LESSER PRAIRIE-CHICKEN SURVEYS

ON THE NATIONAL ENRICHMENT FACILITY

PROPOSED PROJECT SITE

Prepared for:

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Purpose of Work

The purpose of this project was to conduct a baseline survey for Lesser Prairie-Chickens (*Tympanuchus pallidicinctus*) in the proposed National Enrichment Facility (NEF) site near Eunice, New Mexico (T21S, R38E, Section 32).

Methods

Lesser Prairie Chicken (LPCH) surveys were conducted at six listening stations. Stations were placed in and around the NEF site and spaced 0.5 to 1.0 miles apart (Figure 1; Table 1). Station locations were marked with a Garmin geographic positioning system (GPS) in differential correction mode.

Surveys were designed to identify the sounds of courting males on leks during the lekking period. Between ½ hour before sunrise and 2 hours after sunrise, each station was surveyed for up to 20-minutes. The close spacing of points and long survey duration maximized the ability to detect LPCHs. The stations were surveyed in the opposite order on the first and second mornings. Field data sheets are attached to the end of this document. All bird species detected in the survey area were recorded and are listed in the Appendix.

Vegetation in the survey area was evaluated for potential to provide LPCH habitat. Vegetation transect surveys conducted in 2003 were reviewed, and a general assessment of potential habitat in the area was made.

Table 1. Survey station latitude and longitude in decimal degrees (WGS 84 datum).

Survey Station	Latitude	Longitude
LP1	32.4311557	-103.0645315
LP2	32.4328675	-103.0825277
LP3	32.4410576	-103.0824883
LP4	32.4464499	-103.0923249
LP5	32.4427806	-103.073244
LP6	32.432821	-103.0993294

Results

No LPCHs were detected during the surveys and no visual sightings or aural detections were made (Table 2). The closest known LPCH lek to the NEF site is in the northern part of the same township (T21S, R38E). We are unable to disclose the location of this lek in this document.

Vegetation sampling conducted in 2003 indicated the predominant vegetation community on the NEF site is Plains sand scrub (GL Environmental, Inc. 2003). In this community, shinoak (*Quercus havardii*) is the dominant plant species. A variety of other shrubs and grasses adapted to sandy soils occur in the project area (GL Environmental, Inc. 2003). Additional plant communities in the survey area include grassland and mesquite woodland (Figures 2-7).

Overall, the potential LPCH habitat on the site is of moderate quality and minimal area. Along the north-south gravel road in the center of section 32, and northwest of the NEF site in the southeast quarter of section 30, Plains sand scrub provides the best potential habitat for LPCH in the survey area (Figures 3 and 6). Although this habitat type may be important to LPCH (Massey 2001), three vegetation characteristics on the NEF site may make the habitat of low suitability to LPCH. These characteristics include relatively low grass and shrub canopy cover (16.7% and 9.6%, respectively; GL Environmental 2003), scattered-to-dense honey mesquite (*Prosopis glandulosa*) stands, and relatively short grass height.

The eastern portion of section 32 harbors dense mesquite and provides no suitable LPCH habitat. In addition, just west of section 32 the shinoak-grassland communities merge into shortgrass prairie and provide no suitable LPCH habitat.

Through the life cycle of the facility, the habitat is expected to become less suitable to LPCH because of the reduction in Plains sand scrub vegetation due to construction and the addition of structures and disturbances that will likely discourage use of the site by LPCH.

Table 2. Summary of surveys conducted and weather conditions

Survey Date	Time	Temperature (°F)	Mean Wind Speed (mph)	Comments
5 April, 2004				No LPCHs detected
Start	06:39	47	6	Light, intermittent sprinkles
End	08:52	53	5	Rain lessened
6 April, 2004				No LPCHs detected
Start	6:04	48	3	Clear and cool
End	8:29	52	5	Clear and cool

In the project area, potential LPCH predators include the Swainson's hawk (*Buteo swainsoni*). A pair of Swainson's hawks appeared likely to nest in the north-central part of section 32. An adult hawk was observed making undulating courtship display flights during the 6 April visit. A second Swainson's Hawk pair was observed making courtship displays southwest of section 32. Along a private road in section 33, power lines provide ample raptor perches.

The potential for human disturbance in the area is high. A waste disposal site, gravel quarry, and county landfill are located within approximately one mile of the center of Section 32. There also is a contaminated soils cleanup facility located approximately two miles west of Section 32. Railroad tracks run east-west through the northern part of Section 32 (Figure 6).

Potential Impacts

In the project area, potential negative impacts to LPCH are limited. No LPCHs were detected and there is little potential habitat in the survey area. In addition, high human disturbance and predator potential in the area make it unlikely that LPCHs will colonize the area.

Cumulative regional impacts to LPCH are predicted to be low because of limited habitat availability in the immediate project area, the absence of LPCH on the site, and the apparently small number of known LPCH areas near the site. Although the cumulative effects of losing small habitat patches is a real concern for the viability of LPCH populations, the effect of losing isolated sub-optimal habitat patches currently not used by LPCH may be small. This project will likely remove approximately 1-3 km^2 of potential habitat from the potential LPCH range, which is small relative to the currently occupied range of LPCH in New Mexico (estimated at 16,757 km^2 as of 1999 by Bailey and Williams 2000).

Literature Cited

Bailey, J.A., and S. Williams III. 2000. Status of the Lesser Prairie-Chicken in New Mexico, 1999. Prairie Naturalist 32:157-168.

GL Environmental, Inc. 2003. Vegetation survey report: National Enrichment Facility, Lea County, New Mexico. Typescript.

Massey, M. 2001. Long-range plan for the management of Lesser Prairie Chickens in New Mexico 2002-2006. New Mexico Department of Game and Fish Report, July 2001.

Figure 1. Map of the survey area showing survey stations LP1-LP6 in and around the NEF project site (T21S, R38E, section 32). From USGS 7.5 minute quad Eunice, N. Mex.

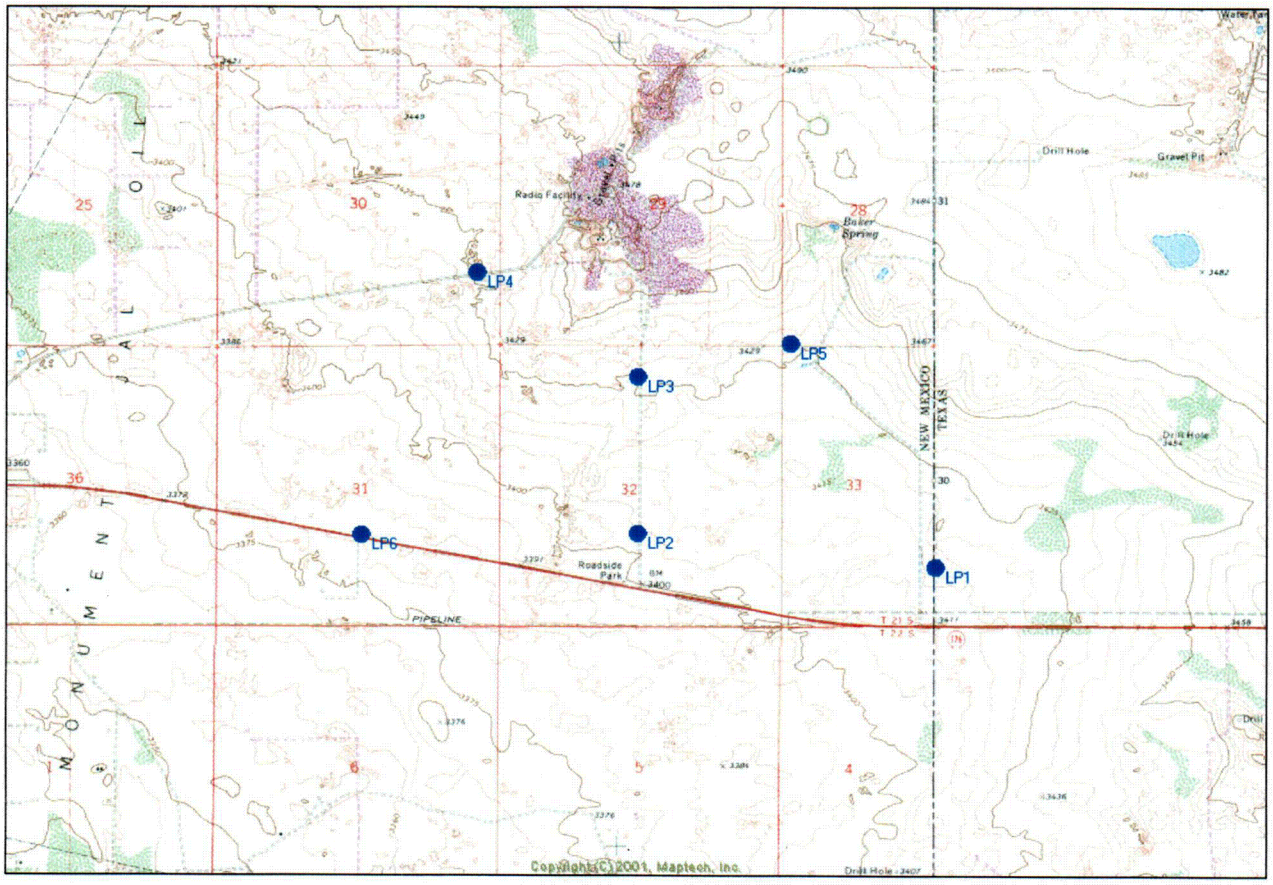

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Figure 2. Habitat at survey station LP1 (north aspect)

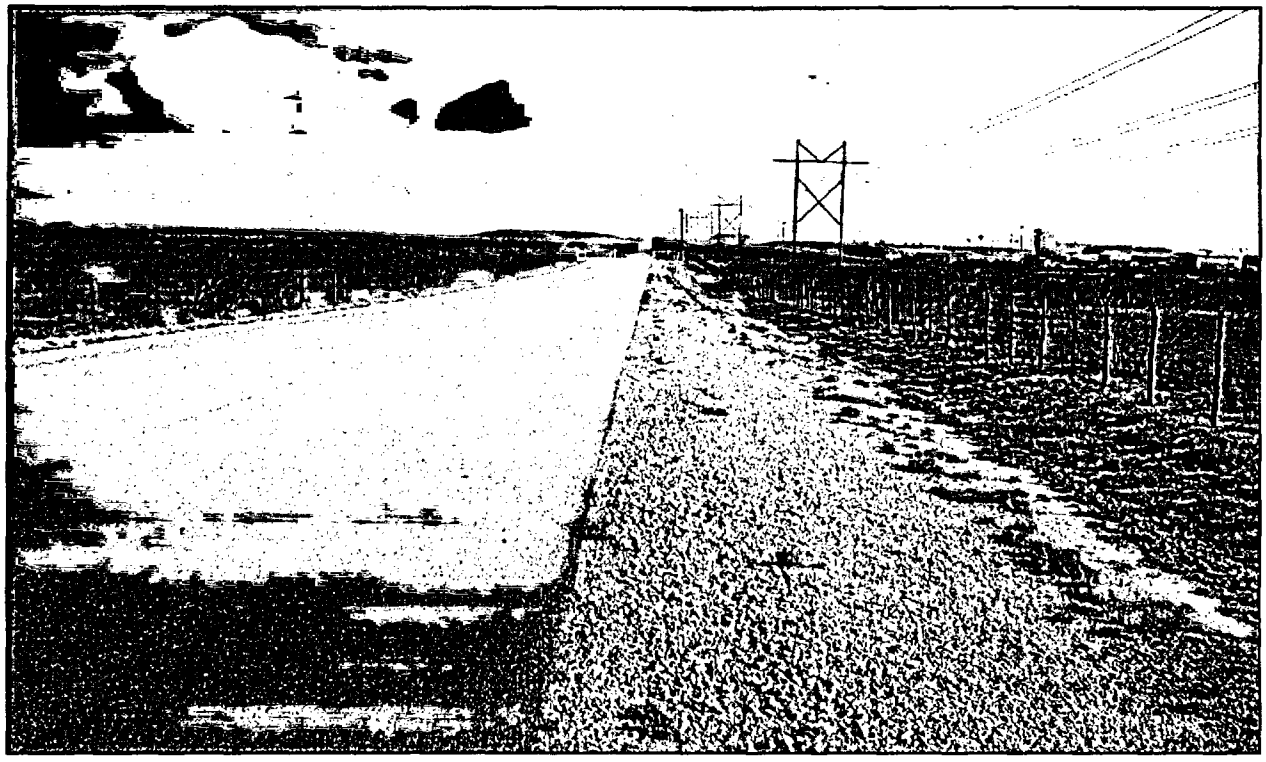

Figure 3. Habitat at survey station LP2 (north aspect)

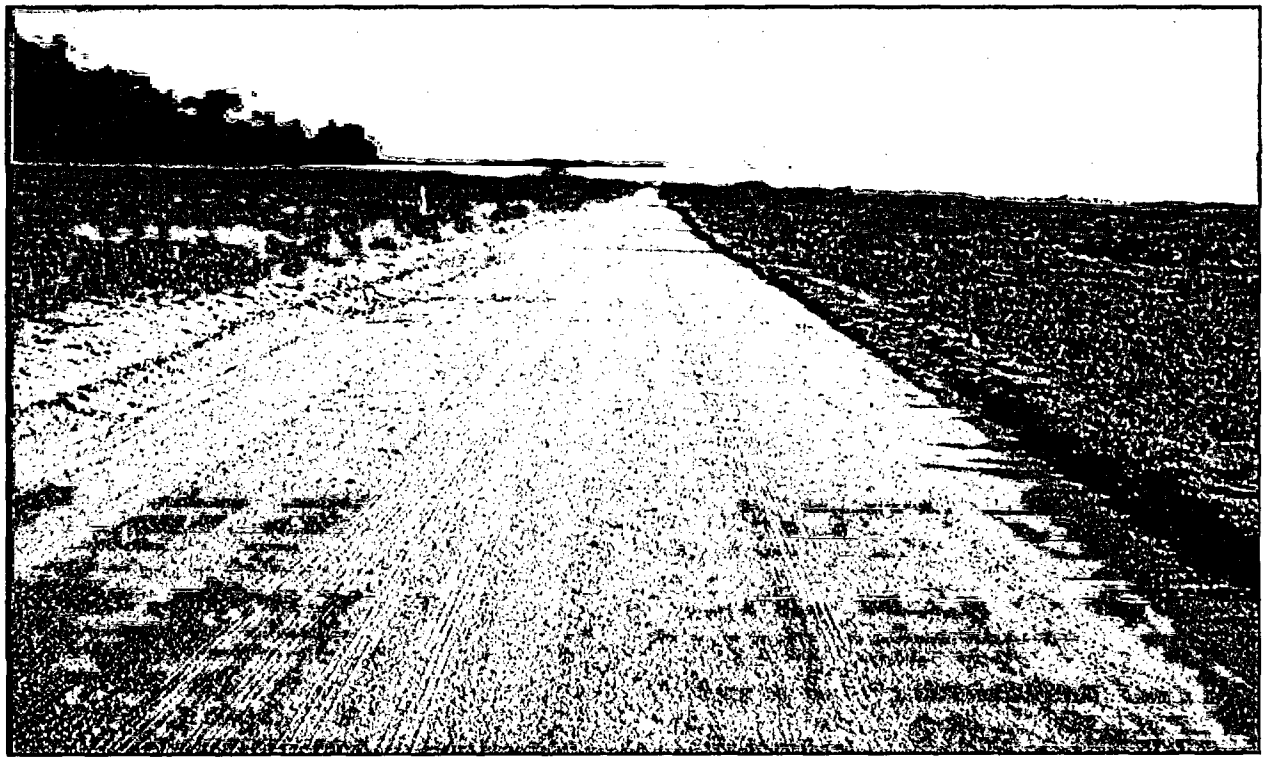

Figure 4. Habitat at survey station LP3 (south aspect)

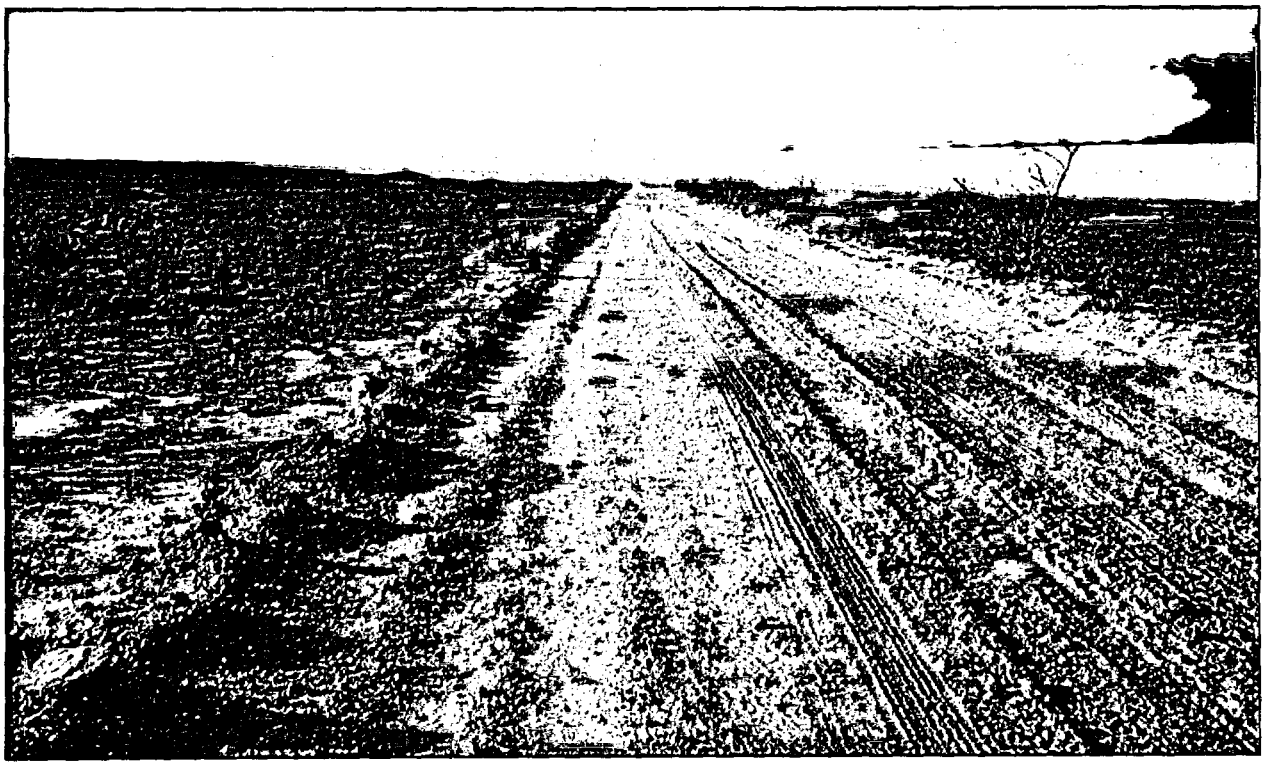

Figure 5. Habitat at survey station LP4 (south aspect)

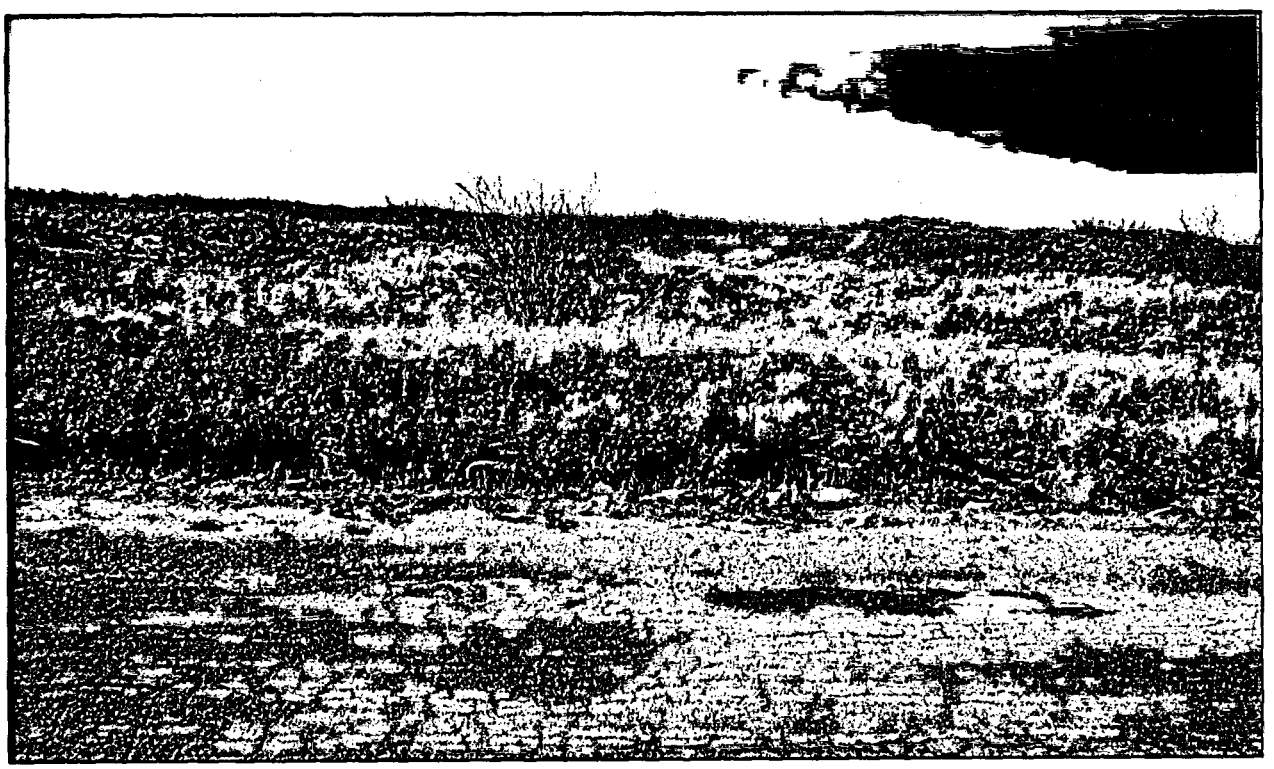

Figure 6. Habitat at survey station LP5 (north aspect)

Figure 7. Habitat at survey station LP6 (north aspect)

Appendix. Common and scientific names of bird species detected in the survey area.

Common Name	*Scientific Name*
Swainson's Hawk	*Buteo swainsoni*
American Kestrel	*Falco sparverius*
Scaled Quail	*Callipepla squamata*
Killdeer	*Charadrius vociferus*
Mourning Dove	*Zenaida macroura*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Loggerhead Shrike	*Lanius ludovicianus*
Chihuahuan Raven	*Corvus cryptoleucus*
Cactus Wren	*Campylorhynchus brunneicapillus*
Bewick's Wren	*Thyromanes bewickii*
Northern Mockingbird	*Minimus polyglottos*
European Starling	*Sturnus vulgaris*
Vesper Sparrow	*Pooecetes gramineus*
Lark Bunting	*Calamospiza melanocorys*
Red-winged Blackbird	*Agelaius phoeniceus*
Eastern Meadowlark	*Sturnella magna*
Great-tailed Grackle	*Quiscalus mexicanus*
House Finch	*Carpodacus mexicanus*

954-0063

(LOCATION: T21S, R38E, sec 30, 31, 32, 33) SEE REPORT FOR POINT COORDINATES

New Mexico Lesser Prairie-chicken PCA Survey

1. Prairie-chicken Area: NOT ASSIGNED - NEF SITE

2. Date: 04 (Month) / 05 (Day) / 2004 (Year)

3. Observer: JOHN P. DeLONG

4. Local Sunrise (from chart): 6:34 AM ☐ Mountain Standard ☒ Mountain Daylight — FROM EPS UNIT

5.

	Start	Stop
Time:	6:39	8:52
Wind Velocity:	B-2	B-2
Temp:	47 °F	53 °F

CAUTION: Any information collected from private lands is considered confidential and subject to the state game commission reg. 19 NMAC 33.4. DO NOT make copies of completed original. DO NOT share locations of leks with others.

Stop # or Listening Pt. # (6.)	Time of Stop (6.)	# Leks Heard (7.)	Compass Bearing to Lek (8.)	# Leks Seen (9.)	# of Chickens Seen per Lek (10.)	Noise (11.)	Lek Location & Land Status (Unknown=Blank) UTM or Twnshp, Range, Sec, 1/4 (12.)
LP1 (1)	6:39	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☒ Priv ☐ BLM ☐ State ☐ PCA
LP2	7:05	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
LP3 (3)	7:32	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☒ State ☐ PCA
LP4	7:53	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
LP5 (5)	8:16	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☒ Low ☐ Moderate ☐ High	1 2 3 ☒ Priv ☐ BLM ☐ State ☐ PCA
LP6	8:37	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(7)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
		1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(9)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☒ BLM ☐ State ☐ PCA
		1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(11)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
		1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(13)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
		1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(15)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
14. Totals		Ø		Ø	Ø		

Write comments on rear

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941-0093

(LOCATION: T21S, R38E, SEC 30, 31, 32, 33) SEE REPORT FOR POINT COORDINATES

New Mexico Lesser Prairie-chicken PCA Survey

1: Prairie-chicken Area: NOT ASSIGNED - NEF SITE

2. Date: 04 (Month) / 06 (Day) / 2004 (Year)

3. Observer: JOHN P. DELONG

4. Local Sunrise: 6:34 (from chart) AM From ☐ SUNIT ☐ Mountain Standard ☒ Mountain Daylight

5. Time: Start 6:04 Stop 8:29

Wind Velocity: Start B-1 Stop B-2

Temp: Start 48 °F Stop 52 °F

CAUTION: Any information collected from private lands is confidential and subject to the state game commission rep. 19 NMAC 33.4. DO NOT make copies of completed original. DO NOT share locations of leks with others.

Stop # or Listening Pt #	6. Time of Stop	7. # Leks Heard	8. Compass Bearing to Lek	9. # Leks Seen	10. # of Chickens Seen per Lek	11. Noise	12. Lek Location & Land Status (Unknown=Blank) UTM or Twnshp. Range, Sec, 1/4
LP6 (1)	6:04	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☒ High	1 2 3 ☒ Priv ☐ BLM ☐ State ☐ PCA
LP4	6:31						
LP5 (3)	6:57	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☒ Low ☐ Moderate ☐ High	1 2 3 ☒ Priv ☐ BLM ☐ State ☐ PCA
LP3	7:21						
LP2 (5)	7:44	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☒ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☒ State ☐ PCA
LP1	8:09						
(7)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(8)	:						
(9)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☒ BLM ☐ State ☐ PCA
(10)	:						
(11)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(12)	:						
(13)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
(14)	:						
(15)	:	1 2 3	1 2 3	1 2 3	1 2 3	☐ None ☐ Low ☐ Moderate ☐ High	1 2 3 ☐ Priv ☐ BLM ☐ State ☐ PCA
14. Totals		Ø		Ø	Ø		

Write comments on rear

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