

**Leaning Juniper II Wind Power Facility
2017 Washington Ground Squirrel Monitoring**



Prepared for:

Leaning Juniper Wind Power II, LLC
1125 NW Couch St., Suite 700
Portland, Oregon 97209

Prepared by:

Rick Gerhardt and Karen Kronner
Northwest Wildlife Consultants, Inc.
815 NW 4th St.
Pendleton, Oregon 97801



September 18, 2017

Executive Summary

The Leaning Juniper II Wind Power Facility is located south of Arlington in Gilliam County, Oregon and is owned and operated by Leaning Juniper Wind Power II, LLC, which is owned by Avangrid Renewables, LLC (previously Iberdrola Renewables, LLC). Commercial operations began in June 2011. The Project is comprised of two areas, referred to as Leaning Juniper IIA and IIB. The 2009 Amended Leaning Juniper Wind Facility Site Certificate contains a study plan for operations phase wildlife monitoring (Wildlife Monitoring and Mitigation Plan). That plan was amended November 6, 2015, and calls for Washington ground squirrel monitoring in 2017 and every three years subsequently for the life of the Project (EFSC, 2015). This report summarizes methods and results from 2017 Washington ground squirrel monitoring conducted by Northwest Wildlife Consultants, Inc. on Leaning Juniper IIA and IIB.

General habitat types present within the Project boundary are agricultural (non-irrigated farmland used for small grain crop production every other year), non-agricultural but developed areas and features (landfill, gravel quarry, roads, wind project facilities) and undeveloped (shrub-steppe, native perennial grassland, non-native annual grassland and revegetated grassland). Areas monitored for Washington ground squirrels are in shrub-steppe, native perennial grassland, non-native annual grassland and revegetated grassland within the Leaning Juniper II Project boundary.

The primary objective of the post-construction monitoring of Washington ground squirrels on Leaning Juniper IIA, as stated in Attachment 2 of the Incidental Take Permit (LJWP II, 2007b), was to determine the current status of the pre-construction baseline sites. The nine baseline sites described in the ITP application are areas of historical Washington ground squirrel use, 2005–2007. The life-of-project monitoring area includes the historical area of use boundary plus a 500-foot buffer in suitable habitat within the Project boundary. These were monitored for WGS occupancy and level of use twice in 2017, once during April and once during May. Methods matched those defined in the ITP and in 2011 and 2014, the previous years of reporting on these areas of use (Downes et al., 2012; Downes and Gritski, 2014). Monitoring also included an assessment of the current land use and habitat quality. None of the monitored areas showed signs of 2017 WGS occupancy. Based on Northwest Wildlife Consultant's experience onsite with Washington ground squirrel studies since 2003, and most recently in habitat adjacent to Leaning Juniper IIA in 2016 (Gerhardt and Kronner, confidential report, 2016), continuing encroachment by exotic grasses and weeds may be rendering some of these areas less suitable for ground squirrel occupancy. No change in land use within the monitored areas since 2014 was noted.

The Leaning Juniper IIB monitoring area is defined as the historical area of use and, starting in 2017, includes a 500-foot buffer of the historical sites in suitable habitat within the Project boundary. The buffering of ten historical use sites yielded six distinct survey areas. Monitoring also includes an assessment of the current land use and habitat quality. Suitable habitat was surveyed twice during 2017, once in April and once in May. Some significant land use changes have occurred between early 2015 and early 2017. At four of the six survey areas conversion to agriculture has left very little (two areas) or no (two areas) suitable WGS habitat but were assessed for suitability and where suitable, surveyed twice. No WGS or sign of use was found. At the other two survey areas (one incorporating historical use sites 16 and 17 and the other incorporating historical use sites 22a and b and 24), WGS occupancy persisted in 2017.

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 METHODS	2
2.1 Leaning Juniper IIA	3
2.2 Leaning Juniper IIB	3
3.0 RESULTS	3
3.1 Land Use Changes 2017 compared to 2014, Erosion, and Grazing	3
3.2 Intransit Observations	3
3.3 Leaning Juniper IIA WGS and Habitat	4
3.4 Leaning Juniper IIB WGS and Habitat	4
4.0 DISCUSSION	4
4.1 Leaning Juniper IIA	4
4.2 Leaning Juniper IIB	4
5.0 ACKNOWLEDGEMENTS	5
6.0 REFERENCES	5
7.0 FIGURES	9

Tables

Table 1. 2017 Washington ground squirrel (WGS) monitoring at the Leaning Juniper IIA Wind Power Facility and previous WGS level of use within the 2017 surveyed areas.	7
Table 2. 2017 Washington ground squirrel (WGS) monitoring at the Leaning Juniper IIB Wind Power Facility.	8

Figures

Figure 1. Leaning Juniper IIA Wind Power Facility Washington ground squirrel monitoring areas and results for 2011 and 2014.	9
Figure 2. Leaning Juniper IIA Wind Power Facility 2017 Washington ground squirrel monitoring areas.	9
Figure 3. Leaning Juniper IIB Wind Power Facility 2017 Washington ground squirrel monitoring areas.	9
Figure 4. (Photo) Absence of Washington ground squirrels at Leaning Juniper IIA survey area 4b is likely associated with increasing density of exotic cheatgrass, tarweed, and tumble mustard.	10
Figure 5. (Photo) Habitat occupied by Washington ground squirrels at Leaning Juniper IIB Wind Power Facility in spring of 2017.	11

1.0 INTRODUCTION

This report presents results of the Washington ground squirrel (WGS, *Urocitellus washingtoni*) monitoring conducted in 2017 at Leaning Juniper IIA and IIB. This monitoring was implemented in compliance with the Wildlife Monitoring and Mitigation Plan (WMMP, Nov 20, 2009, amended WMMP, November 6, 2015) to conform to Permit Conditions #87 and #88 of the Final Order of the Site Certificate (LJWPPII, 2009a). The species current status in Oregon is Oregon State Endangered and federal Species of Concern (ORBIC, 2016 and USFWS, 2016).

The Leaning Juniper II Wind Power Facility (LJF; also referred to as the "Project" in this report) is owned and operated by Leaning Juniper Wind Power II, LLC (LJWPPII) which is owned by Avangrid Renewables, LLC (previously Iberdrola Renewables, LLC). A permit ("Site Certificate") for construction and operations was issued to LJWPPII by the Oregon Energy Facility Siting Council in 2007 (LJWPPII, 2007a) and an Amended Site Certificate was issued in 2009 (LJWPPII, 2009a). The Final Order of the Site Certificate contains Permit Conditions for the pre-construction, construction and post-construction phases. Conditions #87 and #88 specify wildlife monitoring and refer to a study plan for the operations phase wildlife monitoring (Wildlife Monitoring and Mitigation Plan, WMMP). The WMMP was amended November 6, 2015, and calls for Washington ground squirrel monitoring in 2017 and every three years subsequently for the life of the Project (EFSC, 2015).

The Project is located south of Arlington, Gilliam County, Oregon. Commercial operations began in June 2011. The Project consists of 117 wind turbines, three non-guyed meteorological (met) towers and other related or supporting facilities as described in the Site Certificate. The Project consists of two areas, referred to as Leaning Juniper IIA and IIB. Leaning Juniper IIA has 43 Suzlon S88 2.1-megawatt (MW) turbines for an installed capacity of 90.3 MW. Leaning Juniper IIB has 74 GE 1.5-MW sle turbines for an installed capacity of 111 MW. Combined, the Project has an installed capacity of 201.3 megawatts. Substantial construction completion of Leaning Juniper IIA facilities occurred by October 20, 2010 and IIB facilities were completed on December 20, 2010. Commercial operation of the full Project started on June 9, 2011.

General land cover/habitat types present within the Project boundary (also referred to as the Facility boundary) continue to be agricultural (non-irrigated farmland used for small grain crop production every other year), non-agricultural but developed areas and features (landfill, gravel quarry, roads, wind project facilities) and undeveloped (shrub-steppe, native perennial grassland, non-native annual grassland and revegetated grassland). Some of the revegetated grassland (prior farmland) may be enrolled in the federal Conservation Reserve Program (CRP). Scattered juniper trees and rock outcrops are also present. Areas monitored for Washington ground squirrels are in shrub-steppe, native perennial grassland, non-native annual grassland and revegetated grassland.

Within the northern portion of the Facility boundary, snakeweed (*Gutierrezia sarothrae*) is the dominant shrub where antelope bitterbrush (*Purshia tridentata*) is not present. Various perennial grasses and forbs along with some non-native grasses and forbs such as cheatgrass (*Bromus tectorum*) and tall tumbled mustard (*Sisymbrium altissimum*) are present. Cheatgrass varies from being a small grass component in some areas to being the dominant grass species in other areas. Some remnants of big sage (*Artemisia tridentata*) are found throughout the northern area. Gray rabbitbrush (*Ericameria nauseosa*) is also present in some areas along with scattered medium to large sized western junipers (*Juniperus occidentalis*).

Within the southern portion of the Facility boundary, the dominant shrub is also snakeweed, with scattered gray rabbitbrush and the occasional big sage also present. Native perennial grasses are present along with non-native cheatgrass. Cheatgrass is a secondary grass component in some areas while being the dominant grass species in other areas. Within the Facility boundary, some of the lowest densities of cheatgrass are within the revegetation areas around the turbine pads and roads.

For the IIA portion of the Project, long-term intensive post-construction monitoring is required under the Washington Ground Squirrel Incidental Take Permit (ITP) issued as Attachment E to the Final Order on the Project Application (LJWPPII, 2007b). To comply with Condition #88 a concurrence letter for the 2007 ITP application was issued to LJWPPII by the Oregon Department of Fish and Wildlife in June 2008. For the IIB portion of the Project, no ITP was issued. The primary objective of the post-construction monitoring as stated in Attachment 2 of the LJII-A ITP (LJWPPII, 2007b) is to determine the current status of the pre-construction baseline sites. The 2015 amended WMMP specifies an additional 500 feet around the IIB sites be monitored starting in 2017 and for the future outyear monitoring. In addition, it specifies that IIA and IIB will be monitored in the same years.

Washington ground squirrel surveys (monitoring of prior recorded sites) were to be conducted during the first year following construction. The surveys were initiated in March 2011 and repeated in 2014, three years post-construction. As specified in the 2009 WMMP, the historical areas on IIA were to be monitored during the year following construction and every three years thereafter for the life of the facility. At IIB, the WGS activity assessments at specific areas were to occur during the WGS active period in the first and fourth years of operation and every five years thereafter for the life of the Project. The 2015 WMMP specifies IIA and IIB be monitored in the same year every three years for the life of the Project and an additional 500 feet around the IIB sites be included in the monitoring for consistency with IIA methods.

2.0 METHODS

Washington ground squirrel (WGS) monitoring in 2017 at Leaning Juniper II Wind Power Facility consists of monitoring specific areas of use (sites or colonies and associated buffers) on the IIA and IIB portions of the Project (Figures 1, 2 and 3). Consistent with prior monitoring, biologists determined the current habitat suitability for WGS and recorded land use activity along with any evidence of Project-related conditions that might increase erosion or result in a decline in vegetation quality, thus adversely affecting a WGS colony or its activity (LJWPPII, 2009b and EFSC, 2015).

The following describes survey methods used at IIA and IIB in each monitoring year. Biologists looked and listened for WGS and surveyed for active holes and potential natal burrows, recording the locations of these using a handheld GPS receiver. They also documented habitat changes and areas of erosion as specified in the WMMP. All detections were subsequently entered into a Geographic Information System (GIS). Washington ground squirrel areas of use were delineated and assigned a level of use according to the following classification system that was also used by NWC for the pre-construction studies: very low use = less than one active hole per hectare, low use = 1–5 active holes per hectare, medium = 5–25 active holes per hectare, or high = 25 or more active holes, very high = 250 or more active holes per hectare. Detections were recorded for active holes at least 15 meters from other active holes and each detection included notes on how many active holes were within 15 meters of the detection. If multiple detections were recorded for an area of use, a delineated boundary was drawn in GIS. In delineating areas of use in GIS, a buffer of 15 meters was placed on the outside of the outer detections to be consistent with the methods used for recording detections during pre-construction field surveys. If any

WGS were documented while in transit to and from the survey areas, they were recorded and mapped in GIS.

2.1 Leaning Juniper IIA

Intensive monitoring for Washington ground squirrels on the IIA portion of the Project consisted of a biologist monitoring a survey area defined in the ITP as sites identified during the pre-construction surveys (2005 through 2007) and the buffer area within 500 feet in all directions from the identified WGS sites in suitable habitat (Figures 1 and 2). The survey areas were only within the IIA Project boundary and in areas where suitable habitat had not been permanently altered by spring 2017 (Figure 2). Habitat within portions of WGS 4c area of use (the historically active area of use) and the 500-foot survey buffer assigned to the site were permanently converted to commercial use by the landowner after the initial 2005 WGS surveys were conducted (Downes et al., 2012). Because the habitat was no longer suitable for WGS, these areas were not surveyed in 2011, 2014, or 2017. The 2017 survey areas are identical to those surveyed in 2011 (Downes et al., 2012) and 2014 (Downes and Gritski, 2014).

The term “area of use” for IIA is defined as the delineated area that Washington ground squirrels were determined to be using during the pre-construction surveys. WGS areas of use and their associated 500-foot survey buffers inside the Leaning Juniper IIA boundary that were surveyed during 2011, 2014, and 2017 surveys were those listed in the ITP (LJWP II, 2007b). They are: 1, 4a, 4b, 4c, 4d, 4e, 5, 6, and 8 (Figures 1 and 2). The experienced biologist walked the survey areas twice during the spring of 2017. The first survey occurred March 12 and 17, a time at which adults are expected to be active but before most juvenile squirrels would have emerged aboveground. The second survey occurred May 17 and 18, during the typical peak WGS activity. The biologist walked transects spaced at 30–50 meters apart, as specified in the ITP. Transect widths were consistent with survey efforts during 2011 surveys (Downes et al., 2012) and 2014 surveys (Downes and Gritski, 2014).

2.2 Leaning Juniper IIB

Monitoring at IIB included ten pre-construction Washington ground squirrel areas of use—13, 14, 15a, 15b, 16, 17, 22a, 22b, 23, and 24. In 2017 (though not in prior years), these were buffered by 500 feet. This resulted in six distinct survey areas (Figure 3), each of which encompassed one, two or three historical areas of use. At four of the six survey areas conversion to agriculture has left very little (two areas) or no (two areas) suitable WGS habitat but were fully assessed for suitability and where suitable, were surveyed for sign of use twice. Surveys were surveyed on April 19 and again on May 22, 2017. Survey methods were the same as those described above for Leaning Juniper IIA.

3.0 RESULTS

3.1 Land Use Changes 2017 compared to 2014, Erosion, and Grazing

As in prior survey years, cattle were grazed on most WGS areas of historical use at IIA and IIB (at least where grassland was still present). Within the monitored areas no evidence of erosion resulting from Project related activities was noted at either Project during 2017 surveys. Some significant land use changes had occurred at IIB since the last monitoring, however; these are described below.

3.2 Intransit Observations

No WGS were observed while travelling onsite between surveys areas.

3.3 Leaning Juniper IIA WGS and Habitat

No WGS activity was detected in 2017 at any of the nine Leaning Juniper IIA survey areas (Figure 2, Table 1). However, because portions of the habitat remaining in 2017 at the original 2005 WGS areas 1, 4d, 4e and 5 lie outside of the Project's leased land boundary (Figure 1), it cannot be determined if the entire 2005 WGS four areas of use were devoid of use during 2017. In general, LJ-IIA survey areas previously occupied by WGS have seen an increase in vegetative density over the years (Figure 4); this likely makes these areas less suitable for occupancy by WGS (see discussion below).

3.4 Leaning Juniper IIB WGS and Habitat

Ten WGS areas of use are specified in the WMMP (LJWP II, 2009b and the 2015 WMMP) for post-construction monitoring and assessments; these are 13, 14, 15a, 15b, 16, 17, 22a, 22b, 23 and 24 (Figure 3). Starting in 2017, a buffer of 500 feet was established around each of these; this yielded six distinct survey areas (Figure 3), each of which encompassed one (13, 14 and 23), two (15a, 15b, 16, 17), or three (22a, 22b, 24) areas of use that were previously monitored. All suitable habitat within the resulting perimeters was surveyed (Figure 3).

At four of the six 2017 survey areas, recent land use changes (plowing, tilling to convert to agricultural use within the original sites as well as the added buffers) rendered most (in two cases) or all (in two cases) of the 2017 survey area land unsuitable for supporting WGS. At the two more easterly survey areas (those associated with sites 16 and 17 and with sites 22a, 22b, and 24), the habitat within the original previously-monitored areas remained suitable for WGS (Figure 4) and continued occupancy by this species was documented (Table 2).

Of the 10 areas specified in the WMMP, two (17 and 22b) had 2017 WGS activity within the historical area of use, and three others (16, 22a, and 24) had no WGS at the historical area of use but did have WGS activity within the 500-foot buffer additional survey area of the historical area of use (Table 2). At these two survey areas, the majority of the land encompassed by the added 500-foot buffer constitutes suitable WGS habitat (Figure 3).

4.0 DISCUSSION

4.1 Leaning Juniper IIA

Neither individuals nor colonies of ground squirrels of the genus *Urocitellus* are completely sedentary year to year, and the absence of WGS from areas they occupied as far back as a decade ago is not unexpected. Nonetheless, habitat alterations and land use and changes in vegetation characteristics may preclude the future suitability of areas that previously supported this species, as at Leaning Juniper IIA in the past ten years. In regards to non-use in 2017, this WGS breeding season followed a winter and spring of higher than normal precipitation, and native and non-native grasses were abundant, dense and tall during the survey period. Whereas WGS prefer areas of native grass and forb species that include patches of low vegetation and bare ground (Carlson et al., 1980), the presence and density of cheatgrass, tarweed, and tumble mustard (Figure 4) likely leads to the avoidance by squirrels of otherwise suitable (and previously occupied) soils. Further monitoring of these areas will occur every three years, as specified in the ITP, with the next monitoring scheduled for spring of 2020.

4.2 Leaning Juniper IIB

Monitoring in 2017 of the ten sites active during pre-construction surveys and described in the WMMP yielded mixed results. For four of six 2017 survey areas—and five of the ten

originally monitored WGS use areas—recent land use changes have rendered the areas unsuitable for supporting WGS. For the other two 2017 survey areas (encompassing five originally monitored WGS use areas), land use was unchanged within the originally monitored areas. As of the last field survey day (May 22, 2017) habitat in these two survey areas has persisted as mostly healthy native grassland and shrub-steppe. WGS were detected in both of these survey areas, at or very near two of the historical use areas, and within 500 feet of the other three historical use areas. As specified in the WMMP (LJWP II, 2009b) amended November 6, 2015 (EFSC, 2015), assessment of the 10 WGS areas and associated 500-foot buffers will occur during the active WGS periods every three years for the life of the Project. Habitat in areas that were known in 2017 as having been rendered useless for supporting WGS will be checked in the next survey year to confirm current land alterations and lack of habitat suitability and to delineate the current suitability. The next monitoring is scheduled for spring of 2020.

5.0 ACKNOWLEDGEMENTS

The authors thank the landowners for providing access.

6.0 REFERENCES

- Carlson L., G. Geupel, J. Kjølmyr, J. MacIver, M. Morton, and N. Shishido. 1980. Geographical range, habitat requirements, and a preliminary population study of *Spermophilus washingtoni*. Final Technical Report, National Science Foundation Student-originated Studies Program. 24 pp.
- Downes, S. 2013. 2013 Leaning Juniper Washington Ground Squirrel Monitoring of 2005 Sites for ODFW-issued Incidental Take Permit Requirements. Prepared for PacifiCorp Energy, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon.
- Downes, S. and B. Gritski. 2014. Leaning Juniper II Wind Power Facility 2014 Wildlife Monitoring. Prepared for Leaning Juniper II, LLC, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon.
- Downes, S., B. Gritski, B. Anderson and S. Zielin. 2012. Leaning Juniper II Wind Power Facility Wildlife Monitoring Study Annual Report. March 2011–July 2012. Prepared for Iberdrola Renewables, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon.
- Downes, S., B. Gritski and S. Woods. 2013. Leaning Juniper II Wind Power Facility Wildlife Monitoring Study. January 2011–July 2013. Prepared for Leaning Juniper II, LLC, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon. *In* 2013 Annual Report for Leaning Juniper IIA and Annual Report for Leaning Juniper IIB. Report submitted in 2014 to the Oregon Department of Energy by Leaning Juniper Wind Power II, LLC.
- Energy Facility Siting Council (EFSC). 2015. Leaning Juniper IIA and IIB Wind Projects: Ongoing Wildlife Monitoring and Mitigation Plan (November 6, 2015). <http://www.oregon.gov/facilities-safety/facilities/Facilities%20library%20Wildlife%20Monitoring%20and%20Mitigation%20Plan.pdf>.
- Gritski, B. K. Kronner, and S. Downes. 2008. Leaning Juniper Phase I Wind Power Project, 2006–2008. Wildlife Monitoring Final Report. Prepared for PacifiCorp Energy, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon.

- Gritski, B. 2010. 2010 Leaning Juniper Washington Ground Squirrel Monitoring of 2005 Sites for ODFW-issued Incidental Take Permit Requirements. Prepared for PacifiCorp Energy, Portland, Oregon. Prepared by Northwest Wildlife Consultants, Inc., Pendleton, Oregon.
- Leaning Juniper II Wind Power (LJIWP), LLC. 2007a. Site Certificate for the Leaning Juniper II Wind Power Facility. September 21, 2007.
- Leaning Juniper Wind Power II (LJWP II), LLC. 2007b. Incidental Take Permit Application For State-Listed, Washington Ground Squirrel (*Spermophilis washingtoni*).
- Leaning Juniper Wind Power II (LJWP II), LLC. 2007c. Application for Site Certificate for the Leaning Juniper Wind Power Facility. Submitted to the Oregon Energy Facility Siting Council. Application filed on May 15, 2007. Prepared by PPM Energy, Inc., CH2M Hill and Northwest Wildlife Consultants, Inc.
- Leaning Juniper Wind Power II (LJWP II), LLC. 2009a. First Amended Site Certificate and Final Order on amendment #1 for the Leaning Juniper II Wind Power Facility issued by the Oregon Energy Facility Siting Council.
- Leaning Juniper Wind Power II (LJWP II), LLC. 2009b. Leaning Juniper II Wind Project: Wildlife Monitoring and Mitigation Plan. November 20, 2009. Oregon Energy Facility Siting Council of the State of Oregon, Final Order on Amendment #1-Attachment A. First Amended Site Certificate for the Leaning Juniper II Wind Power Facility.
- Oregon Biodiversity Information Center (ORBIC). 2016. Rare, Threatened and Endangered Species of Oregon.
- United States Fish and Wildlife Service (USFWS). 2016. USFWS Oregon Species Statewide List. <https://www.fws.gov/oregonfwo/promo.cfm?id=177175701>

7.0 TABLES

Table 1. 2017 Washington ground squirrel (WGS) monitoring at the Leaning Juniper IIA Wind Power Facility and previous WGS level of use within the 2017 surveyed areas.

WGS Area of Use	2017 Level of Use	2014 Level of Use¹	2011 Level of Use²	2010 Level of Use³	2007 Level of Use⁴	2005 Level of Use⁴
1	Absent	Absent	Absent	Low	High	High
4a	Absent	Absent	Absent	Absent	Low	Low
4b	Absent	Absent	Absent	Absent	Low	Medium
4c	Absent	Absent	Absent	Low	High	High
4d	Absent	Absent	Absent	Absent	Medium	High
4e	Absent	Absent	Absent	Absent	Medium	High
5	Absent	Absent	Absent	Absent	Absent	High
6	Absent	Very Low	High	High	Medium	Very Low
8 ⁵	Absent	Absent	Absent	Not Surveyed	Not Surveyed	Not Surveyed

Level of Use definitions: Absent = no active holes detected during either survey, Very Low = less than 1 active hole per hectare, Low = 1–5 active holes/hectare, Medium = 5–25 active holes/hectare, High = 25 or more active holes/hectare.

¹ Information from Downes and Gritski, 2014

² Information from Downes et al., 2012

³ Information from Gritski, 2010

⁴ Information from Gritski et al., 2008

⁵ From ITP application (LJWP II, 2007b) Figure 1 (Q-1) dated July 11, 2007 and Figure 2 (Q-6) dated September 15, 2006. Not surveyed from mid-March–end of May. Was likely active in 2005, judging by sign of use noted in December 2005. Heard and saw two or three Washington ground squirrel on February 16, 2006. No indication of natal activity (female with young).

Table 2. 2017 Washington ground squirrel (WGS) monitoring at the Leaning Juniper IIB Wind Power Facility.

WGS Area of Use¹	2017 Status²	2014 Status²	2011 Status²
13	Little Habitat	Absent	Absent
14	No Habitat	Absent	Present
15a	Little Habitat	Present	Absent
15b	Little Habitat	Present	Absent
16	Present within 500ft	Present	Absent
17	Present	Present	Present
22a	Present within 500ft	Present	Absent
22b	Present	Present	Absent
23	No Habitat	Absent	Absent
24	Present within 500ft	Present	Absent

¹ In 2017 habitat within an additional 500 feet around each area was field assessed for suitability and if suitable, was also surveyed.

² Absent = no active holes detected during either survey (but suitable habitat persists);

Present = at least one active hole found at or very near area of historical use;

Present within 500 feet = no holes present at area of historical use but at least one active hole within 500 feet;

Little Habitat = Conversion to agriculture has resulted in no suitable habitat at area of historical use but some remaining within 500 feet; survey conducted in suitable.

No Habitat = Tilling, plowing for agriculture use has resulted in no suitable habitat within the historical monitored areas as well as within the additional 500 feet added in 2017; assessed but not surveyed.

7.0 FIGURES

Figure 1. Leaning Juniper IIA Wind Power Facility Washington ground squirrel monitoring areas and results for 2011 and 2014.

(Confidential - submitted under separate cover, previously submitted with the 2014 report)

Figure 2. Leaning Juniper IIA Wind Power Facility 2017 Washington ground squirrel monitoring areas.

(Confidential - submitted under separate cover)

Figure 3. Leaning Juniper IIB Wind Power Facility 2017 Washington ground squirrel monitoring areas.

(Confidential - submitted under separate cover)

Figure 4. Absence of Washington ground squirrels at Leaning Juniper IIA survey area 4b is likely associated with increasing density of exotic cheatgrass, tarweed, and tumble mustard.



Figure 5. Habitat occupied by Washington ground squirrels at Leaning Juniper IIB Wind Power Facility in spring of 2017.

