas will be accomplished by restoring the surface to preconstruction contours and planting with a specified native seed mix immediately following construction.

The permittee will submit a monitoring report to the U.S. Army Corps of Engineers (USACE) within 120 days of Facility completion describing the installation of the mitigation measures. Annual monitoring will be conducted at the end of the growing period for 5 years following installation. Results of the monitoring visits will be documented for submittal to the appropriate agencies. Each Facility level monitoring report will include the following information**:**

- **Project Identification:**

    a. Permittee name, permit number, and project name

    b. Category of activity

    c. Project location including any compensatory mitigation site(s), by 5th field HUC (Hydrologic Unit Codes) and by latitude and longitude as determined from the appropriate U.S. Geological Survey 7-minute quadrangle map

    d. USACE contact person

    e. Starting and ending dates for work completed

- **Narrative Assessment**: A narrative assessment of the Facility's effects on natural stream function.
- **Photo Documentation**: Photos of habitat conditions at the project and compensation site(s) before, during, and after project completion.
    a. Include general views and close-ups showing details of the project and project area, including pre- and post-construction
    b. Label each photo with date, time, project name, photographer's name and a comment about the subject
- **Annual Monitoring Report:** The permittee will submit to the USACE an annual monitoring report by December 31 of each year. The report will summarize project level monitoring information by activity and by 5th field HUC, with special attention to site restoration, streambank protection, and compensatory mitigation. The report also will provide an overall assessment of program activity and cumulative effects.

3.6 Success Criteria

An area will be deemed successfully revegetated when total cover of all vegetation exceeds 80 percent and, of that total vegetative cover, at least 25 percent is composed of native species. It is anticipated that these goals will be met by the end of the 5-year monitoring period.

In the event that success criteria are not met for a site, the investigator may recommend reseeding or replanting of those areas. In certain instances, the revegetation area may be small enough that weed encroachment may make native seed establishment impossible. In these areas, additional reseeding will not be recommended if erosion from construction activities is moderate or low, and vegetative cover of non-native species exceeds 30 percent.

4.0 Sources

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ATTACHMENT F

Adjacent Landowners

Landowners within 500 feet of Leaning Juniper II Wind Power Facility

TAXLOTID	OWNER	Lease Status	Area (m)
1205	Chemical Security Systems	No Lease	1941214.966
2500	BLM	No Lease	653966.0954
2317	Chemical Security Systems	No Lease	650001.5896
1300	Hickerson	Leased	127522.2361
1101	Oregon Waste Systems	No Lease	7887786.679
1500	Holzapfel, Herbert et al	No Lease	675814.8616
1602	Steven Anderson	No Lease	12600865.86
2318	Holzapfel, Herbert et al	No Lease	7725586.704
1701	Holzapfel, Herbert et al	Leased	1025264.67
1700	Holzapfel, Herbert et al	Leased	1268733.619
1900	Waste Management	Leased - LJ I	643816.296
1104	Gilliam County	No Lease	466877.5715
200	Holz & Reitman	No Lease	15217797.48
1300	Arlington Saddle Club	No Lease	2407743.697
102	J.R. Krebs	No Lease	704937.4442
500	Alice Tatone	No Lease	1280428.966
1000	Greiner	No Lease	507944.9921
100	J.R. Krebs	Leased - Pebble Springs	10717093.83
1300		No Lease	33163.10526
	City of Arlington	No Lease	1764289.291
	City of Arlington	No Lease	165150.552
1303	Philippi Ranches, LLC	No Lease	6435591.764
102	Gunkel Barnard Griffin , LLC.	No Lease	160381.8652
117	Shawn Martin	No Lease	62699.79613
101	Gunkel Barnard Griffin, LLC.	No Lease	251788.8247
1500	Waste Management	Leased - LJ I	2100696.932
300	Waste Management	Leased - LJ I	1060785.699
1204	Waste Management	Leased - LJ I	92691.63026
1801	Waste Management	Leased - LJ I	1987253.899
1102	Waste Management	Leased - LJ I	986138.2049
400	Waste Management	Leased - LJ I	3470058.128
1100	Waste Management	Leased - LJ I	8284760.86
1600	J.R. Krebs	No Lease	787720.3608
500	J.R. Krebs	Leased - Pebble Springs	12095004.51
2103	Holzapfel Land & Cattle	Leased	2463095.276

ATTACHMENT G

Wetland Delineation Report

Addendum to:
Wetlands & Jurisdictional Waters Determination Report
Leaning Juniper Wind Power Project
Gilliam County, Oregon

PREPARED FOR: Ty Daul/PPM Energy
Kevin Hercamp/DSL
Karla Ellis/USACOE

PREPARED BY: Peggy O'Neill/CH2M HILL

COPIES: Sara McMahon/PPM Energy
Carrie Haag/CH2M HILL

DATE: September 2, 2005

Summary

This document summarizes the results of a field survey performed to identify and delineate potentially jurisdictional waters and wetlands at four additional locations within the proposed project footprint of the Leaning Juniper Wind Project. The additional locations are labeled S8A, S16A, S18A, and S19A and are shown on the revised Figure 5 (attached). This document is intended as an addendum to the initial Delineation Report prepared by CH2M HILL (January 10, 2005) and includes information specific to the additional sites only. All other information pertaining to the proposed project background and activities, site information, and methodology is provided in the original report.

Results

This section summarizes the delineation results derived from the office review and field investigation.

Office Review

The office review consisted of a review of the following resources:

- National Wetland Inventory maps: Arlington, Oregon-Washington (USFWS, 1983); Sundale, Oregon-Washington (USFWS, 1983)
- USGS Topographic maps: Arlington, Oregon-Washington (USGS, 1971); Sundale, Oregon-Washington (USGS, 1971)
- Soil Survey of Gilliam County, Oregon (1984)
- Hydric Soils List: Gilliam County, Oregon (1999)
- Historical Climate Data, Pendleton, OR Forecast Office

All of the additional survey areas are located between 350 and 1200 feet downslope (in the same drainage) of crossings investigated in the original delineation report. All NWI, USGS, and Soils information is the same as that discussed for the corresponding sites in the original report.

Field Investigation

The supplemental field investigation was conducted on September 1, 2005.

Weather was clear and warm. According to the Oregon Climate Data Service for Pendleton (Historical Climate Data, Pendleton, Oregon, Forecast Office), the nearest reporting station, it rained 0.02 inch during the month preceding the field visit. The 0.02 inch of rain represents 4 percent of the mean for that time period (0.56 inch). No precipitation was recorded in the two-week period preceding the field visit. Rainfall amounts and hydrological conditions recorded represent a considerably dryer than normal flow period.

At three of the four survey locations, S16A, S18A, S19A, USGS-mapped stream channels did not meet criteria for regulation. At these locations active stream channels no longer exist due alterations to the landscape as a result of historic and current agricultural practices. No physical characteristics were present to indicate a currently active drainage. No discernable bed or banks, no evidence of water flow over the surface, or changes in vegetation were observed. At the fourth location, S8A, intermittent evidence of a marginally-defined channel feature is present, however indications of flow were not observed. Because this area is part of a drainage that drains to a fish-bearing water, it may be considered jurisdictional under current wetland regulations.

S8A: USGS and NWI maps indicate an intermittent stream channel meandering across the broad, flat canyon floor in this portion of the project area, draining directly to the Columbia River approximately 3.5 miles north of the project site. Located approximately 600 feet north of the road crossing at S8, conditions at S8A are similar to those at S8. At this location, a slight depress ional area becomes a marginally-defined shallow channel in places, however no evidence of any regular flow was observed. There were no indications of scouring or sedimentation, no water-borne debris, and no distinct change in vegetation between the depress ional area/channel and the surrounding area. Vegetation consists entirely of upland shrub-steppe vegetation including big sagebrush (*Artemisia tridentate,* NOL), rigid sagebrush (*Artemisia rigida,* NOL), gray rabbitbrush (*Chrysothamnus nauseosus,* NOL), Russian thistle (*Salsola kali,* UPL), and cheatgrass (*Bromus tectorum,* UPL) (Photo Plates 5, 6).

S16A: Conditions at S16A are similar to those documented in the original delineation report for S16 and S17. S16A is located at the confluence of the drainages S16 and S17, approximately 800 feet downslope of S16 and approximately 1200 feet downslope of S17. The USGS map indicates an intermittent stream at this location, however no evidence of a currently existing channel was observed. No defined bed and banks, and no indications of flow were present at this location. Vegetation is entirely upland shrubs and forbs and soils exhibit no hydric characteristics (Photo Plates 1, 2).

S18A: S18A is located approximately 400 feet downslope of S18 in the same drainage. Conditions at S18A are essentially the same as those documented at S18. The USGS-mapped

intermittent stream was not observed in the field at this location. The area is a broad, shallow draw with no defined channel, no bed and banks, or other indications of flow. Vegetation is entirely upland consisting of rabbitbrush (*Chrysothamnus nauseosus,* UPL), Russian thistle (*Salsola kaoli,* UPL), and cheatgrass (*Bromus tectorum,* UPL). Soils show no indications of hydric characteristics (Photo Plates 3, 4).

S19A: S19A is located approximately 350 feet downslope of S19 in the same drainage. Conditions at S19A are essentially the same as those documented at S19. The USGS-mapped intermittent stream was not observed in the field at this location. This is a broad, shallow draw with a well-traveled animal trail along the lowest part of the draw. No defined channel, bed, banks, or other evidence of flow was observed. Vegetation is entirely upland shrubs and forbs (No Photo).

Conclusion

One additional area of potentially jurisdictional waters of the U.S. was identified in this supplementary investigation: S8A in the Jones Canyon drainage. Because Jones Canyon drains to a fish bearing water, the drainage at S8A may be regulated under federal wetland regulations. The Oregon Department of State Lands has declined jurisdiction of this drainage at S8 (per 2/28/05 telephone conversation with Kevin Hercamp/DSL). Because conditions are similar at S8A, it is assumed that jurisdiction of the drainage at that location would also be declined by DSL.

This report documents the investigation, best professional judgment, and conclusions of the investigator. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been reviewed and approved in writing by Klickitat County and the U.S. Army Corps of Engineers.

Figure 5

Potential Jurisdictional Waters Map: Revised

Leaning Juniper Wind Project

PPM Energy
A ScottishPower Company

Focused Study Locations

- Jurisdictional Waters
- Non-Jurisdictional Waters
- NWI Wetlands

Proposed Permanent Facilities

- Proposed Permanent Met Towers
- Proposed Turbine Access Road
- Proposed Overhead 34.5-kV Transmission Line
- Proposed Underground 34.5-kV Transmission Line
- Proposed Underground 34.5-kV Transmission Line (Alternative 1)
- Proposed 230-kV Overhead Transmission Line (Alternate 1)
- Proposed O&M and Substation Facility (Preferred)
- Proposed O&M Facility (Alternative 1)
- Proposed O&M and Substation Facility (Alternative 2)
- Proposed Temporary Facilities
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area
- Existing Facilities
- Existing BPA Transmission Line
- Major Roads
- Local Roads
- Railroads
- Streams
- Project Boundary
- Easement Area
- CRLRC Landfill Property

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Site Photographs

Photo Plate 1 View northeast showing drainage at S16A.

Photo Plate 2 View north at S16A, showing drainage from S16 where it meets the drainage from S17.

Photo Plate 3 View northeast from S18A along drainage.

Photo Plate 4 View southwest along drainage at S18A.

Photo Plate 5 View north along drainage at S8A.

Photo Plate 6 View south along drainage at S8A.

Addendum
Wetlands and Jurisdictional Waters Determination Report
Leaning Juniper II Wind Power Facility
Gilliam County, Oregon

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DATE: September 25, 2006

Summary

This document is intended as an addendum to the initial Delineation Report (January 10, 2005) and subsequent Addendum (September 2, 2005) prepared by CH2M HILL and includes information specific to the additional sites only. All other information pertaining to the proposed Leaning Juniper II Wind Power Facility (Facility) background and activities, site information, and methodology is provided in the initial report.

This document summarizes the results of an additional field survey performed to identify and delineate potentially jurisdictional waters and wetlands at 12 additional locations within the proposed project footprint of the Facility (see Figure 1 for site map). The proposed Facility consists of two main components: (1) Leaning Juniper II North (the north portion of the Facility with up to 93 MW), and (2) Leaning Juniper II South (the south portion of the Facility with up to 186 MW). Nine of the 12 sites are located in the north portion of the Facility identified as Leaning Juniper II North. Three of the sites are located within the Leaning Juniper II South area. The additional survey locations are labeled S21 through S27, and W1 through W6, and are shown on Figure 2.

Within the Leaning Juniper II North boundary, four potential stream crossings and five seasonal (vernal) pools were investigated. Three of the four potential stream crossings are mapped intermittent streams on the U.S. Geological Survey (USGS) map of the area. The fourth is a topographic drainage to a mapped intermittent stream. One of the streams (S25) was determined to be potentially jurisdictional under federal and state wetlands regulations. The other three were determined to be not jurisdictional within 500 feet of proposed Facility activities under federal and state regulations. All five vernal pools were determined to be potentially jurisdictional as wetlands under state and federal wetlands

regulations. Three of the five vernal pools are located within 500 feet of proposed Facility activities. All of the vernal pools were dry at the time of the field investigation.

Two potential stream crossings and one vernal pool in the Leaning Juniper II South area area also were investigated. Both stream drainages are mapped intermittent streams on the USGS map of the area. One of the streams (S27) was determined to be potentially jurisdictional under federal and state wetlands regulations. The other (S26) was determined to be not jurisdictional under federal and state regulations within 500 feet of proposed Facility activities. The vernal pool was determined to be potentially jurisdictional as a wetland under state and federal wetlands regulations. It is located within 500 feet of proposed Facility activities and was dry at the time of the field investigation.

Results

This section summarizes the delineation results derived from the supplemental office review and field investigation.

Office Review

The office review consisted of a review of the following resources:

- National Wetland Inventory (NWI) maps: Arlington, Oregon-Washington (USFWS, 1983); Sundale, Oregon-Washington (USFWS, 1983)
- USGS Topographic maps: Arlington, Oregon-Washington (USGS, 1971); Sundale, Oregon-Washington (USGS, 1971)
- Soil Survey of Gilliam County, Oregon (1984)
- Hydric Soils List: Gilliam County, Oregon (1999)
- Historical Climate Data, Pendleton, OR Forecast Office

Six of the survey locations were mapped or unmapped (USGS) drainages located within 500 feet of proposed Facility activities. Six of the survey locations were seasonal (vernal) pools identified in the course of wildlife habitat surveys of the Facility area. All of the vernal pools are located within 500 feet of proposed Facility activities or are immediately adjacent to the study area.

National Wetland Inventory Map

The NWI maps for Arlington, Oregon-Washington (USFWS, 1983) and Sundale, Oregon-Washington (USFWS, 1983) indicate one NWI-mapped wetland in the vicinity of the Facility area (Figure 3). A small *palustrine emergent persistent seasonally flooded* wetland is mapped along an intermittent drainage channel, a headwater tributary to Blalock Canyon, in the southwest portion of the Facility area. This potential wetland is located outside the 200-foot study corridor. No NWI-mapped wetlands were identified within the study area.

USGS Topographic Map

Leaning Juniper II North is located in the Arlington, Oregon-Washington (USGS, 1971) and Sundale, Oregon-Washington (USFWS, 1971) 7.5-minute quadrangles of the USGS

topographic maps (Figure 3). The USGS maps indicate three stream channels within 500 feet of the proposed Facility area. Topography consists of high plateaus and rolling hills dissected by stream drainages in canyons and draws. Elevation ranges from 600 feet mean sea level (msl) (W.M.) at the confluence of stream C and China Creek in the eastern portion of the Facility area to 1,340 feet on the high plateau west of Jones Canyon in the northern portion of the site.

The USGS map also identifies two intermittent stream channels in the southeast portion of the Facility area within 500 feet of proposed Facility activities. The channels of China Ditch and an unnamed drainage to the south flow southwest to northeast, draining directly to Chinal Creek. China Creek is located in Alkali Canyon, adjacent to the Facility site on the south and east, drains to the Columbia River at Arlington.

Gilliam County Soil Survey

A review of the *Soil Survey the Gilliam County Area, Oregon* (Hosler, 1984) reveals 24 soil types mapped within the study area (Figure 4):

- 4c Blalock loam, 2 to 12 percent slopes
- 14B Krebs silt loam, 2 to 5 percent slopes
- 14D Krebs silt loam, 5 to 20 percent slopes
- 22F Nansene silt loam, 35 to 70 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, 12 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
- 36F Rock outcrop-Rubble land comlex, very steep
- 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
- 55C Warden silt loam, 2 to 5 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
- 57 Wrentham-rock outcrop complex, 35 to 70 percent slopes
- 58 Xeric torrifluvents, nearly level

None these soils are listed as hydric and none contain inclusions of hydric soils. The *Hydric Soils of Gilliam County, Oregon* list (NRCS, 1999) was used to determine hydric soil status. Detailed soils information is presented in Table 1.

Land Use

The primary land use in the Facility area is agricultural, with much of the land planted in dryland wheat.

Weather and Climate Data

May 5 field visit: Weather was clear and warm with no precipitation. According to the Oregon Climate Data Service for Pendleton (Historical Climate Data, Pendleton, Oregon, Forecast Office), the nearest reporting station, no rainfall was recorded during 14-day period preceding the field visit. Normal mean precipitation for this period is 0.52 inch. Rainfall amounts and hydrological conditions recorded represent a dryer than normal flow period.

May 22 field visit: Weather was overcast with intermittent showers and occasional thundershowers. According to the Oregon Climate Data Service for Pendleton (Historical Climate Data, Pendleton, Oregon, Forecast Office), the nearest reporting station, it rained 0.76 inch during 14-day period preceding the field visit. The 0.76 inch of rain represents 138 percent of the mean for that time period (0.55 inch). Rainfall amounts and hydrological conditions recorded represent a wetter than normal flow period.

September 12 field visit: Weather was clear and hot, +/- 96°, with no precipitation. According to the Oregon Climate Data Service for Pendleton (Historical Climate Data, Pendleton, Oregon, Forecast Office), the nearest reporting station, it rained 0.01 inch during 14-day period preceding the field visit. The 0.01 inch of rain represents 2 percent of the mean for that time period (0.56 inch). Rainfall amounts and hydrological conditions recorded represent a considerably drier than normal flow period.

Field Investigation

The supplemental field investigation was conducted on May 5 and 22, and September 12, 2006.

Potential Stream Crossings

At four of the survey locations, S21, S22, S23, and S26, USGS-mapped stream channels did not meet criteria for regulation. At these locations, active stream channels no longer exist because of alterations to the landscape resulting from historical and current agricultural practices. No physical characteristics were present to indicate a currently active drainage. No discernable bed or banks, no evidence of water flow over the surface, and no changes in vegetation were observed. At two locations, S25 and S27, well-defined channels with distinct bed and banks are present. No flow was present in either drainage at the time of the field visit. However, evidence of flow including scouring and sedimentation was observed. Both channels drain directly to China Creek. China Creek is a ditched natural drainage that drains directly to the Columbia River approximately 15 miles north of the Facility site. Representative photographs depicting each area are presented in Attachment A. Field datasheets are presented in Attachment B.

S21: The USGS map indicates an unnamed, intermittent stream flowing from southwest to northeast at this location. The area is a broad, shallow draw with no defined channel, no bed and banks, and no other indications of flow. Vegetation is entirely upland, consisting of

rabbitbrush (*Chrysothamnus nauseosus,* UPL), Russian thistle (*Salsola kaoli,* UPL), cheatgrass (*Bromus tectorum,* UPL) and other grasses. Soils show no indications of hydric characteristics (Photo Plate 1).

S22: The USGS map indicates an unnamed, intermittent stream flowing from northwest to southeast at this location. The area is a broad, shallow draw with no defined channel, no bed and banks, and no other indications of flow. A well-used farm road is located along the lowest part of the draw. Vegetation consists of foxtail barley (*Hordeum jubatum,* UPL), Russian thistle (*Salsola kaoli,* UPL), and cheatgrass (*Bromus tectorum,* UPL). Soils show no indications of hydric characteristics (Photo Plate 2).

S23: The USGS map indicates an unnamed, intermittent stream flowing from west to east at this location. The area is a broad, shallow draw with no defined channel, no bed and banks, and no other indications of flow at this location. Vegetation is entirely upland, consisting predominantly of rabbitbrush (*Chrysothamnus nauseosus,* UPL), big sagebrush (*Artemisia tridentata,* NoL), and bulbous bluegrass (*Poa bulbosa,* UPL). Soils show no indications of hydric characteristics (Photo Plate 3). A well-defined channel with distinct bed and banks (identified on the attached map as **S24**) and evidence of intermittent flow begins approximately 1,000 feet downslope of the survey location S23 in the same drainage.

S25: The USGS map indicates an unnamed, intermittent stream adjacent to Rattlesnake Road in the northern portion of the Facility area. The channel flows in a narrow canyon from the southwest, parallel to Rattlesnake Road, draining to China Creek. No flow was present at the time of the field visit. Ordinary high water of the drainage was delineated within the Facility area. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs, including rabbitbrush, Russian thistle, and cheatgrass. Soils are dark brown (10YR 3/3) with no hydric features (Photo Plate 4).

S26: The USGS map indicates an unnamed, intermittent stream flowing southwest to northeast at this location. While a defined drainage is present in places, a continuous drainage feature is not present. The upstream portion of the mapped stream is a defined drainage in a narrow v-shaped valley that spreads out and disappears as a drainage feature in a broad, flat valley adjacent to the highway. Distinct bed and banks were not observed, and no scouring, sedimentation, or other evidence of flow was present. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs, including rabbitbrush, Russian thistle, and cheatgrass. Soils are dark brown (10YR 3/3) with no hydric features (Photo Plate 5).

S27: The USGS map indicates an intermittent stream channel, China Ditch, flowing from southwest to northeast in the southeastern portion of the Facility area. An existing gravel road crosses this drainage with a 12-inch culvert crossing. The culvert is collapsed on the upstream side of the road. The channel drains to China Creek. No flow was present at the time of the field visit. Ordinary high water of the drainage was delineated within 500 feet of proposed Facility. Vegetation throughout the drainage channel is dominated by upland shrubs and forbs with occasional juniper. Dominant shrubs and forbs include rabbitbrush, Russian thistle, bulbous bluegrass, and cheatgrass. Soils are dark brown (10YR 3/3) with no hydric features (Photo Plate 6).

Potential Wetlands

Six potentially jurisdictional seasonal (vernal) pool areas were investigated. All six vernal pools were determined to be potentially jurisdictional as wetlands under state and federal wetlands regulations. Four of the six vernal pools, W3, W4, W5, and W6, are located within 500 feet of proposed Facility activities. All of the vernal pools were dry at the time of the field investigation. Wetlands and sample points are shown on Figures 6A through 6D. Representative photographs depicting each area are presented in Attachment A. Field datasheets are presented in Attachment B.

Wetlands W1 and W2: W1 and W2 are two small, isolated vernal pool wetlands located west of Rattlesnake Road in shallow, depressional areas in the landscape. No surface water or saturation in the upper 12 inches was present at the time of the field visit. However, distinct evidence of hydrology was observed, including areas bare of vegetation (bare soil areas = 80 percent), cracked and hummocky soils, and hydrophytic vegetation[1]. Soils were a very dark brown clayey silt loam with a thin layer contain redoximorphic concentrations at approximately 7.5 to 8 inches. Vegetation consisted of approximately 20 percent cover of herbaceous vegetation with no trees or shrubs. Dominant plants included prostrate knotweed (*Polygonum aviculare,* FACW-), tiny mousetail (*Myosurus minimus,* OBL), bur buttercup (*Ranunculus testiculatus,* NOL), and scalepod (*Idahoa scapigera,* NOL). The wetland boundaries followed a slight break in topography combined with a marked change in vegetation from that described above to a grassland vegetation community dominated by bulbous bluegrass (*Poa bulbosa,* UPL) and cheatgrass (*Bromus tectorum,* UPL), with percent cover of vegetation nearly 100 percent (Photo Plates 7 and 8).

Wetlands W3 and W4: W3 and W4 are two small, isolated vernal pool wetlands located east of Rattlesnake Road in the vicinity of the Bonneville Power Administration (BPA) powerlines. The wetlands occupy shallow depressional areas in an area of rolling topography.

W3 is a large, flat vernal pool area with approximately 80 percent cover of herbaceous vegetation. Dominant vegetation includes slender-branched popcorn-flower (*Plagiobothrys leptocladus,* FACW), tiny mousetail (*Myosurus minimus,* OBL), sessile mousetail (*Myosurus sessilis,* OBL), needleleaf navarretia (*navarretia intertexta*, FACW), and marsh cudweed (*Gnathalium palustre,* FAC+). No surface water or saturation in the upper 12 inches was present at the time of the field visit. However, distinct evidence of hydrology was observed, including areas bare of vegetation (bare soil areas = 20 percent), cracked and hummocky soils, and hydrophytic vegetation. Soils were a very dark brown clayey silt loam with a thin layer contain redoximorphic concentrations at approximately 7.5 to 8 inches. The wetland boundary followed a slight break in topography combined with a marked change in vegetation from that described above to a grassland vegetation community dominated by bulbous bluegrass (*Poa bulbosa,* UPL) and cheatgrass (*Bromus tectorum,* UPL), with percent cover of vegetation nearly 100 percent (Photo Plate 9).

[1] Hydrophytic definitions are as follows: FACW = facultative wetland; FACW- = facultative wetland, drier; OBL = obligate wetland; NOL = Not found on list; UPL = obligate upland; FAC = facultative; FAC+ = facultative, wetter.

W4 is a smaller vernal pool east of W3 with a large proportion of bare ground and approximately 40 percent cover of herbaceous vegetation. Dominant vegetation includes slender-branched popcorn-flower (*Plagiobothrys leptocladus,* FACW), tiny mousetail (*Myosurus minimus,* OBL), sessile mousetail (*Myosurus sessilis,* OBL), and least navarretia (*navarretia minima*, FAC). No surface water or saturation in the upper 12 inches was present at the time of the field visit. However, distinct evidence of hydrology was observed, including areas bare of vegetation (bare soil areas = 60 percent), cracked and hummocky soils, and hydrophytic vegetation. Soils were a very dark brown clayey silt loam with a thin layer contain redoximorphic concentrations at 6.5 to 7 inches. The wetland boundary followed a slight break in topography combined with a marked change in vegetation from that described above to a grassland vegetation community dominated by bulbous bluegrass (*Poa bulbosa,* UPL) and cheatgrass (*Bromus tectorum,* UPL), with percent cover of vegetation nearly 100 percent (Photo Plate 10).

Wetland W5: W5 is a very small, isolated vernal pool located in a low area along a farm access road. No surface water or saturation in the upper 12 inches was present at the time of the field visit. However, distinct evidence of hydrology was observed, including areas bare of vegetation (bare soil areas = 90 percent), cracked and hummocky soils, and hydrophytic vegetation. Soils were a very dark brown clayey silt loam with a thin layer contain redoximorphic concentrations at approximately 7.5 to 8 inches. Vegetation consisted of approximately 10 percent cover of herbaceous vegetation with no trees or shrubs. Dominant plants included slender-branched popcorn-flower (*Plagiobothrys leptocladus,* FACW), tiny mousetail (*Myosurus minimus,* OBL), sessile mousetail (*Myosurus sessilis,* OBL), bur buttercup (*Ranunculus testiculatus,* NOL), and Watson's willowherb (*Epilobium watsonii,* FACW-). The wetland boundaries followed a slight break in topography combined with a marked change in vegetation from that described above to a grassland vegetation community dominated by bulbous bluegrass (*Poa bulbosa,* UPL), cheatgrass (*Bromus tectorum,* UPL), and green rabbitbrush (*Chrysothamnus viscidiflorus,* NOL), with percent cover of vegetation nearly 100 percent (Photo Plate 11).

Wetland W6: W6 is a large, flat vernal pool area in the southern portion of the Facility area, west of Jones Canyon in the southwest quarter of Section 19. Dominant vegetation includes slender-branched popcorn-flower (*Plagiobothrys leptocladus,* FACW), tiny mousetail (*Myosurus minimus,* OBL), sessile mousetail (*Myosurus sessilis,* OBL), needleleaf navarretia (*navarretia intertexta*, FACW), and marsh cudweed (*Gnathalium palustre,* FAC+). Total percent cover of vegetation is approximately 80 percent. No surface water or saturation in the upper 12 inches was present at the time of the field visit. However, distinct evidence of hydrology was observed, including areas bare of vegetation (bare soil areas = 20 percent), cracked and hummocky soils, and hydrophytic vegetation. Soils were a very dark brown clayey silt loam with a thin layer contain redoximorphic concentrations at approximately 7.5 to 8 inches. The wetland boundary followed a slight break in topography combined with a marked change in vegetation from that described above to a grassland vegetation community dominated by bulbous bluegrass (*Poa bulbosa,* UPL), cheatgrass (*Bromus tectorum,* UPL), and green rabbitbrush (*Chrysothamnus viscidiflorus,* NOL), with percent cover of vegetation nearly 100 percent (Photo Plate 12).

Conclusion

Two additional areas of potentially jurisdictional waters of the U.S. were identified in this supplementary investigation: S25, along Rattlesnake Road and S27, China Ditch in the Leaning Juniper II South area. Six seasonal wetlands also were identified and delineated. Four of these wetlands are located within 500 feet of proposed Facility activities. Federal and/or state permits may be required for impacts to these features.

This report documents the investigation, best professional judgment, and conclusions of the investigator. 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 Department of State Lands and the U.S. Army Corps of Engineers.

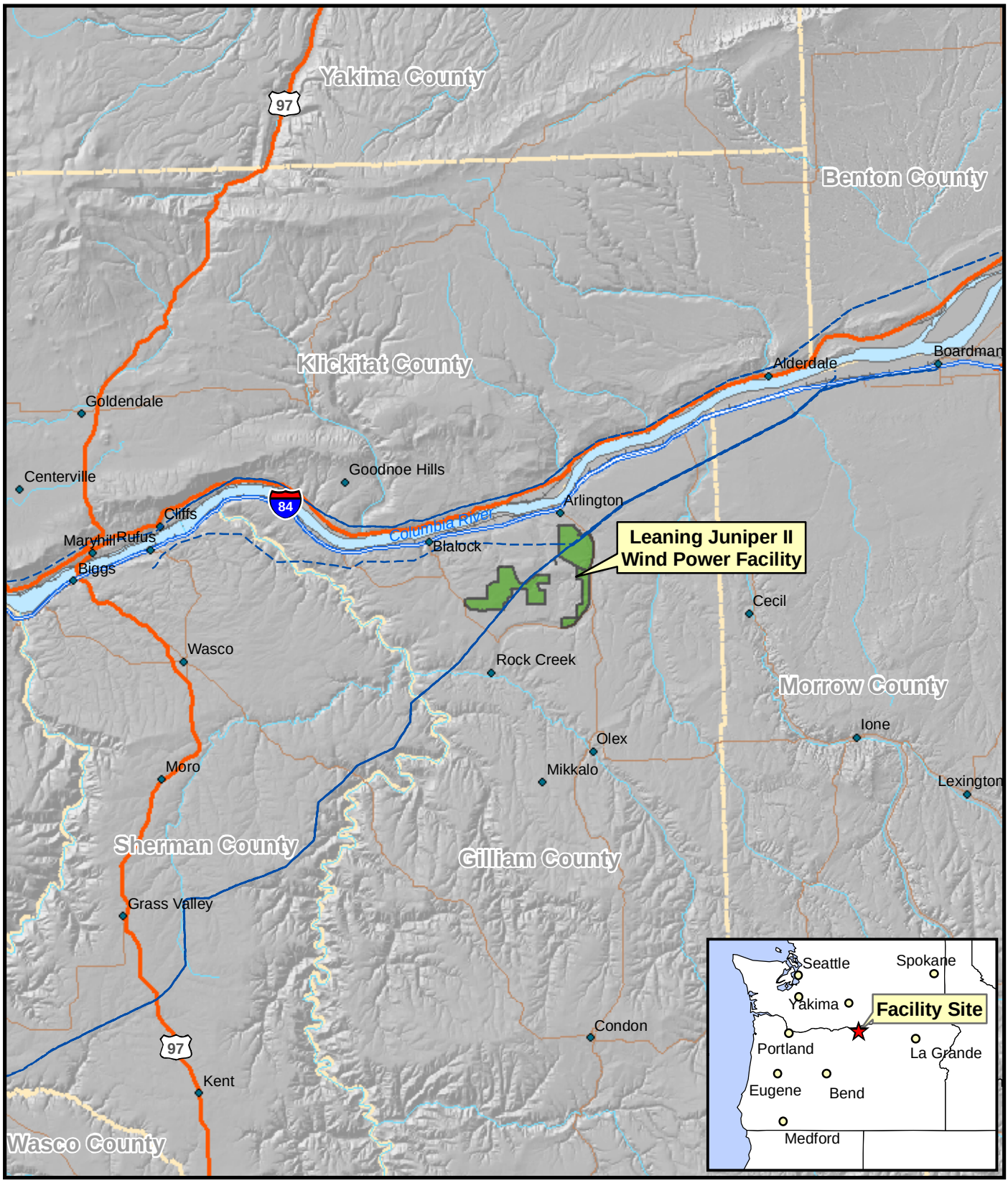
Table 1
Soils Occurring Within or Adjacent to the Study Area

ID	Soil Name	Description	Profile	Hydric	Hydric Inclusions
4c	Blalock loam, 2 to 12 percent slopes	Shallow, well drained soil on uplands. It formed in loess. Permeability is moderate	0-2" 10YR 3/2 loam 2-7" 10YR 3/3 loam 7-12" 10YR 4/3 loam 12-18" 10 YR 4/3 gravelly loam 18-22" 10YR 6/2 very gravelly duripan 22-41" 10YR 5/3 gravelly loam	No	No
14B	Krebs silt loam, 2 to 5 percent slopes	Deep, well drained soils on uplands. It formed in loess and in the underlying	0-5" 10YR 3/2 silt loam 5-17" 10YR 3/2 silty clay loam	No	No
14D	Krebs silt loam, 5 to 20 percent slopes			No	No
22D	Nansene silt loam, 35 to 70 percent slopes	Very deep, well drained soils formed in loess. Permeability is	0-3" 10YR 2/2 silt loam 3-21" 10YR 3/2 silt loam 21-34" 7.5YR 3/3 silt loam	No	No
23B	Olex silt loam, 0 to 5 percent slopes	Very deep, well drained soils on high terraces. It formed in loess and very	0-12" 10YR 3/2 silt loam 12-24" 10YR 3/2 gravelly silt loam	No	No
23C	Olex silt loam, 5 to 12 percent slopes			No	No
24D	Olex gravelly silt loam, 12 to 20 percent slopes	Very deep, well drained soils on uplands north of Rock Creek. It formed in loess	0-12" 10YR 3/2 silt loam 12-24" 10YR 3/2 gravelly silt loam	No	No
24E	Olex gravelly silt loam, 20 to 40 percent slopes			No	No
32B	Ritzville silt loam, 2 to 7 percent slopes	Very deep, well drained soils on uplands. It formed in loess and volcanic ash. Permeability is moderate.	0-31" 10YR 3/3 silt loam	No	No
32C	Ritzville silt loam, 7 to 12 percent slopes			No	No
32D	Ritzville silt loam, 12 to 20 percent slopes			No	No
39D	Roloff-rock outcrop complex, 1 to 20 percent slopes	Moderately deep, well drained soils formed in loess. Permeability is moderate.	0-8" 10YR 3/2 silt loam 8-24" 10YR 3/3 silt loam >24" basalt	No	No
40B	Sagehill fine sandy loam, 2 to 5 percent slopes	Very deep, well drained soil on terraces. It formed in loess and calcareous lacustrine sediment. Permeability is moderate.	0-25" 10YR 3/3 fine sandy loam 25-35" 2.5 YR 4/2 silt loam	No	No
40C	Sagehill fine sandy loam, 5 to 12 percent slopes			No	No
40D	Sagehill fine sandy loam, 12 to 20 percent slopes			No	No
40E	Sagehill fine sandy loam, 20 to 40 percent slopes			No	No
55C	Warden silt loam, 2 to 5 percent slopes	Very deep, well drained soils on uplands. It formed in loess and in the underlying calcareous lacustrine silt. Permeability is moderate.	0-3" 10YR 3/3 silt loam 3-30" 10YR 4/3 silt loam	No	No
56B	Willis silt loam, 2 to 5 percent slopes	Moderately deep, well drained soils on terraces. It formed in loess. Permeability is moderate.	0-19" 10YR 3/3 silt loam 19-26" 10YR 4/3 silt loam 26-60" duripan	No	No
56C	Willis silt loam, 5 to 12 percent slopes			No	No
56D	Willis silt loam, 12 to 20 percent slopes			No	No
57	Wrentham-rock outcrop complex, 35 tp 70 percent slopes	Moderately deep, well-drained soils, on north facing exposures on uplands. It formed in loess and colluvium from basalt. Permeability is moderately slow.	0-18" 10YR 2/2 silt loam 18-33" 10YR 3/3 very gravelly silt loam	No	No

Table 1
Soils Occurring Within or Adjacent to the Study Area

ID	Soil Name	Description	Profile	Hydric	Hydric Inclusions
58	Xeric torrifluvents, nearly level	Very deep, somewhat excessively drained soils on bottom lands of streams. It formed in recent alluvium and windlaid materials. Permeability is rapid.	0-6" 10YR 3/3 fine sandy loam 6-22" 10YR 4/3 fine sandy loam 22-41" 10YT 4/3 loamy fine sand	No	No

Figures



- Cities
- Limited Access Highway
- Highway
- Major Road
- Existing BPA Transmission Line
- Water
- Lease Boundary

N

0 5 10 15

Miles

Figure 1

Site Map

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

ES092006004PDX

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\Figure C-1 Site Vicinity Map.mxd, Date: August 2, 2006 11:31:32 AM

Figure 2
Facility Components
(1.5-MW Layout)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Nonjurisdictional Waters
- CH2M HILL-Mapped Wetlands
- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000 Feet

Slatt-John Day No 1 (500 kV)
McNary-Santiam No 2 (230 kV)
Slatt-Buckley No 1 (500 kV) & Ashe-Marion No 2 (500 kV)
Bialock Canyon Rd
Cedar Springs Rd
Rattlesnake Rd
China Ditch
Stone Ln
John Day
Cedar Springs Canyon
Bialock Canyon
Cedar Springs
S01 S02 S03 S04 S05 S06 S07 S08 S8A S8B S09 S10 S11 S12 S13 S14 S15 S16 S16A S17 S18 S18A S19 S19A S20 S21 S22 S23 S24 S25 S26 S27
W1 W2 W3 W4 W5 W6
Met-1 Met-2 Met-3 Met-4
19

ES092006004PDX

File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\WeltandDelineationReport\Figure 2 - Project Facilities Map.mxd, Date: September 19, 2006 3:53:22 PM

Figure 3

NWI Wetlands Map

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

Focused Study Locations
- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Nonjurisdictional Waters
- CH2M HILL-Mapped Wetlands
- NWI Wetlands

Proposed Permanent Facilities
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II
- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II
- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities
- Existing BPA Transmission Line
- Major Roads
- Existing LJ I Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
S

0 2,000 4,000 6,000
Feet

File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\WetlandDelineationReport\Figure 3 - NWI Wetlands Map.mxd, Date: September 19, 2006 3:12:59 PM

Figure 4
Soil Survey Map
Leaning Juniper II Wind Power Facility

PPM Energy
A ScottishPower Company

Soils Legend

- Krebs silt loam (14B, 14D, 14E)
- Nansene silt loam (22F)
- Olex silt loam (23B, 23C, 23D)
- Olex gravelly silt loam (24D, 24E, 25D)
- Ritzville loam (31B, 31C, 31D, 31E, 32A, 32B, 32C, 32D, 33E, 34E)
- Roloff-Rock outcrop complex (39D)
- Sagehill fine sandy loam (40B, 40C, 40D, 40E, 41B)
- Blalock loam (4C)
- Warden silt loam (55C, 55D)
- Willis silt loam (56B, 56C, 56D)
- Wrentham-Rock outcrop complex (57F)
- Xeric Torrifluvents, nearly level (58)

Legend

- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Nonjurisdictional Waters
- CH2M HILL-Mapped Wetlands

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II
- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II
- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities
- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities
- Existing BPA Transmission Line
- Major Roads
- Existing LJ I Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000 Feet

Source:
U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic (SSURGO) for Gilliam County, Oregon (2004)

File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\WetlandDelineationReport\Figure 4 - Soil Survey Map.mxd, Date: September 19, 2006 3:52:16 PM

Figure 5
Tax Lot Map

Leaning Juniper II Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams
- Participating Landowners
- Non-Participating Adjacent Landowner
- Tax Lots

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000
Feet

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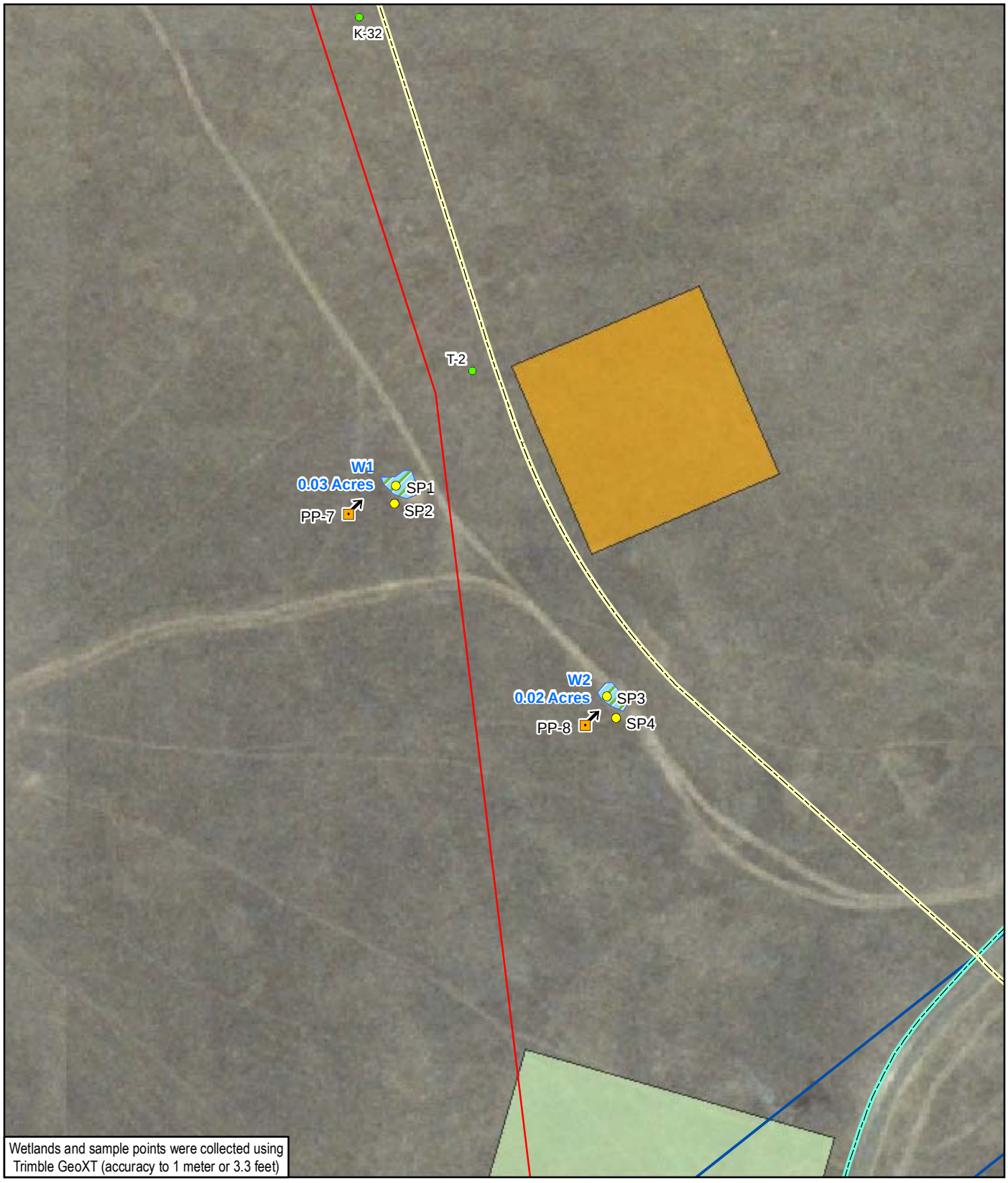

LEGEND

- CH2M HILL-Mapped Wetlands
- Sample Points
- Photo Points
- Jurisdictional Waters
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area
- Existing BPA Transmission Line

Figure 6A

Wetland Delineation Map

N

0 100 200

Feet

CH2MHILL

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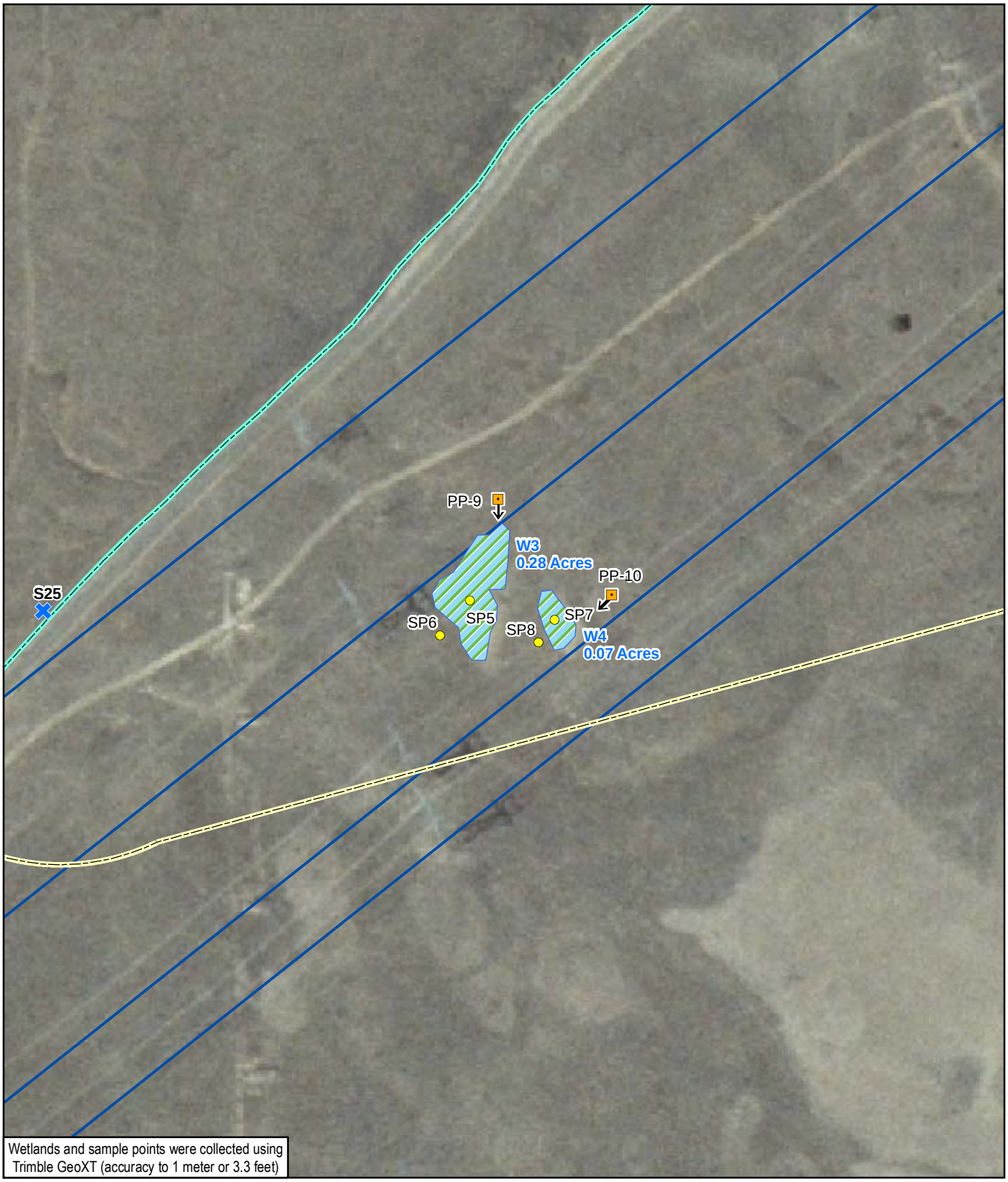

LEGEND

- CH2M HILL-Mapped Wetlands
- Sample Points
- Photo Points
- Jurisdictional Waters
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area
- Existing BPA Transmission Line

Figure 6B

Wetland Delineation Map

N

0 100 200

Feet

CH2MHILL

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LEGEND

- CH2M HILL-Mapped Wetlands
- Sample Points
- Photo Points
- Jurisdictional Waters
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South

Proposed Roads - Leaning Juniper II
- New Road
- Existing Road - Improvements Needed

Preferred Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes
- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area
- Existing BPA Transmission Line

Figure 6C

Wetland Delineation Map

N

0 100 200
Feet

CH2MHILL

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LEGEND

- CH2M HILL-Mapped Wetlands
- Sample Points
- Photo Points
- Jurisdictional Waters
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area
- Existing BPA Transmission Line

Figure 6D

Wetland Delineation Map

N

0 100 200

Feet

CH2MHILL

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ATTACHMENT A

Site Photographs

Photo Plate 1 View northeast showing drainage S21. Draw is completely vegetated with no evidence of channel or flow (5/5/2006).

Photo Plate 2 View southeast showing existing farm road along the bottom of drainage S22 (5/5/2006).

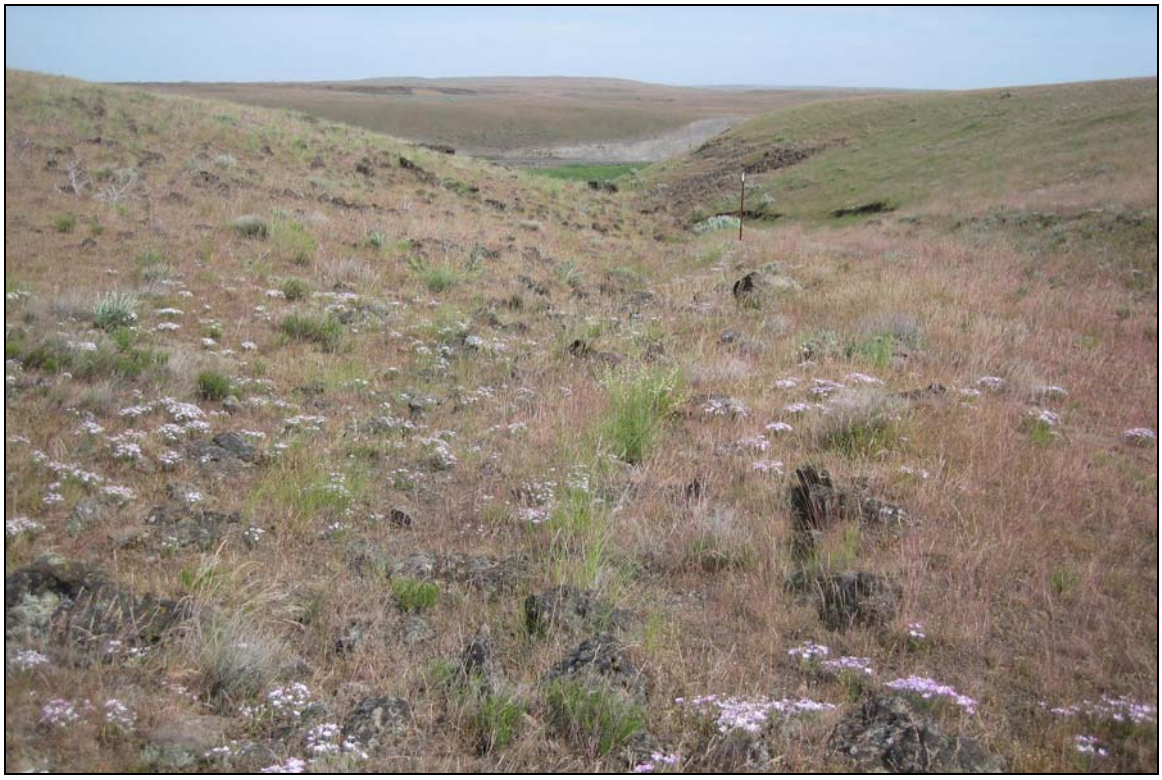


Photo Plate 3 View southeast showing drainage S23 in the vicinity of proposed Facility activities. No evidence of channel or flow. Defined channel with clear evidence of intermittent flow begins with a steep drop approximately 1,000 feet downslope. (5/5/2006).

Photo Plate 4 View northeast showing drainage S25. Mostly vegetated at this location, bed and banks and evidence of flow become more defined downstream. Channel drains to China Creek (5/5/2006).

Photo Plate 5 View northeast showing typical section of drainage S26. Draw is completely vegetated with no evidence of channel or flow (9/12/2006).

Photo Plate 6 View northeast showing drainage S27, China Ditch. Existing gravel access road crosses drainage with a 24-inch culvert (9/12/2006).

Photo Plate 7 View northeast showing vernal pool wetland, W1 (5/22/06).

Photo Plate 8 View northeast showing vernal pool wetland, W2, approximately 100 feet southeast of W1 (5/22/06).

Photo Plate 9 View south showing vernal pool wetland, W3 (5/22/06).

Photo Plate 10 View west showing vernal pool wetland, W4. Wetland W3 visible over rise in background (5/22/06).

Photo Plate 11 View north showing vernal pool wetland, W5 (5/22/06).

Photo Plate 12 View south showing vernal pool wetland, W6 (5/22/06).

ATTACHMENT B

Field Datasheets

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 1
W1

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 20%	% Cover	Dom.	Indicator status
Polygonum aviculare	40	X	FACW-
Idahoa scapigera	10		NOL
Geranium robertianum	20	X	UPL
Poa bulbosa	5		UPL
Ranunculus testiculatus	10		NOL
Myosurus minimus	20	X	OBL
Gnathalium palustre	10		FAC+

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2 of 3 = 66.7 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 2
W1

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Poa bulbosa	30	X	UPL
Chrysothamnus viscidiflorus	30	X	NOL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 2 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No
Is this sample plot within a wetland? No

Comments:

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 3
W2

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 50%	% Cover	Dom.	Indicator status
Polygonum aviculare	10		FACW-
Idahoa scapigera	T		NOL
Geranium robertianum	15		UPL
Poa bulbosa	15		UPL
Ranunculus testiculatus	30	X	NOL
Myosurus minimus	20	**X**	OBL
Gnathalium palustre	20	**X**	FAC+
Triticum aestivum	T		UPL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2 of 3 = 66.7 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-10"	10YR 3/2	none		silt loam
10"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >10"
Depth to saturated soil: >10"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 4
W2

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Poa bulbosa	30	X	UPL
Chrysothamnus viscidiflorus	30	X	NOL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 2 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No

Is this sample plot within a wetland? No

Comments:

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 5
W3

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Myosurus minimus	50	X	OBL
Myosurus sessilis	20	X	OBL
Plagiobothrys leptocladus	10		FACW
Ventenata dubia	10		NOL
Gnathalium palustre	20	X	FAC+
Eryngium spp.	20	X	OBL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 4 of 4 = 100.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-10"	10YR 3/2	none		silt loam
10"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >10"
Depth to saturated soil: >10"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 6
W3

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Poa bulbosa	30	X	UPL
Chrysothamnus viscidiflorus	20	X	NOL
Happlopappus lanuginosis	10		NOL
Artemisia tridentata	30	X	NOL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 3 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-14"	10YR 3/2	none		silt loam
14"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >14"
Depth to saturated soil: >14"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No

Is this sample plot within a wetland? No

Comments:

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 7
W4

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 40%	% Cover	Dom.	Indicator status
Myosurus minimus	40	X	OBL
Myosurus sessilis	20	X	OBL
Plagiobothrys leptocladus	10		FACW
Ventenata dubia	10		NOL
Grindelia nana	10		FACU+
Eryngium spp.	10		OBL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2 of 2 = 100.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-14"	10YR 3/2	none		silt loam
14"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >14"
Depth to saturated soil: >14"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 8
W4

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Poa bulbosa	30	X	UPL
Chrysothamnus viscidiflorus	20	X	NOL
Happlopappus lanuginosis	10		NOL
Artemisia tridentata	30	X	NOL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 3 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

	Primary Indicators:		Secondary Indicators:
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No

Is this sample plot within a wetland? No

Comments:

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 9
W5

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 10%	% Cover	Dom.	Indicator status
Myosurus minimus	T		OBL
Myosurus sessilis	20	X	OBL
Geranium robertianum	10		UPL
Epilobium densiflorum	10		NOL
Ranunculus testiculatus	40	X	NOL
Plagiobothrys leptocladus	20	X	FACW

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 2 of 3 = 66.7 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 10
W5

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Bromus tectorum	40	X	UPL
Chrysothamnus viscidiflorus	30	X	NOL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 2 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-14"	10YR 3/2	none		silt loam
14"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No

Is this sample plot within a wetland? No

Comments:

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 11
W6

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Myosurus minimus	20	X	OBL
Myosurus sessilis	10		OBL
Plagiobothrys leptocladus	20	X	FACW
Ventenata dubia	10		NOL
Gnathalium palustre	20	X	FAC+
Poa bulbosa	10		UPL
Grindelia nana	10		FACU+

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 3 of 3 = 100.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-16"	10YR 3/2	none		silt loam
16"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
X	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments: distinct evidence of seasonal hydrology; presence of obligate wetland plant species

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >16"
Depth to saturated soil: >16"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
X	Sediment deposits		FAC neutral test
X	Drainage patterns in wetlands		Other

Comments: distinct depressional area in the landscape

WETLAND DETERMINATION

Hydrophytic Vegetation? Yes
Hydric Soils? No
Wetland Hydrology? Yes
Is this sample plot within a wetland? Yes

Comments: While soils do not meet hydric criteria, presence of obligate and other hydrophytic plant species indicate sufficient hydrology is present during the growing season for this area to meet the Clean Water Act definition of a wetland.

WETLAND DETERMINATION FORM

Project #: 180506.D1.05
Client/Owner: PPM Energy
Investigator: P. O'Neill
Do normal circumstances exist on the site? Yes
Is it an atypical situation? No
Is the area a potential problem area? No

Date: 5/22/2006
State: OR
County: Gilliam
Township, Range, Section: T2N R20E S28
Plant Community: Sagebrush-steppe/Vernal Pool
Sample Plot: 12
W6

VEGETATION

Tree stratum Total Cover: 0%	% Cover	Dom.	Status

Shrub stratum Total Cover: 0%	% Cover	Dom.	Status

Herbaceous stratum Total Cover: 80%	% Cover	Dom.	Indicator status
Poa bulbosa	30	X	UPL
Chrysothamnus nauseosus	20	X	NOL
Artemisia tridentata	20	X	NOL
Bromus tectorum	30	X	UPL

% of dominant species that are OBL, FACW, or FAC (excluding FAC-): 0 of 4 = 0.0 %

Comments:

SOILS

Mapped Unit Name: Krebs silt loam, 2 to 5 percent slopes (14B)
Matches Profile? Yes
Taxonomy: Fine, smectitic, mesic Aridic Calcic Agrixerolls
Drainage Class: well-drained

Depth	Matrix Color	Mottle Color	Mottle Abundance, Size, Contrast	Soil Texture
0-12"	10YR 3/2	none		silt loam
12"	refusal			

	Histol		Reducing conditions (test)		Gleyed
	Histic epipedon		High organic content surface layer		Organic streaking
	Sulfidic odor		Redox concentrations (w/in 10")		Organic pan
	Probable aquic moisture regime		Concretions (w/in 3", >2mm)		On hydric soils list

Comments:

HYDROLOGY

Depth of surface water: NA
Depth to free water in pit: >12"
Depth to saturated soil: >12"

Primary Indicators:		Secondary Indicators:	
	Inundated		Oxidized rhizospheres in upper 12 in.
	Saturated in upper 12 in.		
	Water marks		Water-stained leaves
	Drift lines		Local soil survey data
	Sediment deposits		FAC neutral test
	Drainage patterns in wetlands		Other

Comments:

WETLAND DETERMINATION

Hydrophytic Vegetation? No
Hydric Soils? No
Wetland Hydrology? No

Is this sample plot within a wetland? No

Comments:

APPENDIX B, ATTACHMENT 7

New Figure L-3

Figure L-3

Protected Areas - John Day River (3.0-MW Layout)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

John Day Wild and Scenic River/
John Day State Scenic Waterway

McDonald
Crossing

Butcher
Butte

Legend

- McDonald Crossing
- 6-mile Turbine Buffer
- John Day River Wildlife Refuge

ZVI Analysis

Number of Visible Turbines

- 1 - 5
- 6 - 10
- 11 - 30
- 31 - 50
- > 50

Note:
ZVI analysis assumes 93 3.0-MW turbines for Leaning Juniper II.

N
W E
S

0 0.25 0.5 0.75 1
Miles

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure L-3 - Protected Areas - John Day River (3MW Layout).mxd, Date: February 7, 2007 1:42:12 PM

APPENDIX B, ATTACHMENT 8

Comment Letter from Oregon Department of Fish and Wildlife (January 16, 2007)

January 16, 2007

Mr. John White
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3742

RE: Comments on the Additional Information Provided for the Leaning Juniper II Wind Power Facility

Dear John:

Oregon Department of Energy (ODOE) has asked Oregon Department of Fish and Wildlife (ODFW) to provide comments on the additional information provided by the applicant for the Leaning Juniper II Wind Power Facility. Our comments are listed below.

1) In the Draft Habitat Mitigation Plan (page C-5, lines 12 – 15), ODFW recommends that the applicant, in conjunction with ODOE and ODFW, determine if the results from the Grassland Bird Study are significant adverse impacts or not, and then also work together regarding appropriate mitigation.

2) In the Draft Habitat Mitigation Plan (pages C-7 and C-8), the applicant states they will note the presence of Washington ground squirrels (WGSs) during the initial spring-season site assessment and during the periodic monitoring. ODFW recommends that the applicant actually survey the proposed mitigation site for WGSs during the initial spring-season site assessment and then continue to monitor any colonies that are found. ODFW intends to also make this recommendation as part of our comments on the application for an Incidental Take Permit for the WGS for this project.

3) Page C-8, line 2 of the Draft Habitat Mitigation Plan mentions that approximately 5 – 6 acres of the mitigation site would be planted with

sagebrush seedlings as an enhancement effort. How was the amount of this area for seedling plantings determined? ODFW recommends that the Habitat Mitigation Plan list what the current habit categories are of the proposed 116-acre mitigation site. And then, the plan should explain specifically how the proposed enhancement efforts will aid in increasing the necessary acres of lower valued habitat to higher valued habitat categories, in accordance with replacement of acres of habitat categories that are permanently or temporarily impacted. This exercise would show that there would be no net loss of habitat quality as well as habitat quantity.

4) Page C-8, lines 32 and 33 mention that nest platforms will be constructed on the mitigation site tailored to the needs of the site, using best professional judgment of raptor use in the general area. ODFW agrees that this should be one component of this enhancement measure. However, ODFW also recommends that a target number of nest platforms be constructed and that the target number be tied to the number of raptor nesting sites (active and inactive) that are located within ¼-mile of facilities of the Leaning Juniper II project. In this way, this enhancement measure will be directly tied to mitigating for the potential disturbance impacts of the project.

5) In the Draft Habitat Mitigation Plan on page C-9, lines 23 – 33, the applicant states they intend to monitor the vegetation at the mitigation site during the first growing season, then every other year for the first four years, and, once the site is trending toward meeting the success criteria, then to monitor it once every five years for the life of the project. ODFW believes that if the mitigation site is to be managed long-term for the replacement of the loss of habitat due to the construction of Leaning Juniper II then the habitat needs to be monitored long-term (i.e. once the site is trending toward meeting the success criteria) on a yearly basis to ensure that the area is maintained as good quality habitat. There is certainly the potential for drastic habitat change to occur (e.g. fire, weed infestation, etc.) during the four-year interim period when there isn't any monitoring occurring under the proposed once-every-five-years monitoring scenario.

6) Page C-10, lines 18 – 20 of the Draft Habitat Mitigation Plan state that the enhancement goal for the "net benefit" of the mitigation site will be attained when 85% of the whole site (116 acres?) is at Category 3 or better and 15% is at Category 2 or better. How were these percentages derived? What is the current habitat categorization of the proposed 116-acre site? If the enhancement goal percentages were to be tied to the permanently/temporarily impacted acreages then the percentages would be 75% Category 2 habitat to be replaced and 25% Category 3 habitat to be replaced. ODFW suggests that further discussion occur with the applicant as to the mitigation site's enhancement goals for habitat categories.

7) Page C-10, lines 27 and 28, and Page C-11, line 4 of the Draft Habitat Mitigation Plan state that success criteria for modification of grazing practices will be when native bunchgrass shows signs of more abundant seed production. How can this be effectively measured and determined?

8) ODFW would like to know what efforts the applicant would take if the mitigation site were burned in a wildfire. ODFW would like to have some assurances that the applicant would help promote the recovery of the mitigation site area to a pre-fire state.

9) The Draft Revegetation Plan calls for seeding bitterbrush in with grass seed in temporarily impacted areas that previously had bitterbrush in them before the disturbance. Depending on the seed mixture and the seeding rates, ODFW is unsure if the bitterbrush seed will out-compete the seeded grasses. ODFW suggests that the applicant include planting seedlings in the applicable temporarily impacted areas to give the shrubs a better chance to take root and survive in the planted areas.

10) ODFW also recommends that livestock be excluded from the revegetated areas for at least one year to allow for the establishment of the new grass/shrub stands. The revegetated areas will have a much better chance of becoming established if they are not grazed for at least the first year after they are seeded/planted. This could be accomplished by temporarily fencing the seeded/planted areas with electric fencing.

11) On page B-4, the Draft Revegetation Plan states “The Department may exclude small areas from the reseeding requirement if erosion from construction activities is low, if total vegetative cover (of native and non-native species together) exceeds 30% and if weed encroachment has made native seed establishment impossible.” ODFW would be concerned if “small areas” are excluded from reseeding if weeds have encroached into the area making establishing a grass stand “impossible”. ODFW would rather see those areas treated with chemical and seeded to establish a healthy grass stand.

12) ODFW appreciates the applicant including the area of the suspected burrowing owl sites in the Draft Grassland Bird Study area. However, ODFW would recommend that the study area encompass the area from turbine string H4 to H12 and make the study area a contiguous block of land rather than having two separate study areas.

13) In the Draft Wildlife Monitoring and Mitigation Plan, the applicant states if two different size turbines are used in the project area that an expert in statistical analysis would be consulted to determine the number of turbines necessary

to be surveyed to derive a statistically valid sample size. ODFW would like to know how many turbines the applicant will survey if two different size turbines are used in the project area.

Thank you for the opportunity to provide our comments on the additional information provided by the applicant for the proposed Leaning Juniper II Wind Power Facility. If you have any questions regarding our comments, please feel free to call me at (503) 947-6085.

Sincerely,

Rose Owens
Habitat Special Projects Coordinator

cc: Steve, Cherry, Heppner
Charlie Bruce, Salem

APPENDIX B, ATTACHMENT 9

Letter to Oregon Department of Energy Requesting Archaeological Site Record Confidentiality

CH2M HILL
2020 SW 4th Avenue
Suite 300
Portland, OR 97201-4953
Tel 503.235.5000
Fax 503.736.2000

CH2MHILL

February 23, 2007

John White
Oregon Department of Energy
625 Marion St. NE
Salem, OR 97301-3737

Subject: Leaning Juniper II Wind Power Facility – Response to Comment RAC3 in RAI No. 2 dated January 18, 2007

Dear Mr. White:

As requested, you will find enclosed the following material:

- Correspondence between Applicant representative Robin McClintock of CH2M HILL and Molly Manion of the Oregon State Historic Preservation Office regarding transmittal of revised site records LJ-S-2 and LJ-S-3.
- Revised confidential archaeological site records LJ-S-2 and LJ-S-3. Revised site record LJ-S-2 provides additional physical description. Revised site record LJ-S-3 adjusts the interpretation of the age of LJ-S-3.

These revised site records have already been provided to Molly Manion of the Oregon State Historic Preservation Office. Note that locational archaeological information and therefore these site records are exempt from public disclosure per ORS 192.501.11. Please take appropriate steps to ensure that these records are not included in those documents made publicly available.

If the Oregon Department of Energy or the Energy Facility Siting Council receives a public records request for the archaeological locational information, please notify me accordingly.

Sincerely,

Robin McClintock

CH2M HILL

Enclosure

From: McClintock, Robin/PDX
Sent: Wednesday, December 27, 2006 2:03 PM
To: 'mollie.manion@state.or.us'
Subject: Leaning Juniper Site Records

Seasons Greetings Mollie!

I've attached revised site records as you requested for two sites (LJ-S-2 & LJ-S-3) from the Leaning Juniper Wind Project. As you may recall, we spoke on 11/29 about what additional information you'd like to see on the site records. I have NOT included the associated USGS figures, the sketch maps, or the photographs since these would make the attachment too large and unwieldy. I assume you have the originals of those that you can reattach to these revised forms. If not, let me know and I will pdf the figures and send them. Thank you Mollie...enjoy the rest of the season and I'm sure I will talk to you soon.

Cheers...Robin
503-736-4236

APPENDIX B, ATTACHMENT 10

Letter from Oregon Department of Transportation Regarding Road Approach Permit

From: Beutler, Mark A. [Mark.Beutler@PPMEnergy.com]
Sent: Tuesday, February 20, 2007 2:58 PM
To: Pat.Sims@mortenson.com
Cc: McMahon, Sara; Johnsen, Alec
Subject: FW: Leaning Juniper II - Request for State Highway Approach

Hello Pat, I needed to check in with you for any action on the permit/letter for the highway approach for Leaning Juniper II.

Have you had a chance to circulate internally for approval? we are planning to submit with our app by the by the end of the month.
Again thanks for all your help in advance, greatly appreciated. Call me if you have any questions.

Mark

From: Beutler, Mark A.
Sent: Wednesday, February 14, 2007 3:27 PM
To: 'patrick.e.smith@odot.state.or.us'
Cc: Johnsen, Alec; McMahon, Sara
Subject: Leaning Juniper II - Request for State Highway Approach

Hello Pat,
Good to talk with you yesterday. This email is a follow up our conversation yesterday about reopening the Leaning Juniper I Highway Approach Permit under an new entity name "Leaning Juniper Wind II LLC.
As discussed, It is our intent to reuse the existing approach, (e.g LJ) as the new approach for Leaning Juniper II.

Can you provide me what next steps are needed from me to reopen the permit under an new entity of Leaning Juniper II

thanks for your help.

Mark Beutler
PPM Energy
Wind Project Manager
Engineering / Construction
1125 NW Couch St, Suite 700
Portland, OR 97209
Office: (503) 796-7159
Cell: (503) 705-5647
Fax: 503-796-6907
Email: Mark.Beutler@ppmenergy.com

APPENDIX B, ATTACHMENT 11

Construction Permit from Gilliam County for Rattlesnake Road

GILLIAM COUNTY ROAD DEPARTMENT
P.O. Box 427, Condon, OR 97823

Application for Activities in Gilliam County Rights-A-Way

Name of Applicant: Leaning Juniper Wind Power, LLC

Date: Sep. 6, 2005

I. Type of Activity to be performed in the Right of Way:

_____ Installation of Telephone Cable Lines

_____ Installation of Cattle Guard

_____ Installation of Culvert

_____ Installation of Water Line

_____ Location / Installation of Power Lines

How many volt?_____ Above ground_____ Underground
Will the line cross or parallel the right of way?_____

_____ Application of Dust Oil or Chemical Agents
How many feet will be covered?_____

__x__ Other Construction in the Right of Way

Describe: LJWP, LLC will APProve the straightening of Rattlesnake Road through the County Planning Process while the County will Perform the Construction

II. Location of Right of Way:

a. Township 3N, Range 21 E, Section 34
b. Common Road Name: Rattlesnake Road
c. County Road Number:_____

Construction is to be (temporary or permanent): Permanent

Please include 1 set of drawings / sketches to detail the proposed action

III. Responsibilities of the Applicant:

a. Applicant agrees to be responsible and liable for all accidents, damage or injury to persons or property resulting from the use of the right-of-way for the above stated purpose(s).

b. Applicant agrees to employ any and all methods of construction and maintenance to assure the safety of the general traveling public.

c. Applicant confirms that the construction/work in the right-of-way will conform to federal, state and local laws and rules.

d. Applicant understands that if the operation, construction and/or use is to be permanent, the County must agree to the form and substance of the impairment.

e. Applicant acknowledges that the County is not responsible for any supervisory or regulatory actions other than those specifically agreed to in the authorizing of this specific permit, or already required by law.

f. Applicant will notify Public Works Department 24 hours in advance of on-site construction.

g. Applicant is responsible for the location of any/all underground utilities within the construction. **Call before you dig!**

All applications will be reviewed by the Planning Department prior to approval to determine if any land use issues exist.

Declaration and Signature of Application:

I declare that I have read and understand my responsibilities with regard to the application, that I agree to any terms and conditions that may arise under the permit, and that I have the authority to bind myself and others who may be completing work under this permit to it's provisions.

Signature of Applicant — **Date** 9/9/05

1125 NW Couch St., Suite 700 — **Address**

(503) 796-6928 — **Phone**

Portland, OR 97209

Gilliam County Road Department

Roadmaster

Date: 9-20-05

Gilliam County Court

Judge / Commissioner

Date: 9.23.05

This permit expires:_____

This permit is subject to the following attached conditions.

CONSTRUCTION PERMIT

DESCRIPTION

Scope - This work consists of maintaining roadway to accomodate public traffic through and within the project for the life of the permit. Public traffic includes motor vehicles, bicycles, and pedestrians. The County road right of way will be left in the same condition or better than prior to the issued date of this permit.

Beginning Of Contractor's Responsibility - The contractor's responsibilities for accommodating public traffic begin on the day any on-site work begins within the permit limits.

Permit Limits - Permit is for (60) sixty days starting from date of this permit. Extension of permit permissible with approval from Public Works/Roadmaster.

NOTICE - Permittee is responsible for a minimum 24 hour notice to the Gilliam County Road Department prior to any on-site work in the County right-of-way. (384-5717 or 384-3998)

Public Safety and Convenience - Provide for safety and convenience of the public and:

* Be responsible for damages to property, injury to persons, loss, expense, inconvenience, and delay caused by or resulting from any act, omission, or neglect of the Contractor, the Contractor's subcontractors and suppliers, or their employee(s) while performing the work.

* Conduct work at all times so that there is the least possible interference with or hazard to the traveling public and residents affected by the project.

* Keep the existing lanes of traffic open and in operation through the project at all times except:

    * One lane may be closed to traffic in the immediate work area but only during hours work is actually being performed.

    * Do not stop or hold vehicles more than 20 minutes. Allow emergency vehicles immediate passage.

* Do not proceed with construction or close any lane until the area is signed according to the plans or the requirements of this permit.

* Park construction equipment and vehicles and stockpile materials at least (30) thirty feed from the traveled way. If this is not possible, protect the equipment, vehicles, and stockpiled material with barriers or other satisfactory means.

* Provide protection from work areas.

* At the end of each working day, all vehicles or equipment left on the County right-of-way will be barricaded with type II (amber flashing light on each) barricades.

Marking of Underground Utility Placement - A flexible delineator will be placed to indicate all underground utility placement (parallel or lateral crossings) in the county right-of-way.

(a) **General** - Material for the portion of the flexible delineators which extends above the ground level shall:

* Be flexible, durable plastic, resistant to impact, ultraviolet light, ozone, hydrocarbons, and other effects of atmospheric weathering.

* Exhibit good workmanship and be free of burns, discoloration, contamination and other objectionable marks or defects which affect appearances or serviceability.

* The delineator post when permanently installed shall resist overturning, twisting and displacement form wind and impact forces. Detailed installation instructions shall be provided by the manufacturer.

All applications will be reviewed by the Planning Department prior to approval to determine if any land use issues exist.

This application has been reviewed by the Gilliam County Planning Director and (is)/is not in compliance with adopted Comprehensive Land Use Plan for Gilliam County. is

Signed: Susie Anderson
Gilliam County Planning Director

Date: 09/26/05

* No vehicle or equipment will be left over night on the traveled way.

Signs - Prior to use of the County right-of-way, signs will be placed:

* 'Road Construction Ahead' at each end of the roadway, 1500 feet in advance of the work area.

* 'Prepare to Stop' at 750 feet in advance of the work area.

* 'Flagmen Ahead' 350 feet prior to the work area.

Depth of All Underground Utilities - All underground utilities placed in the county right-of-way will be placed at a minimum of 42 inches below the existing road grade.

Selected General Backfill - Soil, selected from specified excavation and containing no particles with any dimension greater than 8 inches, or other unsuitable material. Place the material in layers not greater than 6 inches thick and in a manner that equalized pressures on the structure and minimizes stress. Before placing backfill material, condition, aerate, or wet the material so that the moisture content of each layer is within minus 4 to plus 2 percent of optimum moisture content.

Thoroughly tamp and compact all trench backfill material with machine or pneumatic operated tampers of a size and type that will obtain the required density.

Compact the top 3 feet of trench backfill material within the roadway and shoulders, and a 2:1 slope line projected from each subgrade shoulder, to not less than 95 percent of maximum density. Compact all other trench backfill material to not less than 90 percent of maximum density. If the material is not density testable, each layer will be observed for deflection or reaction under the compaction equipment to verify that no soft or pumping areas remain. Compact until there is no perceptible deflection under the compaction equipment.

Ponding or Jetting of Backfill Material - Ponding or jetting will not be permitted within roadbed lateral limits or within a 5 foot depth below finished subgrade, whichever is more restrictive.

Aggregate Base - Provide 6" depth of 1"-0 or 3/4"-) aggregate base material, 95% maximum density.

Asphalt Cuts - Unless approved by this office all underground utilities will be pushed or pulled when crossing asphalt pavement.

Asphalt Tack Coat - All vertical edges will be tacked.

Existing Pavement Edges - Will be vertical cut prior to placement of asphalt cement.

Asphalt Cement - Asphalt cement will be 3/4" or 1/2" mix design. Asphalt will be placed 3" deep in trench cut.

Above Ground Fixtures - Where possible all above ground fixtures will be set back to the edge of right-of-way, i.e., pedestals, utility poles, etc.

APPENDIX B, ATTACHMENT 12

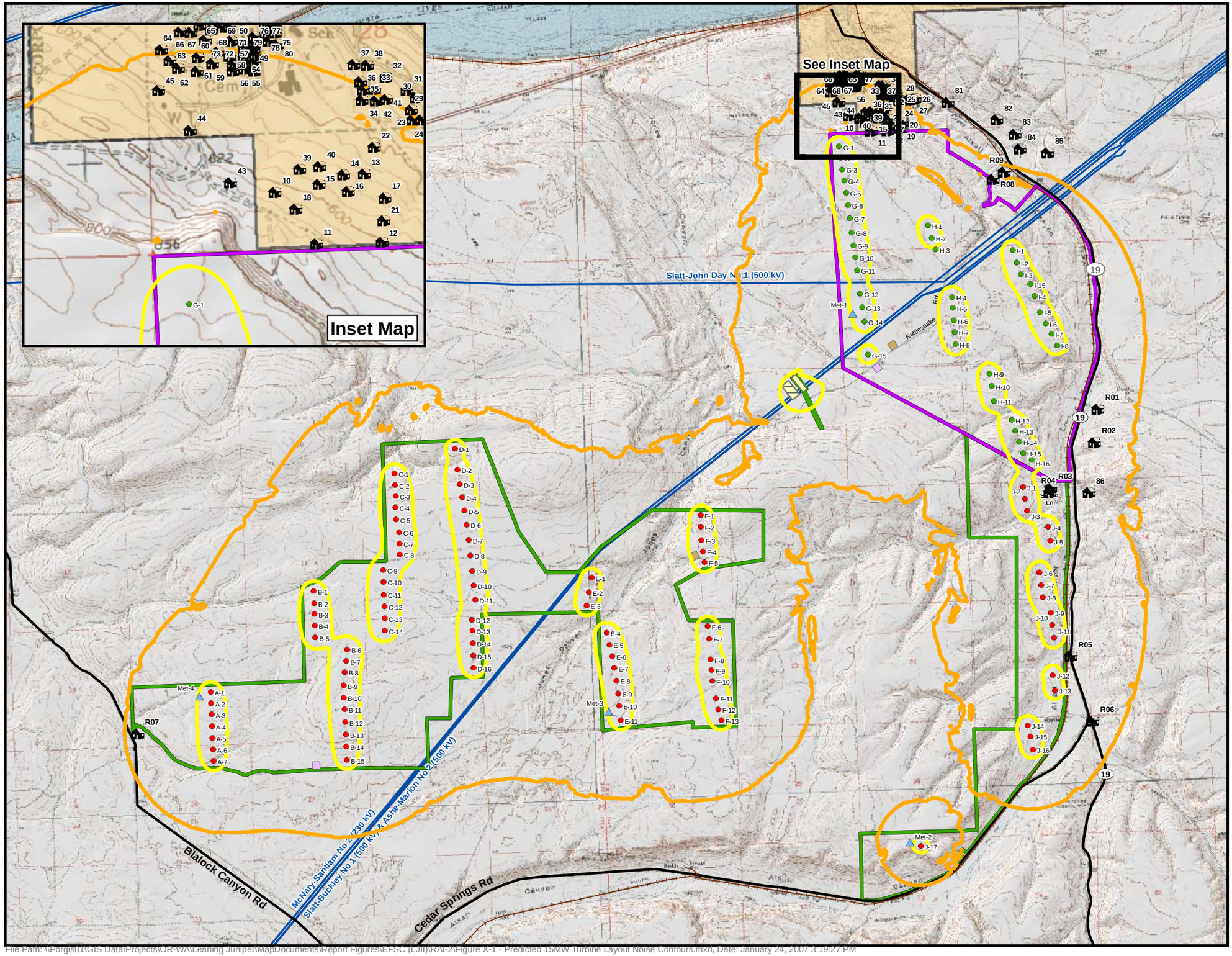
Revised Figures X-1 Through X-4

Figure X-1

Predicted 1.5-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower
- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South
- City Limits

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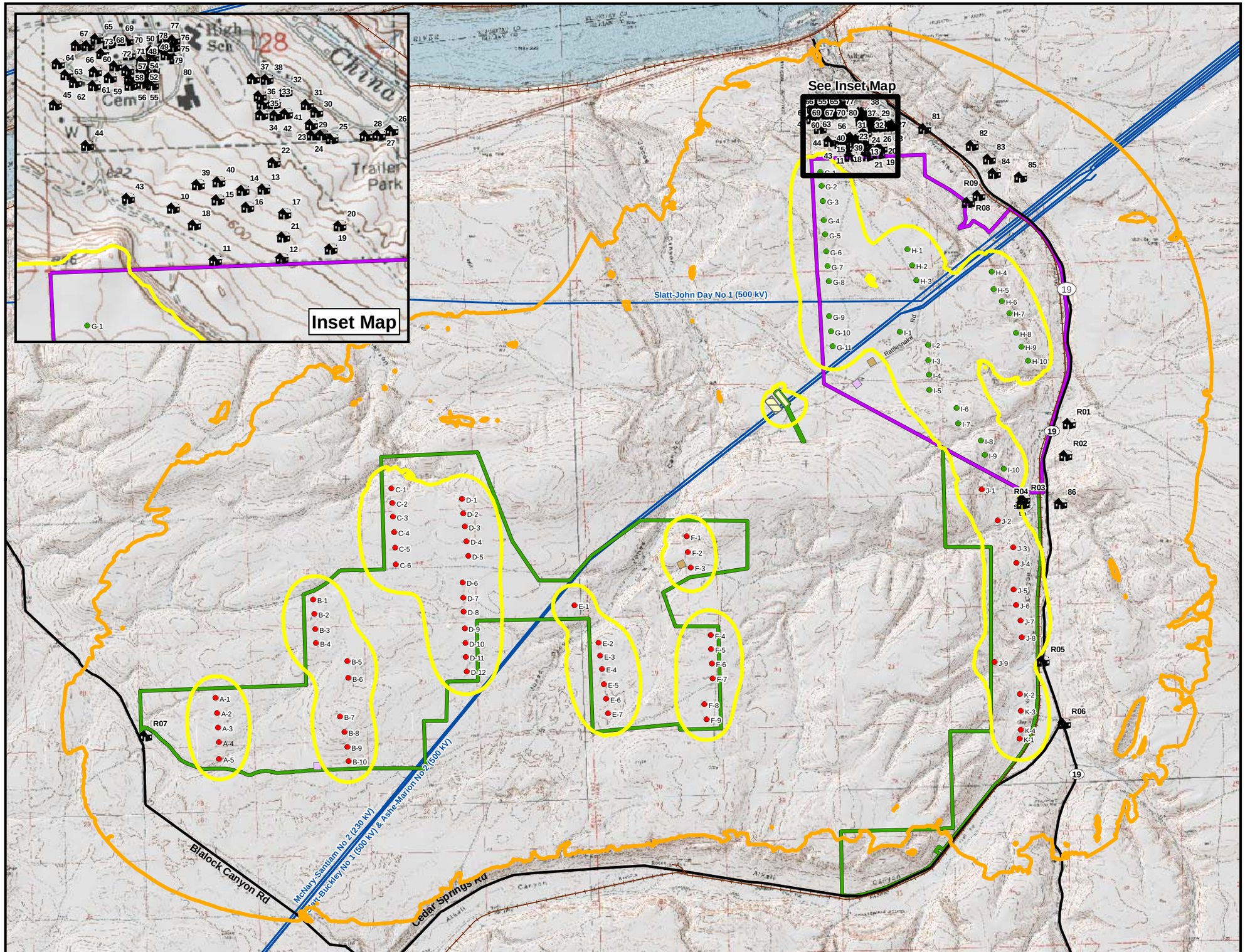
File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure X-1 - Predicted 15MW Turbine Layout Noise Contours.mxd, Date: January 24, 2007 3:19:27 PM

Figure X-2

Predicted 3.0-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- House
- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

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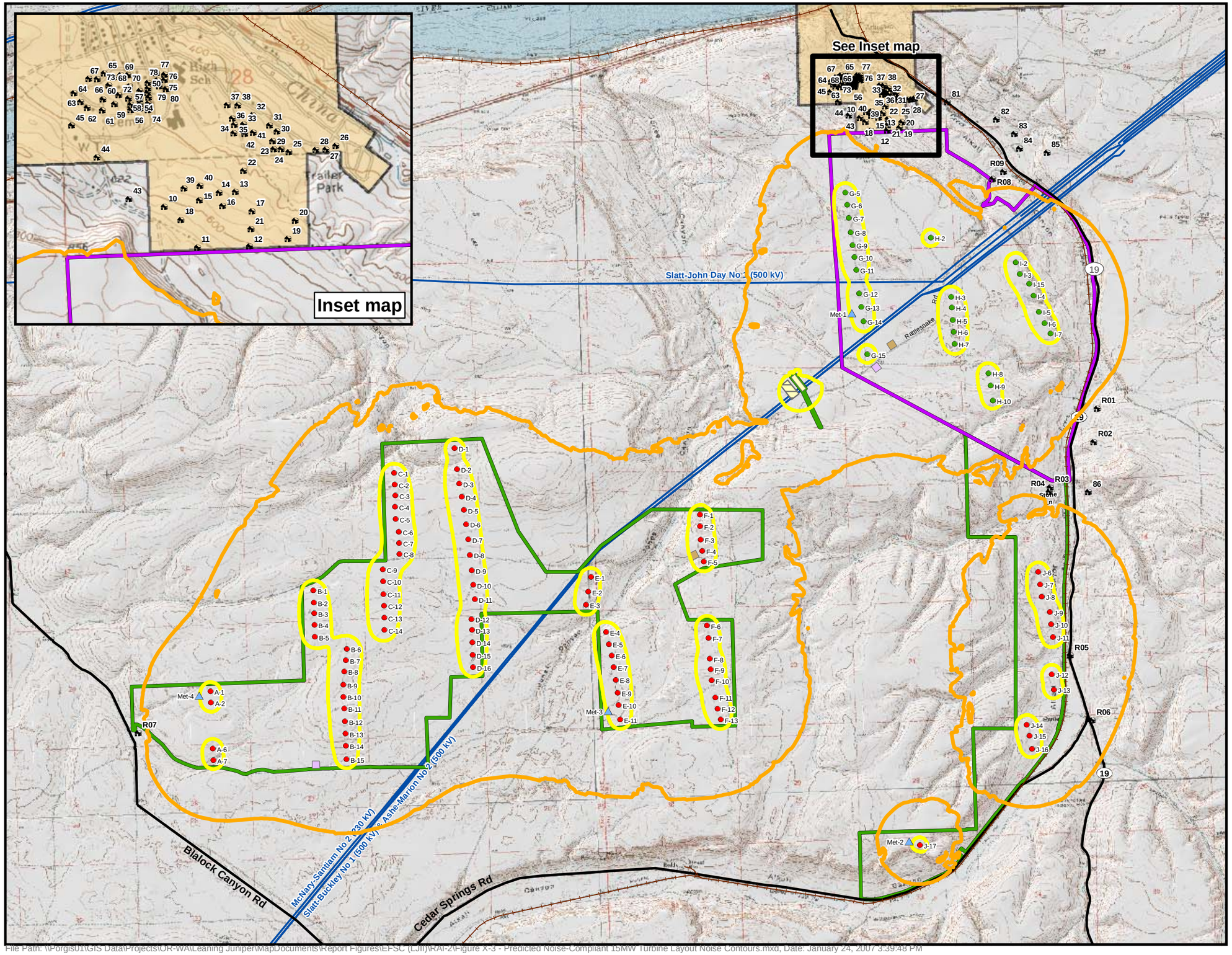
File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure X-2 - Predicted 3MW Turbine Layout Noise Contours.mxd, Date: January 24, 2007 3:28:36 PM

Figure X-3

Predicted Noise-Compliant 1.5-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- Proposed Permanent Met Tower
- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South
- City Limits

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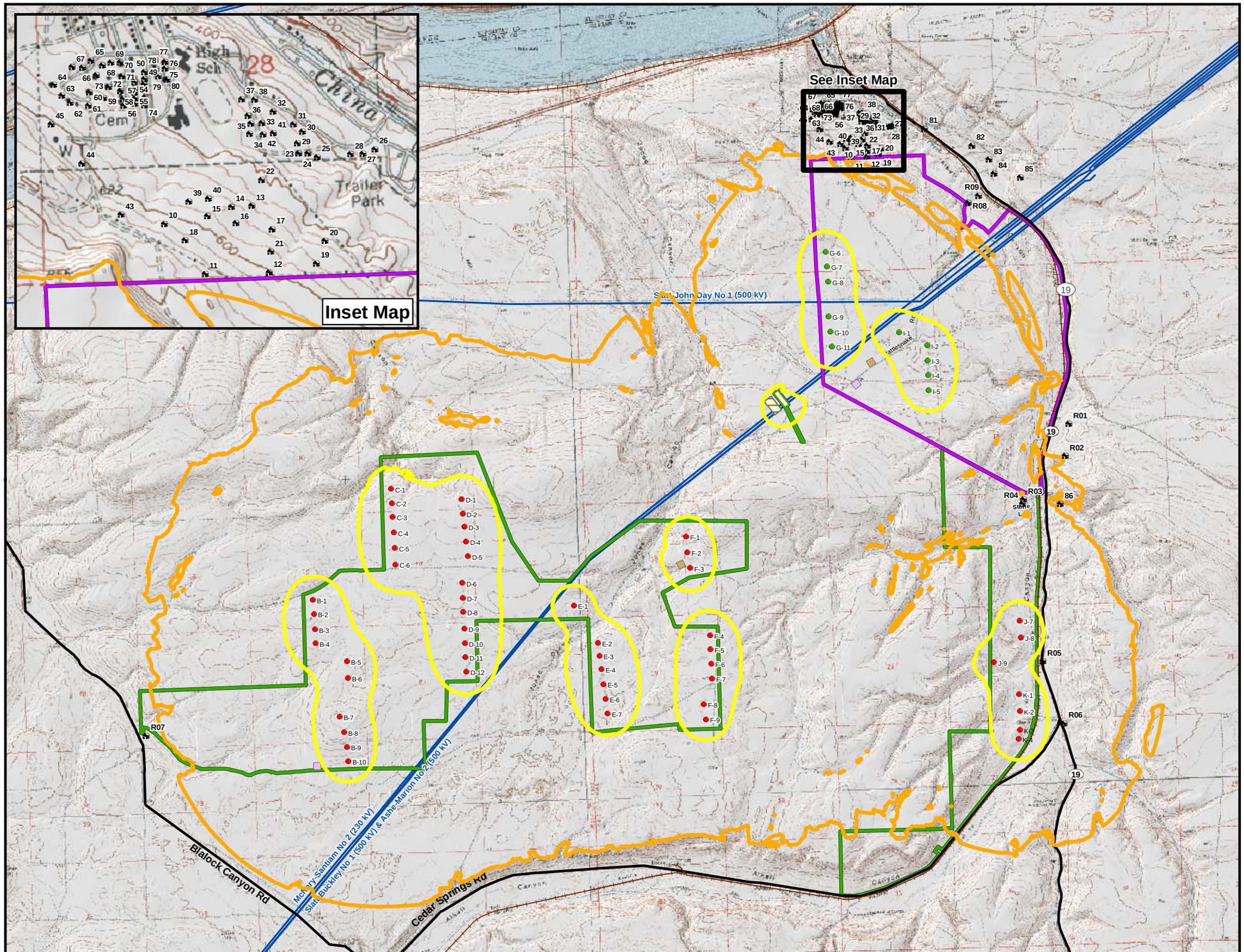
File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure X-3 - Predicted Noise-Compliant 15MW Turbine Layout Noise Contours.mxd, Date: January 24, 2007 3:39:48 PM

Figure X-4
Predicted Noise-Compliant 3.0-MW Turbine Layout Noise Contours (dBA)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- House
- 36-dBA Noise Contour
- 50-dBA Noise Contour

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

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File Path: \\Porgis01\GIS Data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure X-4 - Predicted Noise-Compliant 3MW Turbine Layout Noise Contours.mxd, Date: January 24, 2007 3:49:46 PM

APPENDIX B, ATTACHMENT 13

New Tables X-11, X-12, and X-13

Table X-11

Receptor Identifier and Coordinate Locations

Name	Coordinates	
	X (m)	Y (m)
R001	721184.86	5061161.64
R002	721137.17	5060708.17
R003	720546.35	5060090.6
R004	720532.54	5060030.46
R005	720818.13	5057803.41
R006	721116.33	5056921.62
R007	708134.93	5056747.5
R008	719761.2	5064288
R009	719909.2	5064386
R010	717957.14	5065118.4
R011	718100.71	5064941.16
R012	718327	5064947.06
R013	718265.55	5065182.8
R014	718194.06	5065179.26
R015	718109.58	5065146.76
R016	718210.02	5065121.36
R017	718337.04	5065099.5
R018	718029.22	5065061.09
R019	718493.9	5064978.97
R020	718524.63	5065058.73
R021	718332.61	5065020.92
R022	718300.29	5065274.35
R023	718431.77	5065368.27
R024	718463.97	5065368.27
R025	718497.06	5065354.85
R026	718700.98	5065382.58
R027	718658.05	5065366.48
R028	718614.22	5065365.58
R029	718427.3	5065403.15
R030	718445.18	5065445.18
R031	718412.98	5065471.12
R032	718340.54	5065515.84
R033	718301.18	5065474.7
R034	718258.25	5065437.13
R035	718261.83	5065472.91
R036	718251.99	5065500.64
R037	718229.63	5065559.67
R038	718276.14	5065557.88
R039	718042.52	5065198.33
R040	718112.29	5065208.17
R041	718342.15	5065439.82
R042	718306.37	5065434.45
R043	717803.63	5065151.82
R044	717665	5065332.49
R045	717555.88	5065470.22
R046	717888.13	5065566
R047	717888.78	5065591.04
R048	717884.83	5065612.13

Table X-11

Receptor Identifier and Coordinate Locations

Name	Coordinates	
	X (m)	Y (m)
R049	717886.81	5065631.24
R050	717886.15	5065655.63
R051	717851.88	5065620.04
R052	717851.88	5065599.61
R053	717851.88	5065583.13
R054	717852.54	5065562.7
R055	717852.54	5065543.59
R056	717812.33	5065537
R057	717811.67	5065560.07
R058	717801.79	5065587.75
R059	717741.82	5065563.36
R060	717691.73	5065583.79
R061	717688.43	5065536.34
R062	717623.85	5065546.88
R063	717594.85	5065572.59
R064	717565.85	5065610.81
R065	717697	5065695.83
R066	717666.68	5065671.45
R067	717630.44	5065672.76
R068	717737.86	5065678.7
R069	717768.18	5065689.24
R070	717799.81	5065689.24
R071	717807.06	5065641.13
R072	717760.27	5065602.9
R073	717716.77	5065644.42
R074	717886.15	5065537.66
R075	717958.64	5065668.15
R076	717958.64	5065691.22
R077	717923.05	5065697.81
R078	717927.01	5065666.17
R079	717935.58	5065640.47
R080	717965.89	5065627.95
R081	719145.38	5065330.68
R082	719813.38	5065094.41
R083	720058.8	5064900.39
R084	720126.97	5064697.97
R085	720501.71	5064645.45
R086	721063.45	5060027.08

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																												
ID	R001	R002	R003	R004	R005	R006	R007	R008	R009	R010	R011	R012	R013	R014	R015	R016	R017	R018	R019	R020	R021	R022	R023	R024	R025	R026	R027	R028	R029
LJ2N_G_10	11.4	12.1	10.7	10.6	5.5	3.8	0	18.5	17.5	20	21.1	20.8	19.4	19.5	19.8	19.8	19.8	20.4	20.2	19.7	20.3	18.9	18.2	18.1	18.1	17.7	17.8	17.4	18
LJ2N_G_11	11.7	12.5	11.1	11	5.9	4.1	0	18.1	17.2	19	20	19.8	18.5	18.6	18.8	18.9	18.9	19.3	19.3	18.8	19.3	18	17.3	17.3	17.1	16.9	17.1	16.2	17.2
LJ2N_G_12	12.3	13.1	12	11.9	6.5	4.6	0	17.3	16.4	17.3	18.2	18	16.9	16.9	17.1	17.2	17.2	17.6	17.7	17.2	17.6	16.4	15.7	15.5	15.5	15.6	15.7	14.4	15.8
LJ2N_G_13	12.7	13.5	12.5	12.4	6.9	5	0	16.8	16	16.4	17.3	17.1	16.1	16.1	16.3	16.4	16.4	16.7	16.8	16.4	16.8	15.6	14.9	14.7	15.2	14.9	15	13.7	15
LJ2N_G_14	13.1	13.9	13	12.9	7.4	5.3	0	16.2	15.4	15.5	16.3	16.2	15.2	15.3	15.4	15.5	15.5	15.8	16	15.6	15.9	14.8	14.2	14	14.4	14.1	14.1	13.1	14.2
LJ2N_G_15	13.7	14.7	14.3	14.2	8.4	6.2	0	14.8	14.2	13.7	14.4	14.3	13.5	13.5	13.6	13.7	13.8	14	14.1	13.8	14.1	13.1	12.7	12.4	12.7	12.5	12.5	11.8	12.6
LJ2N_G_5	9.5	10.3	8.5	8.4	3.9	2.3	0	19.3	18.4	26.8	28.2	28.6	26.8	27.1	26.1	25.9	27.2	27.2	27.3	26.5	27.9	25.9	24.7	24.5	24.5	23.5	23.7	22.4	24.4
LJ2N_G_6	9.9	10.6	8.9	8.8	4.2	2.6	0	19.3	18.4	25.2	26.6	25.6	24	24.2	24.7	24.6	24.4	25.6	24.6	23.9	25	23.2	22.1	22	22	21.1	21.4	21.5	21.9
LJ2N_G_7	10.2	11	9.3	9.2	4.5	2.9	0	19.2	18.3	23.7	25	24.3	22.7	22.9	23.3	23.3	23.1	24.1	23.4	22.8	23.7	22	21.1	21	21	20.2	20.4	20.6	20.9
LJ2N_G_8	10.6	11.4	9.8	9.7	4.9	3.2	0	19	18.1	22.3	23.4	22.9	21.4	21.6	21.9	21.9	21.8	22.6	22.2	21.6	22.4	20.8	20	19.9	19.9	19.3	19.5	19.3	19.8
LJ2N_G_9	11	11.7	10.2	10.1	5.2	3.5	0	18.8	17.8	21.1	22.2	21.8	20.4	20.5	20.8	20.8	20.8	21.4	21.2	20.6	21.3	19.8	19	19	18.9	18.4	18.6	18.3	18.8
LJ2N_H_10	24.8	24.3	24.9	24.5	13.6	10.9	0	14.5	14.1	10.3	10.9	11.2	10.5	10.4	10.4	10.6	10.8	10.5	11.3	11	11	10.2	10.1	10.1	10.2	10.3	10.2	10.3	10
LJ2N_H_2	14.9	13.8	11.8	11.6	5.9	6	0	27.1	25.5	20.1	21.5	22.2	20.5	20.4	20.3	20.8	21.2	20.6	22.3	21.8	21.7	21.4	19.7	19.8	19.9	19.9	20	20	19.5
LJ2N_H_3	16.7	16.8	14.9	14.7	9.5	7.5	0	21.3	20.3	15.7	16.7	17.1	16	15.9	15.9	16.2	16.5	16.1	17.3	16.6	16.8	15.7	15.4	15.5	15.6	15.6	15.5	15.6	15.3
LJ2N_H_4	17.2	17.3	15.5	15.3	9.8	7.8	0	20.4	19.5	15.1	16.1	16.5	15.4	15.3	15.3	15.5	15.8	15.5	16.6	15.6	16.1	15	14.8	14.9	14.9	15	15	15	14.7
LJ2N_H_5	17.7	17.9	16.1	15.9	10.2	8.1	0	19.4	18.6	14.5	15.4	15.7	14.7	14.6	14.6	14.8	15.1	14.8	15.8	14.9	15.4	14.4	14.1	14.2	14.3	14.3	14.2	14.3	14
LJ2N_H_6	18.2	18.4	16.8	16.6	10.6	8.5	0	18.6	17.8	13.9	14.8	15.1	14.1	14	14	14.2	14.5	14.2	15.1	14.2	14.8	13.8	13.5	13.6	13.7	13.7	13.6	13.7	13.4
LJ2N_H_7	20	19	17.5	17.3	11	8.8	0	17.7	17.1	13.3	14.1	14.4	13.5	13.4	13.4	13.6	13.8	13.6	14.5	13.6	14.1	13.2	12.9	13	13.1	13.1	12.9	13.1	12.8
LJ2N_H_8	23.8	22.7	22.3	22	12.4	10	0	16.1	15.6	11.4	12.1	12.4	11.6	11.5	11.5	11.7	12	11.7	12.5	12	12.2	11.4	11.2	11.3	11.3	11.4	11.2	11.4	11.1
LJ2N_H_9	24.3	23.5	23.4	23.1	12.9	10.4	0	15.4	14.9	10.9	11.6	11.9	11.1	11	11	11.2	11.4	11.1	12	11.5	11.6	10.8	10.7	10.7	10.8	10.9	10.7	10.9	10.6
LJ2N_I_15	21.2	18.9	16.7	16.5	9.6	7.7	0	24.1	22.2	13.7	14.6	15.2	15.6	15.5	14	15.7	16.1	14.1	16.9	16.7	16.3	15.5	15.5	15.5	14.4	14.7	14.7	14.6	15.4
LJ2N_I_2	19.2	17.3	15.5	15.3	8.9	7.1	0	26.9	26.3	16.3	16	18	17	16.8	16.7	17.1	17.5	16.7	18.4	18.2	17.8	16.8	16.8	16.9	17.1	17.5	16.1	16	16.7
LJ2N_I_3	20.1	18.1	16.1	15.9	9.3	7.4	0	25.4	24.9	14.4	15.4	16	16.4	16.2	14.8	16.4	16.8	14.8	17.7	17.5	17.1	16.2	16.2	16.2	16.4	16.7	15.4	15.3	16
LJ2N_I_4	22.3	19.9	17.5	17.2	10	8	0	22.8	21	13.1	14	14.6	15	13.5	13.4	13.7	15.4	13.5	14.9	14.7	14.4	14.8	14.8	13.6	13.7	14	14	13.9	14.7
LJ2N_I_5	23.9	21.3	18.6	18.3	10.5	8.5	0	19.9	19.6	12.4	13.2	13.7	12.9	12.8	12.7	13	13.3	12.7	14	13.9	13.5	12.7	12.7	12.8	12.9	13.2	13.2	13.1	13.9
LJ2N_I_6	25.3	22.4	19.4	19.1	10.9	8.8	0	18.9	18.6	11.8	12.6	13.1	12.3	12.2	12.1	12.4	12.7	12.1	13.4	13.2	12.9	12.1	12.1	12.2	12.3	12.6	12.5	12.5	12
LJ2N_I_7	26.8	23.6	20.2	19.9	11.3	9.1	0	18	17.8	11.3	12	12.5	11.8	11.6	11.5	11.8	12.1	11.6	12.8	12.6	12.3	11.6	11.6	11.6	11.7	12	12	11.9	11.5
LJ2S_A_1	0	0	0	0	0	0	27.4	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_2	0	0	0	0	0	0	28.1	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_6	0	0	0	0	0	0	28.5	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_7	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_1	0	0	0	0	0	0	14.3	0	0	-0.5	-0.4	0	0	0	-0.6	0	0	-0.5	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_10	0	0	0	0	-0.6	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_11	0	0	0	0	-0.6	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_12	0	0	0	0	-0.6	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_13	0	0	0	0	-0.6	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_14	0	0	0	0	-0.6	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_15	0	0	0	0	-0.6	0	15.2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	0	0	0	14.7	0	0	-0.6	-0.6	0	0	0	0	0	0	-0.6	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	15.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	0	0	0	0	15.7	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	-0.4	-0.4	-0.5	0	14.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	-0.5	-0.5	-0.5	0	14.6	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	-0.6	-0.5	-0.5	0	14.9	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	-0.7	-0.6	-0.5	0	15.1	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	-0.2	-0.1	0.8	0.8	-0.1	0	8.3	0.6	0.3	2.2	2.2	1.9	1.8	1.9	2	1.9	1.8	2.2	1.7	1.6	1.8	1.7	1.4	1.4	1.3	1.1	1.1	1.2	1.4
LJ2S_C_10	-0.7	-0.5	0.4	0.5	0.1	-0.5	11.3	-0.6	0	0.6	0.6	0.4	0.2	0.3	0.4	0.4	0.2	0.6	0.2	0.1	0.3	0.1	-0.1	-0.1	-0.2	-0.4	-0.4	-0.3	-0.1
LJ2S_C_11	0	-0.5	0.4	0.4	0.1	-0.4	11.6	0	0	0.4	0.5	0.2	0.1	0.2	0.3	0.2	0.1	0.4	0	-0.1	0.2	0	-0.3	-0.3	-0.3	-0.5	-0.5	-0.4	-0.3
LJ2S_C_12	0	-0.6	0.4	0.4	0.2	-0.4	11.8	0	0	0.3	0.3	0.1	-0.1	0	0.1	0	-0.1	0.3	-0.1	-0.2	0	-0.2	-0.4	-0.4	-0.4	-0.7	-0.6	-0.6	-0.4
LJ2S_C_13	0	-0.6	0.3	0.4	0.2	-0.3	12	0	0	0.1	0.2	-0.1	-0.2	-0.1	0	-0.1	-0.2	0.1	-0.2	-0.3	-0.1	-0.3	-0.5	-0.6	-0.6	0	0	0	-0.6
LJ2S_C_14	0	-0.7	0.3	0.3	0.2	-0.3	12.2	0	0	0	0	-0.2	-0.4	-0.3	-0.2	-0.3	-0.4	0	-0.4	-0.5	-0.3	-0.5	0	0	0	0	0	0	0
LJ2S_C_2	-0.2	-0.1	0.8	0.8	0		8.6	0.5	0.2	2.1	2.1	1.8	1.7	1.7	1.9	1.8	1.6	2.1	1.6	1.4	1.7	1.5	1.3	1.2	1.2	0.9	1	1.1	1.3
LJ2S_C_3	-0.2	-0.1	0.8	0.8	0.1	-0.6	8.8	0.4	0.2	2	2	1.7	1.5	1.6	1.7	1.6	1.5	1.9	1.4	1.3	1.6	1.4	1.1	1.1	1.1	0.8	0.9	0.9	1.1
LJ2S_C_4	-0.2	-0.1	0.8	0.8	0.1	-0.6	9.1	0.3	0.1	1.8	1.8	1.5	1.4	1.5	1.6	1.5	1.4	1.8	1.3	1.2	1.4	1.2	1	1	0.9	0.7	0.8	0.8	1
LJ2S_C_5	-0.2	-0.1	0.8	0.8	0.2	-0.5	9.4	0.2	-0.1	1.6	1.6	1.4	1.2	1.3	1.4	1.3	1.2	1.6	1.1	1	1.3	1.1	0.9	0.8	0.8	0.5	0.6	0.7	0.8
LJ2S_C_6	-0.2	-0.1	0.8	0.9	0.3	-0.4	9.6	0.1	-0.1	1.5	1.5	1.3	1.1	1.2	1.3	1.2	1.1	1.5	1	0.9	1.2	1	0.7	0.7	0.7	0.4	0.5	0.6	0.7
LJ2S_C_7	-0.2	-0.1	0.8	0.9	0.3	-0.3	9.9	0	-0.2	1.4	1.4	1.1	1	1	1.2	1.1	1	1.3	0.9	0.8	1	0.8	0.6	0.6	0.5	0.3	0.4	0.4	0.6
LJ2S_C_8	-0.3	-0.1	0.8	0.8	0.4	-0.3	10.1	-0.1	-0.3	1.2	1.2	1	0.8	0.9	1	0.9	0.8	1.2	0.8	0.7	0.9	0.7	0.5	0.4	0.4	0.2	0.2	0.3	0.4
LJ2S_C_9	-0.6	-0.4	0.5	0.5	0.1	-0.5	11	-0.5		0.8	0.8	0.5	0.4	0.5	0.6	0.5	0.4	0.7	0.3	0.2	0.5	0.3	0	0	0	-0.2	-0.2	-0.1	0
LJ2S_D_1	1	1.1	2	2	0.9	0.1	6.3	1.9	1.6	3.7	3.7	3.4	3.2	3.3	3.4	3.3	3.2	3.7	3.1	3	3.3	3	2.8	2.7	2.7	2.4	2.5	2.5	2.7
LJ2S_D_10	0.9	1.2	2.2	2.3	1.9	1.2	8.3	0.7	0.5	1.8	1.9	1.6	1.4	1.5	1.6	1.5	1.4	1.8	1.4	1.3	1.5	1.3	1	1	1	0.8	0.8	0.9	1
LJ2S_D_11	0.9	1.1	2.2	2.3	2	1.3	8.4	0.6	0.3	1.6	1.7	1.4	1.2	1.3	1.4	1.3	1.2	1.6	1.2	1.1	1.3	1.1	0.8	0.8	0.8	0.6	0.6	0.6	0.8
LJ2S_D_12	0.7	1	2.1	2.1	1.9	1.3	8.7	0.3	0	1.2	1.3	1.1	0.9	0.9	1	1	0.9	1.2	0.9	0.8	1	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.5
LJ2S_D_13	0.6	0.9	2	2.1	2	1.4	8.9	0.2	-0.1	1.1	1.1	0.9	0.7	0.8	0.9	0.8	0.7	1.1	0.7	0.6	0.8	0.6	0.3	0.3	0.3	0.1	0.2	0.2	0.3
LJ2S_D_14	0.6	0.8	2	2	2	1.4	9	0	-0.2	0.9	0.9	0.7	0.5	0.6	0.7	0.6	0.6	0.9	0.5	0.4	0.6	0.4	0.2	0.1	0.1	-0.1	0	0	0.1
LJ2S_D_15	0.5	0.8	1.9	1.9	2	1.5	9.1	-0.1	-0.4	0.7	0.7	0.5	0.3	0.4	0.5	0.4	0.4	0.7	0.4	0.2	0.5	0.2	0	0	0	-0.2	-0.2	-0.2	0
LJ2S_D_16	0.4	0.7	1.8	1.9	2	1.5	9.1	-0.3	-0.5	0.5	0.6	0.4	0.2	0.2	0.3	0.3	0.2	0.5	0.2	0.1	0.3	0	-0.2	-0.2	-0.2	-0.4	-0.4	-0.3	-0.2
LJ2S_D_2	1	1.2	2.1	2.1	1.1	0.3	6.7	1.7	1.5	3.4	3.4	3.1	2.9	3	3.2	3.1	2.9	3.4	2.8	2.7	3	2.8	2.5	2.5	2.4	2.2	2.2	2.3	2.5

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																												
ID	R001	R002	R003	R004	R005	R006	R007	R008	R009	R010	R011	R012	R013	R014	R015	R016	R017	R018	R019	R020	R021	R022	R023	R024	R025	R026	R027	R028	R029
LJ2S_D_3	1.1	1.2	2.1	2.1	1.2	0.4	6.9	1.6	1.4	3.2	3.2	2.9	2.8	2.8	3	2.9	2.8	3.2	2.7	2.6	2.8	2.6	2.3	2.3	2.3	2	2.1	2.1	2.3
LJ2S_D_4	1.1	1.2	2.2	2.2	1.3	0.5	7.1	1.5	1.3	3.1	3.1	2.8	2.6	2.7	2.8	2.7	2.6	3	2.5	2.4	2.7	2.5	2.2	2.2	2.1	1.9	1.9	2	2.2
LJ2S_D_5	1.1	1.2	2.2	2.2	1.4	0.7	7.3	1.4	1.2	2.9	2.9	2.6	2.4	2.5	2.7	2.6	2.4	2.9	2.4	2.3	2.5	2.3	2	2	2	1.7	1.8	1.8	2
LJ2S_D_6	1.1	1.2	2.2	2.3	1.5	0.8	7.5	1.3	1	2.7	2.7	2.4	2.2	2.3	2.5	2.4	2.3	2.7	2.2	2.1	2.4	2.1	1.9	1.8	1.8	1.5	1.6	1.7	1.8
LJ2S_D_7	1.1	1.2	2.3	2.3	1.7	0.9	7.7	1.2	0.9	2.5	2.5	2.2	2	2.1	2.3	2.2	2.1	2.5	2	1.9	2.2	1.9	1.7	1.6	1.6	1.4	1.1	1.5	1.6
LJ2S_D_8	1	1.2	2.3	2.3	1.7	1	7.9	1	0.8	2.2	2.3	2	1.8	1.9	2	2	1.8	2.2	1.8	1.7	1.9	1.7	1.4	1.4	1.3	1.2	1.1	1.3	1.4
LJ2S_D_9	1	1.2	2.3	2.3	1.8	1.1	8.1	0.9	0.6	2	2.1	1.8	1.6	1.7	1.8	1.7	1.6	2	1.6	1.5	1.7	1.5	1.2	1.2	1.1	1	1	1.1	1.2
LJ2S_E_1	3.4	3.8	5.1	5.2	4.6	3.7	4.8	2.7	2.4	3.5	3.6	3.4	3.1	3.2	3.3	3.2	3.2	3.5	3.2	3	3.3	2.9	2.7	2.7	2.6	2.4	2.5	2.5	2.6
LJ2S_E_10	2.7	3.2	4.7	4.8	5.5	5	4.8	1	0.8	1.2	1.4	1.2	0.9	1	1.1	1.1	1	1.2	1.1	0.9	1.1	0.8	0.6	0.6	0.6	0.4	0.5	0.4	0.6
LJ2S_E_11	2.6	3.1	4.6	4.6	5.5	5	4.7	0.8	0.5	1	1.1	1	0.7	0.7	0.8	0.8	0.8	1	0.8	0.7	0.9	0.6	0.4	0.3	0.3	0.2	0.2	0.2	0.3
LJ2S_E_2	3.3	3.6	5	5	4.6	3.8	5	2.4	2.1	3.1	3.3	3.1	2.8	2.8	3	2.9	2.8	3.2	2.9	2.7	2.9	2.6	2.4	2.3	2.3	2.1	2.2	2.2	2.3
LJ2S_E_3	3.1	3.4	4.8	4.9	4.6	3.8	5.2	2.2	1.9	2.8	3	2.8	2.5	2.6	2.7	2.6	2.6	2.9	2.6	2.4	2.7	2.3	2.1	2.1	2.1	1.9	1.9	1.9	2.1
LJ2S_E_4	3.3	3.7	5.1	5.2	5.2	4.4	4.8	2	1.8	2.5	2.7	2.5	2.2	2.2	2.4	2.3	2.3	2.5	2.3	2.2	2.4	2	1.8	1.8	1.8	1.6	1.6	1.7	1.8
LJ2S_E_5	3.2	3.6	5.1	5.2	5.3	4.6	4.8	1.9	1.6	2.3	2.5	2.3	2	2	2.2	2.1	2.1	2.3	2.1	2	2.2	1.8	1.6	1.6	1.6	1.4	1.4	1.5	1.6
LJ2S_E_6	3.2	3.6	5.1	5.1	5.4	4.7	4.8	1.7	1.5	2.1	2.3	2.1	1.8	1.9	2	1.9	1.9	2.1	1.9	1.8	2	1.6	1.4	1.4	1.4	1.2	1.3	1.3	1.4
LJ2S_E_7	3.1	3.5	5	5.1	5.4	4.8	4.8	1.6	1.3	1.9	2.1	1.9	1.6	1.7	1.8	1.7	1.7	1.9	1.7	1.6	1.8	1.4	1.2	1.2	1.2	1	1.1	1.1	1.2
LJ2S_E_8	3	3.4	4.9	5	5.5	4.8	4.8	1.4	1.1	1.7	1.8	1.7	1.4	1.4	1.5	1.5	1.4	1.7	1.5	1.4	1.6	1.2	1	1	1	0.8	0.9	0.9	1
LJ2S_E_9	2.9	3.3	4.8	4.9	5.5	4.9	4.8	1.2	0.9	1.4	1.6	1.4	1.2	1.2	1.3	1.3	1.2	1.5	1.3	1.2	1.3	1	0.8	0.8	0.8	0.6	0.7	0.7	0.8
LJ2S_F_1	6.8	7.1	8.8	8.8	7.2	5.8	1.9	5.8	5.4	6.3	6.5	6.3	5.9	6	6.1	6.1	6	6.3	6.1	5.9	6.1	5.7	5.4	5.4	5.3	5.1	5.2	5.2	5.3
LJ2S_F_10	5	5.6	7.5	7.6	8.5	7.7	2.5	2.5	2.2	2.3	2.5	2.4	2.1	2.1	2.2	2.2	2.2	2.4	2.3	2.2	2.3	1.9	1.7	1.7	1.7	1.6	1.6	1.5	1.7
LJ2S_F_11	4.8	5.4	7.3	7.4	8.6	7.9	2.4	2.2	1.9	2	2.2	2.1	1.8	1.8	1.9	1.9	1.9	2.1	2	1.8	2	1.6	1.4	1.4	1.4	1.3	1.3	1.2	1.4
LJ2S_F_12	4.7	5.3	7.1	7.2	8.6	8	2.4	2	1.8	1.8	2	1.9	1.6	1.6	1.7	1.7	1.6	1.8	1.8	1.6	1.8	1.4	1.2	1.2	1.2	1.1	1.1	1	1.2
LJ2S_F_13	4.6	5.2	7	7.1	8.6	8.1	2.3	1.8	1.6	1.6	1.8	1.7	1.4	1.4	1.5	1.5	1.4	1.6	1.6	1.4	1.6	1.2	1	1	1	0.9	0.9	0.8	1
LJ2S_F_2	6.7	7	8.7	8.8	7.4	6	2	5.5	5.2	6	6.2	6	5.6	5.6	5.8	5.7	5.7	6	5.8	5.6	5.8	5.4	5.1	5.1	5.1	4.8	4.9	4.9	5
LJ2S_F_3	6.6	7	8.7	8.8	7.5	6.2	2	5.2	4.9	5.6	5.8	5.6	5.2	5.3	5.4	5.4	5.3	5.7	5.4	5.3	5.5	5	4.8	4.7	4.7	4.5	4.6	4.6	4.7
LJ2S_F_4	6.5	6.9	8.7	8.8	7.7	6.3	2.1	5	4.7	5.3	5.6	5.4	5	5	5.2	5.1	5.1	5.4	5.2	5	5.2	4.8	4.5	4.5	4.5	4.3	4.3	4.4	4.5
LJ2S_F_5	6.4	6.9	8.7	8.7	7.8	6.5	2.1	4.8	4.5	5.1	5.3	5.1	4.7	4.8	4.9	4.9	4.8	5.1	4.9	4.7	5	4.5	4.3	4.2	4.2	4	4.1	4.1	4.2
LJ2S_F_6	5.7	6.3	8.1	8.2	8.3	7.2	2.4	3.5	3.2	3.5	3.7	3.6	3.2	3.3	3.4	3.4	3.3	3.6	3.4	3.3	3.5	3.1	2.8	2.8	2.7	2.7	2.7	2.1	2.8
LJ2S_F_7	5.6	6.1	8	8.1	8.4	7.4	2.4	3.3	3	3.2	3.5	3.3	3	3	3.1	3.1	3.1	3.3	3.2	3	3.2	2.8	2.6	2.6	2.5	2.4	2.5	2	2.5
LJ2S_F_8	5.3	5.9	7.7	7.8	8.5	7.5	2.4	2.9	2.6	2.8	3	2.9	2.5	2.6	2.7	2.7	2.6	2.8	2.7	2.6	2.8	2.4	2.2	2.1	2.1	2	2.1	1.8	2.1
LJ2S_F_9	5.2	5.8	7.6	7.7	8.5	7.6	2.5	2.7	2.4	2.6	2.8	2.7	2.3	2.4	2.5	2.4	2.4	2.6	2.5	2.4	2.5	2.2	1.9	1.9	1.9	1.8	1.8	1.6	1.9
LJ2S_J_10	14.6	16.6	21.7	22.1	36.4	24.9	0	5.7	5.5	3.3	3.6	3.8	3.3	3.3	3.3	3.4	3.5	3.4	3.8	3.7	3.6	3.2	3.1	3.1	3.2	3.2	3.2	3.2	3.1
LJ2S_J_11	13.9	15.8	20.6	20.9	40.1	26.3	0	5.3	5.1	3	3.3	3.5	3	3	3	3.1	3.2	3.1	3.5	3.4	3.3	2.9	2.8	2.8	2.9	2.9	2.9	2.9	2.8
LJ2S_J_12	12.1	13.8	17.9	18.1	39.8	30.9	0	4.3	4.2	2.2	2.5	2.6	2.2	2.2	2.2	2.3	2.4	2.3	2.7	2.4	2.5	2.1	2	2	2.1	2.1	2.1	2.1	2
LJ2S_J_13	11.5	13	16.9	17.2	36.1	33.3	0	3.9	3.8	1.9	2.2	2.3	1.9	1.9	1.9	2	2.1	2	2.3	2.1	2.2	1.8	1.7	1.7	1.7	1.8	1.7	1.8	1.6
LJ2S_J_14	9.8	11.2	13.6	13.9	27.7	30.1	0	3.1	3	1.3	1.6	1.7	1.3	1.3	1.3	1.4	1.5	1.4	1.7	1.5	1.6	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.1
LJ2S_J_15	9.4	10.8	13.1	13.3	26.6	30.4	0	2.9	2.7	1.1	1.4	1.5	1.1	1.1	1.1	1.2	1.3	1.2	1.5	1.3	1.4	1	0.9	0.9	0.9	1	1	1	0.9
LJ2S_J_16	9	10.3	12.5	12.7	25.3	30	0	2.6	2.4	0.8	1.1	1.2	0.9	0.8	0.8	0.9	1	0.9	1.2	1.1	1.1	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.6
LJ2S_J_17	5	5.9	7.8	7.9	14.7	16.3	0	0.5	0.4	-0.6	-0.3	-0.3	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.4	-0.5	-0.4	0	0	0	0	0	0	0	0
LJ2S_J_6	17.5	19.9	27.2	27.8	26.7	19.9	0	7.3	7.1	4.6	5	5.2	4.7	4.6	4.6	4.8	4.9	4.7	5.2	5.1	5	4.5	4.4	4.5	4.5	4.6	4.5	4.5	4.4
LJ2S_J_7	16.7	19	25.7	26.2	28.3	20.9	0	6.9	6.7	4.3	4.7	4.8	4.4	4.3	4.3	4.4	4.6	4.4	4.9	4.7	4.7	4.2	4.1	4.1	4.2	4.2	4.2	4.2	4.1
LJ2S_J_8	16	18.2	24.3	24.8	30.2	21.9	0	6.5	6.3	4	4.4	4.5	4.1	4	4	4.1	4.2	4.1	4.6	4.4	4.4	3.9	3.8	3.8	3.9	3.9	3.9	3.9	3.8
LJ2S_J_9	15.3	17.3	22.8	23.2	33.5	23.6	0	6	5.8	3.5	3.9	4.1	3.6	3.6	3.6	3.7	3.8	3.7	4.1	4	3.9	3.5	3.4	3.4	3.5	3.5	3.5	3.5	3.3
Trans	6.3	6.2	0	7.9	1.7	-1.3	0	7	6.3	7.4	8	7.7	6.8	6.9	7.1	7.1	7.1	7.6	7.3	7	7.4	6.4	4.2	4.5	3.3	5.4	5.5	-2.2	5.7
Trans	6.3	6.3	0	8	1.8	-1.2	0	7	6.3	7.3	8	7.7	6.7	6.8	7.1	7.1	7	7.5	7.3	6.9	7.4	6.3	4.2	4.5	3.3	5.3	5.5	-2.2	5.6
Trans	5.9	5.9	0	7.7	1.7	-1.3	0	6.5	5.8	7	7.6	7.3	6.4	6.5	6.7	6.7	6.6	7.2	6.9	6.5	6.9	5.9	4.1	4.3	3.1	4.9	5.1	-2.4	5.3
Trans	5.9	5.9	0	7.7	1.7	-1.3	0	6.5	5.8	6.9	7.6	7.2	6.3	6.4	6.7	6.7	6.6	7.1	6.8	6.5	6.9	5.9	4.1	4.2	3.1	4.9	5	-2.3	5.2
Trans	6.2	6.1	-0.1	7.8	1.6	-1.4	0	7.1	6.3	7.5	8.1	7.8	6.9	7	7.2	7.2	7.1	7.7	7.4	7	7.5	6.4	4.3	4.5	3.3	5.4	5.6	-2.3	5.7
Trans	5.8	5.8	0	7.6	1.6	-1.4	0	6.5	5.8	7	7.6	7.3	6.4	6.5	6.8	6.7	6.7	7.2	6.9	6.5	7	6	4.1	4.3	3.1	5	5.1	-0.3	5.3

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																												
ID	R030	R031	R032	R033	R034	R035	R036	R037	R038	R039	R040	R041	R042	R043	R044	R045	R046	R047	R048	R049	R050	R051	R052	R053	R054	R055	R056	R057	R058
LJ2N_G_10	17.8	17.7	17.5	17.8	18	17.8	17.7	17.4	17.4	19.5	19.4	17.9	18	19.8	18.7	17.9	17.5	17.4	17.3	17.2	17.1	17.3	17.4	17.4	17.5	17.6	16.5	17.6	17.4
LJ2N_G_11	17	16.9	16.7	17	17.2	17	16.9	16.6	16.6	18.5	18.5	17.1	17.1	18.8	17.8	17	16.7	16.6	16.5	16.4	16.3	16.4	16.5	16.6	16.7	16.8	15.2	16.7	16.6
LJ2N_G_12	15.6	15.5	15.3	15.5	15.7	15.6	15.5	15.2	15.2	16.9	16.8	15.7	15.7	17.1	16.2	15.5	15.2	15.1	15.1	15	14.9	15	15.1	15.2	15.3	15.3	12.8	15.3	15.1
LJ2N_G_13	14.8	14.7	14.6	14.8	15	14.8	14.7	14.5	14.5	16.1	16	14.9	14.9	16.2	15.4	14.8	14.5	14.4	14.3	14.2	14.1	14.3	14.3	14.4	14.5	14.6	11.9	13.7	14.4
LJ2N_G_14	14.1	14	13.8	14	14.2	14	13.9	13.7	13.7	15.2	15.2	14.1	14.2	15.4	14.6	14	13.7	13.6	13.5	13.5	13.4	13.5	13.6	13.6	13.7	13.8	11.1	13	13.6
LJ2N_G_15	12.5	12.4	12.2	12.4	12.5	12.4	12.3	12.1	12.1	13.4	13.4	12.5	12.5	13.6	12.9	12.3	12.1	12	12	11.9	11.8	11.9	12	12	12.1	12.2	9.8	11.5	12
LJ2N_G_5	24.1	24	23.9	24.3	24.7	24.5	24.3	23.9	23.8	25.8	27.1	24.5	24.6	26.6	24.9	23.6	24.4	24.2	24.1	23.9	23.7	24	24.2	24.3	23	23.1	23.2	23	24.3
LJ2N_G_6	21.6	21.5	21.4	21.8	22.1	21.9	21.7	21.4	21.3	24.4	24.1	21.9	22	25	23.5	22.3	21.7	21.5	21.4	21.3	21.1	21.4	21.5	21.6	21.8	21.9	21.9	21.8	21.6
LJ2N_G_7	20.6	20.5	20.4	20.7	21	20.8	20.6	20.3	20.2	23	22.8	20.8	20.9	23.5	22.1	21.1	20.5	20.4	20.3	20.1	20	20.2	20.3	20.4	20.6	20.7	20.6	20.6	20.4
LJ2N_G_8	19.5	19.4	19.3	19.6	19.8	19.6	19.5	19.2	19.1	21.6	21.5	19.7	19.8	22	20.8	19.8	19.4	19.2	19.1	19	18.9	19.1	19.2	19.3	19.4	19.5	18.6	19.4	19.3
LJ2N_G_9	18.6	18.5	18.4	18.6	18.9	18.7	18.5	18.2	18.2	20.5	20.4	18.8	18.8	20.9	19.7	18.8	18.4	18.3	18.1	18	17.9	18.1	18.2	18.3	18.4	18.5	17.5	18.4	18.3
LJ2N_H_10	9.9	9.8	9.6	9.7	9.7	9.7	9.6	9.4	9.4	10.2	10.2	9.8	9.8	10	9.4	8.9	9	9	8.9	8.9	8.8	8.9	8.9	9	9	9.1	9	9	8.9
LJ2N_H_2	19.3	19.1	20.1	20.3	20.4	20.2	20	19.7	19.8	19.9	20	20.5	20.5	19.4	18.1	18.5	18.9	18.8	18.7	18.6	18.5	18.6	18.7	18.8	18.9	19	17.6	17.5	17.4
LJ2N_H_3	15.1	15	14.7	14.9	14.9	14.8	14.7	14.4	14.5	15.6	15.6	15	15	15.3	14.3	13.7	13.9	13.8	13.8	13.7	13.6	13.7	13.7	13.8	13.9	13.9	13.9	13.8	13.7
LJ2N_H_4	14.5	14.4	14.2	14.3	14.4	14.2	14.1	13.9	13.9	15	15	14.4	14.4	14.7	13.8	13.2	13.4	13.3	13.2	13.2	13.1	13.2	13.2	13.3	13.4	13.4	13.4	13.3	13.2
LJ2N_H_5	13.9	13.8	13.5	13.6	13.7	13.6	13.5	13.2	13.3	14.3	14.4	13.8	13.8	14.1	13.2	12.6	12.8	12.7	12.7	12.6	12.5	12.6	12.7	12.7	12.8	12.8	12.7	12.7	12.6
LJ2N_H_6	13.3	13.2	12.9	13.1	13.1	13	12.9	12.7	12.7	13.7	13.8	13.2	13.2	13.5	12.7	12.1	12.3	12.2	12.1	12.1	12	12.1	12.1	12.2	12.2	12.3	12.1	12.2	12.1
LJ2N_H_7	12.7	12.6	12.4	12.5	12.6	12.4	12.3	12.1	12.2	13.1	13.2	12.6	12.6	13	12.2	11.6	11.7	11.7	11.6	11.5	11.5	11.5	11.6	11.7	11.7	11.8	11.6	11.7	11.6
LJ2N_H_8	11	10.9	10.7	10.8	10.8	10.7	10.7	10.5	10.5	11.3	11.3	10.9	10.9	11.1	10.4	9.9	10.1	10	9.9	9.9	9.8	9.9	9.9	10	10	10.1	10	10	9.9
LJ2N_H_9	10.5	10.4	10.2	10.3	10.3	10.2	10.2	10	10	10.8	10.8	10.4	10.4	10.6	9.9	9.4	9.6	9.5	9.5	9.4	9.4	9.4	9.5	9.5	9.6	9.6	9.5	9.5	9.4
LJ2N_I_15	15.3	15.1	14.8	14.9	14.9	14.8	14.7	14.5	14.6	13.7	13.9	15.1	15	13.2	12.4	13.2	13.7	13.6	13.6	13.5	13.5	13.5	13.5	13.6	13.6	13.7	12.3	13.6	13.5
LJ2N_I_2	16.6	16.4	16.1	16.2	16.2	16.1	16	15.7	15.8	16.3	16.5	16.4	16.3	15.8	14.9	14.3	14.9	14.8	14.7	14.7	14.6	14.6	14.7	14.7	14.8	14.8	13.5	14.7	14.6
LJ2N_I_3	15.9	15.8	15.5	15.5	15.5	15.4	15.3	15.1	15.2	14.4	15.9	15.7	15.7	13.9	13	13.8	14.3	14.3	14.2	14.1	14.1	14.1	14.1	14.2	14.2	14.3	12.9	14.2	14.1
LJ2N_I_4	14.6	14.5	14.2	14.3	14.3	14.2	14.1	13.9	14	13.1	13.3	14.4	14.4	12.6	11.9	11.3	13.2	13.1	13.1	13	12.9	13	13	11.7	11.7	11.8	11.7	11.7	11.6
LJ2N_I_5	12.5	13.7	13.5	12.2	12.2	12.1	12	11.8	11.9	12.4	12.5	12.3	12.3	11.9	11.2	10.7	11.1	11.1	11	10.9	10.9	10.9	11	11	11	11.1	11	11	10.9
LJ2N_I_6	11.9	11.8	11.6	11.6	11.6	11.5	11.4	11.2	11.3	11.8	11.9	11.8	11.7	11.4	10.7	10.2	10.6	10.5	10.5	10.4	10.4	10.4	10.4	10.5	10.5	10.6	10.5	10.5	10.4
LJ2N_I_7	11.4	11.3	11	11.1	11.1	11	10.9	10.7	10.8	11.3	11.4	11.2	11.2	10.9	10.2	9.7	10.1	10.1	10	10	9.9	9.9	10	10	10.1	10.1	10	10	9.9
LJ2S_A_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_1	0	0	0	0	0	0	0	0	0	-0.6	0	0	0	-0.3	-0.4	-0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.5	-0.5	-0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.6	-0.6	-0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	1.3	1.3	1.4	1.5	1.6	1.5	1.5	1.5	1.4	2.1	2	1.5	1.5	2.4	2.4	2.4	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2	2	2
LJ2S_C_10	-0.2	-0.2	-0.2	-0.1	0	0	-0.1	-0.1	-0.1	0.4	0.4	-0.1	0	0.7	0.6	0.6	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.3	-0.2	-1.2	0.3	0.3
LJ2S_C_11	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	0.3	0.2	-0.2	-0.2	0.6	0.4	0.5	0	0	0	0	0	0	0.1	0.1	0.1	-0.3	-1.3	0.1	0.1
LJ2S_C_12	-0.5	-0.5	-0.5	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	0.1	0.1	-0.4	-0.3	0.4	0.3	0.3	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.5	-1.4	0	0
LJ2S_C_13	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	0	-0.1	-0.5	-0.5	0.2	0.1	0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.5	-1.3	-0.2	-0.2
LJ2S_C_14	0	0	0	0	-0.6	-0.6	-0.7	0	0	-0.2	-0.3		-0.6	0.1	0	0	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.7	-1.5	-0.3	-0.4
LJ2S_C_2	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.3	1.3	1.9	1.8	1.3	1.4	2.3	2.2	2.2	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8
LJ2S_C_3	1.1	1.1	1.1	1.2	1.3	1.2	1.2	1.2	1.1	1.8	1.7	1.2	1.2	2.1	2.1	2.1	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7
LJ2S_C_4	0.9	0.9	1	1.1	1.1	1.1	1.1	1.1	1	1.6	1.5	1	1.1	2	1.9	1.9	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5
LJ2S_C_5	0.8	0.8	0.8	0.9	1	0.9	0.9	0.9	0.8	1.5	1.4	0.9	0.9	1.8	1.8	1.7	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.3
LJ2S_C_6	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.7	1.3	1.3	0.8	0.8	1.7	1.6	1.6	1.1	1.1	1.1	1.1	1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
LJ2S_C_7	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.6	0.6	1.2	1.1	0.6	0.7	1.5	1.5	1.4	1	1	0.9	0.9	0.9	1	1	1	1	1	1	1.1	1
LJ2S_C_8	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.4	1	1	0.5	0.5	1.3	1.3	1.3	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9
LJ2S_C_9	0	0	0	0.1	0.2	0.1	0.1	0.1	0	0.6	0.5	0.1	0.1	0.9	0.9	0.8	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
LJ2S_D_1	2.7	2.7	2.7	2.8	2.9	2.9	2.9	2.8	2.8	3.5	3.4	2.8	2.9	3.9	3.8	3.8	3.3	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.4	3.4
LJ2S_D_10	0.9	0.9	1	1	1.1	1.1	1.1	1	1	1.6	1.5	1	1.1	1.9	1.5	1.7	1.1	1.3	1.3	1.2	1.2	1.3	1.3	1.3	1.4	-0.1	-1.5	1.4	1.4
LJ2S_D_11	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.8	1.4	1.3	0.9	0.9	1.7	1.5	1.5	1	1.1	1.1	1	1	1.1	1.1	1.1	1.1	0.4	-0.9	1.2	1.2
LJ2S_D_12	0.4	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.4	1.1	1	0.5	0.5	1.3	1.1	1.1	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.2	-1	0.8	0.8
LJ2S_D_13	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.9	0.8	0.4	0.4	1.2	1	1	0.5	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.2	-1.1	0.7	0.6
LJ2S_D_14	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.7	0.6	0.2	0.2	1	0.8	0.8	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0	-1	0.5	0.4
LJ2S_D_15	-0.1	-0.1	-0.1	0	0.1	0	0	-0.1	-0.1	0.5	0.4	0	0	0.8	0.6	0.6	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	-0.1	-0.9	0.3	0.2
LJ2S_D_16	-0.3	-0.3	-0.3	-0.2	-0.1	-0.2	-0.2	-0.2	-0.3	0.3	0.3	-0.2	-0.2	0.6	0.4	0.4	0	0	0	-0.1	-0.1	0	0	0	0.1	-0.2	-0.9	0.1	0.1
LJ2S_D_2	2.4	2.4	2.5	2.6	2.7	2.6	2.6	2.6	2.5	3.2	3.1	2.6	2.6	3.6	3.5	3.5	3	2.9	2.9	2.9	2.9	3	3	3	3	3	3	3.1	3.1

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																												
ID	R030	R031	R032	R033	R034	R035	R036	R037	R038	R039	R040	R041	R042	R043	R044	R045	R046	R047	R048	R049	R050	R051	R052	R053	R054	R055	R056	R057	R058
LJ2S_D_3	2.2	2.3	2.3	2.4	2.5	2.4	2.4	2.4	2.3	3	2.9	2.4	2.4	3.4	3.3	3.3	2.8	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.8
LJ2S_D_4	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.9	2.8	2.2	2.3	3.2	3.1	3.1	2.6	2.6	2.6	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.6	2.7	2.7
LJ2S_D_5	1.9	1.9	2	2.1	2.2	2.1	2.1	2	2	2.7	2.6	2.1	2.1	3	3	2.9	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.5
LJ2S_D_6	1.8	1.8	1.8	1.9	2	1.9	1.9	1.9	1.8	2.5	2.4	1.9	1.9	2.8	2.7	2.7	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.3
LJ2S_D_7	1.6	1.6	1.6	1.7	1.8	1.7	1.7	1.7	1.6	2.3	2.2	1.7	1.7	2.6	1.8	2.4	1.4	2	1.9	1.9	1.9	2	2	2	2	-0.1	-1.6	2.1	2.1
LJ2S_D_8	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.4	1.4	2.1	2	1.5	1.5	2.4	1.6	2.2	1.3	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	-0.3	-1.8	1.9	1.8
LJ2S_D_9	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.2	1.2	1.8	1.7	1.2	1.3	2.1	1.6	2	1.2	1.5	1.5	1.5	1.4	1.5	1.5	1.6	1.6	-0.1	-1.5	1.6	1.6
LJ2S_E_1	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.6	2.5	3.3	3.2	2.7	2.7	3.6	3.4	3.3	2.9	2.8	2.8	2.8	2.7	2.8	2.8	2.9	2.9	2.8	2.7	2.9	2.9
LJ2S_E_10	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.4	1	1	0.6	0.6	1.2	1.1	0.9	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.7	0.7
LJ2S_E_11	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.8	0.7	0.3	0.3	1	0.8	0.7	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
LJ2S_E_2	2.3	2.2	2.2	2.3	2.4	2.4	2.3	2.3	2.2	2.9	2.9	2.3	2.4	3.2	3.1	2.9	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.5	2.6	2.5	2.3	2.6	2.6
LJ2S_E_3	2	2	2	2.1	2.1	2.1	2.1	2	2	2.7	2.6	2.1	2.1	2.9	2.8	2.6	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.3	2.1	2.3	2.3
LJ2S_E_4	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.7	2.3	2.3	1.8	1.8	2.6	2.4	2.3	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.8	2	1.9
LJ2S_E_5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.5	2.1	2.1	1.6	1.6	2.4	2.2	2	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.8	1.7
LJ2S_E_6	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.3	1.3	1.9	1.9	1.4	1.4	2.2	2	1.8	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.4	1.6	1.5
LJ2S_E_7	1.1	1.1	1.1	1.2	1.3	1.2	1.2	1.1	1.1	1.7	1.7	1.2	1.2	1.9	1.8	1.6	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.2	1.4	1.3
LJ2S_E_8	0.9	0.9	0.9	1	1	1	1	0.9	0.9	1.5	1.4	1	1	1.7	1.5	1.4	1.1	1	1	1	1	1	1.1	1.1	1.1	1.1	1	1.1	1.1
LJ2S_E_9	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.7	1.3	1.2	0.8	0.8	1.5	1.3	1.2	0.9	0.8	0.8	0.8	0.7	0.8	0.8	0.9	0.9	0.9	0.8	0.9	0.9
LJ2S_F_1	5.2	5.2	5.2	5.3	5.4	5.3	5.3	5.2	5.2	6	6	5.3	5.4	6.3	6	5.9	5.4	5.4	5.4	5.3	5.3	5.4	5.4	5.4	5.4	5.1	4.3	5.5	5.5
LJ2S_F_10	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.5	1.5	2.2	2.1	1.7	1.7	2.3	2.1	1.9	1.7	1.6	1.6	1.6	1.5	1.6	1.6	1.7	1.7	0.7	-0.6	1.7	1.7
LJ2S_F_11	1.3	1.3	1.2	1.3	1.4	1.3	1.3	1.2	1.2	1.8	1.8	1.4	1.4	2	1.8	1.6	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.2	0.6	-0.8	1.4	1.3
LJ2S_F_12	1.1	1.1	1	1.1	1.2	1.1	1.1	1	1	1.6	1.6	1.1	1.2	1.8	1.5	1.4	1.1	1.1	1.1	1	1	1.1	1.1	1.1	1	0.5	-0.9	1.2	1.1
LJ2S_F_13	0.9	0.9	0.9	0.9	1	0.9	0.9	0.8	0.8	1.4	1.4	1	1	1.6	1.3	1.2	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.8	0.4	-0.9	1	0.9
LJ2S_F_2	4.9	4.9	4.9	5	5.1	5	5	4.9	4.9	5.7	5.7	5	5.1	6	5.7	5.5	5.1	5.1	5	5	5	5	5.1	5.1	5.1	4.9	4.5	5.2	5.1
LJ2S_F_3	4.6	4.6	4.6	4.7	4.8	4.7	4.7	4.6	4.5	5.4	5.3	4.7	4.7	5.6	5.4	5.2	4.8	4.7	4.7	4.7	4.6	4.7	4.8	4.8	4.8	4.6	4.2	4.9	4.8
LJ2S_F_4	4.4	4.3	4.3	4.4	4.5	4.4	4.4	4.3	4.3	5.1	5	4.5	4.5	5.4	5.1	4.9	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.4	4	4.6	4.5
LJ2S_F_5	4.1	4.1	4.1	4.2	4.3	4.2	4.2	4.1	4	4.9	4.8	4.2	4.2	5.1	4.8	4.6	4.3	4.2	4.2	4.2	4.1	4.2	4.2	4.3	4.3	4.1	3.8	4.3	4.3
LJ2S_F_6	2.7	2.7	2.7	2.8	2.8	2.8	2.7	2.7	2.6	3.3	3.3	2.8	2.8	3.5	3.3	3.1	2.8	2.8	2.7	2.7	2.7	2.7	2.8	2.8	2.8	0.6	2.5	2.9	2.8
LJ2S_F_7	2.5	2.4	2.4	2.5	2.6	2.5	2.5	2.4	2.4	3.1	3	2.5	2.6	3.3	3	2.8	2.5	2.5	2.5	2.4	2.4	2.5	2.5	2.5	2.6	0.5	-0.7	2.6	2.5
LJ2S_F_8	2	2	2	2.1	2.1	2.1	2.1	2	2	2.6	2.6	2.1	2.1	2.8	2.6	2.4	2.1	2.1	2	2	2	2	2.1	2.1	2.1	0.6	-0.6	2.1	2.1
LJ2S_F_9	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.7	2.4	2.4	1.9	1.9	2.6	2.3	2.2	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	0.7	-0.6	1.9	1.9
LJ2S_J_10	3	2.9	2.8	2.9	2.9	2.9	2.8	2.7	2.7	3.2	3.2	3	2.9	3.1	2.7	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.3	2.5	2.4
LJ2S_J_11	2.7	2.6	2.5	2.6	2.6	2.6	2.5	2.4	2.4	2.9	2.9	2.7	2.6	2.8	2.5	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2	2.2	2.1
LJ2S_J_12	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.7	2.1	2.1	1.9	1.9	2.1	1.7	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.3	1.4	1.4
LJ2S_J_13	1.6	1.5	1.4	1.5	1.5	1.5	1.4	1.3	1.4	1.8	1.8	1.6	1.6	1.7	1.4	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1	1.1	1.1
LJ2S_J_14	1	1	0.9	0.9	1	0.9	0.9	0.8	0.8	1.2	1.3	1	1	1.2	0.9	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.5	0.6	0.6
LJ2S_J_15	0.8	0.8	0.7	0.7	0.8	0.7	0.7	0.6	0.6	1	1	0.8	0.8	1	0.7	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.3	0.4	0.4
LJ2S_J_16	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.8	0.8	0.5	0.5	0.7	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1
LJ2S_J_17	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_J_6	4.3	4.2	4.1	4.2	4.2	4.2	4.1	4	4	4.5	4.5	4.3	4.2	4.4	4	3.7	3.8	3.7	3.7	3.7	3.6	3.7	3.7	3.7	3.7	3.8	3.8	3.7	3.7
LJ2S_J_7	4	3.9	3.8	3.9	3.9	3.8	3.8	3.7	3.7	4.2	4.2	3.9	3.9	4.1	3.7	3.4	3.5	3.4	3.4	3.4	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.4	3.4
LJ2S_J_8	3.7	3.6	3.5	3.6	3.6	3.5	3.5	3.4	3.4	3.9	3.9	3.6	3.6	3.8	3.4	3.1	3.2	3.1	3.1	3.1	3	3.1	3.1	3.1	3.2	3.2	3.2	3.1	3.1
LJ2S_J_9	3.3	3.2	3.1	3.2	3.2	3.1	3.1	3	3	3.5	3.5	3.2	3.2	3.4	3	2.7	2.8	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.8	2.8	2.5	2.7	2.7
Trans	5.5	5.4	5.3	5.5	5.7	5.6	5.5	5.3	5.2	7	6.9	5.6	5.7	6.6	6.7	6.1	5.5	5.4	5.4	5.3	5.2	5.3	5.4	5.5	-0.7	-2.8	-5.4	5.6	5.5
Trans	5.4	5.4	5.3	5.5	5.7	5.5	5.4	5.2	5.2	6.9	6.8	5.6	5.7	6.6	6.6	6.1	5.5	5.4	5.3	5.2	5.1	5.3	5.4	5.4	-0.7	-2.7	-5.4	5.6	5.5
Trans	5.1	5	4.9	5.1	5.3	5.2	5.1	4.9	4.8	6.6	6.4	5.2	5.3	6.1	6.3	5.8	5.2	5.1	5	4.9	4.8	5	5.1	5.1	-0.8	-3	-5.2	5.2	5.1
Trans	5	5	4.9	5.1	5.3	5.2	5.1	4.8	4.8	6.5	6.4	5.2	5.3	6.1	6.3	5.7	5.1	5	4.9	4.9	4.8	4.9	5	5.1	-0.7	-2.9	-5.2	5.2	5.1
Trans	5.5	5.5	5.4	5.6	5.8	5.7	5.6	5.3	5.3	7	6.9	5.7	5.8	6.5	6.8	6.2	5.6	5.5	5.4	5.3	5.2	5.4	5.5	5.6	-0.8	-2.9	-5.5	5.7	5.6
Trans	5.1	5.1	5	5.2	5.4	5.2	5.1	4.9	4.9	6.6	6.5	5.3	5.3	6.1	6.4	5.8	5.2	5.1	5	5	4.9	5	5.1	5.2	-1	-3.2	-5.3	5.3	5.2

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																											
ID	R059	R060	R061	R062	R063	R064	R065	R066	R067	R068	R069	R070	R071	R072	R073	R074	R075	R076	R077	R078	R079	R080	R081	R082	R083	R084	R085	R086
LJ2N_G_10	17.5	17.4	17.6	17.6	17.4	17.2	16.9	17	16.9	16.9	16.9	16.9	17.1	17.3	17.1	17.7	17	16.9	16.9	17	17.1	17.2	16.9	15.9	15.6	15.9	15.9	9.5
LJ2N_G_11	16.7	16.6	16.8	16.7	16.6	16.4	16	16.1	16.1	16.1	16.1	16.1	16.3	16.5	16.3	16.8	16.2	16.1	16.1	16.2	16.3	16.4	16.3	15.4	15.2	15.5	15.7	9.9
LJ2N_G_12	15.2	15.1	15.3	15.3	15.1	15	14.7	14.8	14.7	14.8	14.7	14.7	14.9	15.1	14.9	15.4	14.8	14.7	14.7	14.8	14.9	15	15.1	14.5	14.5	14.8	15.1	10.6
LJ2N_G_13	14.5	14.4	14.6	14.5	14.4	14.2	13.9	14	14	14	14	14	14.2	14.3	14.1	14.6	14.1	14	14	14.1	14.2	14.2	14.5	14	14	14.4	14.8	11.1
LJ2N_G_14	13.7	13.6	13.8	13.7	13.6	13.4	13.2	13.3	13.2	13.3	13.2	13.2	13.4	13.6	13.4	13.8	13.3	13.3	13.2	13.3	13.4	13.5	13.8	13.5	13.5	13.9	14.4	11.5
LJ2N_G_15	12.1	12	12.2	12.1	12	11.9	11.6	11.7	11.7	11.7	11.7	11.7	11.8	12	11.8	12.2	11.8	11.7	11.7	11.8	11.9	11.9	12.3	12.2	12.3	12.8	13.4	12.5
LJ2N_G_5	23	22.8	23.2	23.1	22.9	22.5	22	22.2	22.1	22.1	22	23.5	23.9	22.7	22.4	24.6	23.6	23.4	23.4	23.6	23.8	23.9	21.7	19.1	18.3	18.3	16.7	7.6
LJ2N_G_6	21.8	21.6	21.9	21.8	21.6	21.4	20.9	21	21	21	20.9	20.9	21.2	21.5	21.2	21.9	21	20.8	20.8	21	21.2	21.2	21	18.8	18.2	18.2	16.6	7.9
LJ2N_G_7	20.6	20.4	20.7	20.6	20.4	20.2	19.7	19.9	19.9	19.9	19.8	19.8	20.1	20.3	20.1	20.7	19.9	19.7	19.7	19.9	20.1	20.1	20.3	18.5	17.9	18	16.5	8.3
LJ2N_G_8	19.4	19.3	19.5	19.4	19.3	19	18.6	18.7	18.7	18.7	18.7	18.7	18.9	19.2	18.9	19.5	18.8	18.6	18.6	18.8	18.9	19	18.2	18	16.3	16.5	16.3	8.8
LJ2N_G_9	18.4	18.3	18.5	18.4	18.3	18.1	17.7	17.8	17.8	17.8	17.7	17.7	18	18.2	18	18.5	17.8	17.7	17.7	17.8	18	18	17.6	17.6	15.9	16.2	16.1	9.1
LJ2N_H_10	8.9	8.8	8.9	8.8	8.7	8.6	8.5	8.5	8.5	8.6	8.6	8.6	8.8	8.8	8.7	9.1	8.9	8.8	8.7	8.8	8.9	9	10.7	11.6	12.2	12.9	14.2	22
LJ2N_H_2	18.6	18.4	18.6	18.4	18.2	18	17.9	18	17.9	18.1	18.1	18.2	18.4	18.5	18.2	19.1	18.6	18.5	18.4	18.6	18.7	18.8	21.6	21.8	21.9	22.6	21	10.8
LJ2N_H_3	13.7	13.5	13.7	13.5	13.4	13.2	13.2	13.2	13.1	13.3	13.3	13.4	13.5	13.6	13.4	14	13.7	13.6	13.5	13.6	13.7	13.8	16.1	18.1	18.6	19.5	18.8	14.9
LJ2N_H_4	13.2	13	13.2	13	12.9	12.7	12.7	12.7	12.7	12.8	12.8	12.9	13	13.1	12.9	13.5	13.1	13.1	13	13.1	13.2	13.3	15.4	17.4	18	18.8	18.2	15.4
LJ2N_H_5	12.6	12.5	12.6	12.5	12.4	12.2	12.1	12.2	12.1	12.2	12.3	12.3	12.5	12.5	12.3	12.9	12.6	12.5	12.4	12.5	12.6	12.7	14.7	15.4	17.3	16.7	17.5	15.9
LJ2N_H_6	12.1	12	12.1	12	11.9	11.7	11.6	11.7	11.6	11.7	11.7	11.8	11.9	12	11.8	12.4	12	12	11.9	12	12.1	12.2	14.1	14.8	16.6	16.1	16.9	16.5
LJ2N_H_7	11.6	11.5	11.6	11.5	11.4	11.2	11.1	11.2	11.1	11.2	11.2	11.3	11.4	11.5	11.3	11.8	11.5	11.4	11.4	11.5	11.6	11.6	13.4	14.2	16	15.4	16.3	17.1
LJ2N_H_8	9.9	9.8	9.9	9.8	9.7	9.5	9.5	9.5	9.5	9.6	9.6	9.6	9.8	9.8	9.6	10.1	9.9	9.8	9.8	9.8	9.9	10	11.9	12.9	13.5	14.2	15.5	20.1
LJ2N_H_9	9.4	9.3	9.4	9.3	9.2	9.1	9	9.1	9	9.1	9.1	9.2	9.3	9.3	9.2	9.7	9.4	9.3	9.3	9.4	9.4	9.5	11.3	12.3	12.9	13.6	14.9	21
LJ2N_I_15	13.4	13.2	12	11.8	11.7	12.9	13	13	12.9	13.1	13.2	13.2	13.3	13.3	13.1	13.8	13.6	13.5	13.4	13.5	13.6	13.7	17.1	19.2	20.5	21.8	22.1	14.8
LJ2N_I_2	14.5	14.3	14.5	14.3	14.1	14	14.1	14.1	14	14.2	14.3	14.3	14.5	14.5	14.3	14.9	14.8	14.7	14.6	14.7	14.8	14.9	18.7	21	22.4	23.8	23.8	13.5
LJ2N_I_3	14	13.8	13.9	13.8	13.6	13.5	13.6	13.6	13.5	13.7	13.7	13.8	13.9	13.9	13.7	14.4	14.2	14.1	14	14.1	14.2	14.3	17.8	20	21.3	22.7	22.8	14.1
LJ2N_I_4	11.5	11.3	11.4	11.3	11.2	11	11.1	11.1	11	11.2	12.6	12.7	12.8	11.4	11.2	11.9	13.1	13	12.9	13	13.1	13.2	16.3	18.3	19.5	20.7	21.1	15.5
LJ2N_I_5	10.8	10.7	10.8	10.6	10.5	10.4	10.4	10.4	10.4	10.5	10.6	10.6	10.8	10.8	10.6	11.2	11	10.9	10.9	10.9	11	11.1	15.4	17.2	18.3	19.4	19.8	16.6
LJ2N_I_6	10.3	10.2	10.3	10.1	10	9.9	9.9	9.9	9.9	10.1	10.1	10.1	10.3	10.3	10.1	10.7	10.5	10.4	10.3	10.4	10.5	10.6	14.8	16.5	17.5	18.5	19	17.4
LJ2N_I_7	9.9	9.7	9.8	9.7	9.6	9.4	9.5	9.5	9.4	9.6	9.6	9.7	9.8	9.8	9.6	10.2	10	9.9	9.9	9.9	10	10.1	14.2	15.9	16.9	17.8	18.2	18.2
LJ2S_A_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_A_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_1	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	0	-0.7	-0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	-0.7	-0.7	-0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	2.1	2.1	2.2	2.2	2.2	2.2	2	2	2.1	1.9	1.9	1.9	1.9	2	2	1.9	1.7	1.7	1.7	1.7	1.7	1.7	0.6	0	-0.2	-0.1	-0.5	0.1
LJ2S_C_10	0.4	0.4	0.5	0.5	0.5	0.5	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0	0.1	0.1	0.1	0.1	0	0	0	0	0	-0.2
LJ2S_C_11	0.2	0.2	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0	0.1	0.1	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0	0	0	0	0	-0.3
LJ2S_C_12	0	0.1	0.1	0.2	0.2	0.2	0	0	0	-0.1	-0.1	-0.1	-0.1	0	0	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	0	0	0	0	0	-0.3
LJ2S_C_13	-0.1	-0.1	0	0	0	0	-0.2	-0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	0	0	0	0	0	-0.3
LJ2S_C_14	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.4	-0.3	-0.3	-0.4	-0.4	-0.5	-0.4	-0.3	-0.3	-0.5	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	0	0	0	0	0	-0.4
LJ2S_C_2	1.9	1.9	2	2.1	2.1	2.1	1.8	1.9	1.9	1.8	1.7	1.7	1.7	1.8	1.9	1.8	1.5	1.5	1.6	1.6	1.6	1.6	0.5	-0.1	-0.3	-0.2	-0.6	0.1
LJ2S_C_3	1.8	1.8	1.8	1.9	1.9	1.9	1.7	1.7	1.8	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.4	1.4	1.4	1.4	1.5	1.4	0.4	-0.2	-0.4	-0.3	0	0.1
LJ2S_C_4	1.6	1.6	1.7	1.7	1.7	1.7	1.5	1.6	1.6	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.2	1.2	1.3	1.3	1.3	1.3	0.2	-0.3	-0.5	-0.4	0	0.1
LJ2S_C_5	1.4	1.5	1.5	1.6	1.6	1.6	1.3	1.4	1.4	1.3	1.3	1.2	1.3	1.4	1.4	1.3	1.1	1.1	1.1	1.1	1.1	1.1	0.1	-0.4	-0.6	-0.5	0	0.1
LJ2S_C_6	1.3	1.3	1.4	1.4	1.4	1.4	1.2	1.3	1.3	1.2	1.1	1.1	1.1	1.2	1.2	1.2	1	0.9	1	1	1	1	0	-0.5	-0.6	-0.6	0	0.1
LJ2S_C_7	1.1	1.2	1.2	1.3	1.3	1.3	1	1.1	1.1	1	1	0.9	1	1.1	1.1	1	0.8	0.8	0.8	0.8	0.9	0.8	-0.1	-0.6	0	0	0	0.1
LJ2S_C_8	1	1	1.1	1.1	1.1	1.1	0.9	0.9	1	0.9	0.8	0.8	0.8	0.9	0.9	0.9	0.7	0.6	0.7	0.7	0.7	0.7	-0.2	0	0	0	0	0.1
LJ2S_C_9	0.5	0.6	0.6	0.7	0.7	0.7	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.2	0.2	0.2	0.3	0.3	0.3	-0.6	0	0	0	0	-0.2
LJ2S_D_1	3.5	3.5	3.6	3.6	3.6	3.6	3.4	3.4	3.5	3.3	3.3	3.2	3.3	3.4	3.4	3.3	3.1	3	3.1	3.1	3.1	3.1	1.9	1.2	1.1	1.1	3.1	1.2
LJ2S_D_10	1.5	1.5	1.5	1.6	1.6	1.6	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.1	1.1	1.1	1.2	1.2	1.2	0.4	-0.1	-0.1	0	-0.4	1.5
LJ2S_D_11	1.2	1.3	1.3	1.4	1.4	1.3	1.1	1.2	1.2	1.1	1.1	1	1.1	1.2	1.2	1.1	0.9	0.9	0.9	1	1	1	0.2	-0.2	-0.3	-0.2	-0.5	1.5
LJ2S_D_12	0.9	0.9	1	1	1	1	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.6	0.6	-0.1	-0.5	-0.6	-0.4	0	1.3
LJ2S_D_13	0.7	0.7	0.8	0.8	0.8	0.8	0.6	0.6	0.7	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.4	0.4	0.4	0.4	0.5	0.5	-0.2	-0.6	0	-0.6	0	1.3
LJ2S_D_14	0.5	0.5	0.6	0.6	0.6	0.6	0.4	0.4	0.5	0.4	0.3	0.3	0.4	0.5	0.4	0.4	0.2	0.2	0.2	0.3	0.3	0.3	-0.4	0	0	0	0	1.2
LJ2S_D_15	0.3	0.3	0.4	0.4	0.4	0.4	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0	0	0	0.1	0.1	0.1	-0.6	0	0	0	0	1.2
LJ2S_D_16	0.1	0.1	0.2	0.2	0.2	0.2	0	0.1	0.1	0	0	-0.1	0	0.1	0.1	0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1	0	0	0	0	0	1.1
LJ2S_D_2	3.2	3.2	3.3	3.3	3.3	3.3	3	3.1	3.2	3	3	2.9	3	3.1	3.1	3	2.8	2.7	2.8	2.8	2.8	2.8	1.7	1	0.9	1	0.5	1.3

TABLE X-12

Predicted Turbine Noise Level, 1.5-MW Layout

	Partial Level																											
ID	R059	R060	R061	R062	R063	R064	R065	R066	R067	R068	R069	R070	R071	R072	R073	R074	R075	R076	R077	R078	R079	R080	R081	R082	R083	R084	R085	R086
LJ2S_D_3	3	3	3	3.1	3.1	3.1	2.8	2.9	2.9	2.8	2.8	2.7	2.8	2.9	2.9	2.8	2.6	2.5	2.6	2.6	2.6	2.6	1.5	0.9	0.8	0.8	0.4	1.3
LJ2S_D_4	2.8	2.8	2.9	2.9	2.9	2.9	2.7	2.7	2.8	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.4	2.4	2.4	2.4	2.5	2.4	1.4	0.8	0.7	0.8	0.3	1.4
LJ2S_D_5	2.6	2.6	2.7	2.7	2.7	2.7	2.5	2.5	2.6	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.2	2.2	2.2	2.3	2.3	2.3	1.3	0.7	0.6	0.7	0.2	1.4
LJ2S_D_6	2.4	2.4	2.5	2.5	2.5	2.5	2.3	2.3	2.4	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2	2	2	2.1	2.1	2.1	1.1	0.6	0.5	0.5	0.1	1.4
LJ2S_D_7	2.2	2.2	2.2	2.3	2.3	2.3	2	2.1	2.1	2	2	1.9	2	2.1	2.1	0.9	1.8	1.8	1.8	1.8	1.9	1.8	0.9	0.4	0.3	0.4	0	1.5
LJ2S_D_8	1.9	1.9	2	2.1	2	2	1.8	1.9	1.9	1.8	1.7	1.7	1.8	1.9	1.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6	0.7	0.3	0.2	0.3	-0.1	1.5
LJ2S_D_9	1.7	1.7	1.8	1.8	1.8	1.8	1.6	1.6	1.7	1.5	1.5	1.5	1.5	1.6	1.6	1	1.4	1.3	1.4	1.4	1.4	1.4	0.6	0.1	0	0.1	-0.2	1.5
LJ2S_E_1	3	3	3.1	3.1	3.1	3	2.8	2.9	2.9	2.8	2.8	2.7	2.8	2.9	2.9	2.9	2.6	2.6	2.6	2.7	2.7	2.7	2.1	1.7	1.7	1.8	1.5	4.2
LJ2S_E_10	0.7	0.7	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.7	0.5	0.4	0.4	0.5	0.5	0.5	0.2	0	0	0.2	0	3.9
LJ2S_E_11	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.3	0.3	0	-0.2	-0.2	0	-0.2	3.8
LJ2S_E_2	2.6	2.7	2.7	2.8	2.7	2.7	2.5	2.5	2.6	2.5	2.4	2.4	2.5	2.6	2.5	2.6	2.3	2.3	2.3	2.4	2.4	2.4	1.8	1.4	1.4	1.5	1.2	4
LJ2S_E_3	2.4	2.4	2.4	2.5	2.5	2.4	2.2	2.3	2.3	2.2	2.2	2.1	2.2	2.3	2.3	2.3	2.1	2	2	2.1	2.1	2.1	1.5	1.2	1.2	1.3	1	3.9
LJ2S_E_4	2	2	2.1	2.1	2.1	2	1.8	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	2	1.7	1.7	1.7	1.7	1.8	1.8	1.3	1	1	1.2	0.9	4.2
LJ2S_E_5	1.8	1.8	1.9	1.9	1.9	1.8	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.5	1.5	1.5	1.5	1.6	1.6	1.1	0.9	0.9	1	0.7	4.2
LJ2S_E_6	1.6	1.6	1.7	1.7	1.7	1.6	1.4	1.5	1.5	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.3	1.3	1.3	1.3	1.4	1.4	1	0.7	0.7	0.9	0.6	4.2
LJ2S_E_7	1.4	1.4	1.5	1.5	1.5	1.4	1.2	1.3	1.3	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.1	1.1	1.1	1.1	1.2	1.2	0.8	0.6	0.6	0.7	0.5	4.1
LJ2S_E_8	1.2	1.2	1.2	1.2	1.2	1.2	1	1.1	1.1	1	1	1	1	1.1	1.1	1.1	0.9	0.9	0.9	0.9	1	1	0.6	0.4	0.4	0.6	0.3	4.1
LJ2S_E_9	0.9	0.9	1	1	1	1	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.9	0.8	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.4	0.2	0.2	0.4	0.1	4
LJ2S_F_1	5.5	5.5	5.6	5.7	5.6	5.6	5.3	5.4	5.4	5.3	5.3	5.3	5.3	5.5	5.4	5.5	5.2	5.1	5.2	5.2	5.3	5.3	4.8	4.4	4.4	4.6	4.2	7.5
LJ2S_F_10	1.7	1.7	1.8	1.8	1.8	1.7	1.5	1.6	1.6	1.6	1.5	1.5	1.6	1.7	1.6	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.4	1.6	1.4	6.5
LJ2S_F_11	1.4	1.4	1.5	1.5	1.4	1.4	1.2	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.2	1.1	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.4	1.2	6.3
LJ2S_F_12	1.2	1.2	1.2	1.2	1.2	1.2	1	1	1.1	1	1	1	1	1.1	1.1	1.2	1	0.9	0.9	1	1	1	0.9	0.9	1	1.2	1	6.2
LJ2S_F_13	1	1	1	1	1	1	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.9	1	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.8	1	0.8	6.1
LJ2S_F_2	5.2	5.2	5.3	5.3	5.3	5.2	5	5.1	5.1	5	5	5	5	5.1	5.1	5.2	4.9	4.8	4.9	4.9	5	5	4.5	4.2	4.2	4.4	6	7.5
LJ2S_F_3	4.9	4.9	5	5	5	4.9	4.7	4.7	4.7	4.7	4.6	4.6	4.7	4.8	4.8	4.8	4.6	4.5	4.5	4.6	4.6	4.6	4.2	3.9	3.9	4.2	3.8	7.4
LJ2S_F_4	4.6	4.6	4.7	4.7	4.7	4.6	4.4	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.6	4.3	4.3	4.3	4.3	4.4	4.4	4	3.7	3.7	4	3.6	7.4
LJ2S_F_5	4.4	4.4	4.4	4.5	4.4	4.4	4.1	4.2	4.2	4.2	4.1	4.1	4.2	4.3	4.2	4.3	4.1	4	4	4.1	4.1	4.1	3.8	3.5	3.6	3.8	3.4	7.4
LJ2S_F_6	2.9	2.9	2.9	3	2.9	2.9	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.8	2.8	2.9	2.6	2.6	2.6	2.6	2.7	2.7	2.5	2.3	2.4	2.6	2.3	7
LJ2S_F_7	2.6	2.6	2.7	2.7	2.6	2.6	2.4	2.5	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.3	2.3	2.3	2.4	2.4	2.4	2.2	2.1	2.2	2.4	2.1	6.9
LJ2S_F_8	2.2	2.2	2.2	2.2	2.2	2.2	2	2	2	2	2	2	2	2.1	2	2.2	1.9	1.9	1.9	1.9	2	2	1.8	1.7	1.8	2	1.8	6.7
LJ2S_F_9	2	1.9	2	2	2	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.9	1.8	1.9	1.7	1.7	1.7	1.7	1.8	1.8	1.6	1.5	1.6	1.8	1.6	6.6
LJ2S_J_10	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.3	2.6	2.4	2.4	2.3	2.4	2.4	2.5	3.5	4.1	4.5	4.9	6.9	20.2
LJ2S_J_11	2.2	2.1	2.2	2.1	2.1	2	1.9	1.9	1.9	2	2	2	2.1	2.1	2	2.3	2.1	2.1	2	2.1	2.1	2.2	3.2	3.8	4.2	4.6	6.6	19.3
LJ2S_J_12	1.4	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.3	1.5	1.4	1.3	1.3	1.4	1.4	1.4	2.3	2.9	3.3	3.6	5.8	16.6
LJ2S_J_13	1.1	1.1	1.1	1.1	1	1	0.9	0.9	0.9	1	1	1	1	1.1	1	1.2	1.1	1	1	1.1	1.1	1.1	2	2.5	2.9	3.2	5.4	15.7
LJ2S_J_14	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.5	0.7	0.6	0.5	0.5	0.5	0.6	0.6	1.4	1.8	2.1	2.5	4.7	13.5
LJ2S_J_15	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.5	0.3	0.3	0.3	0.3	0.4	0.4	1.1	1.6	1.9	2.2	4.5	13
LJ2S_J_16	0.1	0.1	0.2	0.1	0.1	0	0	0	0	0	0	0	0.1	0.1	0	0.2	0.1	0.1	0	0.1	0.1	0.1	0.9	1.3	1.6	1.9	4.3	12.4
LJ2S_J_17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.6	-0.4	-0.1	-0.1	7.4
LJ2S_J_6	3.7	3.6	3.7	3.6	3.6	3.5	3.4	3.4	3.4	3.5	3.5	3.5	3.6	3.6	3.5	3.8	3.6	3.6	3.6	3.6	3.7	3.7	4.8	5.5	6	6.4	8.3	24.5
LJ2S_J_7	3.4	3.3	3.4	3.3	3.3	3.2	3.1	3.2	3.1	3.2	3.2	3.2	3.3	3.3	3.2	3.5	3.3	3.3	3.3	3.3	3.4	3.4	4.5	5.2	5.6	6	7.9	23.4
LJ2S_J_8	3.1	3	3.1	3	3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3	3	3	3.2	3.1	3	3	3	3.1	3.1	4.2	4.8	5.3	5.7	7.6	22.3
LJ2S_J_9	2.7	2.6	2.7	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.8	2.7	2.6	2.6	2.6	2.7	2.7	3.8	4.4	4.8	5.2	7.2	21.2
Trans	5.6	5.6	5.8	5.8	5.7	5.5	5.1	5.2	5.2	5.2	5.1	5.1	5.3	5.5	5.3	5.7	5.1	5	5	5.1	5.2	5.2	4.8	4.3	4.3	4.7	3.8	5.8
Trans	5.6	5.5	5.7	5.7	5.6	5.5	5.1	5.2	5.2	5.1	5.1	5	5.2	5.4	5.3	5.6	5	4.9	4.9	5.1	5.2	5.2	4.8	4.2	4.2	4.7	3.8	5.8
Trans	5.3	5.2	5.4	5.4	5.3	5.2	4.8	4.9	4.9	4.8	4.7	4.7	4.9	5.1	5	5.3	4.7	4.6	4.6	4.7	4.8	4.8	4.4	3.8	3.8	4.2	3.3	5.5
Trans	5.2	5.2	5.4	5.4	5.3	5.1	4.7	4.8	4.9	4.8	4.7	4.7	4.9	5.1	4.9	5.2	4.7	4.6	4.6	4.7	4.8	4.8	4.4	3.8	3.8	4.2	3.3	5.5
Trans	5.7	5.7	5.9	5.9	5.8	5.6	5.2	5.3	5.3	5.2	5.2	5.2	5.4	5.5	5.4	5.7	5.1	5	5	5.2	5.3	5.3	4.9	4.3	4.3	4.7	3.8	5.7
Trans	5.3	5.3	5.5	5.5	5.4	5.2	4.8	4.9	5	4.9	4.8	4.8	5	5.2	5	5.3	4.8	4.7	4.7	4.8	4.9	4.9	4.4	3.8	3.8	4.2	3.3	5.4

TABLE X-13

Predicted Turbine Noise Level, 3.0-MW Layout

	Partial Level																												
ID	R001	R002	R003	R004	R005	R006	R007	R008	R009	R010	R011	R012	R013	R014	R015	R016	R017	R018	R019	R020	R021	R022	R023	R024	R025	R026	R027	R028	R029	R030
LJ2N_G_10	18.5	20.3	18.5	18.4	13.5	11.7	0	22.1	21.3	22.1	22.9	22.7	21.7	21.8	22	22	22	22.4	22.4	22	22.4	21.3	20.7	20.5	20.5	20.4	20.5	19.6	20.6	20.5
LJ2N_G_11	18.8	20.6	19	18.9	13.9	12.1	0	21.5	20.8	21.2	22	21.8	20.8	20.9	21.1	21.1	21.1	21.4	21.5	21.1	21.5	20.4	19.9	19.7	19.8	19.7	19.8	18.9	19.9	19.7
LJ2N_G_6	16.7	18.5	16	15.9	11.5	10	0	24.7	23.8	28.5	29.6	29	27.5	27.7	28.1	28.1	27.9	28.8	28.2	27.6	28.5	26.9	26	26	26	25.3	25.5	25.6	25.9	25.6
LJ2N_G_7	17.1	18.9	16.4	16.3	11.9	10.3	0	24.4	23.5	27.1	28.1	27.6	26.3	26.4	26.8	26.8	26.7	27.4	27	26.5	27.2	25.7	25	24.9	24.9	24.3	24.5	24.6	24.8	24.5
LJ2N_G_8	17.4	19.2	16.9	16.8	12.2	13.9	0	24	23.1	25.8	26.8	26.4	25.1	25.2	25.5	25.5	25.5	26.1	25.9	25.3	25.9	24.6	23.9	23.9	23.8	23.4	23.5	23.4	23.7	23.5
LJ2N_G_9	18.1	19.9	17.9	17.8	13.1	11.4	0	22.6	21.8	23.1	24	23.7	22.6	22.7	22.9	23	23	23.4	23.3	22.9	23.3	22.2	21.6	21.6	21.4	21.2	21.4	20.6	21.5	21.3
LJ2N_I_1	21.8	23	20.9	20.7	17.2	15.5	0	25.1	24.2	21.6	22.5	22.7	21.6	21.6	21.6	21.8	22	21.9	22.7	22	22.4	21.3	20.9	20.9	21	21	21	21	20.8	20.6
LJ2N_I_2	25.9	24.9	22.5	22.3	17.8	16	0	25	24.2	20.3	21.2	21.5	20.5	20.4	20.4	20.6	20.9	20.6	21.5	21	21.2	20.2	19.9	20	20.1	20.1	20.1	20.1	19.8	19.7
LJ2N_I_3	26.5	25.5	23.4	23.2	18.3	16.4	0	23.9	23.2	19.6	20.3	20.6	19.7	19.6	19.6	19.8	20.1	19.8	20.7	20.1	20.3	19.4	19.2	19.2	19.3	19.3	19.3	19.3	19.1	19
LJ2N_I_4	26.9	26.1	24.3	26.1	18.7	16.8	0	22.9	22.3	18.9	19.6	19.9	19	18.9	19	19.2	19.3	19.2	19.9	19.4	19.6	18.7	18.5	18.6	18.6	18.6	18.6	18.6	18.4	18.3
LJ2N_I_5	27.3	26.7	27.2	27	19.2	17.2	0	21.9	21.3	18.2	18.9	19.1	18.3	18.3	18.3	18.5	18.6	18.5	19.1	18.7	18.9	18.1	17.9	17.9	17.9	17.9	17.9	18	17.7	17.6
LJ2S_B_1	0	0	0	0	0	0	20.5	0	0	6.9	6.9	0	0	0	0	0	0	6.9	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_10	0	0	0	0	6.8	0	21.2	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	0	0	0	20.9	0	0	6.8	6.8	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	21.4	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	21.8	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	6.9	7	6.9	0	20.6	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	6.9	6.9	6.9	0	20.8	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	0	0	6.8	0	21.7	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	0	0	6.8	0	21.5	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	0	0	6.8	0	21.3	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	7.2	7.3	8	8	7.3	0	14.9	7.8	7.6	9.2	9.2	9	8.9	8.9	9.1	9	8.8	9.2	8.8	8.7	8.9	8.7	8.5	8.5	8.5	8.2	8.3	8.3	8.5	8.4
LJ2S_C_2	7.2	7.3	8	8	7.4	0	15.2	7.7	7.5	9.1	9.1	8.8	8.7	8.8	8.9	8.8	8.7	9.1	8.6	8.5	8.8	8.6	8.4	8.3	8.3	8.1	8.1	8.2	8.3	8.3
LJ2S_C_3	7.1	7.3	8	8	7.4	6.8	15.5	7.6	7.4	8.9	8.9	8.7	8.5	8.6	8.7	8.7	8.5	8.9	8.5	8.4	8.6	8.4	8.2	8.2	8.2	7.9	8	8	8.2	8.1
LJ2S_C_4	7.1	7.3	8	8.1	7.5	6.9	15.8	7.5	7.3	8.7	8.8	8.5	8.4	8.5	8.6	8.5	8.4	8.7	8.3	8.2	8.4	8.3	8.1	8	8	7.8	7.8	7.9	8	8
LJ2S_C_5	7.1	7.2	8	8.1	7.6	7	16.2	7.4	7.2	8.6	8.6	8.3	8.2	8.3	8.4	8.3	8.2	8.5	8.2	8.1	8.3	8.1	7.9	7.9	7.8	7.6	7.7	7.7	7.9	7.8
LJ2S_C_6	7.1	7.2	8	8	7.6	7.1	16.5	7.2	7	8.4	8.4	8.2	8	8.1	8.2	8.1	8	8.4	8	7.9	8.1	7.9	7.7	7.7	7.7	7.5	7.5	7.6	7.7	7.6
LJ2S_D_1	8.4	8.5	9.3	9.4	8.5	7.8	13.4	8.8	8.6	10.2	10.3	10	9.8	9.9	10	9.9	9.8	10.2	9.8	9.6	9.9	9.7	9.5	9.4	9.4	9.2	9.2	9.3	9.4	9.4
LJ2S_D_10	7.8	8.1	9	9.1	9	8.5	15.4	7.4	7.2	8.1	8.2	8	7.8	7.9	8	7.9	7.9	8.1	7.9	7.8	7.9	7.7	7.5	7.5	7.5	7.3	7.4	7.4	7.5	7.5
LJ2S_D_11	7.8	8	9	9	9	8.6	15.5	7.2	7	7.9	8	7.8	7.7	7.7	7.8	7.8	7.7	8	7.7	7.6	7.8	7.5	7.4	7.3	7.3	7.1	7.2	7.2	7.3	7.3
LJ2S_D_12	7.7	7.9	8.9	9	9	8.6	15.6	7.1	6.9	7.8	7.8	7.6	7.5	7.5	7.6	7.6	7.5	7.8	7.5	7.4	7.6	7.4	7.2	7.1	7.1	7	7	7	7.1	7.1
LJ2S_D_2	8.4	8.5	9.4	9.4	8.6	7.9	13.6	8.7	8.5	10	10.1	9.8	9.6	9.7	9.8	9.8	9.6	10	9.6	9.5	9.7	9.5	9.3	9.2	9.2	9	9	9.1	9.2	9.2
LJ2S_D_3	8.4	8.5	9.4	9.4	8.7	8	13.8	8.6	8.4	9.9	9.9	9.6	9.5	9.5	9.7	9.6	9.5	9.8	9.4	9.3	9.6	9.3	9.1	9.1	9.1	8.8	8.9	8.9	9.1	9
LJ2S_D_4	8.3	8.5	9.4	9.4	8.8	8.1	14	8.5	8.3	9.7	9.7	9.5	9.3	9.4	9.5	9.4	9.3	9.6	9.3	9.1	9.4	9.2	8.9	8.9	8.9	8.7	8.7	8.8	8.9	8.8
LJ2S_D_5	8.3	8.5	9.4	9.4	8.9	8.2	14.2	8.4	8.1	9.5	9.5	9.3	9.1	9.2	9.3	9.2	9.1	9.5	9.1	9	9.2	9	8.8	8.7	8.7	8.5	8.5	8.6	8.7	8.7
LJ2S_D_6	8.1	8.3	9.2	9.3	8.9	8.3	14.8	8	7.8	9	9	8.8	8.6	8.7	8.8	8.8	8.7	9	8.6	8.5	8.7	8.5	8.3	8.3	8.2	8.1	8.1	8.2	8.3	8.2
LJ2S_D_7	8	8.2	9.2	9.2	8.9	8.3	15	7.8	7.6	8.8	8.8	8.6	8.4	8.5	8.6	8.6	8.5	8.8	8.4	8.3	8.5	8.3	8.1	8.1	8.1	7.9	7.9	8	8.1	8
LJ2S_D_8	8	8.2	9.1	9.2	8.9	8.4	15.1	7.7	7.5	8.6	8.6	8.4	8.3	8.3	8.4	8.4	8.3	8.6	8.3	8.2	8.4	8.1	7.9	7.9	7.9	7.7	7.8	7.8	7.9	7.9
LJ2S_D_9	7.9	8.1	9.1	9.1	9	8.5	15.3	7.5	7.3	8.3	8.4	8.2	8	8.1	8.2	8.1	8.1	8.3	8	7.9	8.1	7.9	7.7	7.7	7.7	7.5	7.6	7.6	7.7	7.6
LJ2S_E_1	10.1	10.4	11.6	11.6	11.3	10.6	12	9.3	9.1	9.9	10.1	9.9	9.6	9.7	9.8	9.7	9.7	10	9.7	9.6	9.8	9.5	9.3	9.2	9.2	9	9.1	9.1	9.2	9.2
LJ2S_E_2	10.2	10.6	11.9	12	12	11.3	11.6	9.1	8.8	9.5	9.6	9.5	9.2	9.3	9.4	9.3	9.3	9.5	9.3	9.2	9.4	9.1	8.9	8.8	8.8	8.7	8.7	8.8	8.8	8.8
LJ2S_E_3	10.1	10.5	11.8	11.9	12.1	11.4	11.6	8.9	8.7	9.3	9.4	9.2	9	9	9.1	9.1	9	9.3	9.1	9	9.1	8.9	8.7	8.6	8.6	8.5	8.5	8.6	8.6	8.6
LJ2S_E_4	10.1	10.4	11.8	11.8	12.1	11.5	11.6	8.7	8.5	9	9.2	9	8.8	8.8	8.9	8.9	8.8	9.1	8.9	8.8	8.9	8.6	8.5	8.4	8.4	8.3	8.3	8.4	8.4	8.4
LJ2S_E_5	9.9	10.3	11.7	11.7	12.1	11.6	11.6	8.5	8.3	8.8	8.9	8.8	8.5	8.6	8.7	8.6	8.6	8.8	8.6	8.5	8.7	8.4	8.2	8.2	8.2	8.1	8.1	8.1	8.2	8.1
LJ2S_E_6	9.8	10.2	11.5	11.6	12.2	11.6	11.6	8.3	8.1	8.5	8.7	8.6	8.3	8.4	8.4	8.4	8.4	8.6	8.4	8.3	8.5	8.2	8	8	8	7.8	7.9	7.9	8	7.9
LJ2S_E_7	9.7	10.1	11.4	11.5	12.2	11.7	11.6	8.1	7.9	8.3	8.5	8.3	8.1	8.1	8.2	8.2	8.1	8.3	8.2	8.1	8.2	8	7.8	7.8	7.8	7.6	7.7	7.6	7.7	7.7
LJ2S_F_1	13.3	13.6	15.2	15.2	13.9	12.6	9.1	12.2	11.9	12.6	12.8	12.6	12.3	12.3	12.5	12.4	12.4	12.7	12.4	12.3	12.5	12.1	11.8	11.8	11.8	11.6	11.7	11.7	11.8	11.7
LJ2S_F_2	13.2	13.5	15.1	15.2	14.1	12.9	9.1	11.9	11.6	12.2	12.5	12.3	11.9	12	12.1	12.1	12	12.3	12.1	11.9	12.1	11.7	11.5	11.5	11.5	11.3	11.3	11.4	11.4	11.4
LJ2S_F_3	13.1	13.5	15.1	15.2	14.3	13.1	9.2	11.7	11.4	11.9	12.1	11.9	11.6	11.6	11.7	11.7	11.7	11.9	11.8	11.6	11.8	11.4	11.2	11.2	11.2	11	11	11	11.1	11
LJ2S_F_4	12.8	13.3	15.1	15.2	15.4	14.3	9.1	10.6	10.3	10.5	10.7	10.6	10.3	10.3	10.4	10.4	10.3	10.5	10.4	10.3	10.5	10.1	9.9	9.9	9.8	9.8	9.8	9.4	9.9	9.8
LJ2S_F_5	12.6	13.1	14.9	15	15.4	14.4	9.2	10.3	10.1	10.2	10.4	10.3	10	10	10.1	10.1	10	10.2	10.2	10	10.2	9.8	9.6	9.6	9.6	9.5	9.5	9.3	9.6	9.5
LJ2S_F_6	12.4	12.9	14.7	14.8	15.4	14.5	9.2	10.1	9.8	9.9	10.1	10	9.7	9.7	9.8	9.8	9.8	9.9	9.9	9.7	9.9	9.5	9.3	9.3	9.3	9.2	9.3	9	9.3	9.2
LJ2S_F_7	12.2	12.7	14.5	14.6	15.4	14.6	9.2	9.8	9.6	9.6	9.8	9.7	9.4	9.4	9.5	9.5	9.5	9.6	9.6	9.4	9.6	9.2	9.1	9.1	9	8.9	9	8.8	9	9
LJ2S_F_8	11.6	12.2	13.8	13.9	15.1	14.4	9.4	9.2	9	9	9.2	9.1	8.8	8.9	9	9	8.9	9.1	9	8.9	9	8.7	8.5	8.5	8.5	8.4	8.5	8.4	8.5	8.4
LJ2S_F_9	11.4	12	13.6	13.7	15.1	14.5	9.4	9	8.8	8.8	9	8.9	8.6	8.6	8.7	8.7	8.7	8.8	8.8	8.6	8.8	8.5	8.3	8.3	8.3	8.2	8.2	8.1	8.3	8.2
LJ2S_J_7	21.2	23.3	29.3	29.8	40	30.3	0	12.6	12.5	10.5	10.8	10.9	10.5	10.5	10.5	10.6	10.7	10.6	11	10.8	10.8	10.4	10.3	10.3	10.4	10.4	10.4	10.4	10.3	10.2
LJ2S_J_8	20.3	22.2	27.8	28.2	43.7	32	0	12.2	12	10.1	10.4	10.6	10.2	10.1	10.1	10.2	10.3	10.2	10.6	10.5	10.4	10	10	10	10	10.1	10.1	10	9.9	9.9
LJ2S_J_9	18.7	20.3	25.7	26	39.3	32.4	0	11.6	11.5	9.8	10.1	10.2	9.8	9.8	9.8	9.9	10	9.9	10.2	10.1	10.1	9.7	9.6	9.6	9.6	9.7	9.7	9.7	9.5	9.5
LJ2S_K_1	17.6	19.1	23.7	24	41.4	38.5	0	10.8	10.7	9	9.3	9.4	9.1	9	9	9.1	9.2	9.1	9.4	9.3	9.3	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.8	8.8
LJ2S_K_2	17	18.3	22.7	23	38.3	40.2	0	10.4	10.3	8.7	9	9.1	8.7	8.7	8.7	8.8	8.9	8.8	9.1	9	9	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.5	8.5
LJ2S_K_3	16.2	17.5	21.8	22	35.2	40.5	0	10	9.9	8.4	8.6	8.7	8.4	8.4	8.4	8.5	8.5	8.5	8.7	8.6	8.6	8.3	8.2	8.2	8.2	8.3	8.3	8.3	8.2	8.1
LJ2S_K_4	15.9	17.1	21.4	21.6	33.9	39.7	0	9.8	9.7	8.2	8.5	8.6	8.2	8.2	8.2	8.3	8.4	8.3	8.6	8.4	8.5	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8	8
Trans	6.3	6.2	0	7.9	1.7	-1.3	0	7	6.3	7.4	8	7.7	6.8	6.9	7.1	7.1	7.1	7.6	7.3	7	7.4	6.4	4.2	4.5	3.3	5.4	5.5	-2.2	5.7	5.5
Trans	6.3	6.3	0	8	1.8	-1.2	0	7	6.3	7.3	8	7.7	6.7	6.8	7.1	7.1	7	7.5	7.3	6.9	7.4	6.3	4.2	4.5	3.3	5.3	5.5	-2.2	5.6	5.4
Trans	5.9	5.9	0	7.7	1.7	-1.3	0	6.5	5.8	7	7.6	7.3	6.4	6.5	6.7	6.7	6.6	7.2	6.9	6.5	6.9	5.9	4.1	4.3	3.1	4.9	5.1	-2.4	5.3	5.1
Trans	5.9	5.9	0	7.7	1.7	-1.3	0	6.5	5.8	6.9	7.6	7.2	6.3	6.4	6.7	6.7	6.6	7.1	6.8	6.5	6.9	5.9	4.1	4.2	3.1	4.9	5	-2.3	5.2	5
Trans	6.2	6.1	-0.1	7.8	1.6	-1.4	0	7.1	6.3	7.5	8.1	7.8	6.9	7	7.2	7.2	7.1	7.7	7.4	7	7.5	6.4	4.3	4.5	3.3	5.4	5.6	-2.3	5.7	5.5
Trans	5.8	5.8	0	7.6	1.6	-1.4	0	6.5	5.8	7	7.6	7.3	6.4	6.5	6.8	6.7	6.7	7.2	6.9	6.5	7	6	4.1	4.3	3.1	5	5.1	-0.3	5.3	5.1

TABLE X-13

Predicted Turbine Noise Level, 3.0-MW Layout

	Partial Level																													
ID	R031	R032	R033	R034	R035	R036	R037	R038	R039	R040	R041	R042	R043	R044	R045	R046	R047	R048	R049	R050	R051	R052	R053	R054	R055	R056	R057	R058	R059	R060
LJ2N_G_10	20.4	20.3	20.4	20.6	20.5	20.4	20.2	20.2	21.7	21.7	20.6	20.6	22	21.2	20.6	20.3	20.2	20.1	20	19.9	20.1	20.1	20.2	20.3	20.3	18.3	20.3	20.2	20.3	20.2
LJ2N_G_11	19.6	19.5	19.7	19.9	19.7	19.6	19.4	19.4	20.9	20.8	19.8	19.8	21.1	20.3	19.8	19.5	19.4	19.3	19.3	19.2	19.3	19.4	19.4	19.5	19.6	17.5	19.5	19.4	19.5	19.4
LJ2N_G_6	25.5	25.4	25.7	26	25.8	25.6	25.3	25.3	27.8	27.7	25.8	25.9	28.3	27.1	26.2	25.6	25.5	25.3	25.2	25.1	25.3	25.4	25.5	25.6	25.7	25.5	25.7	25.5	25.7	25.5
LJ2N_G_7	24.5	24.3	24.6	24.9	24.7	24.5	24.2	24.2	26.5	26.4	24.7	24.8	26.9	25.8	25	24.5	24.3	24.2	24.1	24	24.2	24.3	24.4	24.5	24.6	24.2	24.5	24.4	24.5	24.4
LJ2N_G_8	23.4	23.3	23.5	23.8	23.6	23.5	23.2	23.2	25.3	25.2	23.7	23.7	25.6	24.6	23.8	23.4	23.2	23.1	23.1	22.9	23.1	23.2	23.3	23.4	23.5	22.9	23.4	23.3	23.4	23.3
LJ2N_G_9	21.2	21.1	21.3	21.5	21.3	21.2	21	21	22.7	22.6	21.4	21.5	23	22.1	21.5	21.1	21	20.9	20.8	20.7	20.9	21	21.1	21.1	21.2	19.6	21.2	21	21.1	21
LJ2N_I_1	20.5	20.3	20.4	20.6	20.4	20.3	20.1	20.1	21.3	21.4	20.6	20.6	21.2	20.3	19.7	19.8	19.7	19.6	19.5	19.5	19.6	19.6	19.7	19.7	19.8	19.7	19.7	19.6	19.6	19.5
LJ2N_I_2	19.6	19.4	19.5	19.6	19.4	19.3	19.1	19.2	20.1	20.2	19.6	19.6	19.9	19.1	18.6	18.7	18.7	18.6	18.5	18.5	18.5	18.6	18.6	18.7	18.8	18.7	18.7	18.6	18.6	18.4
LJ2N_I_3	18.8	18.7	18.8	18.8	18.7	18.6	18.4	18.5	19.4	19.4	18.9	18.9	19.2	18.5	18	18.1	18	17.9	17.9	17.8	17.9	17.9	18	18	18.1	18	18	17.9	17.9	17.8
LJ2N_I_4	18.2	18	18.1	18.2	18.1	18	17.8	17.8	18.7	18.8	18.2	18.2	18.6	17.9	17.4	17.5	17.4	17.3	17.3	17.2	17.3	17.4	17.4	17.5	17.5	17.4	17.4	17.3	17.3	17.2
LJ2N_I_5	17.5	17.4	17.5	17.5	17.4	17.3	17.2	17.2	18.1	18.1	17.6	17.6	17.9	17.3	16.8	16.9	16.8	16.8	16.7	16.6	16.7	16.8	16.8	16.9	16.9	16.8	16.8	16.7	16.8	16.6
LJ2S_B_1	0	0	0	0	0	0	0	0	6.8	0	0	0	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.8
LJ2S_B_10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	0	0	0	0	0	0	0	0	0	6.9	6.9	6.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.5	9.1	9	8.6	8.6	9.4	9.4	9.4	8.9	8.9	8.9	8.9	8.9	8.9	8.9	9	9	9	9	9	9	9.1	9.1
LJ2S_C_2	8.3	8.3	8.4	8.5	8.5	8.4	8.4	8.4	8.9	8.8	8.4	8.4	9.2	9.2	9.2	8.8	8.7	8.7	8.7	8.7	8.7	8.8	8.8	8.8	8.8	8.9	8.8	8.8	8.9	8.9
LJ2S_C_3	8.2	8.2	8.3	8.3	8.3	8.3	8.3	8.2	8.8	8.7	8.3	8.3	9.1	9	9	8.6	8.6	8.6	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.7	8.7	8.7	8.7	8.8
LJ2S_C_4	8	8	8.1	8.2	8.1	8.1	8.1	8.1	8.6	8.5	8.1	8.1	8.9	8.8	8.8	8.4	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.6	8.6
LJ2S_C_5	7.8	7.9	7.9	8	8	8	7.9	7.9	8.4	8.3	7.9	8	8.7	8.7	8.6	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.3	8.3	8.3	8.3	8.3	8.4	8.4
LJ2S_C_6	7.6	7.7	7.7	7.8	7.8	7.8	7.7	7.7	8.2	8.1	7.7	7.8	8.5	8.4	8.4	8	8	8	8	7.9	8	8	8	8.1	8.1	8.1	8.1	8.1	8.2	8.2
LJ2S_D_1	9.4	9.4	9.5	9.6	9.5	9.5	9.5	9.4	10.1	10	9.5	9.5	10.4	10.3	10.3	9.8	9.8	9.8	9.8	9.7	9.8	9.8	9.8	9.9	9.9	9.9	9.9	9.9	10	10
LJ2S_D_10	7.5	7.5	7.5	7.6	7.6	7.5	7.5	7.5	8	7.9	7.5	7.6	8.2	8.1	8.1	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.7	7.8	7.5	6.8	7.8	7.8	7.8	7.9
LJ2S_D_11	7.3	7.3	7.3	7.4	7.4	7.4	7.3	7.3	7.8	7.7	7.4	7.4	8	7.9	7.9	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.6	7.3	6.8	7.6	7.6	7.6	7.7
LJ2S_D_12	7.1	7.1	7.2	7.2	7.2	7.2	7.1	7.1	7.6	7.6	7.2	7.2	7.8	7.7	7.7	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.1	6.5	7.4	7.4	7.4	7.5
LJ2S_D_2	9.2	9.2	9.3	9.4	9.3	9.3	9.3	9.2	9.9	9.8	9.3	9.3	10.2	10.1	10.1	9.6	9.6	9.6	9.6	9.5	9.6	9.6	9.6	9.7	9.7	9.7	9.7	9.7	9.8	9.8
LJ2S_D_3	9	9.1	9.1	9.2	9.2	9.2	9.1	9.1	9.7	9.6	9.1	9.2	10	9.9	9.9	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.5	9.5	9.5	9.5	9.5	9.5	9.6	9.6
LJ2S_D_4	8.9	8.9	9	9	9	9	8.9	8.9	9.5	9.4	8.9	9	9.8	9.7	9.7	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.3	9.3	9.3	9.4	9.4
LJ2S_D_5	8.7	8.7	8.8	8.8	8.8	8.8	8.7	8.7	9.3	9.2	8.8	8.8	9.6	9.5	9.4	9	9	9	9	9	9	9	9.1	9.1	9.1	9.1	9.1	9.1	9.2	9.2
LJ2S_D_6	8.2	8.3	8.3	8.4	8.4	8.3	8.3	8.3	8.8	8.8	8.3	8.4	9.1	8.8	9	8.4	8.6	8.5	8.5	8.5	8.6	8.6	8.6	8.6	7.6	6.5	8.7	8.6	8.7	8.7
LJ2S_D_7	8	8.1	8.1	8.2	8.2	8.1	8.1	8.1	8.6	8.6	8.1	8.2	8.9	8.6	8.7	8.2	8.3	8.3	8.3	8.3	8.3	8.4	8.4	8.4	7.6	6.5	8.4	8.4	8.5	8.5
LJ2S_D_8	7.9	7.9	7.9	8	8	8	7.9	7.9	8.4	8.4	7.9	8	8.7	8.4	8.5	8.1	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.2	7.6	6.6	8.2	8.2	8.3	8.3
LJ2S_D_9	7.6	7.7	7.7	7.8	7.8	7.7	7.7	7.7	8.2	8.1	7.7	7.8	8.4	8.3	8.3	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8	8	7.6	6.8	8	8	8.1	8.1
LJ2S_E_1	9.2	9.2	9.2	9.3	9.3	9.2	9.2	9.2	9.8	9.7	9.2	9.3	10	9.9	9.8	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.3	9.5	9.4	9.5	9.5
LJ2S_E_2	8.8	8.7	8.8	8.9	8.8	8.8	8.8	8.7	9.3	9.3	8.8	8.9	9.5	9.4	9.3	9	8.9	8.9	8.9	8.8	8.9	8.9	9	9	9	8.9	9	9	9	9
LJ2S_E_3	8.6	8.5	8.6	8.7	8.6	8.6	8.6	8.5	9.1	9.1	8.6	8.7	9.3	9.1	9	8.7	8.7	8.7	8.7	8.6	8.7	8.7	8.7	8.8	8.7	8.7	8.8	8.8	8.8	8.8
LJ2S_E_4	8.3	8.3	8.4	8.5	8.4	8.4	8.3	8.3	8.9	8.8	8.4	8.5	9.1	8.9	8.8	8.5	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.4	8.6	8.5	8.6	8.6
LJ2S_E_5	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.1	8.6	8.6	8.2	8.2	8.8	8.7	8.6	8.3	8.2	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.3	8.2	8.3	8.3	8.4	8.4
LJ2S_E_6	7.9	7.9	7.9	8	8	7.9	7.9	7.9	8.4	8.4	8	8	8.6	8.4	8.3	8	8	8	8	7.9	8	8	8	8.1	8.1	8	8.1	8.1	8.1	8.1
LJ2S_E_7	7.7	7.7	7.7	7.8	7.8	7.7	7.7	7.7	8.2	8.1	7.8	7.8	8.3	8.2	8.1	7.8	7.8	7.8	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.8	7.9	7.9
LJ2S_F_1	11.7	11.7	11.8	11.9	11.8	11.8	11.7	11.6	12.4	12.4	11.8	11.8	12.7	12.4	12.2	11.9	11.8	11.8	11.8	11.7	11.8	11.8	11.9	11.9	11.8	11.4	11.9	11.9	12	12
LJ2S_F_2	11.3	11.3	11.4	11.5	11.4	11.4	11.3	11.3	12	12	11.4	11.5	12.3	12	11.9	11.5	11.5	11.4	11.4	11.4	11.4	11.5	11.5	11.5	11.4	11.1	11.6	11.5	11.6	11.6
LJ2S_F_3	11	11	11.1	11.2	11.1	11.1	11	11	11.7	11.6	11.1	11.2	11.9	11.7	11.5	11.2	11.1	11.1	11.1	11	11.1	11.1	11.2	11.2	11	10.8	11.2	11.2	11.3	11.2
LJ2S_F_4	9.8	9.7	9.8	9.9	9.8	9.8	9.7	9.7	10.3	10.3	9.8	9.9	10.5	10.3	10.1	9.8	9.8	9.8	9.7	9.7	9.8	9.8	9.8	9.9	9.8	9.6	9.9	9.8	9.9	9.9
LJ2S_F_5	9.5	9.5	9.5	9.6	9.5	9.5	9.4	9.4	10	10	9.6	9.6	10.2	10	9.8	9.6	9.5	9.5	9.5	9.4	9.5	9.5	9.5	9.6	9.5	9.4	9.6	9.5	9.6	9.6
LJ2S_F_6	9.2	9.2	9.3	9.3	9.3	9.2	9.2	9.1	9.7	9.7	9.3	9.3	9.9	9.7	9.5	9.3	9.2	9.2	9.2	9.2	9.2	9.2	9.3	9	8.3	7	9.3	9.3	9.3	9.3
LJ2S_F_7	8.9	8.9	9	9	9	9	8.9	8.9	9.4	9.4	9	9	9.6	9.4	9.2	9	9	8.9	8.9	8.9	8.9	9	9	8.8	8.2	7	9	9	9	9
LJ2S_F_8	8.4	8.4	8.5	8.5	8.5	8.4	8.4	8.4	8.9	8.9	8.5	8.5	9	8.8	8.7	8.5	8.4	8.4	8.4	8.4	8.4	8.4	8.5	8.3	7.9	6.9	8.5	8.5	8.5	8.5
LJ2S_F_9	8.2	8.1	8.2	8.3	8.2	8.2	8.1	8.1	8.6	8.6	8.2	8.3	8.8	8.6	8.4	8.2	8.2	8.2	8.1	8.1	8.2	8.2	8.2	8.1	7.8	6.8	8.2	8.2	8.3	8.2
LJ2S_J_7	10.2	10.1	10.1	10.1	10.1	10	10	10	10.4	10.4	10.2	10.2	10.3	10	9.7	9.8	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.8	9.8	9.8	9.7	9.7	9.7	9.7
LJ2S_J_8	9.8	9.7	9.8	9.8	9.7	9.7	9.6	9.6	10	10.1	9.8	9.8	10	9.7	9.4	9.4	9.4	9.4	9.4	9.3	9.4	9.4	9.4	9.4	9.5	9.4	9.4	9.4	9.4	9.3
LJ2S_J_9	9.4	9.4	9.4	9.4	9.4	9.4	9.3	9.3	9.7	9.7	9.5	9.5	9.7	9.4	9.1	9.1	9.1	9.1	9	9	9	9.1	9.1	9.1	9.2	9.1	9.1	9.1	9.1	9
LJ2S_K_1	8.7	8.6	8.7	8.7	8.7	8.6	8.5	8.6	8.9	9	8.7	8.7	8.9	8.6	8.4	8.4	8.4	8.4	8.3	8.3	8.3	8.4	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.3
LJ2S_K_2	8.4	8.3	8.4	8.4	8.4	8.3	8.2	8.3	8.6	8.6	8.4	8.4	8.6	8.3	8.1	8.1	8.1	8.1	8	8	8	8.1	8.1	8.1	8.1	8	8.1	8.1	8.1	8
LJ2S_K_3	8.1	8	8	8.1	8	8	7.9	7.9	8.3	8.3	8.1	8.1	8.3	8	7.8	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.7	7.7
LJ2S_K_4	7.9	7.9	7.9	7.9	7.9	7.8	7.8	7.8	8.1	8.2	7.9	7.9	8.1	7.8	7.6	7.7	7.6	7.6	7.6	7.5	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.6	7.6	7.6
Trans	5.4	5.3	5.5	5.7	5.6	5.5	5.3	5.2	7	6.9	5.6	5.7	6.6	6.7	6.1	5.5	5.4	5.4	5.3	5.2	5.3	5.4	5.5	-0.7	-2.8	-5.4	5.6	5.5	5.6	5.6
Trans	5.4	5.3	5.5	5.7	5.5	5.4	5.2	5.2	6.9	6.8	5.6	5.7	6.6	6.6	6.1	5.5	5.4	5.3	5.2	5.1	5.3	5.4	5.4	-0.7	-2.7	-5.4	5.6	5.5	5.6	5.5
Trans	5	4.9	5.1	5.3	5.2	5.1	4.9	4.8	6.6	6.4	5.2	5.3	6.1	6.3	5.8	5.2	5.1	5	4.9	4.8	5	5.1	5.1	-0.8	-3	-5.2	5.2	5.1	5.3	5.2
Trans	5	4.9	5.1	5.3	5.2	5.1	4.8	4.8	6.5	6.4	5.2	5.3	6.1	6.3	5.7	5.1	5	4.9	4.9	4.8	4.9	5	5.1	-0.7	-2.9	-5.2	5.2	5.1	5.2	5.2
Trans	5.5	5.4	5.6	5.8	5.7	5.6	5.3	5.3	7	6.9	5.7	5.8	6.5	6.8	6.2	5.6	5.5	5.4	5.3	5.2	5.4	5.5	5.6	-0.8	-2.9	-5.5	5.7	5.6	5.7	5.7
Trans	5.1	5	5.2	5.4	5.2	5.1	4.9	4.9	6.6	6.5	5.3	5.3	6.1	6.4	5.8	5.2	5.1	5	5	4.9	5	5.1	5.2	-1	-3.2	-5.3	5.3	5.2	5.3	5.3

TABLE X-13

Predicted Turbine Noise Level, 3.0-MW Layout

ID	Partial Level																								
	R061	R062	R063	R064	R065	R066	R067	R068	R069	R070	R071	R072	R073	R074	R075	R076	R077	R078	R079	R080	R081	R082	R083	R084	R085	R086
LJ2N_G_10	20.4	20.3	20.2	20.1	19.8	19.9	19.8	19.8	19.8	19.8	20	20.1	20	20.4	19.9	19.8	19.8	19.9	20	20	20	19.5	19.5	19.8	21.1	17.1
LJ2N_G_11	19.6	19.5	19.4	19.3	19	19.1	19.1	19.1	19.1	19.1	19.2	19.4	19.2	19.6	19.1	19.1	19	19.1	19.2	19.3	19.4	19	19	19.4	20.8	17.5
LJ2N_G_6	25.8	25.7	25.6	25.3	24.9	25	25	25	24.9	24.9	25.2	25.4	25.2	25.8	25	24.9	24.8	25	25.2	25.2	24.2	24.6	24.1	24.3	22.9	15
LJ2N_G_7	24.6	24.6	24.4	24.2	23.8	23.9	23.9	23.9	23.8	23.8	24.1	24.3	24.1	24.6	23.9	23.8	23.8	23.9	24.1	24.1	23.4	24.1	23.7	21.9	22.6	15.4
LJ2N_G_8	23.5	23.5	23.3	23.1	22.7	22.9	22.8	22.8	22.8	22.8	23	23.2	23	23.5	22.9	22.7	22.7	22.9	23	23	22.6	23.5	23.3	21.5	22.3	15.8
LJ2N_G_9	21.3	21.2	21.1	20.9	20.6	20.7	20.7	20.7	20.6	20.6	20.8	21	20.8	21.2	20.7	20.6	20.6	20.7	20.8	20.8	20.7	20.1	20	20.3	21.5	16.7
LJ2N_I_1	19.7	19.5	19.4	19.3	19.1	19.2	19.1	19.2	19.2	19.3	19.4	19.5	19.3	19.9	19.5	19.4	19.4	19.5	19.6	19.6	21.1	23.4	23.7	22.3	23.6	21.5
LJ2N_I_2	18.6	18.4	18.3	18.2	18.1	18.1	18.1	18.2	18.2	18.3	18.4	18.5	18.3	18.8	18.5	18.4	18.4	18.5	18.6	18.6	20.4	23.1	23.6	24.4	23.9	23
LJ2N_I_3	17.9	17.8	17.7	17.6	17.5	17.5	17.5	17.6	17.6	17.6	17.8	17.8	17.7	18.2	17.8	17.8	17.7	17.8	17.9	18	19.6	20.3	22.8	21.5	23.1	23.7
LJ2N_I_4	17.4	17.3	17.2	17	16.9	17	16.9	17	17	17.1	17.2	17.2	17.1	17.6	17.3	17.2	17.1	17.2	17.3	17.4	18.9	19.5	22.1	20.7	22.4	24.4
LJ2N_I_5	16.8	16.7	16.6	16.5	16.4	16.4	16.4	16.4	16.4	16.5	16.6	16.7	16.5	17	16.7	16.6	16.6	16.6	16.7	16.8	18.2	18.8	19.3	19.9	21.7	25.1
LJ2S_B_1	6.8	6.9	6.9	6.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_B_9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LJ2S_C_1	9.2	9.2	9.2	9.2	9	9.1	9.1	9	8.9	8.9	8.9	9	9	9	8.8	8.7	8.8	8.8	8.8	8.8	7.8	7.3	7.1	7.2	6.8	7.4
LJ2S_C_2	9	9	9.1	9	8.8	8.9	8.9	8.8	8.8	8.7	8.8	8.9	8.9	8.8	8.6	8.6	8.6	8.6	8.6	8.6	7.7	7.2	7	7.1	0	7.4
LJ2S_C_3	8.8	8.9	8.9	8.9	8.7	8.7	8.7	8.6	8.6	8.6	8.6	8.7	8.7	8.6	8.4	8.4	8.4	8.5	8.5	8.5	7.5	7.1	6.9	7	0	7.4
LJ2S_C_4	8.6	8.7	8.7	8.7	8.5	8.5	8.6	8.5	8.4	8.4	8.4	8.5	8.5	8.4	8.3	8.2	8.3	8.3	8.3	8.3	7.4	6.9	6.8	6.9	0	7.4
LJ2S_C_5	8.4	8.5	8.5	8.5	8.3	8.3	8.4	8.3	8.2	8.2	8.2	8.3	8.3	8.3	8.1	8.1	8.1	8.1	8.1	8.1	7.3	6.8	0	6.8	0	7.4
LJ2S_C_6	8.2	8.3	8.3	8.3	8.1	8.1	8.2	8.1	8	8	8	8.1	8.1	8.1	7.9	7.9	7.9	7.9	7.9	7.9	7.1	0	0	0	0	7.4
LJ2S_D_1	10.1	10.1	10.1	10.1	9.9	9.9	10	9.9	9.8	9.8	9.8	9.9	9.9	9.9	9.6	9.6	9.7	9.7	9.7	9.7	8.7	8.2	8.1	8.2	11.4	8.6
LJ2S_D_10	7.9	7.9	7.9	7.9	7.7	7.8	7.8	7.7	7.7	7.7	7.7	7.8	7.8	7.8	7.6	7.6	7.6	7.6	7.6	7.6	7	0	0	0	0	8.4
LJ2S_D_11	7.7	7.7	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.5	7.5	7.6	7.6	7.6	7.4	7.4	7.4	7.4	7.4	7.4	6.9	0	0	0	0	8.3
LJ2S_D_12	7.5	7.5	7.5	7.5	7.3	7.4	7.4	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.2	7.2	7.2	7.2	7.2	7.2	0	0	0	0	0	8.3
LJ2S_D_2	9.9	9.9	9.9	9.9	9.7	9.7	9.8	9.6	9.6	9.6	9.6	9.7	9.7	9.7	9.4	9.4	9.4	9.5	9.5	9.5	8.6	8.1	8	8	7.7	8.6
LJ2S_D_3	9.7	9.7	9.7	9.7	9.5	9.5	9.6	9.5	9.4	9.4	9.4	9.5	9.5	9.5	9.3	9.2	9.3	9.3	9.3	9.3	8.4	8	7.9	7.9	7.6	8.7
LJ2S_D_4	9.5	9.5	9.5	9.5	9.3	9.3	9.4	9.3	9.2	9.2	9.2	9.3	9.3	9.3	9.1	9	9.1	9.1	9.1	9.1	8.3	7.8	7.7	7.8	7.5	8.7
LJ2S_D_5	9.3	9.3	9.3	9.3	9.1	9.1	9.2	9.1	9	9	9	9.1	9.1	9.1	8.9	8.9	8.9	8.9	8.9	8.9	8.1	7.7	7.6	7.7	7.4	8.7
LJ2S_D_6	8.8	8.8	8.8	8.8	8.6	8.7	8.7	8.6	8.6	8.5	8.6	8.7	8.6	8.3	8.4	8.4	8.4	8.4	8.5	8.5	7.7	7.3	7.3	7.3	7	8.5
LJ2S_D_7	8.6	8.6	8.6	8.6	8.4	8.4	8.5	8.4	8.3	8.3	8.4	8.4	8.4	8.4	8.2	8.2	8.2	8.2	8.3	8.2	7.6	7.2	7.1	7.2	6.9	8.5
LJ2S_D_8	8.4	8.4	8.4	8.4	8.2	8.2	8.3	8.2	8.1	8.1	8.2	8.2	8.2	8.2	8	8	8	8	8.1	8	7.4	7	7	7.1	6.8	8.5
LJ2S_D_9	8.1	8.2	8.1	8.1	7.9	8	8	7.9	7.9	7.9	7.9	8	8	8	7.8	7.8	7.8	7.8	7.8	7.8	7.2	6.9	6.8	6.9		8.4
LJ2S_E_1	9.6	9.6	9.6	9.6	9.4	9.4	9.4	9.4	9.3	9.3	9.4	9.5	9.4	9.4	9.2	9.2	9.2	9.3	9.3	9.3	8.8	8.4	8.4	8.6	8.3	10.7
LJ2S_E_2	9.1	9.1	9.1	9.1	8.9	8.9	9	8.9	8.9	8.8	8.9	9	8.9	9	8.8	8.8	8.8	8.8	8.8	8.8	8.4	8.2	8.2	8.3	8.1	11.1
LJ2S_E_3	8.9	8.9	8.9	8.8	8.7	8.7	8.7	8.7	8.6	8.6	8.7	8.8	8.7	8.8	8.6	8.5	8.6	8.6	8.6	8.6	8.2	8	8	8.2	7.9	11
LJ2S_E_4	8.7	8.7	8.7	8.6	8.5	8.5	8.5	8.5	8.4	8.4	8.5	8.5	8.5	8.6	8.4	8.3	8.3	8.4	8.4	8.4	8.1	7.8	7.9	8	7.8	11
LJ2S_E_5	8.4	8.4	8.4	8.4	8.2	8.3	8.3	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.1	8.1	8.1	8.1	8.2	8.2	7.8	7.7	7.7	7.8	7.6	10.9
LJ2S_E_6	8.2	8.2	8.2	8.1	8	8	8	8	8	7.9	8	8.1	8	8.1	7.9	7.9	7.9	7.9	7.9	7.9	7.6	7.5	7.5	7.6	7.4	10.8
LJ2S_E_7	7.9	8	7.9	7.9	7.8	7.8	7.8	7.8	7.7	7.7	7.8	7.8	7.8	7.9	7.7	7.6	7.7	7.7	7.7	7.7	7.4	7.3	7.3	7.5	7.2	10.7
LJ2S_F_1	12.1	12.1	12	12	11.8	11.8	11.8	11.8	11.7	11.7	11.8	11.9	11.8	11.9	11.7	11.6	11.6	11.7	11.7	11.7	11.3	11	11	11.2	14.1	14
LJ2S_F_2	11.7	11.7	11.7	11.6	11.4	11.5	11.5	11.4	11.4	11.4	11.4	11.5	11.5	11.6	11.3	11.3	11.3	11.3	11.4	11.4	11	10.8	10.8	11	13.9	14
LJ2S_F_3	11.3	11.3	11.3	11.3	11.1	11.1	11.1	11.1	11	11	11.1	11.2	11.1	11.2	11	10.9	11	11	11	11	10.7	10.5	10.5	10.7	13.7	14
LJ2S_F_4	9.9	10	9.9	9.9	9.7	9.8	9.8	9.7	9.7	9.7	9.8	9.8	9.8	9.9	9.7	9.6	9.6	9.7	9.7	9.7	9.6	9.5	9.5	9.8	9.5	16.8
LJ2S_F_5	9.7	9.7	9.6	9.6	9.4	9.5	9.5	9.4	9.4	9.4	9.5	9.5	9.5	9.6	9.4	9.4	9.4	9.4	9.4	9.4	9.3	9.2	9.3	9.5	9.3	16.6
LJ2S_F_6	9.4	9.4	9.3	9.3	9.2	9.2	9.2	9.2	9.1	9.1	9.2	9.3	9.2	9.3	9.1	9.1	9.1	9.1	9.2	9.2	9.1	9	9.1	9.3	9.1	13.7
LJ2S_F_7	9.1	9.1	9.1	9	8.9	8.9	8.9	8.9	8.9	8.8	8.9	9	8.9	9	8.8	8.8	8.8	8.8	8.9	8.9	8.8	8.7	8.8	9	8.8	13.6
LJ2S_F_8	8.6	8.6	8.5	8.5	8.4	8.4	8.4	8.4	8.4	8.3	8.4	8.5	8.4	8.5	8.3	8.3	8.3	8.3	8.4	8.4	8.3	8.2	8.3	8.5	8.3	13
LJ2S_F_9	8.3	8.3	8.3	8.2	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.3	8.1	8	8	8.1	8.1	8.1	8.1	8	8.1	8.3	8.1	12.8
LJ2S_J_7	9.7	9.7	9.6	9.5	9.5	9.5	9.5	9.5	9.5	9.6	9.6	9.7	9.6	9.8	9.7	9.6	9.6	9.7	9.7	9.7	10.7	11.2	11.6	11.9	15.1	27.1
LJ2S_J_8	9.4	9.3	9.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.3	9.3	9.3	9.5	9.3	9.3	9.3	9.3	9.4	9.4	10.3	10.8	11.2	11.5	14.7	25.7
LJ2S_J_9	9.1	9.1	9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	9	9	9	9.2	9	9	9	9	9.1	9.1	9.8	10.3	10.6	10.9	14.2	23.2
LJ2S_K_1	8.4	8.3	8.3	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.3	8.3	8.2	8.4	8.3	8.3	8.3	8.3	8.3	8.4	9.1	9.6	9.9	10.2	13.6	21.7
LJ2S_K_2	8.1	8	8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8	8	8	8.2	8	8	8	8	8	8.1	8.8	9.2	9.5	9.8	13.2	20.7
LJ2S_K_3	7.8	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.6	7.8	7.7	7.7	7.7	7.7	7.7	7.7	8.4	8.9	9.2	9.4	12.9	19.7
LJ2S_K_4	7.6	7.6	7.5	7.5	7.4	7.5	7.4	7.5	7.5	7.5	7.5	7.6	7.5	7.7	7.6	7.5	7.5	7.6	7.6	7.6	8.3	8.7	9	9.3	12.7	19.3
Trans	5.8	5.8	5.7	5.5	5.1	5.2	5.2	5.2	5.1	5.1	5.3	5.5	5.3	5.7	5.1	5	5	5.1	5.2	5.2	4.8	4.3	4.3	4.7	3.8	5.8
Trans	5.7	5.7	5.6	5.5	5.1	5.2	5.2	5.1	5.1	5	5.2	5.4	5.3	5.6	5	4.9	4.9	5.1	5.2	5.2	4.8	4.2	4.2	4.7	3.8	5.8
Trans	5.4	5.4	5.3	5.2	4.8	4.9	4.9	4.8	4.7	4.7	4.9	5.1	5	5.3	4.7	4.6	4.6	4.7	4.8	4.8	4.4	3.8	3.8	4.2	3.3	5.5
Trans	5.4	5.4	5.3	5.1	4.7	4.8	4.9	4.8	4.7	4.7	4.9	5.1	4.9	5.2	4.7	4.6	4.6	4.7	4.8	4.8	4.4	3.8	3.8	4.2	3.3	5.5
Trans	5.9	5.9	5.8	5.6	5.2	5.3	5.3	5.2	5.2	5.2	5.4	5.5	5.4	5.7	5.1	5	5	5.2	5.3	5.3	4.9	4.3	4.3	4.7	3.8	5.7
Trans	5.5	5.5	5.4	5.2	4.8	4.9	5	4.9	4.8	4.8	5	5.2	5	5.3	4.8	4.7	4.7	4.8	4.9	4.9	4.4	3.8	3.8	4.2	3.3	5.4

APPENDIX C, ATTACHMENT 1

Revised Tables C-2 and C-3; Revised Figures C-3a and C-3c

Table C-2. Micrositing Corridors for Turbine Strings[1]

Description	Longitude	Latitude
A-string—Western Boundary	-120.3210935	
A-string—Eastern Boundary	-120.3107982	
B-D string—Western Boundary	-120.3017389	
B-D string—Eastern Boundary	-120.2686091	
E1-3—Western Boundary	-120.261098	
E1-3—Eastern Boundary	-120.2500477	
E1-3—Northern Boundary		45.655466
E4-11—Northern Boundary		45.64662762
E4-11—Eastern Boundary	-120.2414496	
F1-5—Eastern Boundary	-120.2238475	
F1-5—Western Boundary	-120.2365971	
F6-13—Western Boundary	-120.2344746	
G String—Eastern Boundary	-120.195484	
H1-8—Western Boundary	-120.1922851	
H1-8—Eastern Boundary	-120.1848239	
H1-8—Northern Boundary		45.69452023
H1-8—Southern Boundary		45.6725221
I String—NW Corner	-120.1818659	45.68968116
I String—NE Corner	-120.1747899	45.69178413
I String—SW Corner	-120.1735608	45.67593476
I String—SE Corner	-120.1664095	45.67806005
H9-11—Western Boundary	-120.1859096	
H9-11—Eastern Boundary	-120.178417	
H9-11—Northern Boundary		45.67606262
H9-11—Southern Boundary		45.66796
H12-16 and J1-3 Eastern Boundary	-120.1719403	
H12-16 and J1-3 Northern Boundary		45.67115987
H12-16 and J1-3 Western Boundary	-120.1790375	
H12-16 and J1-3 Southern Boundary		45.655232
J4-16—Northern Boundary		45.66023208
J4-16—Western Boundary	-120.177838	
J-17—Western Boundary	-120.1981621	
J-17—Southern Boundary		45.61721147
J17—Eastern Boundary	-120.1902439	
J17—Northern Boundary		45.62241712

[1] Turbine string corridors are also adjacent to the lease boundaries. Legal descriptions for the lease boundaries are available on request.

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
1	Centerline of Alternate Collector Corridor Connecting J1-3 Turbine String Corridor to LJ I Easement	500		45.65764917	-120.184709
				45.65837155	-120.1808053
				45.65899633	-120.1791685
2	Centerline of Crane Path Corridor Connecting Access Road to H12 and 13	500		45.66270109	-120.1842465
				45.66536356	-120.1831584
				45.66623826	-120.1823774
				45.66710705	-120.1813575
				45.6678652	-120.1800045
3	Centerline of Northernmost Road Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500		45.68864792	-120.1812674
				45.68801958	-120.1849758
4	Centerline of Primary Collector Route Connecting F16 to F-17	500		45.63127598	-120.1776535
				45.62834378	-120.1822776
				45.62356555	-120.1849442
				45.62345681	-120.1851384
5	Centerline of Road Connecting D and E Strings	400	W	45.654691	-120.26886
			E	45.653847	-120.26109
6	Centerline of Road Corridor Connecting Access Road to F-1	500		45.65767811	-120.236452
				45.65468786	-120.2389854
7	Centerline of Southernmost Collector Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500		45.64916724	-120.2494657
				45.6824096	-120.1778171
8	Collector Connecting E1-3 to E4-11—Northwestern Edge of Corridor	630		45.64916724	-120.2494657
				45.64863259	-120.2488339
				45.64800059	-120.2484093
				45.64724968	-120.2482161
				45.64669198	-120.2481099
				45.64960668	-120.2500738
9	Crane Path Corridor Connecting G-string to H-string—Northern Boundary	500	N	45.69461058	-120.1939453
			S	45.69323968	-120.1940296
10	Expanded Corridor North of F6-13 Corridor	1,480	E		-120.2261001
			N	45.64893734	
			S	45.64597072	
			W		-120.2317406
11	Primary Access Road from East Entrance and Collector Corridor (Starting at West Side of J1-3 Corridor Ending at Lease Boundary)	500	N	45.66473767	-120.1797365
				45.66452299	-120.1805243
				45.66425543	-120.1811134
				45.66394674	-120.1816086
				45.66372868	-120.1818477
				45.66361072	-120.1824493
				45.6635676	-120.1830791

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.66312206	-120.1847009
				45.6648038	-120.178906
			S	45.66167623	-120.1847212
				45.66212187	-120.1830097
				45.66223863	-120.1825718
				45.66224965	-120.1821746
				45.66256684	-120.1807351
				45.66304937	-120.1801263
				45.66325572	-120.179769
				45.66339075	-120.178977
12	Road and Collector Corridor Connecting E-String to F-String	550	N	45.65470859	-120.2472878
				45.65408307	-120.2453707
				45.65406739	-120.244955
				45.65401453	-120.2446455
				45.65493285	-120.2417272
				45.65496912	-120.2410678
				45.65483272	-120.2399986
				45.65460837	-120.2379173
				45.65458134	-120.2373501
				45.65446946	-120.2368371
				45.65515673	-120.2498032
				45.6546751	-120.2490195
			S	45.65322436	-120.2498255
				45.6533354	-120.247641
				45.65293484	-120.2464726
				45.65260547	-120.2460019
				45.6524296	-120.2454318
				45.65241419	-120.2447198
				45.65257356	-120.2438702
				45.65340061	-120.2415855
				45.65348998	-120.241182
				45.65343975	-120.2407061
				45.65317065	-120.2389199
				45.65306437	-120.2382143
				45.65285768	-120.2377119
				45.65274244	-120.2371752
13	Road and Collector Corridor Connecting E4-11 to F6-13 strings	500. Increases to 1,380 where road splits.	N	45.63521851	-120.2416616
				45.63529252	-120.2411365
				45.63659708	-120.2385929
				45.63809273	-120.2365057
				45.63931883	-120.2345442
			S	45.63393405	-120.2400196

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.63411434	-120.239619
				45.63447353	-120.2393667
				45.63628215	-120.2362216
				45.63553383	-120.2347305
				45.63401158	-120.2348054
14	Road and Collector Corridor Connecting H8 to H9—Northeastern Boundary	500		45.67608998	-120.179524
				45.67657683	-120.1798506
				45.67910159	-120.184257
15	Road and Collector Corridor Connecting H-String to G-String	2,640	N	45.68135637	-120.1946997
			S	45.6741315	-120.1950336
16	Road and Collector Corridor Connecting I-String Turbine Corridor to H-String Turbine Corridor	500	N	45.68552972	-120.1851604
				45.68491344	-120.1789809
			S	45.68414517	-120.1851621
				45.68366819	-120.1803791
				45.68282221	-120.1788328
17	Road and Collector Corridor Connecting LJ II North to LJ II Collector Substation	500	N	45.67484208	-120.2127925
				45.67491891	-120.2122355
				45.67476584	-120.2117114
				45.67463177	-120.2095789
				45.67513745	-120.205686
				45.675961	-120.2040863
			S	45.67211845	-120.212634
				45.6726361	-120.2120636
				45.67285234	-120.2114765
				45.67329244	-120.2102406
				45.67325915	-120.2094326
				45.67374452	-120.2056757
				45.6739979	-120.2045957
				45.67482203	-120.2029948
18	Road Connecting E-String (At Lease Boundary) to Access Road to the North	See Table C-2 J 1-3 Corridor			
19	Western Access Road from Blalock Canyon Road to B-String	Varies on the west side of the A-string. Width between A and B is 500 feet.	N	45.63711534	-120.3297983
				45.63630636	-120.3280113
				45.63517001	-120.3264266
				45.63395561	-120.3247266
				45.63262578	-120.3232179
				45.63201347	-120.3212997
				45.6311251	-120.311029
				45.63124782	-120.3094919
				45.63114983	-120.3082258
				45.63092978	-120.3071075
				45.63108705	-120.3019835

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.63736069	-120.3315946
			S	45.63309464	
			W	Blalock Canyon Road	
20	Rattlesnake Road Corridor (Existing Road)	20	NW	45.68961543	-120.1849553
				45.69036821	-120.183686
				45.69074216	-120.1831715
				45.69103459	-120.1828249
				45.69128387	-120.1824473
				45.69150057	-120.1820693
				45.69174243	-120.1815954
				45.69195314	-120.1811745
				45.69212005	-120.1807216
				45.69233172	-120.1803476
				45.69260513	-120.1801458
				45.69295129	-120.1800348
				45.69323267	-120.1801337
				45.69357407	-120.1803023
				45.69381447	-120.1804468
				45.69404413	-120.1806293
				45.69638612	-120.1800127
				45.69650278	-120.1797582
				45.69668247	-120.1795695
				45.69692851	-120.1794292
				45.69724431	-120.1794531
				45.69776312	-120.1795421
				45.69788518	-120.1795484
				45.69806591	-120.1795075
				45.69838491	-120.1794516
			SE	45.6887425	-120.1849509
				45.68920673	-120.1843591
				45.68978268	-120.1834268
				45.69033131	-120.1826517
				45.69070797	-120.1821914
				45.69112456	-120.1814918
				45.69150326	-120.1807246
				45.69186374	-120.1798643
				45.69233201	-120.1794642
				45.69272228	-120.1792737
				45.69303956	-120.1792593
				45.69341363	-120.1793943
				45.69387074	-120.1796184

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.69419624	-120.1798604
				45.69858171	-120.1785617
				45.69846994	-120.1786478
				45.69818191	-120.1786946
				45.69783829	-120.1787645
				45.69753312	-120.1787061
				45.69710911	-120.1786517
				45.69689141	-120.1786478
				45.69668431	-120.1787173
				45.69646971	-120.1788444
				45.6962629	-120.1790266
				45.69608985	-120.1792419
				45.69596381	-120.1794772
				45.69588128	-120.179696
				45.69575968	-120.1798283
21	Rattlesnake Road Corridor (Proposed Realignment)	500		45.69404413	-120.1806293
				45.69419761	-120.1811359
				45.69451095	-120.1814389
				45.69514634	-120.1816395
				45.69728218	-120.1823147
				45.69780604	-120.1823313
				45.69834868	-120.1820993
			NW	45.69876958	-120.1816884
				45.69925379	-120.1809797
				45.70056792	-120.1790376
				45.70122226	-120.1773506
				45.7014559	-120.1770683
				45.70158778	-120.1766021
				45.70157922	-120.1762862
				45.70153904	-120.176057
			SE	45.70090798	-120.1755037
				45.70051386	-120.1756475
				45.7002195	-120.1759626
				45.70001293	-120.1763957
				45.6997346	-120.176686
				45.69966412	-120.1770148
				45.69969144	-120.1772811
				45.69947373	-120.1778479
				45.69923961	-120.1775735
				45.69897985	-120.1774921
				45.69871512	120.1776584
				45.69858508	-120.1780485

Table C-3. Micrositing Corridors for Roads, Collector Cables, and Crane Paths[1, 2]

#	Description	Width (feet)	End Point (centerline of corridor)	Latitude	Longitude
				45.69858614	-120.1784799
				45.69838491	-120.1794516
				45.697834	-120.1802541
				45.6976519	-120.1803822
				45.69740327	-120.1803415
				45.69486659	-120.1795522
				45.69457699	-120.1795548
				45.69434818	-120.1796924
				45.69419805	-120.179862
			NE	45.675962	-120.21411
			NW	45.675638	-120.214739
			SE	45.674209	-120.21226
22	Substation	200 x 795	SW	45.673886	-120.212889
	Alternate underground collector line (within lease boundary) connecting to J			45.631858	-120.183259
				45.631395	-120.184191
23	string	290 (maximum)	SE	45.630913	-120.185155

[1] The corridors for easements across nonleased land and improvements to existing roads are 200 feet wide. The corridors for new roads, collector cables, and crane paths are 500 feet wide.

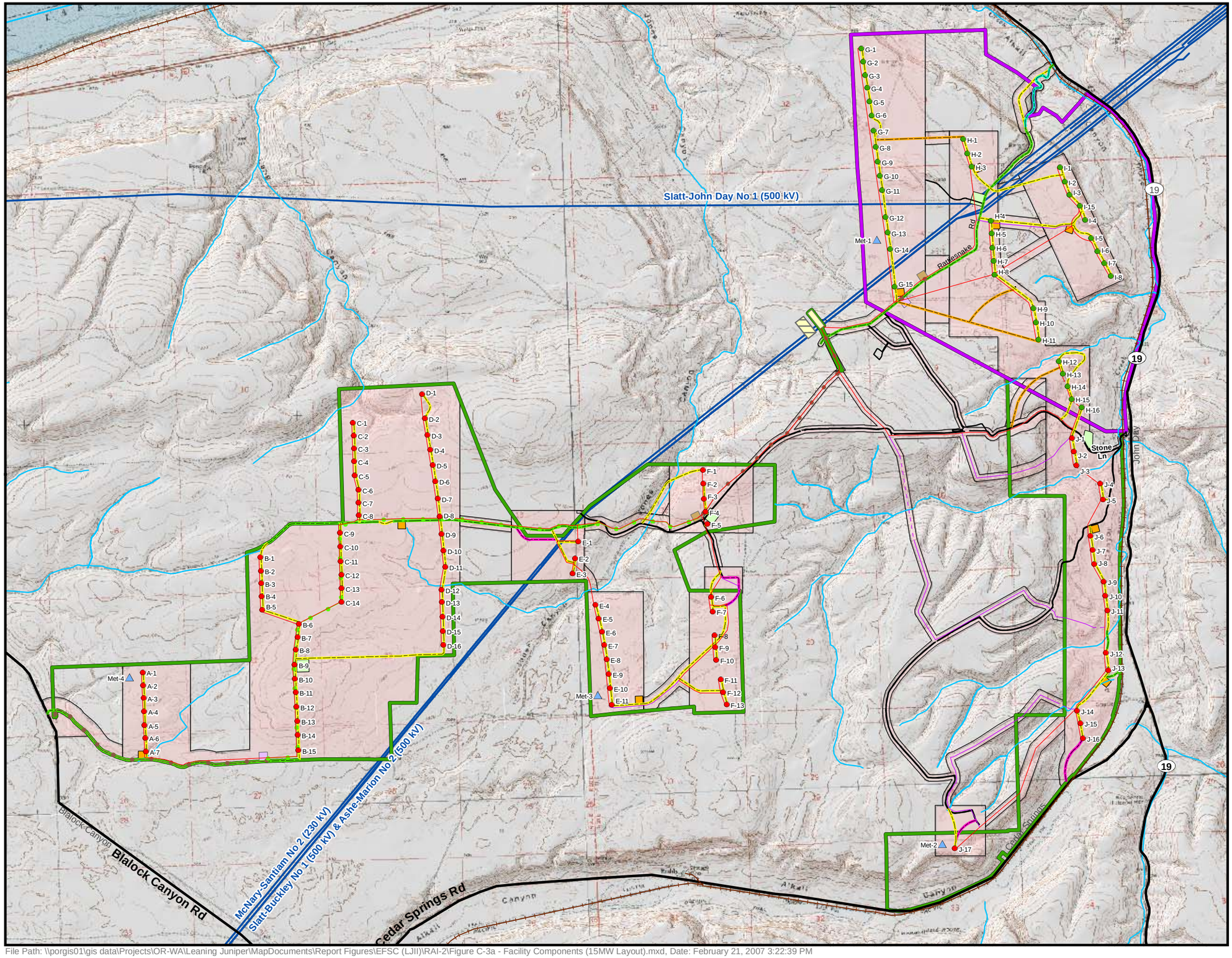
[2] Legal descriptions for the easements and lease boundaries can be provided before construction begins.

Figure C-3a

Facility Components (1.5-MW Layout)

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company



Legend

- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Underground 12-kV Power Line
- Alternate Underground 12-kV Power Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
S

0 2,000 4,000 6,000 Feet

File Path: \\porgis01\gis data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure C-3a - Facility Components (15MW Layout).mxd, Date: February 21, 2007 3:22:39 PM

Figure C-3c

Micrositing Corridors for Roads, Collector Cables, and Crane Paths

Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbine - Leaning Juniper II North
- Proposed Turbine - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Existing LJ I Roads
- Major Roads
- Railroads
- Streams

Lease Boundary

- Leaning Juniper II - North
- Leaning Juniper II - South

N
W E
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0 2,000 4,000 6,000
Feet

File Path: \\porgis01\gis data\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure C-3c - Micrositing Corridors for Roads, Collector Cables, and Crane Paths.mxd, Date: February 21, 2007 3:29:35 PM

APPENDIX C, ATTACHMENT 2

New Figure J-2, Areas Surveyed for Wetlands and Jurisdictional Waters

Figure J-2
Areas Surveyed for Wetlands and Jurisdictional Waters
Leaning Juniper II
Wind Power Facility

PPM Energy
A ScottishPower Company

Legend

- 500-foot survey area
- 200-foot survey area
- Jurisdictional Waters (Corps/DSL)
- Corps Only Jurisdictional
- Nonjurisdictional Waters
- CH2M HILL-Mapped Wetlands (W)
- NWI Wetlands (POWFX)
- Leaning Juniper II Facility Corridor

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Switching Station

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Existing BPA Transmission Line
- Major Roads
- Existing LJ I Roads
- Railroads
- Streams
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

0 2,000 4,000 6,000 Feet

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\RAI-2\Figure J-2 - Areas Surveyed for Wetlands & Jurisdictional Waters.mxd, Date: April 23, 2007 2:50:28 PM

APPENDIX C, ATTACHMENT 3

Revised Tables P-1, P-2, P-10B, and P-15B

TABLE P-1

Habitat Types and Categories Within the Leaning Juniper II North Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
Grassland (G) Native bunchgrass or non-native grasslands with weeds.	GA	4	**Annual grass and weeds with residual native bunchgrass.** Primarily non-native grassland with weeds resulting from past wildfires or land use practices. Patches of native perennial bunchgrass and forbs. Soil depth variable. Category 4—important habitat, but not limited. Areas show signs of recovery to a level that would provide more value for a variety of common or special status wildlife. With sufficient time and appropriate livestock grazing practices, may become essential habitat.	Total GA: 16
	GB	2	**Perennial bunchgrass.** Native bunchgrass. Primarily bluebunch wheatgrass and Sandberg's bluegrass. Shrubs, if present, are an inconspicuous component. Soils generally medium to deep. Native bunchgrass sites in good condition that are in deep soils are limited in the general area. Category 2—essential habitat to sensitive species. Areas show less grazing pressure and more native plant diversity than Category 3 or 4. May also support white-tailed jackrabbit, grasshopper sparrows, or other ground nesting grassland bird species such as savannah sparrow and vesper sparrow. Nesting habitat for Western meadowlark	Total GB: 3
				Total Grassland: 19 acres
Shrub-Steppe (SS) Open low shrub, with native and non-native bunchgrass. Some unburned sites have dense sagebrush cover. Some shrub-steppe lost shrub cover in recent fires but show signs of recovery (trending toward pre-burn shrub conditions).	SSA	2, 3	**Shrub-grass.** Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grasses. Soils medium to deep. Some sites have been intensively impacted by cattle grazing. The Shrub-grass type appears to have potential value for shrub obligate species such as loggerhead shrike. This subtype is limited in size; larger areas are more functional and typically are rated Category 2.	Total SSA: 14
		2	Category 2—essential habitat to sensitive species. Show less grazing pressure and more native plant diversity than Category 3 or 4.	0
		3	Category 3—essential or important habitat that is limited. Nesting habitat for Western meadow lark. Categories 1 through 3 may also support white-tailed jackrabbit and loggerhead shrike.	14
	SSB	2 or 3	**Open low shrub.** Rabbitbrush-snakeweed-buckwheat (*Eriogonum sp*.)/perennial bunchgrass, usually Sandberg's bluegrass *(Poa sandbergii*), and annual grasses. Most of these areas are formerly SS-A attempting to recover from frequent burning. Little current potential for nesting by shrub obligate species.	Total SSB: 2348

TABLE P-1

Habitat Types and Categories Within the Leaning Juniper II North Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
		2	Category 2—essential habitat to sensitive species. Show less grazing pressure and more native plant diversity than Category 3 or 4.	27
		3	Category 3—essential or important habitat that is limited. May support long-billed curlew and white-tailed jackrabbit.	2321
	SSE	2	**Bitterbrush/Buckwheat, Bunchgrass-Annual grass.** Bitterbrush/Eriogonum, native bunchgrass, non-native annual grass. Category 2—essential habitat to sensitive species. Show less grazing pressure and more native plant diversity than Category 3 or 4.	Total SSE: 244
				Total Shrub-Steppe: 2606 acres
Exposed Basalt Rock (E)	EB	4	**Exposed Basalt.** Vegetative cover is very open, contains Sandberg's bluegrass with annual grasses and forbs Category 4—important habitat, but not limited. Areas show signs of recovery to a level that would provide more value for a variety of common or special status wildlife. With sufficient time may become essential habitat.	44
	ESC	2	**Escarpment**. Basalt rim-rock, cliffs Category 2—essential habitat to sensitive-status animals (some raptors and bats). Important for deer resting and provides home sites for wood-rats and marmots	78
				Total Exposed Rock: 122 acres
Raptor Nest Structures Raptor, corvid (common raven) nesting habitat.	WJ ESC	1	**Cliffs and Isolated juniper trees** Category 1— Cliff supports active raptor nests and isolated juniper tree supports active raptor nests and a large, inactive stick nest that could be used by sensitive raptors in the future.	<1
				Total Raptor Nest Habitat: <1 acre

TABLE P-1

Habitat Types and Categories Within the Leaning Juniper II North Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
Developed (D)	DB	3, 4, 5, 6	**Oldfield.** Previously cultivated, currently occupied by non-native perennial grass, rabbitbrush/annual grasses and weeds.	Total DB: 189
		3	Category 3—important and limited habitat for wildlife. Fields are in relative good condition and contain more patches of native perennial bunchgrass.	4
		4	Category 4—important habitat for fish and wildlife species.	100
		5	Category 5—Not important habitat or limited, but not as degraded as Category 6. Native habitat that was tilled at some point and farming and or grass seeding attempted periodically through the years. Good deer cover.	85
		6	Category 6—habitat that has low potential to become essential or important habitat for fish and wildlife.	0
	DW	5	**Dryland wheat.** May be seeded or fallow. Horned lark in winter when bare dirt or fallow. Better habitat than Category 6.	111
	DF	6	**Farmyard,** residence, outbuildings including surroundings, or other farming related disturbed area	25
	DQ	6	**Quarry**.	26
	DX	6	**Other disturbed ground. A**n intensively used pasture with poor vegetative cover and lots of weeds.	6
				Total Developed: 357

TABLE P-2

Habitat Types and Categories Within the Leaning Juniper II South Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
Grassland (G) Native bunchgrass or non-native grasslands with weeds.	GA	1, 3, or 4	**Annual grass and weeds with residual native bunchgrass.** Primarily non-native grassland with weeds resulting from past wildfires or land use practices. Patches of native perennial bunchgrass and forbs. Soil depth variable.	Total GA: 468
		1	Category 1—irreplaceable habitat for Washington ground squirrel colony documented in 2005, may support long-billed curlews.	4
		3	Category 3—essential or important habitat that is limited. Shows less grazing pressure and more native plant diversity than Category 4. may support long-billed curlews.	221
		4	Category 4—important habitat, but not limited. Areas show signs of recovery to a level that would provide more value for a variety of common or special status wildlife. With sufficient time and appropriate livestock grazing practices, may become essential habitat. Categories 1 through 4 provide nesting habitat to common horned lark.	243
	GB	2	**Perennial bunchgrass.** Native bunchgrass. Primarily bluebunch wheatgrass and Sandberg's bluegrass. Shrubs, if present, are an inconspicuous component. Soils generally medium to deep. Native bunchgrass sites in good condition that are in deep soils are limited in the general area. Category 2—essential habitat to raptors and other sensitive species. Areas show less grazing pressure and more native plant diversity than Category 3.	Total GB: 29
				Total Grassland: 497

TABLE P-2

Habitat Types and Categories Within the Leaning Juniper II South Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
Shrub-Steppe (SS) Open low shrub, with native and non-native bunchgrass. Some unburned sites have dense sagebrush cover. Some shrub-steppe lost shrub cover in recent fires but shows signs of recovery (trending toward pre-burn shrub conditions).	SSA	1, 2 or 3	**Shrub-grass.** Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grasses. Soils medium to deep. Some sites have been intensively impacted by cattle grazing. This type appears to have potential value for shrub obligate species such as loggerhead shrike.	Total SS-A: 305
		1	Category 1—supports WGS colony documented in 2005, irreplaceable habitat.	21
		2	Category 2—adjacent to WGS colony and essential habitat to that and other sensitive species. Show less grazing pressure and more native plant diversity than Category 3.	266
		3	Category 3—essential or important habitat that is limited. Nesting habitat for western meadowlark. Categories 1 through 3 may also support white-tailed jackrabbit and loggerhead shrike.	18
	SSB	1, 2 or 3	**Open low shrub.** Rabbitbrush-snakeweed-buckwheat (*Eriogonum sp.*)/perennial bunchgrass, usually Sandberg's bluegrass (*Poa sandbergii*), and annual grasses. Most of these areas are formerly SSA attempting to recover from frequent burning. Little current potential for nesting by shrub obligate species (loggerhead shrike).	Total SS-B: 1505
		1	Category 1—supports Washington ground squirrel colony with natal sites or small area of individuals (patches) documented in 2005, irreplaceable habitat.	87
		2	Category 2—adjacent to Washington ground squirrel colony or small areas of individuals (patches) and essential habitat to that and other sensitive species. Show less grazing pressure and more native plant diversity than Category 3 or 4.	1054
		3	Category 3—essential or important habitat that is limited. Categories 1 through 3 are nesting habitat for horned lark and Western meadowlark. May support long-billed curlew and white-tailed jackrabbit.	364
	SSC	3, 4	**Open low shrub (buckwheat)/Sandberg's bluegrass with non-native annual grasses.**	Total SS-C: 5
		3	Category 3—Significant bare ground could be used by reptiles such as the short-horned lizard as well as foraging birds like long-billed curlew, loggerhead shrike, raptors. Essential or important and limited habitat for these species.	5
		4	Category 4—*Erigonum/Poa Sandbergii*—Annual Grass	0

TABLE P-2

Habitat Types and Categories Within the Leaning Juniper II South Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
	SSD	2 or 3	**Purple sage/Sandberg's bluegrass with non-native annual grasses.**	Total SS-D: 33
		2	Category 2—Significant bare ground used by the short-horned lizard and sagebrush lizard as well as foraging birds like long-billed curlew, loggerhead shrike, raptors. Essential and limited habitat for these species.	28
		3	Category 3—Important and limited habitat for above species. Areas show signs of recovery to a level that would provide more value for a variety of common or special status wildlife. With sufficient time, may become essential habitat.	4
	SSU	3	Category 3—Important and limited habitat for above species. Areas show signs of recovery to a level that would provide more value for a variety of common or special status wildlife. With sufficient time, may become essential habitat.	<1
				Total Shrub-Steppe: 1848
Woodland (W) Raptor, corvid and shrub obligate nesting habitat.	WJ	1 or 2	**Woodland consisting of junipers.** Open canopy. Usually in areas with significant sagebrush (big sage) and bare ground with conspicuous stands of trees.	Total W-J: 96
		1	Category 1—supports great-horned owl and other raptor nests documented in 2005. Nesting potential for other raptors in future years	<1
		2	Category 2—essential and limited woodland habitat without raptor nests. Categories 1 and 2 support loggerhead shrike foraging and nesting potential. Bare ground of value to short-horned lizard, sagebrush lizard. Wintering habitat for American robins, Townsend's solitaire, waxwings (two species), and mountain bluebirds.	95
	WL	2	**Woodlot consisting of non-native deciduous trees.** Tree species typically are black locust. Open canopy (trees not dense). Several to many trees in relatively small well defined areas. Category 2—essential and limited woodland habitat for birds and mammals but trees are without raptor nests.	Total W-L: 3
				Total Woodland: 99

TABLE P-2

Habitat Types and Categories Within the Leaning Juniper II South Analysis Area

Primary Habitat Type (Mapping Code) General Description	Subtype	Habitat Category	Subhabitat Type Description	Acres within Analysis Area
Developed (D)	DB	3, 4 or 6	**Oldfield.** Previously cultivated, currently occupied by non-native perennial grass, rabbitbrush/annual grasses and weeds.	Total D-B: 110
		3	Category 3—important and limited habitat for wildlife. Fields are in relative good condition and contain more patches of native perennial bunchgrass.	4
		4	Category 4—important but not limited habitat for wildlife. Areas show signs of recovery to a level that would provide more value for common or special status wildlife. With sufficient time and appropriate livestock grazing practices, may become essential habitat. Categories 3 and 4: Common species—horned lark, Western meadowlark, may include savannah sparrow.	100
		6	Category 6 D-B is highly degraded with very low to no potential to become essential or important wildlife habitat.	6
	DW	6	**Dryland wheat.** May be seeded or fallow. Horned lark in winter when bare dirt or fallow.	2871
	DF	6	**Farmyard,** residence, or outbuildings including surrounds.	22
	DL	6	**Landfill**	15
	DQ	6	**Quarry**	19
	DX	4 or 6	**Other disturbed ground.**	Total D-X: 51
		4	Category 4 appears to be a recent grassland seeding and could become important wildlife habitat.	34
		6	Category 6 is an intensively used pasture with poor vegetative cover.	17
				Total Developed: 3088

TABLE P-10B
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts (Worst Case)		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland, escarpment)	WJ, ESC	<1	0.00	0.00
Category 2				
Escarpment	ESC	78	0.00	0.00
Sagebrush-Rabbitbrush-Snakeweed/bunchgrass-annual grass	SSA	0	0.74[3]	0
Open low shrub	SSB	27	1.43	0.37
Bitterbrush/Buckwheat, Bunchgrass-Annual grass	SSE	244	30.56	2.29
Perennial bunchgrass	GB	3	0.00	0.00
			32.73	
Category 3				
Oldfield	DB	4	0.03	0.00
Shrub-grass	SSA	14	0.30	0.23
Open low shrub	SSB	2,321	154.21	15.57
			154.54	
Category 4				
Oldfield[4]	DB	100	1.13	0.00
Exposed basalt	EB	44	2.92	0.00
Annual grass and weeds with residual native bunchgrass	GA	16	2.55	0.63
			6.60	
Category 5				
Oldfield	DB	85	10.82	1.20
Dryland wheat	DW	111	0.00	0.00
			10.82	
Category 6				
Oldfield	DB	0	0.77[3]	0
Farmyard	DF	25	0.24	0.23
Quarry	DQ	26	0.12	0.06
Other disturbed ground	DX	6	2.96	0.00
			4.09	
			208.78	20.58

TABLE P-10B
Habitat Types and Categories in the Leaning Juniper II North Analysis Area with Maximum Possible Area of Impact

[1]Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, Operations and Maintenance facility or facilities, and permanent access roads.

[3] Temporary impacts result from the widening of a portion of Rattlesnake Road between LJII North and LJII South. This area is not actually located within the LJII North lease boundary, but the widening is necessary for construction of LJII North. Thus the total acreage within the lease boundary is 0, and the permanent acreage disturbed also is 0.

[4]A small portion of the temporary disturbance associated with crane paths is geographically located in LJII South. However, because these crane paths are necessary for construction of LJII North, the crane paths temporary disturbances are included in the Leaning Juniper II North total. The total acres identified for the Oldfield (DB)—Category 4 is the total for Leaning Juniper II South.

Note:
Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as represented in Tables C-4 and C-5. The total areas in Tables C-4 and C-5 are not exact estimates of the Facility's total impact to land and habitat. Tables C-4 and C-5 do not account for overlapping impact areas. Consequently, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using GIS, overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

TABLE P-15B

Habitat Types and Categories in the Leaning Juniper II South Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Category 1				
Raptor nests (Juniper woodland and escarpment)	WJ, ESC	<1	0.00	0.00
Annual grass and weeds with residual native bunchgrass	GA	4	0.00	0.00
Shrub-grass	SSA	21	0.00	0.00
Open low shrub	SSB	87	0.00	0.00
Category 2				
Perennial bunchgrass	GB	29	11.32	0.74
Shrub-grass	SSA	266	47.21	6.69
Open low shrub	SSB	1054	109.21	8.54
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	28	1.86	0.00
Juniper woodland	WJ	95	1.02	0.40
Deciduous woodland	WL	3	0.10	0.07
			170.72	16.44
Category 3				
Oldfield	DB	4	4.44	3.69
Annual grass and weeds with residual native bunchgrass	GA	221	0.00	0.00
Shrub-grass	SSA	18	5.00	0.00
Open low shrub	SSB	364	35.72	2.64
Open low shrub (buckwheat)/Sandberg's bluegrass with non-native annual grasses	SSC	5	0.44	0.32
Purple sage/Sandberg's bluegrass with non-native annual grasses	SSD	4	0.00	0.00
Shrub-Steppe	SSU	0.25	0.05	0
			46.65	6.65
Category 4				
Oldfield	DB	100	16.91	1.04
Other disturbed ground	DX	34	0.04	0.03

TABLE P-15B

Habitat Types and Categories in the Leaning Juniper II South Analysis Area with Maximum Possible Area of Impact

Category and Habitat Description	Habitat Subtype	Impacts		
		Total Acres Within Lease Boundary	Temporary[1] Facilities (Acres Disturbed)	Permanent[2] Facilities (Acres Disturbed)
Annual grass and weeds with residual native bunchgrass	GA	243	7.63	0.40
Erigonum/Poa Sandbergii—Annual Grass	SSC	0	0.21[3]	0
			24.79	1.48
Category 6				
Oldfield	DB	6	0.00	0.06
Farmyard	DF	22	0.35	
Landfill	DL	15	0.00	0.00
Quarry	DQ	19	0.71	0.00
Dryland wheat	DW	2871	246.68	18.87
Other disturbed ground	DX	17	0.92	0.11
			248.66	19.04
			490.82	43.61

[1] Temporary facilities include access roads, construction areas, access for overhead line construction, installation sites for underground collector cables, and equipment laydown areas for individual turbines, entire strings of turbines, and laydown areas for in-transit towers, cranes, and miscellaneous construction equipment.

[2] Permanent facilities include turbine pads and towers, substation, meteorological towers, operations and maintenance facility or facilities, and permanent access roads.

[3] This temporary impact results from the widening of a roadway located within the Leaning Juniper I lease boundary. The roadway is needed to access Leaning Juniper II South. The total acreage within the Leaning Juniper II South lease boundary is 0, and the permanent acreage disturbed also is 0.

Note:
Because some Facility impact areas overlap, the total Facility disturbance to habitat is less than the sum of all Facility impact areas, as shown in Tables C-4 and C-5. The total areas presented in Tables C-4 and C-5 do not provide a precise estimate of the Facility's total impact to land and habitat. Because Tables C-4 and C-5 do not account for overlapping impact areas, they show a larger overall impact than will occur. When calculating the impacts in the Exhibit P tables (Tables P-10 and P-15) using GIS, overlapping impact areas were not double-counted. As a result, the tables in Exhibit P provide a more accurate total calculation of impact to habitat.

APPENDIX C, ATTACHMENT 4

Revised Figure for Grassland Bird Study

Figure 1

Area to be studied for Grasslands Birds during Operations Phase

Leaning Juniper II
Wind Power Facility

Habitat Subtypes

- (DB) Oldfield
- (DC) CRP
- (DF) Farmyard, residence, or outbuildings including surrounds
- (DL) Landfill
- (DQ) Quarry
- (DW) Dryland Wheat whether sowed or fallow
- (DX) Other
- (EB) Exposed Basalt
- (ESC) Escarpment
- (GA) Annual Grass
- (GB) Perennial Bunchgrass
- (SD) Sandy soils, very limited vegetation, shifts with erosion
- (SSA) Sagebrush-Rabbitbrush-Snakeweed/bunchgrass-annual grass
- (SSB) Rabbitbrush-Snakeweed-Erigonum/bunchgrass
- (SSC) Erigonum/Poa sandbergii-Annual Grass
- (SSD) Purple sage/Poa sandergii-Annual Grass
- (SSE) Bitterbrush/eriogonum, native bunchgrass, non-native annual grass
- (SSU) Shrub-steppe undetermined sub-type
- (WJ) Juniper Woodland
- (WL) Black Locust Woodlot

Slatt-John Day No 1 (500 kV)

Legend

- Grassland Bird Study Area

Proposed Permanent Facilities

- Proposed Turbines - Leaning Juniper II North
- Proposed Turbines - Leaning Juniper II South
- Proposed Permanent Met Tower

Proposed Roads - Leaning Juniper II

- New Road
- Existing Road - Improvements Needed

Alternate Routes - Leaning Juniper II

- Existing Road - Improvements Needed
- New Road

Preferred Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line

Alternate Collector Routes

- Underground 34.5-kV Line
- Overhead 34.5-kV Line
- Proposed Substation
- Proposed O&M Facility and Laydown Area
- Alternate O&M Facility and Laydown Area
- BPA Jones Canyon Substation

Proposed Temporary Facilities

- Proposed Crane Path
- Proposed 2-Acre Temporary Staging Area
- Proposed 5-Acre Temporary Staging Area

Existing Facilities

- Major Roads
- Existing LJ I Roads
- Existing Road - Not Used for Construction
- Railroads
- Existing Transmission Line
- Intermittent Streams
- 1-mile Habitat Study Area
- Leaning Juniper II - North
- Leaning Juniper II - South

N W E S

PPM Energy
A ScottishPower Company

0 1,000 2,000
Feet

* Note:
-Habitat boundaries not surveyed.

Field Data Collected by:
Northwest Wildlife Consultants, Inc.

File Path: Z:\Projects\OR-WA\Leaning Juniper\MapDocuments\Report Figures\EFSC (LJII)\Misc\Figure 1 - Area to be studied for Grasslands Birds during Operations Phase.mxd, Date: March 14, 2007 2:03:58 PM