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D9 WILDLIFE

Ecologically, the Permit Area is located in the Wyoming Basin ecoregion (Chapman et al., 2004) at an elevation of approximately 7,000 ft amsl. With approximately 260 feet of relief, sub-zero winter temperatures, and less than ten inches of annual precipitation, vegetation development and species diversity are limited. The topography is characterized by rolling plains with small, ephemeral drainages dissecting the area. There are no perennial water sources within the study area. Crooked Well Reservoir, a stock pond located in Section 16 of Township 25 North, Range 92 West, contains water only seasonally. The Permit Area covers approximately 4, 254 acres. The main portion of the Permit Area covers approximately 4,194 acres. The east and west access roads, which are described in Appendix D - East and West Roads, cover about 26 and 34 acres, respectively.

The abundance, habitat requirements, seasonal fluctuations, and distribution of species were evaluated. Species of particular interest included:

- threatened or endangered species, and Migratory Birds of High Federal Interest (MBHFI);
- commercially or recreationally valuable species;
- species affecting the well-being of species of special concern;
- species critical to the structure and function of the ecological system; and
- biological indicator species of radionuclides or chemical pollutants in the environment.

Appropriate state and federal agencies, including the WDEQ, WGFD, BLM, and the U.S. Fish and Wildlife Service (FWS), were consulted on the scope of work for the proposed ecological surveys and presence or absence of species of special concern.

Wildlife inventories of the Permit Area were conducted in 2006 through 2009. Wildlife inventories were designed to provide baseline data for permitting the ISR Project and to ensure that wildlife species and habitats are afforded adequate protection during construction, operations, and restoration. Potential impacts, monitoring and mitigation of the wildlife resources are discussed in the **Operations Plan** submitted together with this document.

Data collection for the wildlife surveys included file searches of state and federal agency documents, and field surveys for raptors, sage grouse, and breeding birds. Wildlife studies focused on threatened and endangered (T&E) species, MBHFI, raptors, sage grouse leks and nesting habitat, breeding bird surveys, and Pygmy rabbits, as well as a general wildlife inventory of the Permit Area.

For most surveys, the study area was the same as the Permit Area. In order to identify the off-site habitat and individuals that could be affected by Project activities, the study area for sage grouse included an additional two-mile perimeter, and the study area for raptors included an additional one-mile perimeter. In 2009, the study area for sage grouse was expanded to extend three miles beyond the main Permit Area, in part because of access routes (see Appendix D - East and West Roads). Land ownership of the study area is under the jurisdiction of BLM and the State of Wyoming.

The field surveys and reports specific to the Project were completed by Eric Berg, Cecily Mui, Ray Fetherman, Troy Gerhardt, Dennis Buechler, and Eric Fetherman, who are all qualified wildlife biologists or ecologists. Personnel contacted from WGFD include Greg Hiatt (2006, 2007) and Reg Rothwell (2006). Mary Jennings with FWS was also contacted. The interviewed BLM personnel were Rhen Etzelmiller (2006, 2007) and Frank Blomquist (2006). Regular Project briefings were held during the baseline surveys, and BLM and WDEQ-LQD staffs were updated with the progress of the wildlife surveys.

D9.1 Habitat Description and Wildlife Species

The wildlife habitat in the Permit Area is predominantly big sagebrush shrublands (**Figure D9-1**). The vegetation in the Permit Area is described in detail in **Appendix D8**. Other wildlife habitats include cushion plant communities, small isolated patches of grassland, and disturbed lands. The big sagebrush shrublands were divided into two different types: Upland Big Sagebrush Shrubland and Lowland Big Sagebrush Shrubland.

The Upland Big Sagebrush Shrubland wildlife habitat is generally found on flat and rolling hills. This habitat is important for pronghorn antelope, mule deer, sage grouse, white-tailed prairie dogs, and reptiles. Raptors often hunt in big sagebrush shrubland habitat, and sage grouse leks are typically located on ridge tops that are dominated by cushion plant communities.

The Lowland Big Sagebrush Shrubland wildlife habitat is found along drainages in areas with relatively steep slopes. This habitat type has significantly more vegetation cover than the Upland Big Sagebrush Shrubland. The Lowland Big Sagebrush Shrubland wildlife habitat also provides important cover for resident and migratory birds, reptiles, and small mammals. The taller big sagebrush provides nesting sites for raptors and critical forage for ungulates and sage grouse during winters with extreme snowfall.

A list of wildlife species that potentially occur in the Permit Area is provided in **Table D9-1**. A total of 224 wildlife species potentially occur in the Permit Area. Of these, 164

species are birds, 51 species are mammals, four species are amphibians, and five species are reptiles. Species that are known to exist in the study area, from observation or the presence of identifying signs, are noted in **Table D9-1**.

D9.2 Methods

D9.2.1 File and Data Searches

Locations of raptor nest sites, sage grouse leks, prairie dog towns, big game ranges, and T&E species were obtained from GIS data from the BLM and WGFD. WGFD publications and the computerized WGFD Wildlife Observation System (WOS) of the Permit Area were reviewed (**Attachment D9-1**) along with FWS publications.

A copy of the Sweetwater Uranium Facility Environmental Report (Shepherd Miller, Inc., 1994) that covered a study area southwest of the Permit Area was also reviewed. The Shepherd Miller study was used as an initial survey reference for the area for T&E plant and animal species, big game ranges, sage grouse leks, and raptor nest sites.

D9.2.2 Field Surveys

Field surveys for sage grouse leks, raptor nest sites, and breeding birds were completed in the Permit Area between early April and October 2006; additional sage-grouse-lek and nesting raptor surveys were completed during the springs of 2007, 2008, and 2009. Pygmy rabbit surveys were completed during June and July of 2007. The presence of other wildlife species or their identifying signs was also recorded, and all observed species are included in **Table D9-1**. Breeding bird surveys were conducted within the Permit Area; surveys for raptor nests and sage grouse also included one- and two-mile buffer areas, respectively. Pygmy rabbit surveys were conducted in random transects within the Permit Area.

General field surveys were completed by traversing the Permit Area and the surrounding area in a high-wing aircraft, four-wheel drive vehicles, and on foot. Binoculars and spotting scopes were used for observations. Specific survey methods for individual species or groups of species are presented in **Attachment D9-2**. Wildlife surveys were completed according to a work plan developed in consultation with the WGFD, WDEQ, and BLM. The scope of field work was finalized in consultation with BLM in Rawlins, Wyoming, in February and March of 2006 (BLM, 2006). The field survey protocols were consistent with recommendations from both BLM and WGFD (**Attachment D9-3**).

D9.3 Results

The following sections provide the results from the file searches and field studies, along with relevant figures, tables, and maps. **Table D9-1** provides a list of wildlife species that have the potential of occurring in the study area. **Attachment D9-1** includes the WGFD WOS record of wildlife species previously observed in the Permit Area.

D9.3.1 Big Game

Specific big game surveys were not required for the Project (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006); however, the relative abundance of big game observed during the course of field work was recorded and is presented in **Table D9-2**.

Pronghorn, mule deer, and elk were the only big game animals recorded in the Permit Area during field observations in 2006 and 2007. WGFD observations in **Attachment D9-1** indicate that pronghorn are the most abundant big game species in the study area. Pronghorn use of the study area, as determined by WGFD and BLM, is shown on **Figure D9-2**. The Permit Area is classified as Winter/Yearlong Range. Winter/Yearlong Range is the area where a population of animals makes general use of the habitat on a year-round basis, and there is a significant influx of animals between December and April. The study area comprises a portion of the Red Desert Antelope Herd Unit (WGFD Hunt Area 61). Based on the most current Annual Big Game Herd Unit Job Completion Reports (JCRs) (WGFD 2006a), the Red Desert Antelope Herd had an average population of 14,454 pronghorns from 2000-2005.

A map of mule deer use of the study area is presented in **Figure D9-3**. The Permit Area is out of mule deer range. Areas described as "out of range" contain few animals or the available habitat is of limited importance to the species.

Elk use of the study area is mapped in **Figure D9-4**. Elk likely use the Permit Area as transitional range while moving to other areas. The 2005 WGFD data defines the seasonal range of the elk to be outside of the Permit Area. The 2007 WGFD Herd Unit Data describes two herds, the Shamrock Elk Herd Unit (#643) and the Steamboat Elk Herd Unit (#426), as being situated on or near the Permit Area.

The Permit Area is classified as out of moose range (as determined by WGFD and BLM; **Figure D9-5**); no moose or sign of moose were observed in the study area.

D9.3.2 Upland Game Birds

Field surveys of upland game birds focused on sage grouse strutting grounds, also known as leks. All known strutting grounds were inventoried, and the entire study area within two miles of the Permit Area was searched for additional leks.

Three aerial surveys were completed for new leks during: April of 2006 and 2007; April and May of 2008 (due to weather conditions); and April of 2009. In addition, ground surveys of new leks were completed by driving on roads within the study area and listening for booming sage grouse. Aerial surveys were completed by flying north-south transects in a fixed-wing aircraft at an altitude of 330 to 490 feet (100 to 150 meters) above ground level, with a transect spacing of about 0.6 miles (one kilometer). Lek attendance surveys, which document the number of male sage grouse observed at each lek, were completed on the ground three times for each known lek during: April of 2006 and 2007; April and May of 2008 (due to weather conditions); and April of 2009. Sage grouse brood surveys were not required by BLM and WGFD (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006).

Sage grouse and mourning doves were the only upland game birds noted in the study area. Sage grouse may inhabit the area year-long, but mourning doves are migrants and only inhabit the area from spring into early fall. No active sage grouse leks were located in the Permit Area. The Crooked Well Lek, which is a known strutting ground along the northeast boundary of the Permit Area (Township 25 North, Range 92 West, Section 16), was inactive during three site visits in April 2006 (**Figure D9-6**). Four males were observed on the lek on April 4, 2007, but no sage grouse were present in the other two lek surveys; therefore, it is considered inactive. No other birds were observed on the lek during 2007, 2008, and 2009. Informal surveys before 2007 also indicated that birds had not been using the lek since 1994. A letter requesting a check of the official status of this lek was sent to WGFD in June 2009. Per the WGFD response, the lek is considered Occupied - Inactive. The request, which includes a summary of the formal and informal survey results, and response are included in Attachment D9-4.

Five occupied and active leks were located within the two-mile buffer zone of the Main Permit Area based on the 2006 through 2009 surveys: the Green Ridge and Green Ridge Satellite Leks to the east; the Prospect South Lek to the north; and the Discover and Discover 2 Lek to the west. Three occupied and active leks were located not far north of the two-mile buffer zone of the Main Permit Area based on the 2006 through 2009 surveys: the Prospects Lek; the Eagles Nest Draw Lek; and the Sand Gully Lek. The lek locations and attendance are presented in **Figure D9-6** and **Table D9-3**, respectively.

Three of these leks had not been previously mapped by WGFD or located during the 2006 surveys. The Discover 2 Lek, located in Township 25 North, Range 93 West, Section 23, approximately 0.7 miles west of the Permit Area, is a newly mapped active lek. It appears to be a satellite of the previously mapped Discover Lek, 0.5 miles to the west. The Prospect South Lek (Township 25 North, Range 92 West, Section 3, Southwest Quarter) is located approximately 0.75 miles south of the Prospects Lek. The Green Ridge Satellite Lek is located approximately 0.2 miles west of the Green Ridge Lek. At undisturbed leks, attendance ranged from 17 to 126 males during the April 2006 survey. The most highly frequented leks in 2006 and 2007 were Sand Gully (58 to 126 males), Discover (19 to 69 males), and Prospect (41 to 64 males). All sage grouse leks occurred in association with Upland Big Sagebrush Shrubland communities in areas with cushion plants, blowouts and bare ground.

The Sooner and Sooner Oil leks to the south of the main Permit Area were also counted in 2007 through 2009 because they are located near off-site transportation routes that may be used by the Project. In 2009, additional outlying leks were counted, including: the Southland Lek to the southeast; the Harrier Lek to the north (off the map); the Osborne Draw, Little Osborne, and Eagles Nest Reservoir Leks to the northwest; and the Minex West Lek to the southwest.

D9.3.3 Raptors

A raptor nest survey of the entire Permit Area and a one-mile buffer zone was conducted in April and June of 2006, and April, May and June of 2007 through 2009. The survey provided status updates on nests previously identified by BLM and WGFD and a survey for new nests. Surveys were conducted on foot or using four-wheel-drive vehicles; additional surveys were completed by air while looking for sage grouse leks. Raptor observations were made using binoculars and a high-powered spotting scope. Nest site activity and production surveys were conducted according to protocols vetted by the BLM, Rawlins District (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006). Special attention was made to avoid disturbance of any active nests while completing the wildlife surveys.

Agency files were reviewed for data on raptor nests in the area. File searches identified 12 previously documented raptor nests within a one-mile buffer zone of the Permit Area. The status of these nests is presented in **Table D9-4** and the locations are presented in **Figure D9-7**.

No active raptor nests occur within the Permit Area. Nest FH25921601 was inactive on multiple visits in 2006 through 2009 and is currently in poor condition. Nest FH25932501 was also inactive during the field surveys. One active raptor nest was found within the one-mile buffer zone. Nest AFH25921004 was occupied by a pair of ferruginous hawks and was in excellent condition and located on top of artificial nest platforms. Nest AFH25921004 had two or three chicks in the nest when it was last observed on June 15, 2006. Seven other nests that had been previously documented by BLM in the one-mile buffer zone surrounding the Permit Area (**Table D9-4** and **Figure D9-7**) were not located during the 2006 and 2007 surveys. Global Positioning System (GPS) units were used to visit the sites of these nests, but none were located. No new raptor nests were identified during the 2006 through 2009 field surveys.

Several other raptor species were recorded within the study area, but nests were not documented. These species include the Swainson's hawk, red-tailed hawk, northern harrier, golden eagle, kestrel, prairie falcon, and turkey vulture. While the conditions are present for the northern harrier and American kestrel nests within the Permit Area, specific nest sites were not located. Northern goshawk, merlin, and peregrine falcons were not observed in the study area.

D9.3.4 Waterfowl and Shorebirds

Specific waterfowl and shorebird surveys were not required by the BLM, Rawlins District (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006). One shorebird species was observed during bird and wildlife surveys, which is noted in the species list of **Table D9-1**. Most recorded waterfowl and shorebird species are designated "uncommon" to "fairly common" in the region.

In the study area, habitat for waterfowl and shorebirds is sparse. The man-made Crooked Well Reservoir was dry during the 2006 field survey and contained a small amount of water during the spring of 2007. Waterfowl and shorebird species would be expected in the Permit Area during migrations in the spring and fall, with additional use in the summer months. Late fall and winter use of the Permit Area by waterfowl and shorebirds is believed to be very limited. In April 2009, it was found that BLM Well No. 4551, which is outside southeastern permit boundary, had been put back into use. As described in **Section D11.3**, there is a dirt tank associated with the well (**Figure D11-4**). If this tank is kept full, it will provide an additional water source near the Permit Area.

D9.3.5 Passerine and Breeding Birds

A breeding bird survey of all representative habitats of the Permit Area was conducted during the peak of the nesting season in June 2006, using methods recommended in WDEQ-LQD Wildlife Guideline No. 5 Wildlife (1994). Surveys took place in the morning between 0500 to 0930 hours. One 3,280-foot (1,000-meter) transect was established in each habitat within the Permit Area. In Upland Big Sagebrush Shrubland, 328-foot- (100-meter-) wide belt transects were walked, and all birds that were heard or observed were recorded. In riparian zones, where limited habitat size precluded 3,280-foot- (1,000-meter-) wide transects, point transects with 328-foot- (100-meter-) wide spacing were surveyed for five minutes; all birds heard or observed within 164 feet (50 meters) were recorded.

All avian species observed are documented in the species list in **Table D9-1**. A total of 31 passerine species were recorded during surveys. The most common species in the Permit Area were the horned lark, Brewer's sparrow, and sage sparrow.

Species observed in the Upland Big Sagebrush Shrubland habitat were similar to species observed in the Lowland Big Sagebrush Shrubland habitats. There were 12 breeding species seen in each of the big sagebrush habitats during breeding bird surveys.

D9.3.6 Migratory Birds of High Federal Interest

MBHFI and other wildlife species were inventoried during all site visits. This was accomplished by searching all suitable or potentially suitable habitats and recording all species encountered.

Several MBHFI species are known to occur in the region (**Attachment D9-4**). Level I MBHFI species are described by FWS as in need of conservation, while Level II MBHFI species are described as in need of monitoring. Level I MBFHI species in the region include the bald eagle, ferruginous hawk, Swainson's hawk, peregrine falcon, burrowing owl, sage grouse, mountain plover, Brewer's sparrow, and sage sparrow. Of these, the ferruginous hawk, sage grouse, Brewer's sparrow, and sage sparrow were documented in the Permit Area; the mountain plover and burrowing owl have been noted in adjacent areas (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006).

Level II species documented in the Permit Area include the sage thrasher, loggerhead shrike, vesper sparrow, and lark sparrow. Level II MBHFI species known to exist in the region, but not documented in the study area, include the merlin, Cassin's kingbird, black-billed cuckoo, loggerhead shrike, and lark bunting.

The ferruginous hawk nests in the study area were previously discussed in this appendix, as were sage grouse and their leks. The breeding Brewer's sparrow and sage sparrow were found throughout the big sagebrush habitats of the Permit Area. The breeding sage thrasher, loggerhead shrike, vesper sparrow, and lark sparrow were also located within the Permit Area.

No mountain plover were observed on or near the Permit Area during spring and early summer of 2006 and 2007. The Permit Area was evaluated for mountain plover habitat. The extensive tall shrub cover and absence of grassland or open shrub habitats make the Permit Area poorly suited to the mountain plover. Small open areas (grassland and disturbed areas) do occur in the Permit Area, but are isolated. Mountain plover prefer open grasslands, bare ground, disturbed areas, prairie dog colonies and sparse shrubland habitats for nesting. Good potential mountain plover habitat occurs a few miles to the south and west of the Permit Area. However, since no good potential mountain plover habitat exists in the study area and no mountain plover were observed during other field studies, it is unlikely that mountain plovers inhabit the Permit Area.

D9.3.7 Other Mammals

All mammal species and identifying signs observed during the field studies were recorded and are documented on the species list in **Table D9-1**. A total of 19 mammal species were recorded in the study area. The most common species seen were the white-tailed jackrabbit, desert cottontail, Wyoming ground squirrel, thirteen-lined ground squirrel, deer mouse, and meadow vole. The coyote was the most abundant predator. The majority of mammalian species were observed in big sagebrush habitats.

Two wild horse Herd Management Areas (HMAs) overlap with the Permit Area. The Permit Area is within the Stewart Creek HMA and the Lost Creek HMA. Horses were observed in all habitats of the study area.

Aerial and ground surveys of the entire Permit Area were used to locate prairie dog towns. There were no active colonies in the Permit Area.

D9.3.8 T&E and State-Listed Species of Concern

Threatened, endangered, and candidate wildlife species surveys were completed during all site visits by searching suitable habitats for the target species. The specific survey techniques used to identify each species and their potential of occurrence in the Permit Area are included in **Table D9-5**.

The bald eagle (threatened) and black-footed ferret (endangered) are the only federally listed or candidate species that may occur in the vicinity of the Permit Area (FWS, 2006). Bald eagle nesting habitat does not exist within the study area, but they might be found in the Permit Area during migration. The bald eagle has not been recorded in the study area (**Attachment D9-1**).

A black-footed ferret survey was not required, since black-footed ferrets live exclusively in prairie dog colonies, which are not present within the Permit Area.

The state-listed wildlife species (WGFD, Non-Game Program, 2005a, 2005b) not included under other wildlife categories, and their probability of occurrence in the Permit Area, are listed in **Table D9-6**. State-listed species that may occur in the Permit Area are classified as Native Species Status (NSS) 2, 3, or 4 (WGFD, Non-Game Program, 2005a). Status 2 species have declining populations that are threatened with extirpation, and have restricted or vulnerable habitat. These species may also be sensitive to human disturbance or have significant habitat loss. Status 3 species have: 1) populations that are restricted or declining with the threat of extirpation, 2) habitat that is restricted or vulnerable, or 3) a wide distribution and unknown population, with significant habitat loss. Status 4 species have: 1) populations that are restricted or declining with stable habitat, 2) widely distributed stable populations with restricted habitat that are sensitive to human disturbance, or 3) stable or increasing populations with significant loss of habitat.

Listed waterfowl and shorebird species such as the American white pelican, upland sandpiper, and long-billed curlew, and passerines, such as McCown's longspur, chestnut-collared longspur, and bobolink, are unlikely to be in the Permit Area, because there is no suitable habitat for these species; they may pass through the Permit Area during migration. The sage thrasher, Brewer's sparrow, and sage sparrow (all NSS4 species) were observed in the Permit Area. Suitable habitat exists for the willow lark bunting, though this species was not observed.

State-listed mammal species that may occur in the Permit Area have been classified as Native Species Status 2, 3, or 4 (WGFD, Non-Game Program, 2005b). Several listed shrew and bat species, such as the dwarf shrew, vagrant shrew, hoary bat, and silver-haired bat, have ranges that include the Permit Area. There is no suitable habitat in the study area, so they are unlikely to be present. Suitable roosting habitats for the western small-footed myotis, little brown myotis, long-legged myotis, big brown bat, Townsend's big-eared bat, and pallid bat might be found in rock crevices, rock outcrops, or trees near the Stratton Rim to the north of the Permit Area. These species could also potentially roost in the vertical walls of eroded streambeds in the Permit Area. None of these species was observed in the Permit Area. The state-listed olive-backed pocket mouse and prairie

vole were not observed in the Permit Area. Suitable habitat exists in the Permit Area, and these species are known to be in the region (WGFD, 2004a).

Surveys were conducted for Pygmy rabbits (NSS3 species). Pygmy rabbits were observed in the Permit Area during the summer of 2007. Based on these surveys Pygmy rabbits occur in most Lowland Big Sagebrush Shrubland habitats (**Figure D9-1**). Scat, burrows, and individual Pygmy rabbits were observed along every transect within the Lowland Big Sagebrush Shrubland habitats of the study area. Locations of observed Pygmy rabbit burrows and pellets are presented in **Figure D9-8**.

D9.3.9 Reptiles and Amphibians

Specific reptile and amphibian surveys were not required for the Project (Etzelmiller, R. Wildlife Biologist, BLM. Personal communication. February 2006; Blomquist, F. Wildlife Biologist, BLM. Personal communication. February 2006). Several species were observed during general surveys, as noted in **Table D9-1**. These included the greater short-horned lizard, prairie rattlesnake, and western terrestrial garter snake.

D9.3.10 Fish and Aquatic Life

The Permit Area is predominately dry shrubland, and there is no aquatic habitat for most of the year. The Crooked Well Reservoir is an ephemeral stock pond that is dry except for a short period of time after spring snowmelt. No fish or other aquatic life occur.