

APPENDIX D9 - WILDLIFE

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WILDLIFE INVENTORY

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APPENDIX D9 - WILDLIFE

1. INTRODUCTION

1.1 Description Of The Study Area

Power Resources Inc. contracted Intermountain Resources to complete wildlife inventories on the Gas Hills Project Area in 1996 and in 1997. Intermountain Resources has previously completed wildlife inventories within the study area in 1992, 1993, and 1994. Results of the previous investigations are incorporated herein. Specific survey dates are referenced throughout this report. These inventories were designed to provide data necessary for the acquisition of in-situ uranium mining permits for the area. Data collection efforts included searches of state and federal agency files and detailed field surveys for selected species. Issues of major concern included threatened and endangered species (T&E), migratory birds of high federal interest (MBHFI), raptors, sage grouse strutting grounds, and important big game ranges.

The type of mining operation proposed will be in situ leaching using a network of injection and recovery wells. This type of mining causes far less disturbance than open pit or strip mining methods. Therefore, environmental impacts on most wildlife species are less. The entire Permit Area covers approximately 8500 acres.

The Gas Hills Project is located in the Gas Hills Mining District, approximately 45 miles east of Riverton, Wyoming. The Permit Area is located in portions of Fremont and Natrona Counties. Specifically, the proposed permit area is located in Sections 21,22,27,28,29,31,32,33, and 34 T33N R89W, Section 6 T32N R89W, and Sections 1,2,3,10,11 and 12 T32N R90W as shown on the attached map. The map also displays the entire study area which includes the Permit Area and an additional one half mile perimeter (one mile for selected species as discussed in the results).

The dominant vegetation type within the study area is sagebrush shrublands interspersed with a mixture of upland grassland. Also included in the study area are rough breaks, rock outcrops, land disturbed by mining and reclaimed mining areas. Elevation ranges from 6700 feet to 7400 feet. Topography is highly variable and ranges from rolling plains to steep hillsides and short cliffs along the Beaver Divide. Numerous small ephemeral drainages dissect the area. Several mature cottonwood trees are found on the upper portion of West Canyon Creek, while scattered junipers, limber pines, and aspen trees occur along the Beaver Divide and in the northeastern portion of the study area.

Perennial water sources within the study area are scarce. Waters associated with mining activities include mine pits and sediment control structures. Cameron Spring Reservoir, located in the Peach area of the study area, was almost dry at the time of the November 1992 field survey, but had water throughout 1993. Water was also observed in this reservoir

during late September of 1996. The only perennial stream reach in the study area is within Canyon Creek (See Appendix D6).

Land ownership of the study area is dominated by the BLM. Some small parcels of land under private ownership and others belonging to the State of Wyoming are also found in the area.

1.2 Persons Consulted

All field surveys and reporting specific to this project were completed by Mr. Jim Orpet of Intermountain Resources. Personnel contacted within the Wyoming Game and Fish Department included Bob Luce (1992), Andrea Cerovski (1992), Pat Deibert (1996) and Pat Hnilicka (1996). Art Anderson (1992), Ron Clemonson (1996) and Kim Dickerson (1996) with USDI Fish and Wildlife Service (USFWS) were contacted. Bureau of Land Management personnel interviewed were Jack Welch (1992) and Sue Oberlie (1992, 1996). Wyoming Department of Environmental Quality-Land Quality Division Personnel contacted included Mark Moxley (1992, 1996) and Steve Platt (1992, 1996).

2. HABITAT DESCRIPTION

The Permit Area is predominantly shrublands with a small amount of upland grassland scattered throughout. Other habitat or land use types include, reclaimed mining areas, unreclaimed mine disturbances, small seeps, small rock outcrops and ponds. The shrublands were divided into four different types: mixed sagebrush-grass, rough breaks shrublands, bottomland sagebrush and scattered pine-rough breaks shrublands. Table D9-1 provides acreages for these habitat and land use units. Appendix D8 (Vegetation) discusses the major vegetation types in detail.

The mixed sagebrush-grass habitat is generally found on flat to rolling hills areas. Big sagebrush is the dominant species followed by western wheatgrass and cusick bluegrass.

The rough breaks shrublands are found on areas with relatively steep slopes. This habitat type has significantly less vegetation cover than the mixed sagebrush grass type. Dominant shrub species are big sagebrush and black sagebrush while bluebunch wheatgrass is the most common perennial grass.

The bottomland sagebrush type is found on lowlands and along ephemeral or intermittent drainages. Big sagebrush is the dominant species followed by western wheatgrass and sandberg bluegrass.

Scattered pine-rough break shrubland habitats are found within the rough breaks type on relatively steep slopes. Limber pines are scattered throughout these areas with big sagebrush and black sagebrush as the dominant shrubs and bluebunch wheatgrass the most abundant perennial grass.

Upland grasslands are generally encountered on flat areas or small bench and ridgetops. Dominant plant species are threadleaf sedge, western wheatgrass and birdsfoot sagewort.

Reclaimed areas are generally found in the eastern portion of the permit area (i.e., Buss and Pix areas). These areas are sites of past uranium mining activities, and dominant vegetation established is primarily wheatgrass species.

Disturbed lands are primarily in the eastern portion of the permit area but some sites also existed in the far western portion. These areas have been affected by past uranium mining activities.

Small seeps were generally observed at the base of the Beaver Divide. All of these sites exhibited lush vegetation comprised of rushes and perennial grasses. Two springs were observed which discharge a measureable amount of water. These were Cameron Spring and the upper West Canyon Creek spring. These springs are discussed in greater detail in

Appendix D6 - Hydrology. Surface water discharge, originating from the West Canyon Creek spring, was observed flowing for almost two miles in late September of 1996 as shown on Plate D9-1.

Small rock outcrops were confined to small areas along Beaver Rim as shown on Plate D9-1. These areas were composed primarily of low cliffs or rock ledges.

Ponds within the study area consisted of several stockponds, mine-related sediment control structures, existing mine pits and reclaimed mine pits which have been permitted by WDEQ to remain as postmine reclamation features. Cameron Springs was the only stockpond feature that consistently retained water. Most of the reclaimed mine reservoirs contained water throughout the year.

Details of major habitat/vegetation types and mapping are included in Appendix D8 (Vegetation). Minor habitat type locations not included in that Appendix, are shown on Plate D9-1. No crucial or critical habitats as defined by WG&FD and USFWS respectively, were identified within the permit or adjacent areas.

3. **SPECIES LISTS**

A list of wildlife species that may potentially occur on the Permit Area is provided in Addendum D9A. All species that were actually observed on the permit or adjacent area are indicated on the list with an asterisk. Representatives of WG&FD have agreed that this level of species documentation is sufficient for their approval. Therefore, WG&FD wildlife observation forms were not required (P. Deibert, WG & FD pers. comm. Oct. 1996) .

4. METHODS

File searches and field surveys were the basis of data collection for this inventory. These methods will be described in the following sections.

4.1 File Searches

File searches were the initial sources for data collection. Data regarding raptor nest sites, sage grouse leks, prairie dog towns, big game ranges, and T & E species were obtained from the Lander offices of the BLM and WG&FD. WG&FD publications and computerized Wildlife Observation System were also reviewed. U.S. Fish and Wildlife service publications and field data were also reviewed.

The Wyoming Department of Environmental Quality - Land Quality Division (WDEQ-LQD) was contacted to evaluate available data from existing mine permits and Abandoned Mined Land (AML) studies completed in the area. A copy of an AML study (Mountain West, 1990) completed in 1990 that covered the entire Power Resources study area was obtained from the WDEQ - Abandoned Drill Hole Program. That study was used as an initial survey reference for the area for T&E Plant and Animal species, Migratory Birds of High Federal Interest (MBHFI), and raptor nest sites.

4.2 Field Surveys

Field surveys of the study area were completed from November 2 to 5 of 1992, April 28 to May 1, June 16 to 19, and August 30 to September 1 of 1993. Additional surveys were completed July 7 to 9 and September 17 to 19, 1994 and September 23-25, 1996 primarily to cover the new areas proposed for the permit area and appropriate buffer for those areas. Areas previously inventoried were resurveyed during April and May, 1997. These surveys were designed to locate any T & E species, or habitat for those species (ie: prairie dog towns, nest sites, etc.), MBHFI species, document raptor nest sites, big game, sage grouse strutting grounds and record any wildlife species or their sign observed. These surveys were completed by traversing the area and suitable habitat in a four-wheel drive vehicle, ATV, and on foot. Binoculars (9X35) and a spotting scope (16X48) were used for observations. Specific survey methods for individual species or groups of species are included in the results sections for those species.

5. RESULTS

The following sections provide the results of the file searches and field inventories. Pertinent figures, tables, and maps are included with this report. Addendum D9A provides a list of wildlife species which have the potential for occurring on the study area. Addendum D9B includes a computer printout from the WG&FD Wildlife Observation System of wildlife species that they have recorded on the area. The WG&FD determined that the 1992 computer printout was sufficient, and 1996 update not required.

5.1 Big Game

Specific big game surveys were completed during seasonal survey periods. These surveys were completed on the ground during one day within each survey period by traveling the roads within the study area. Periodic stops were made at appropriate vantage points to scan the terrain with optics in search of big game animals. The survey route is shown on Plate D9-1 and allowed good inspection of the entire permit area and one half mile perimeter. The one half mile perimeter was deemed sufficient by the WG&FD (P. Deibert, Pers. Comm. Oct. 1996). Counts were only made in one direction of travel and not when backtracking to avoid double counts.

Pronghorn and mule deer were the only big game animals recorded for the study area. Field surveys in 1992-1996 and the WG&FD observations in Addendum D9B indicate that pronghorn are the most common species in the area. Results of specific big games surveys on the study area are shown in Table D9-2. Pronghorn generally frequented habitats dominated by big sagebrush while mule deer frequented rough breaks and sagebrush habitats.

Pronghorn use of the area, as determined by the BLM and WG&FD, is shown on Figure D9-1. Most of the proposed permit area is classified as spring-summer-fall range and the remainder is yearlong use. Pronghorn winter-yearlong range and crucial winter ranges are located several miles north and west of the area. Mule deer use of the area is mapped on Figure D9-2. Most of the proposed permit area consists of yearlong range while portions on the north and west boundaries are winter-yearlong and spring-summer-fall range is located in the southeast. Crucial mule deer winter ranges occur several miles north of the area.

The study area is located within portions of the WG&FD Sweetwater Mule Deer Herd Unit (Hunt Areas 96 and 97) and the Beaver Rim Mule Deer Herd Unit (Hunt Area 90). The 1995 post-hunt population estimates were from 7500-9500 and 500-1000 animals for the Sweetwater and Beaver Rim Mule Deer Herd Units, respectively (WG&FD, 1996). All potential surface disturbances will be within the Beaver Rim Male Deer Herd Unit.

The Sweetwater Antelope Herd Unit (Hunt Areas 68,69 and 106) and Fremont Antelope Herd Unit (Hunt Areas 65,66,67, and 74) were represented within the study area. These units

were recently combined into one herd unit with the 1995 post-hunt population estimated at from 14000-16000 animals (WG&FD, 1996). All potential disturbances will be within the Fremont Antelope Herd Unit.

5.2 Other Mammals

Specific surveys for other mammals (i.e. small mammal trapping, lagomorph surveys, predator surveys) were not required for this project as agreed upon with the WG&FD (P. Deibert, WG&FD, pers.comm.oct.1996). However, all mammal species, or their sign, observed during the course of other field work were recorded and are documented with an asterisk on the species list in Addendum D9A. A total of 14 other mammal species were recorded on the study area. The most common species observed were the Wyoming ground squirrel and least chipmunk. The coyote was the most abundant predator while lagomorph populations were still low and had not recovered from the crash in the early 1990's. The entire permit area and one mile perimeter were searched for prairie dog towns but none were found. Searches revealed the nearest prairie dog town was located over one mile north of the permit area and was occupied by white-tailed prairie dogs. The majority of mammal species were observed in the various habitat types dominated by big sagebrush.

5.3 Upland Game Birds

Sage grouse strutting ground surveys were completed at dawn over three mornings on April 29-30 and May 1 of 1993. Additional surveys were completed in April, 1997 covering the entire permit area. Known strutting grounds were inventoried and the entire permit and one half-mile buffer were also searched for additional strutting grounds. Surveys were completed by traversing the area and stopping periodically to glass potential strutting ground sites and listen for strutting birds.

Mourning doves and sage grouse were the only upland game birds noted for the area. Mourning doves are migrants which only inhabit the area from spring into early fall. Sage grouse may inhabit the area year long. A strutting ground has been located north of the Permit Area on the border of Section 30 and Section 19, T33N, R89W (Plate D9-1). This lek was noted in file searches and counts are shown in Table D9-3. The lowest number of birds recorded was three males in 1996. No other leks are known to exist within or adjacent to the study area and the 1993 surveys did not record any new active strutting grounds. Sage grouse were observed during other survey periods but did not appear to be abundant in the area. All sage grouse were recorded in association with sagebrush shrublands.

5.4 Waterfowl and Shorebirds

Specific surveys were not conducted for waterfowl and shorebirds as agreed upon with the WG&FD. All such species recorded during other surveys were designated on the species list. Habitat for these species is not abundant in the study area and consists primarily of ponds

created by mining and several small stockponds. Most of the seeps do not discharge an adequate quantity of water to support waterbird habitat. A total of 10 waterfowl species and five shorebirds were observed during surveys. All species recorded are common to the region.

5.5 Raptors

Raptor nest searches were conducted on the ground over suitable habitats during all survey periods in 1992, 1993, 1994, 1996 and 1997. Searches generally extended at least one mile from the permit boundary. Nesting activities and production were determined in June of 1992 and early July of 1994 for selected nest sites. Nest site activity and production surveys were completed so as not to cause excessive disturbance to nesting birds. In some cases, production could not be determined due to inaccessibility of nest sites and the prolonged disturbance that would have been required to make those determinations. Agency files were also reviewed to obtain additional information regarding raptors inhabiting the area.

File searches identified only five previously documented raptor nests within the study area. These nest sites are identified in Tables D9-4, D9-5, D9-6 and on the attached map as FH-4b, FH-7a, FH-12, FH-14 and GHO-1. Nest site FH-4b was listed in agency files as unknown, with no past history. Based on field surveys completed in 1993, this nest site was used by ferruginous hawks. Nest site GHO-1 is located in a reclaimed area and consists of a man-made pole structure. This site was placed for mitigation of a great horned owl nest removed during reclamation of mining facilities. Site FH-7a was located within a mine disturbance (Pathfinder's Lucky Mc Mine). Site FH-12 is located in a limber pine and FH-14 on a rock outcrop.

A total of 59 new raptor nest sites have been identified by Intermountain Resources during the 1992-1996 field surveys. Overall, nest sites identified included eight red-tailed hawk nests representing six pairs of birds, 49 ferruginous hawk nests representing 17 territories, three golden eagle nests of two pairs, three prairie falcon nests and one great horned owl nest. Tables D9-4, D9-5, D9-6, and D9-7 provide the status of these nest sites for different survey periods as known. Production was recorded for red-tailed hawks and ferruginous hawks, while production of the active prairie falcon aerie was undetermined. The golden eagle and great horned owls failed to produce young.

The golden eagle nest on the highwall of the Buss Pit was caged in 1993 under permits from the USFWS and WG&FD to enable reclamation activities to proceed (nest site GE-2a in the table and on the map). This pair has an alternate nest site (GE-2b) and suitable highwalls were to be left during reclamation. Suitable highwalls are also found on permanently reclaimed areas adjacent to the site.

Several other raptor species were recorded within the study area but nesting was not documented. These species included the Swainson's hawk, rough-legged hawk, bald eagle

and turkey vulture. The marsh hawk and American Kestrel were also recorded and undoubtedly nest in the area, however, specific nest sites were not recorded.

5.6 Passerine Birds

Specific surveys for passerine bird species were not required as agreed upon with the WG&FD (P. Deibert, WG&FD, Pers. Comm. Oct. 1996). However, all such species observed during the course of field work were recorded and are documented with an asterisk on the species list in Addendum D9A. A total of 33 other bird species were recorded during surveys. The most common species were the horned lark, vesper sparrow and meadowlark. Most passerine species were recorded in the various sagebrush shrublands which dominate the permit area. However, the best diversity of bird species was observed in the scattered pine - rough breaks shrublands due to the high diversity of plant species and topography.

5.7 Migratory Birds of High Federal Interest (MBHFI)

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

Several MBHFI species are known to occur in the region and include the bald eagle, golden eagle, ferruginous hawk, prairie falcon, burrowing owl, mountain plover, and loggerhead shrike. The golden eagle, bald eagle, ferruginous hawk, prairie falcon, and loggerhead shrike have been documented in the study area while the mountain plover and burrowing owl have been noted in adjacent areas.

The bald eagle is a winter resident and migrates through the area but does not nest on the site. The golden eagle, ferruginous hawk and prairie falcon nest on the area and have been discussed in Section D9.5.5. Loggerhead shrikes probably nest in the area but active nest sites were not found.

Additional surveys were completed for mountain pluffers in April and May of 197. These surveys focused on grassland and sparse shrub habitats typically used by this species for nesting.

5.8 Threatened or Endangered Species (T&E) and State-listed Rare Species

T&E species and other wildlife species surveys were completed during all site visits. This was accomplished by searching all suitable habitats and recording any species encountered.

The bald eagle, peregrine falcon, and black-footed ferret are endangered species which may occur in the area. Nesting habitat does not exist within the study area for the bald eagle or peregrine falcon but they may inhabit the area during migration. Although the bald eagle has

been recorded in the study area, winter concentrations and roost areas have not been documented. Golden eagles nest in the area and are also protected along with the bald eagle.

Prairie dog towns provide habitat for black-footed ferrets. Active prairie dog towns were not observed within the study area, although active towns are known to exist within several miles. These towns were inhabited by white-tailed prairie dogs and are located over one mile north of the study area as shown on Plate D9-1. The small size and wide spacing of prairie dog towns in the region would make survival of black-footed ferret populations difficult.

A ferret survey was completed in 1994 on 550 acres of white-tailed prairie dog towns located three to five miles northwest of the permit area. This survey was submitted to, and approved by the USFWS. The survey reported no evidence of ferrets.

No state listed species, other than those species already discussed previously in this report, were recorded on the study area.

5.9 Reptiles and Amphibians

Specific surveys for reptiles and amphibians were not required for this project as agreed upon with the WG&FD (P. Deibert, WG&FD, Pers. Comm. Oct. 1996). Several species were observed as noted in Addendum D9A and included the sagebrush lizard, short-horned lizard, garter snake and leopard frog.

5.10 Fish

Natural habitats for fish species do not exist within the study area.

6. IMPACTS

Crucial or critical wildlife habitats have not been documented on the permit or adjacent areas. A few big game animals may be displaced during mining activities. However, based upon pre-mine density estimates, this would only be 20-30 pronghorn and one or two mule deer. However, based upon long term monitoring at large coal mines, these species readily adapt to mining activities and utilize disturbed sites and newly reclaimed areas.

A sage grouse strutting ground is located about one mile north of the permit area and should not be impacted. Individual birds may be disturbed and a limited amount of nesting and foraging habitat will be affected.

Habitat for waterfowl and shorebirds is limited within the study area. These habitats are not expected to be impacted by mining but increased human activity may affect migrating and feeding birds.

Some nesting raptors will be affected although disturbances should not actually remove nest sites. Mining activities associated with the well fields, road useage and other operations could preclude the use of existing nest sites and force pairs to move or to alter their territories. Prey abundance will also be slightly altered due to removal of vegetation and soils.

Other bird, mammal, reptile and amphibian species will be displaced from areas where vegetation and soils are removed. However, these disturbances will be minor with respect to the entire study area. Also, some of the well fields will be established in areas that have been previously disturbed by past mining activities. Impact to wildlife will also be reduced through the utilization of existing roads.

The only MBHFI species which will probably be impacted by this operation are raptor species and include the ferruginous hawk, prairie falcon and golden eagle. These species are all known to nest in the study area. Although nest sites will not be physically disturbed, surface activities related to in situ mining may impact some of the sites as previously discussed. The ferruginous hawk is the most common nesting MBHFI species while only one pair of golden eagles and one pair of prairie falcons have been recorded nesting on the study area in previous years. The loggerhead shrike generally nests in tall shrubs which are located along ephemeral drainages in the study area. Most of the anticipated disturbances should occur in uplands and not within drainages, so therefore, this species should be minimally impacted. The mountain plover should not be impacted since this species was not observed on site and very little upland grassland or sparse subshrub habitats exist on the area for this species.

T&E or other species of concern should not be impacted by this operation. The only T&E species observed was the bald eagle. This species is only a migrant to the area and should not be affected by the project. Prairie dog towns do not exist within one mile of the permit area,

therefore, habitat for black-footed ferrets is not present. Tall cliffs preferred for nesting peregrine falcons also do not exist on site so this species should not be impacted.

In general, the majority of the anticipated disturbances will occur within the sagebrush-grass habitat areas. Habitat types required by T&E or other species of concern either do not exist within the study area or are limited in extent and will not be disturbed.

7. MITIGATION AND MONITORING

Impacted wildlife habitats will be mitigated following mining by establishing vegetation in accordance with the approved reclamation plan. Rock outcrops, trees, seeps and ponds should not be impacted, therefore, mitigation is not planned for those features. Raptor nest sites will not be removed, however, temporary mitigation will be needed for nest sites where operations are near enough to preclude successful reproduction. Mitigation will be carried out as approved by the USFWS and WG&FD under the appropriate permits obtained from those agencies. Proposed mitigation will include construction of alternate nest sites on natural features (trees, rock outcrops, cliffs), on mine highwalls, or the erection of appropriately sized nesting platforms. Fences, if needed, will be constructed to the required WG&FD standards with approval from the WDEQ and BLM. Minimal fencing, if any, is projected. Controlled speed limits will be implemented to reduce wildlife/vehicle collisions. Employees will be educated about wildlife protection, sensitive species and game laws through use of applicable publications and during safety meetings. The implementation of all of the above commitments will help alleviate impacts to wildlife.

8. CONCLUSION

This report provides wildlife baseline data for the Gas Hills Project Area. Investigated were big game, game birds, raptors, migratory birds of high federal interest, and threatened or endangered species. Threatened or endangered species have not been documented as having important habitat on the area. No crucial or critical wildlife habitats exist in the area. Numerous raptor nests exist on the study area and most of these nest sites belong to migratory birds of high federal interest. One sage grouse strutting ground is located about one mile north of the permit area. The limited amount of disturbance projected by this mining operation will have minimal impacts on most wildlife species. No crucial big game winter ranges or critical endangered species habitats will be affected but raptor nest sites will need to be protected and approved mitigation implemented as approved. Monitoring will be implemented as required by approved permits or at the discretion of the company as discussed in the mine plan.

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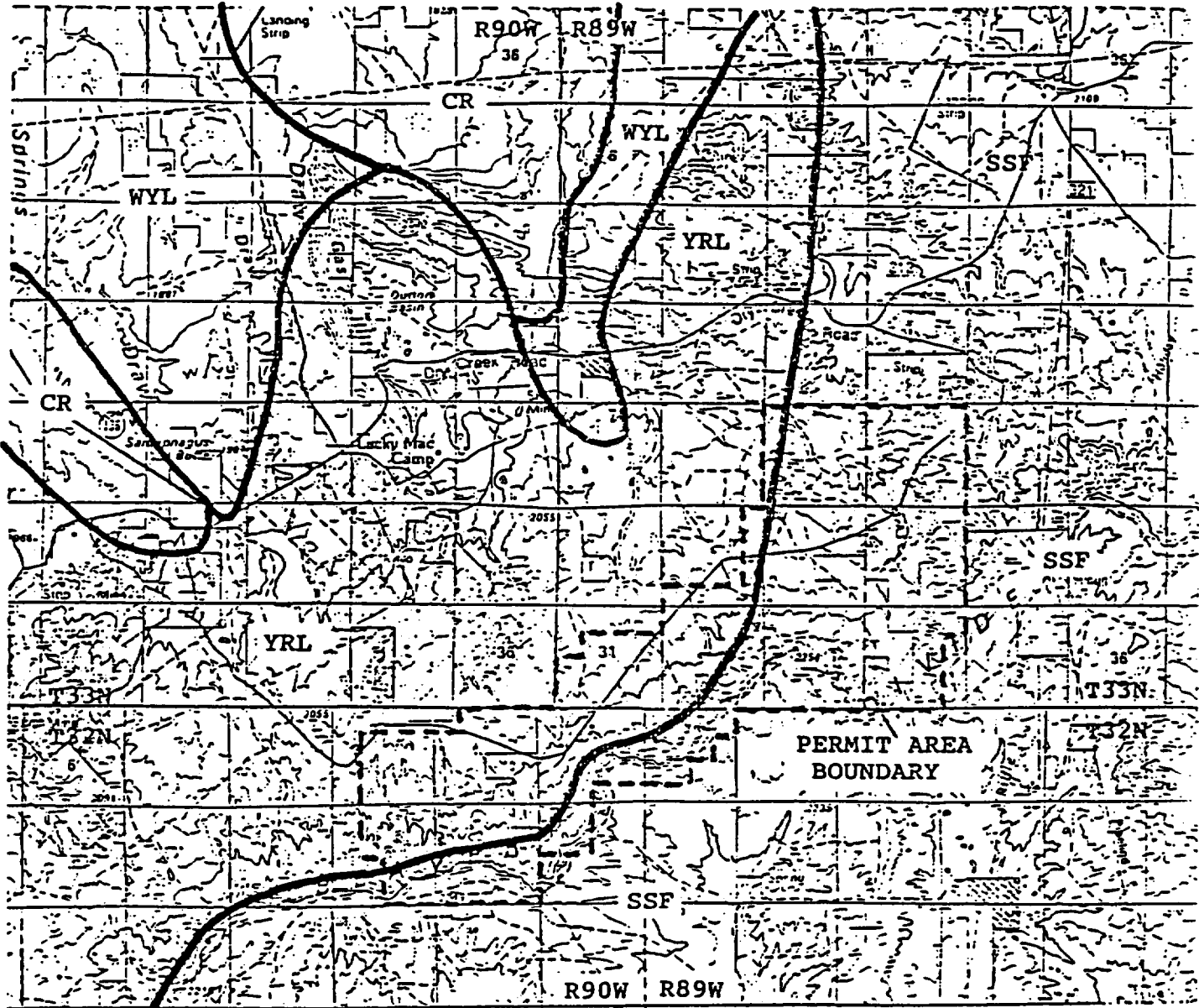


Figure D9-1. Pronghorn Ranges for the Power Resources Gas Hills Project Area, 1996.

CR - Crucial Winter Range
WYL - Winter/Yearlong Range
YRL - Yearlong Range
SSF - Spring/Summer/Fall Range

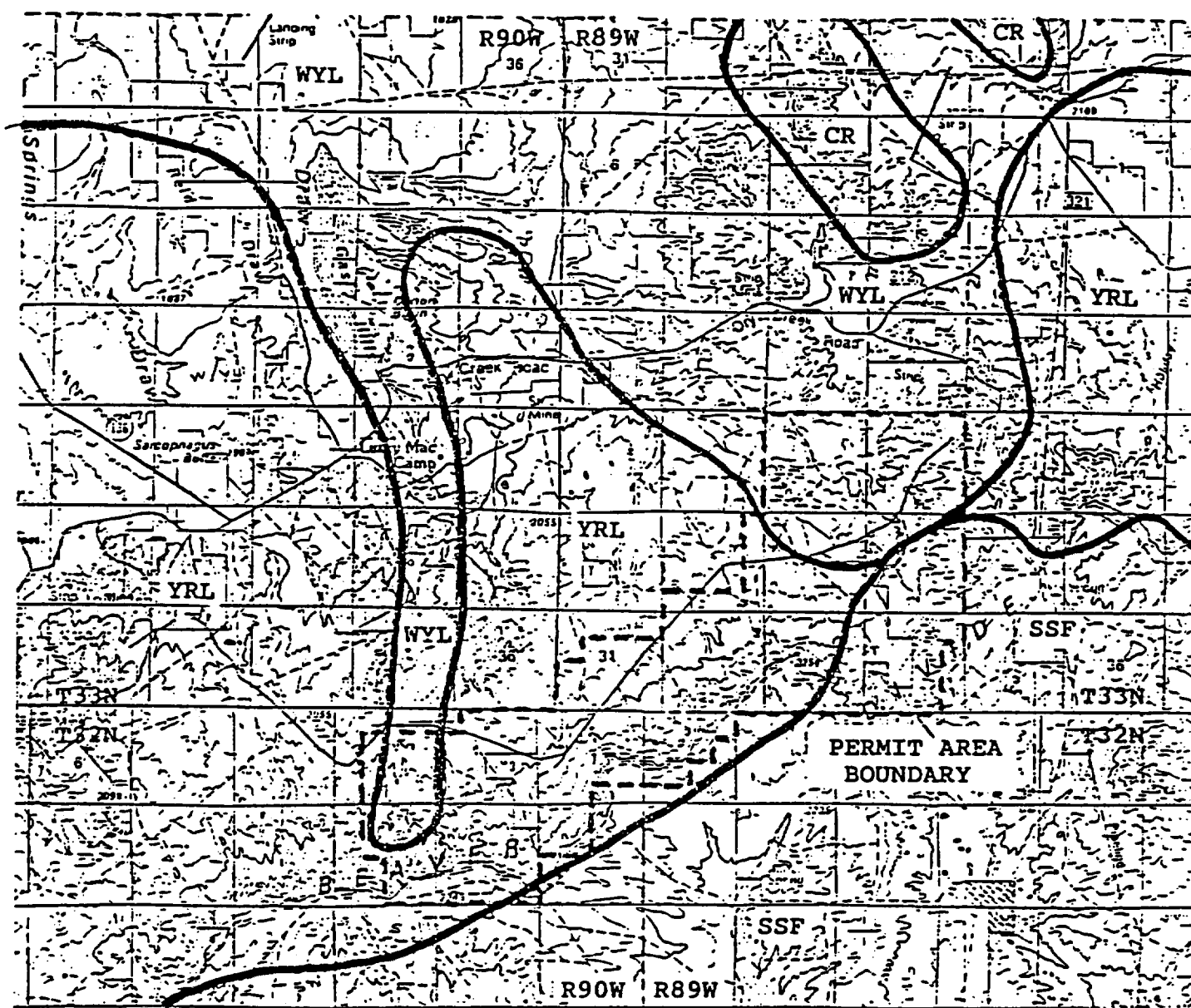


Figure D9-2. Mule Deer Ranges on the Power Resources Gas Hills Project Area, 1996.

- CR - Crucial Winter Range
- WYL - Winter/Yearlong Range
- YRL - Yearlong Range
- SSF - Spring/Summer/Fall Range

Table D9-1.
Tabular Summary of Wildlife Habitat/Vegetation Types and Amount of
Each Type to be Disturbed

<u>Permit Area</u> Habitat/Vegetation Type	<u>Affected Area</u> Acres	%	Acres	%
Mixed Sagebrush-Grass	4089	47.2	552	51.0
Rough Breaks West	569	7.0	29	2.7
Rough Breaks East	1512	18.7	216	20.0
Bottomland Sagebrush	991	10.8	93	8.6
Upland Grasslands	131	1.5	42	3.9
Reclaimed Mining Areas	844	10.3	98	9.0
Disturbed Land	319	3.9	41	3.8
Reservoirs	17	0.2	0	0.0
Wetlands	<u>28</u>	<u>0.4</u>	<u>11*</u>	<u>1.0</u>
TOTAL	8500	100.0	1082	100.0

* A wetland area crosses Mine Unit #4 and is within the area of potential disturbance. Actual disturbance of the wetland area will be avoided wherever possible or mitigated as described in the Operations Plan.

Table D9-2.
Big Game Observations on the Power Resources
Gas Hills Project Area in 1992, 1993 and 1996.

Date/Species	Habitat Type						Total
	MSG	RB	BS	UG	R	DI	
<u>11/5/92</u>							
Pronghorn	79	10	-	-	-	-	89
Mule Deer	10	2	2	-	-	-	140
<u>4/29/93</u>							
Pronghorn	96	6	22	-	12	-	136
Mule Deer	-	4	-	-	-	-	4
<u>6/17/93</u>							
Pronghorn	42	-	-	2	10	-	54
Mule Deer	3	4	-	-	-	-	7
<u>4/29/93</u>							
Pronghorn	52	6	12	-	3	-	73
Mule Deer	-	8	-	-	-	-	8
<u>9/23/96</u>							
Pronghorn	100	-	-	4	38	-	142
Mule Deer	10	-	-	-	-	-	10

MSG - Mixed Sagebrush-Grass
RB - Rough Breaks
BS - Bottomland Sagebrush
UG - Upland Grassland
R - Reclaimed
DI - Disturbed

Table D9-3.
Sage Grouse Strutting Ground Counts for the Lek Located in the SE4 of
Section 19 and the NE4 of Section 30 T33N R89W.

Date	# Male	# Females
1982	65	?
4/19/89 ¹	8	0
4/03/90 ¹	18	0
4/29/93 ²	15	0
4/30/93 ²	13	0
4/03/96 ¹	3	0
4/04/97 ²	6	0

1) WG&FD counts

2) Intermountain Resources counts

Table D9-4.
Raptor Nest Site Locations for the Power Resources Gas Hills
Project Area, 1992-1993.

Species	Location	Nest Substrate	Condition	1993 Activity
<u>GE - Golden Eagle</u>				
GE-1	NWSW Sec.11 T32N R9OW	Limber Pine	Good	I
GE-2a	NWSW Sec.26 T33N R89W	Limber Pine	Good	ALT
GE-2b	NESW Sec.27 T33N R89W	Highwall	D--M	A,?,O
TOTAL				1,?,O
<u>FH - Ferruginous Hawk</u>				
FH-1a	SWNE Sec.32 T33N R89W	Hilltop	Fair	ALT
FH-1b	NESE Sec.32 T33N R89W	Rock Outcrop	Good	A,2,2
FH-1c	NESE Sec.32 T33N R89W	Hilltop	Good	ALT
FH-1d	NWSE Sec.32 T33N R89W	Hilltop	Fair	ALT
FH-1e	NWSE Sec.32 T33N R89W	Hillside	Good	ALT

Table D9-4(continued)

Species	Location	Nest Substrate	Condition	1993 Activity
<u>FH- Ferruginous Hawk (continued)</u>				
FH-2a	SWSW Sec.34 T33N R89W	Rock Outcrop	Good	ALT
FH-2b	SWSW Sec.34 T33N R89W	Rock Outcrop	Good	ALT
FH-2c	SESE Sec.33 T33N R89W	Hillside	Good	A,O,O
FH-2d	SESE Sec.33 T33N R89W	Hillside	Fair	ALT
FH-2e	SWSW Sec.34 T33N R89W	Rock Outcrop	Fair	ALT
FH-3a	SENE Sec.33 T33N R89W	Rock Outcrop	Good	A,3,3
FH-3b	SENE Sec.33 T33N R89W	Rock Outcrop	Fair	ALT
FH-3c	NENE Sec.33 T33N R89W	Hilltop	Fair	ALT
FH-3d	SWSW Sec.28 T33N R89W	Hilltop	Fair	ALT
FH-3e	NWSW Sec.28 T33N R89W	Rock Outcrop	Fair	ALT
FH-4a	SWNW Sec.12 T32N R9OW	Rock Outcrop	Good	A,O,O
FH-4b	NWSW Sec.12 T32N R9OW	Rock Outcrop	Good	ALT
FH-5a	NWSW Sec.21 T33N R89W	Limber Pine	Good	A,2,2

Table D9-4 (continued)

Species	Location	Nest Substrate	Condition	1993 Activity
<u>FH - Ferruginous Hawk (continued)</u>				
FH-5b	NWSW Sec.21 T33N R89W	Hillside	Poor	ALT
FH-6a	SWSE Sec.16 T33N R89W	Limber Pine	Good	A,2,2
FH-7a	NENW Sec.36 T33N R90W	Highwall	Good	A,3,3
FH-8	SENE Sec.34 T33N R89W	Rock Outcrop	Good	I
			TOTAL	7,12,12

RTH - Red-tailed Hawk

RTH-1	SENW Sec.12 T32N R90W	Dead Pine	-- --	DN-1993
RTH-2a	NESW Sec.34 T33N R89W	Cottonwood	Good	A,?,?
RTH-2b	NESW Sec.34 T33N R89W	Cottonwood	Good	ALT
RTH-3	SESW Sec.15 T33N R89W	Highwall	Good	A,?,2
RTH-4	NWNW Sec.26 T33N R89W	Limber Pine	Good	I
RTH-5a	NESW Sec.21 T33N R89W	Limber Pine	Fair	I

Table D9-4 (continued)

Species	Location	Nest substrate	Condition	1993 Activity
<u>RTH - Red Tailed Hawk</u>				
RTH-5b	NESW Sec.21 T33N R89W	Limber Pine	Fair	ALT
TOTAL				2,2,2
<u>PF - Prairie Falcon</u>				
PF-1	SESW Sec.33 T33N R89W	Cliff	Good	A,?,?
<u>GHO - Great Horned Owl</u>				
GHO-1	NESE Sec.32 T33N R89W	Man-made Pole Structure	Good	I

LEGEND

FH-2e - Ferruginous Hawk, Pair Number 2, Alternate Nest Site e

I - Inactive Nest Site

ALT - Alternate Nest Site

-DN 1993 - Nest Destroyed by Natural Causes in 1993

A,?,2 - A - Nest Active

? - Unknown Number Hatched

2 - Two Birds Fledged

D-M - Destroyed by Mining Reclamation

Table D9-5.

**Additional Raptor Nest Sites Identified on the Expanded Portions and Buffer for
the Power Resources Gas Hills Project Area in 1994.**

Species	Location	Nest Substrate	Condition	1994 Activity
<u>FH - Ferruginous Hawk</u>				
FH-6b	NWSE Sec.16 T33N R89W	Limber Pine (Man-Made)	Good	I
FH-7b	SWNW Sec.31 T33N R89W	Hillside	Fair	I
FH-9	SESW Sec.17 T33N R89W	Hillside	Poor	I
FH-10a	SWNE Sec.19 T33N R89W	Hilltop	Fair	I
FH-10b	NESW Sec.19 T33N R89W	Hillside	Fair	I
FH-11a	SWSE Sec.24 T33N R90W	Rock Outcrop	Good	I
FH-11b	NESW Sec.24 T33N R90W	Rock Outcrop	Good	I

LEGEND

FH-7b - Ferruginous Hawk, Pair Number 7, Alternate Nest Site b.

I - Inactive Nest for Year Surveyed

Table D9-6.

**Additional Raptor Nests Observed on the 1996 Expanded Portions and Buffer
Portion of the Power Resources Gas Hills Project Area 1992-1996.**

Species	Location	Nest Substrate	Condition	Activity
<u>FH - Ferruginous Hawk</u>				
FH-12	NESW Sec.14 T33N R89W	Limber Pine	Good	Active, 1996 3 young
FH-13	NESE Sec.3 T32N R89W	Hillside	Fair	Inactive 1993
FH-14	NESE Sec.34 T33N R90W	Rock Outcrop	Good	Inactive 1993
FH-15a	NWNW Sec.10 T32N R90W	Rock Outcrop	Good	Alternate 1993
FH-15b	NENE Sec. 9 T32N R90W	Rock Outcrop	Good	Alternate 1993
FH-15c	NENE Sec. 9 T32N R90W	Rock Outcrop	Good	Active 1993
FH-15d	NWNE Sec. 9 T32N R90W	Rock Outcrop	Good	Alternate 1993
FH-15e	NENW Sec. 9 T32N R90W	Rock Outcrop	Fair	Alternate 1993
FH-15f	SWNW Sec. 9 T32N R90W	Rock Outcrop	Fair	Alternate 1993
FH-16	SENE Sec. 8 T32N R90W	Rock Outcrop	Fair	Inactive 1993

Table D9-6 (continued)

Species	Location	Nest substrate	Condition	Activity
<u>FH -ferruginous Hawk (continued)</u>				
FH-17	NWSW Sec.34 T33N R9OW	Hillside	Good	Unknown
FH-18	NWSE Sec.30 T33N R89W	Hillside	Good	Unknown
<u>RTH - Red-tailed Hawk</u>				
RTH-6	NWNW Sec.11 T32N R9OW	Dirt Cliff	Good	Unknown

Table D9-7. Additional Raptor Nests Observed on the Power Resources Gas Hills Project Area in 1997.

Species	Location	Nest Substrate	Condition	Activity
<u>FH - Ferruginous Hawk</u>				
FH-1f	SESE Sec. 32 T33N R89W	Rock Outcrop	Fair	Inactive
FH-1g	SWSE Sec. 32 T33N R89W	Rock Outcrop	Fair	Inactive
FH-1h	NWNE Sec. 6 T32N R89W	Rock Outcrop	Fair	Inactive
FH-1i	NWNE Sec. 6 T32N R89W	Rock Outcrop	Good	Inactive
FH-1j	NWNE Sec. 6 T32N R89W	Rock Outcrop	Fair	Inactive
FH-1k	NWSW Sec. 33 T33N R89W	Rock Outcrop	Fair	Inactive
FH-10c	NWSW Sec. 20 T33N R89W	Hilltop	Fair	Inactive
FH-18b	SWNE Sec. 30 T33N R89W	Hillside	Good	Inactive
<u>PF - Prairie Falcon</u>				
PF-1b	SENE Sec. 33 T33N R89W	Rock Outcrop	Good	Active
PF-2	NESE Sec. 32 T33N R89W	Rock Outcrop	Good	Active

ADDENDUM D9A

Wildlife Species List

Addendum D9A.
Mammal species which were observed or have the potential for
occurring on the Power Resources Gas Hills Study Area.*

Common Name	Scientific Name	Observed on Site <u>b/</u>
INSECTIVORES	INSETIVORA	
Masked shrew	<u>Sorex cinereus</u>	
Merriam's shrew	<u>Sorex merriami</u>	
BATS	CHIROPTERA	
Little brown myotis	<u>Myotis lucifugus</u>	
Small-footed myotis	<u>Myotis leibii</u>	
Long-legged myotis	<u>Myotis volans</u>	
Long-eared myotis	<u>Myotis evotis</u>	
Hoary bat	<u>Lasiurus cinereus</u>	
Silver-haired bat	<u>Lasionycteris noctivagus</u>	
Big brown bat	<u>Eptesicus fuscus</u>	
Townsend's bat	<u>Plectos townsendii</u>	
LAGOMORPHS	LAGOMORPHA	
Mountain Cottontail	<u>Sylvilagus nuttallii</u>	c/*
Desert cottontail	<u>Sylvilagus audubonii</u>	*
White-tailed jackrabbit	<u>Lepus townsendii</u>	*
RODENTS	RODENTIA	

Addendum D9A (continued)

Common Name	Scientific Name	Observed On site b/
Least chipmunk	<u>Eutamias minimus</u>	*
Wyoming ground squirrel	<u>Spermophilus elegans</u>	*
Thirteen-lined ground squirrel	<u>Spermophilus tridecemlineatus</u>	*
White-tailed prairie dog	<u>Cynomys leucurus</u>	
Northern pocket gopher	<u>Thomomys talpoides</u>	*
Olive-backed pocket mouse	<u>Perognathus fasciatus</u>	
Ord's kangaroo rat	<u>Dipodomys ordii</u>	
Yellowbellied marmot	<u>Marmota flaviventris</u>	
Western harvest mouse	<u>Reithrodontomys megalotis</u>	
Deer mouse	<u>Peromyscus maniculatus</u>	
Northern grasshopper mouse	<u>Onychomys leucogaster</u>	
Bushy-tailed woodrat	<u>Neotoma cinerea</u>	*
Gapper's red-backed vole	<u>Clethrionomys gapperi</u>	
Montane vole	<u>Microtus montanus</u>	
Long-tailed vole	<u>Microtus longicaudus</u>	
Prairie vole	<u>Microtus ochrogaster</u>	
Sagebrush vole	<u>Lagurus curtatus</u>	
Western jumping mouse	<u>Zapus princeps</u>	
Porcupine	<u>Erethizon dorsatum</u>	*

Addendum D9A (continued)

Common Name	Scientific Name	Observed On site b/
CARNIVORES	CARNIVORA	
Coyote	<u>Canis latrans</u>	*
Red fox	<u>Vulpes vulpes</u>	*
Raccoon	<u>Procyon lotor</u>	
Long-tailed weasel	<u>Mustela frenata</u>	
Short-tailed weasel	<u>Mustela erminea</u>	
Badger	<u>Taxidea taxus</u>	*
Striped skunk	<u>Mephitis mephitis</u>	*
Bobcat	<u>Lynx rufus</u>	*
Mountain lion	<u>Felis concolor</u>	
EVEN-TOED UNGULATES	ARTIODACTYLA	
Mule deer	<u>Odocoileus hemionus</u>	*
Pronghorn	<u>Antilocapra americana</u>	*

a/ Compiled from Long (1965), Wyoming Game and Fish (1981), Clark and Stromberg (1987).

b/ An asterisk indicates that the species itself or distinctive evidence (such as scat, tracks, bones), was observed on site. All other speices listed may occur on the permit area, but no evidence of their occurrence has been found. (Suitable habitat is present on-site and the distribution range overlaps the mine permit area.)

c/ Cottontails (Sylvilagus spp.) were seen during field surveys. It was not possible to differentiate between Nuttall's cottontail and the Desert cottontail, both of which could occur on the permit area.

Addendum D9A.

Bird species which were observed or have the potential for occurring on the Power Resources Company Study Area.*

Common Name	Scientific Name <u>b/</u>	Observed on Site <u>c/</u>
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GREBES	PODICIPEDIFORMES	
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Western grebe	<u>Aechmophorus occidentalis</u>	
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Eared grebe	<u>Podiceps nigricollis</u>	*
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Pied-billed grebe	<u>Podilymbus podiceps</u>	
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HERONS AND IBISES	CICONIFORMES	
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Great blue heron	<u>Ardea herodias</u>	
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Black-crowned night heron	<u>Nycticorax nycticorax</u>	
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GEESE AND DUCKS	ANSERIFORMES	
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Canada goose	<u>Branta canadensis</u>	
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Mallard	<u>Anas platyrhynchos</u>	*
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Gadwall	<u>Anas strepera</u>	*
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Pintail	<u>Anas acuta</u>	*
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Green-winged teal	<u>Anas crecca</u>	
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Blue-winged teal	<u>Anas discors</u>	*
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Cinnamon teal	<u>Anas cyanoptera</u>	*
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American widgeon	<u>Anas americana</u>	*
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Northern shoveler	<u>Anas clypeata</u>	*
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Redhead	<u>Aythya americana</u>	
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Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
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Ring-necked duck	<u>Aythya collaris</u>	
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Canvasback	<u>Aythya valisineria</u>	
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Lesser scaup	<u>Aythya affinis</u>	
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Common goldeneye	<u>Bucephala clangula</u>	
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Bufflehead	<u>Bucephala albeola</u>	*
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Ruddy duck	<u>Oxyura jamaicensis</u>	
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Common merganser	<u>Mergus merganser</u>	*
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Hooded merganser	<u>Laphodytes cucullatus</u>	
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VULTURES, HAWKS AND FALCONS FALCONIFORMES

Osprey	<u>Pandion haliaetus</u>	
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Goshawk	<u>Accipiter gentilis</u>	
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Cooper's hawk	<u>Accipiter cooperii</u>	
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Sharp-shinned hawk	<u>Accipiter striatus</u>	
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Turkey vulture	<u>Cathartes aura</u>	*
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Red-tailed hawk	<u>Buteo jamaicensis</u>	*
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Swainson's hawk	<u>Buteo swainsoni</u>	*
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Rough-legged hawk	<u>Buteo lagopus</u>	*
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Ferruginous hawk	<u>Buteo regalis</u>	*
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Golden eagle	<u>Aquila chrysaetos</u>	*
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Bald eagle	<u>Haliaeetus leucocephalus</u>	*
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Marsh hawk	<u>Circus cyaneus</u>	*
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Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
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Prairie falcon	<u>Falco mexicanus</u>	*
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Peregrine falcon	<u>Falco peregrinus</u>	
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Merlin	<u>Falco columbarius</u>	
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American kestrel	<u>Falco sparverius</u>	*
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GALLINACEOUS BIRDS	GALLIFORMES	
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Sage grouse	<u>Centrocercus</u> <u>urophasianus</u>	*
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CRANES AND RAILS	GRUIFORMES	
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Sora rail	<u>Porzana carolina</u>	
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American coot	<u>Fulica americana</u>	*
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SHOREBIRDS	CHARADRIIFORMES	
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Killdeer	<u>Charadrius vociferus</u>	*
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Mountain plover	<u>Charadrius montanus</u>	
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Long-billed curlew	<u>Numenius americanus</u>	
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Upland plover	<u>Bartramia longicauda</u>	
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Spotted sandpiper	<u>Actitis macularia</u>	*
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Solitary sandpiper	<u>Tringa solitaria</u>	
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Willet	<u>Catoptrophorus semipalmatus</u>	
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Greater yellow legs	<u>Tringa melanoleuccus</u>	
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Lesser yellow legs	<u>Tringa flavipes</u>	
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Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
Least sandpiper	<u>Calidris minutilla</u>	
Long-billed dowitcher	<u>Limnodramus scolopaceus</u>	
Semipalmated sandpiper	<u>Calidris pusillus</u>	
Marbled godwit	<u>Limosa fedoa</u>	
American avocet	<u>Recurvirostra americana</u>	*
Black-bellied plover	<u>Squatarola squatarola</u>	
Wilson's phalarope	<u>Steganopus tricolor</u>	*
Northern phalarope	<u>Lobipes lobatus</u>	
SHOREBIRDS	CHARADRIIFORMES	
Common snipe	<u>Capella gallinago</u>	
California gull	<u>Larus californicus</u>	*
Ring-billed gull	<u>Larus delawarensis</u>	
Franklin's gull	<u>Larus pipixcan</u>	
PIGEONS AND DOVES	COLUMBIFORMES	
Rock dove	<u>Columbia livia</u>	*
Mourning dove	<u>Zenaida macroura</u>	*
CUCKOOS	CUCULIFORMES	
Black-billed cuckoo	<u>Coccyzus erythrophthalmus</u>	
OWLS	STRIGIFORMES	

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
Great horned owl	<u>Bubo virginianus</u>	*
Long-eared owl	<u>Asio otus</u>	
Short-eared owl	<u>Asio flammeus</u>	
Burrowing owl	<u>Speotyto cunicularia</u>	
GOATSUCKERS	CAPRIMULGIFORMES	
Poorwill	<u>Phalaenoptilus nattalli</u>	
Common nighthawk	<u>Chordeiles minor</u>	*
SWIFTS		
White-throated swift	<u>Aeronautes saxatalis</u>	
HUMMINGBIRDS	APODIFORMES	
Broad-tailed hummingbird	<u>Salasphorus platycercus</u>	
KINGFISHERS	CORACIIFORMES	
Belted kingfisher	<u>Megaceryle alcyon</u>	
WOODPECKERS	PICIFORMES	
Common flicker	<u>Colaptes auratus</u>	*
Yellow-bellied sapsucker	<u>Sphyrapicus varius</u>	
Hairy woodpecker	<u>Dendrocopos villosus</u>	*
Downy woodpecker	<u>Dendrocopos pubescens</u>	

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
PERCHING BIRDS	PASSERIFORMES	
FLYCATCHERS	TYRANNIDAE	
Eastern kingbird	<u>Tyrannus tyrannus</u>	
Western kingbird	<u>Tyrannus verticalis</u>	*
Cassin's Kingbird	<u>Tyrannus vociferans</u>	
Say's phoebe	<u>Sayornis saya</u>	*
Western flycatcher	<u>Empidonax difficilis</u>	
Willow flycatcher	<u>Empidonax traillii</u>	
Western wood peewee	<u>Contopus sordidulus</u>	
Olive-sided flycatcher	<u>Natalornis borealis</u>	
Hammond's flycatcher	<u>Empidonax hamondii</u>	
Dusky flycatcher	<u>Empidonax oberholseri</u>	
LARKS	ALAUDIDAE	
Horned lark	<u>Eremophila alpestris</u>	*
SWALLOWS	HIRUDINIDAE	
Tree swallow	<u>Iridoprocne bicolor</u>	
Violet-green swallow	<u>Tachycineta thalassina</u>	
Rough-winged swallow	<u>Stelgidopteryx ruficollis</u>	*
Barn swallow	<u>Hirundo rustica</u>	
Bank swallow	<u>Riparia riparia</u>	*

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
Cliff swallow	<u>Petrochelidon pyrrhonota</u>	*
JAYS AND CROWS	CORVIDAE	
Steller's jay	<u>Cyanocitta stelleri</u>	
Pinyon jay	<u>Gymnorhinus syanocephalus</u>	*
Gray jay	<u>Perisoreus canadensis</u>	
Black-billed magpie	<u>Pica pica</u>	*
Common crow	<u>Corvus brachyrhynchos</u>	
Common raven	<u>Corvus corax</u>	*
Clark's nutcracker	<u>Nucifraga columbiana</u>	*
CHICKADEES	PARIDAE	
Black-capped chickadee	<u>Parus atricapillus</u>	
Mountain chickadee	<u>Parus gambeli</u>	
NUTHATCHES	SITTIDAE	
White-breasted nuthatch	<u>Sitta carolinensis</u>	
Red-breasted nuthatch	<u>Sitta canadensis</u>	*
CREEPERS	CERTHIIDAE	
Brown creeper	<u>Certhia familiaris</u>	
Dipper	<u>Cinclus mexicanus</u>	
WRENS	TROGLODYTIDAE	

Addendum D9a (continued)

Common Name	Scientific Name b/	Observed On site c/
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House wren	<u>Troglodytes aedon</u>	
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Rock wren	<u>Salpinctes obsoletus</u>	*
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MOCKINGBIRDS AND THRASHERS MIMIDAE

Gray catbird	<u>Dumetalla carolinensis</u>	
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Sage thrasher	<u>Oreoscoptes montanus</u>	*
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THRUSHES, SOLITARES, AND TURIDAE
BLUEBIRDS

American robin	<u>Turdus migratorius</u>	*
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Hermit thrush	<u>Catharus guttatus</u>	
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Swainson's thrush	<u>Catharus ustulata</u>	
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Veery	<u>Catharus fuscescens</u>	
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Mountain bluebird	<u>Sialia currucoides</u>	*
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Townsend's solitaire	<u>Myadestes townsendii</u>	
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WAXWINGS BOMBYCILLIDAE

Cedar waxwing	<u>Bombycilla cedrorum</u>	
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SHRIKES LANIIDAE

Northern shrike	<u>Lanius excubitor</u>	
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Loggerhead shrike	<u>Lanius ludovicianus</u>	*
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STARLINGS STURNIDAE

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed On site c/
Starling	<u>Sturnus vulgaris</u>	*
VIREOS	VIREONIDAE	
Warbling vireo	<u>Vireo gilvus</u>	
WARBLERS	PARULIDAE	
Yellow warbler	<u>Dendroica petechia</u>	
Yellow-rumped warbler	<u>Dendroica coronata</u>	
MacGillivray's warbler	<u>Oporornis tolmiei</u>	
Common yellowthroat	<u>Geothlypis trichas</u>	
Wilson's warbler	<u>Wilsonia pusilla</u>	
American redstart	<u>Setophaga ruticilla</u>	
WEAVER FINCHES	PLOCEIDAE	
House sparrow	<u>Passer domesticus</u>	*
BLACKBIRDS, ORIOLES AND COWBIRDS	ICTERIDAE	
Bobolink	<u>Dolichonyx oryzivorus</u>	
Western meadowlark	<u>Sturnella neglecta</u>	*
Red-winged blackbird	<u>Agelaius phoeniceus</u>	*
Yellow-headed blackbird	<u>Xanthocephalus xanthocephalus</u>	
Brewer's blackbird	<u>Euphagus cyanocephalus</u>	*
Northern oriole	<u>Icterus galbula</u>	

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed Name c/
Western tanager	<u>Piranga ludoviciana</u>	
Common grackle	<u>Quiscalus quiscula</u>	
Brown-headed cowbird	<u>Molothrus ater</u>	
 GROSBEAKS, FINCHES, FRINGILLIDAE SPARROWS, AND BUNTINGS		
Black-headed grosbeak	<u>Pheucticus melanocephalus</u>	
Pine grosbeak	<u>Pinicola enucleator</u>	
Lazuli bunting	<u>Passerina amoena</u>	
Cassin's finch	<u>Carpodacus cassinii</u>	
House finch	<u>Carpodacus mexicanus</u>	*
Gray-crowned rosy finch	<u>Leucosticte tephrocotis</u>	*
Pine siskin	<u>Spinus pinus</u>	
American goldfinch	<u>Spinus tristis</u>	
Red crossbill	<u>Loxia curvirostra</u>	
Rufous-sided towhee	<u>Pipilo erythrophthalmus</u>	*
Green-tailed towhee	<u>Pipilo chlorurus</u>	
Lark bunting	<u>Calamospiza melanocorys</u>	*
Savannah sparrow	<u>Passerculus sandwichensis</u>	
Grasshopper sparrow	<u>Ammodramus savannarum</u>	
Vesper sparrow	<u>Pooecetes gramineus</u>	*

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed Name c/
Lark sparrow	<u>Chondestes grammacus</u>	*
Sage sparrow	<u>Amphispiza belli</u>	
Dark-eyed junco	<u>Junco hyemalis</u>	*
Gray-headed junco	<u>Junco caniceps</u>	
Tree sparrow	<u>Spizella arborea</u>	

GROSBEAKS, FINCHES FRINGILLIDAE
SPARROWS, AND BUNTINGS

Chipping sparrow	<u>Spizella passerina</u>	
Brewer's sparrow	<u>Spizella breweri</u>	*
White-crowned sparrow	<u>Zonotrichia leucophrys</u>	*
Lincoln's sparrow	<u>Melospiza lincolnii</u>	
Song sparrow	<u>Melospiza melodia</u>	
McCown's longspur	<u>Calcarius mccownii</u>	
Chestnut-collared longspur	<u>Calcarius ornatus</u>	
Snow bunting	<u>Plectrophenax nivalis</u>	

a/ Compiled from Robbins et. al, 1966, and Wyoming Game and Fish Department, 1977 and 1982.

b/ Nomenclature from AOU, 1957, updated by AOU, 1973 and 1976.

c/ An asterisk indicates that the species was observed on-site. All other species listed may occur on the permit area, but no evidence of their occurrence has been found. (Suitable habitat is present on-site and their distribution overlaps the mine permit area.)

Addendum D9A.
Amphibian and Reptile Species which were Observed of Have
the Potential of Occuring on the Power Resources Company
Study Area.

Common Name	Scientific Name b/	Observed Name c/
SALAMANDERS	URODELA	
Tiger salamander	<u>Ambystoma tigrinum</u>	
FROGS AND TOADS	ANURA	
Great basin spadefoot	<u>Scaphiopus intermontanus</u>	
Woodhouse's toad	<u>Bufo w. woodhousei</u>	
Chorus frog	<u>Pseudacris triseriata</u>	
Leopard frog	<u>Rana pipiens</u>	*
LIZARDS	LACERTILA	
Northern sagebrush lizard	<u>Sceloporus g. graciosus</u>	*
Eastern short-horned lizard	<u>Phrynosoma douglassi</u> <u>brevirostre</u>	*
SNAKES	SERPENTES	
Rocky Mountain rubber boa	<u>Charina bottae</u>	
Plains hognose snake	<u>Herterodon nasicus</u>	
Eastern yellowbellied racer	<u>Coluber constrictor</u>	
Bullsnake	<u>Pituophis melanoleuccus</u> <u>sayi</u>	
Wandering garter snake	<u>Thamnophis elegans vagran</u>	*

Addendum D9A (continued)

Common Name	Scientific Name b/	Observed Name c/
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Prairie rattlesnake	<u>Crotalus v. viridis</u>	
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a/ Compiled from Stebbins (1966), Wyoming Game and Fish Department (1977) and Baxter and Stone (1980).

b/ Nomenclature from Baxter and Stone (1980).

c/ An asterisk indicates that the species, itself or distinctive evidence (such as tracks or bones), was observed on-site. All other species listed may occur on the permit area, but no evidence of their occurrence has been found. (Suitable habitat is present on-site and their distribution overlaps the mine permit area.)

ADDENDUM D9B

Computer Printout

from

Wyoming Game and Fish Department

Wildlife Observation System

11/07/92

 * WYOMING GAME AND FISH DEPARTMENT *
 * JIM ORPET *
 * NOVEMBER 9, 1992 *

201-898-1111

U S	N C	U B S R V	A C T I V	D I S T	D A T E	S P E C	A D L T	M A L E	A D L T	F E M	A D L T	U N K	Y R L G	M A L E	Y R L G	F E M	Y R L G	U N K	J U V	M A L E	J U V	F E M	J U V	U N K	N O T	C L A S S	A G E	H U N T	A R E A	T O W N	R A N G E	S E C T	L O C	Q U A N T I T Y	H A B	T Y P E	M O D E	C O D E	A C T	C O D E	M I S C
MALLARD (ANAS PLATYRHYNCHOS)																																									
001279	00	0	110877	132.0	001	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	00	33	090	35	4	3	0	10.00					00		
001550	00	0	110877	132.0	001	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	00	33	090	35	4	3	0	10.10					00			
BLUE-WINGED TEAL (ANAS DISCORS)																																									
001279	00	0	110877	140.0	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	005	00	33	090	35	4	3	0	10.00					00			
001550	00	0	110877	140.0	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	005	00	33	090	35	4	3	0	10.10					00			
BUFFLEHEAD (BUCEPHALA ALBEOLA)																																									
001278	00	0	110877	153.0	001	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	00	33	090	35	4	3	0	10.00					00			
001550	00	0	110877	153.0	001	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	00	33	090	35	4	3	0	10.10					00			
JACK GROUSE (CENTROPERCUS UROPHASIANUS)																																									
005111	00	5	072579	309.0	9																						00	019	32	090	12	0	0	0	04.11	00.00	03				
005111	00	5	072579	309.0	9																						00	019	32	090	12	0	0	0	04.11	00.00	03				

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REV: D9B-2

* WYOMING GAME AND FISH DEPARTMENT *
* JIM ORPET *
* NOVEMBER 9, 1992 *

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GOLDEN EAGLE (AQUILA CHRYSAETOS)

001551 00	0	110777	349.0	000	000	001	000	000	000	000	000	002	000	00	33 089 15	0 0 0	00
001277 00	0	110777	349.0	000	000	001	000	000	000	000	000	002	000	00	33 089 16	0 0 0 01.50	00
001222 01	0	040283	349.0	000	000	001	000	000	000	000	000	000	000	00	33 090 25	0 0 0 04.10 03.03 00	00

GREAT HORNED OWL (BUJO VIRGINIANUS)

001278 00	0 110777 375.0 000	000	000	000	000	000	000	000	000	000	000	000	004	00	33 082 15 0 0 0 01.50	00
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BLACK-BILLED MAGPIE (PICA PICA)

001551 00 0 110777 475.0 000 000 000 000 000 000 000 000 004 00 33 087 15 0 0 0 00

LEAST CHIPMUNK (*TAMIAS MINIMUS*)

001551 00	0 110777	340.0	000	.000	003	000	000	000	000	000	000	000	00	32 090 10 2 0 0	00
001277 00	0 110977	340.0	000	.000	003	000	000	000	000	000	000	00	32 090 10 2 0 0 01.00	00	

031337 01 0 050383 915.0 000 001 000 000 000 000 000 000 001 000 00 006 32 099 03 0 0 0 04.10

MULE DEER (ODONCOILEUS HEMIONUS)

024104	60	6	120645	732.0	000	001	000	000	000	000	000	000	004	000	00	090	32	090	04	4	0	0	05.10
030483	61	6	042782	932.0	000	000	000	000	000	000	000	000	014	00	097	32	090	04	4	0	0	04.10	
000057	00	0	090977	932.0	000	000	000	000	000	000	000	000	003	00	000	32	090	10	4	0	0		

11/69/92

 * WYOMING GAME AND FISH DEPARTMENT *
 * JIM ORPET *
 * NOVEMBER 9, 1992 *

Q95	NO	DOB	ACTIV	DIST	DATE	SPEC	ADLT	MALE	FEM	ADLT	UNK	YR LG	MALE	FEM	YR LG	UNK	JUV	MALE	FEM	JUV	UNK	CLASS	NOT	AGE	HUNT	AREA	TOWN	RANGE	SUBCT	JUV	ACTIV	HAB	TYPE	CODE	ACT	CODE	MISC
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4ULE DLFK (DOOCNILLUS HEKTONUS)

020041	00	6	122381	732.0	000	011	000	002	000	000	000	000	000	00	090	32	090	10	1	4	0	06.10
020390	02	6	112980	732.0	000	004	000	000	000	000	000	004	000	00	090	32	090	10	4	0	0	04.10
000057	00	0	091077	732.0	000	000	000	000	000	000	000	000	004	00	000	32	090	12	1	1	0	
001278	00	0	110777	732.0	002	003	000	000	000	000	000	003	000	00		32	090	12	1	0	0	02.10
001652	00	0	110777	732.0	002	003	000	000	000	000	000	003	000	00		32	090	12	1	0	0	
001279	00	0	100877	732.0	000	001	000	000	001	000	000	002	000	00		33	089	23	1	0	0	04.10
001651	00	0	110877	732.0	000	001	000	000	001	000	000	002	000	00		33	089	23	1	0	0	
023987	00	6	082005	732.0	000	001	000	000	000	000	000	000	000	00	090	33	089	23	1	0	0	05.10

PP GUSHORN (ANTILOCAPRA AMERICANA)

032932	02	6	J81084	935.0	004	009	000	002	000	000	000	000	007	000	00	068	32	089	03	, 0 0 0	04.10		05
034244	03	6	051546	935.0	000	000	000	000	000	000	000	000	000	008	00	068	32	089	03	0 0 0			00
030667	00	6	J81179	935.0	1										00	068	32	089	04	0 0 0	04.10	00.00	00
011363	03	6	752453	935.0	000	000	000	000	000	000	000	000	007	00	068	32	089	04	0 0 0				00

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 * WYOMING GAME AND FISH DEPARTMENT *
 * JIM ORPET *
 * NOVEMBER 9, 1992 *

PPONGHORN (AUTILUCAPRA AMERICANA)

030600 02	6	091502	935.0	004	019	000	007	000	000	000	000	019	000	00	068	32	089	06	0	0	0	04.10	00	0
031369 03	6	052603	935.0	000	000	000	000	000	000	000	000	000	001	00	068	32	089	05	0	0	0		00	0
034245 03	6	051586	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	05	0	0	0		00	0
031369 03	6	052603	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	05	0	0	0		00	0
034245 03	6	051586	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	07	0	0	0		00	0
027745 02	6	080789	935.0	000	001	000	000	000	000	000	000	000	000	00	068	32	089	07	0	0	0		00	0
027745 02	6	080789	935.0	000	004	000	000	000	000	000	000	000	000	00	068	32	089	07	0	0	0		00	0
027745 02	6	080789	935.0	001	007	000	000	000	000	000	000	000	000	00	068	32	089	07	0	0	0		00	0
027745 02	6	090789	935.0	001	004	000	000	000	000	000	000	000	000	00	068	32	089	07	1	0	0		00	0
031369 03	6	052603	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	07	2	0	0		00	0
034245 03	6	051586	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	06	0	0	0		00	0
031278 00	0	110777	935.0	001	005	000	000	000	000	000	000	000	000	00	068	32	089	08	0	0	0		00	0
031652 00	0	110777	935.0	001	005	000	000	000	000	000	000	000	000	00	068	32	090	01	0	0	0	04.10	00	0
030183 03	6	051586	935.0	000	000	000	000	000	000	000	000	000	000	00	068	32	089	01	0	0	0		00	0

000113	12	6	012602	935.0	000	000	000	000	000	000	000	000	000	000	012	00	074	32	090	01	0	0	0	04.10	00	0
024372	02	6	091046	935.0	005	009	000	005	000	000	000	000	000	011	000	00	074	32	090	01	0	0	0	04.10	00	0
001278	00	0	110777	935.0	005	019	000	000	000	000	000	000	000	002	000	00		32	090	03	2	0	0	04.10	00	0
001551	00	0	110777	935.0	005	019	000	000	000	000	000	000	000	002	000	00		32	090	03	2	0	0	04.10	00	0
001278	00	0	110877	935.0	001	001	000	000	000	000	000	000	000	000	000	00		32	090	03	1	0	0	04.10	00	0
001652	00	0	110877	935.0	001	001	000	000	000	000	000	000	000	000	000	00		32	090	03	1	0	0	04.10	00	0
007633	00	6	092880	935.0	001	000	000	000	000	000	000	000	000	000	003	00	063	32	090	03	0	0	0	04.10	02.00	00

11/09/92

 * WYOMING GAME AND FISH DEPARTMENT *
 * JIM ORPET *
 * NOVEMBER 9, 1992 *

UN	U	A	U	D	S	A	M	A	F	A	Y	Y	Y	J	J	J	N	C	A	H	A	T	K	S	J	J	H	T	M	C	A	C	M	
US	EST	CT	IST	ATE	PEC	OLT	ALLE	ULT	DEM	DLT	RLGE	RLG	RLK	ULV	UEH	UNK	CLAS	AGE	HEA	HTA	OWN	RANCE	SECT	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	
PPONGHORI (ANTILUCAPRA AMERICANA)																																		
024372	02	6	091046	935.0	001	002	000	001	000	000	000	000	000	000	000	002	000	00	074	32	090	03	0	0	0	04.10								
027674	02	6	072789	935.0	002	001	000	000	000	000	000	000	000	000	000	002	000	00	074	32	090	03	0	0	0	04.10								
009907	12	6	120781	935.0	000	000	000	000	000	000	000	000	000	000	000	000	250	00	074	32	090	04	0	0	0	04.10								
020040	12	6	122381	935.0	000	000	000	000	000	000	000	000	000	000	000	000	173	00	074	32	090	04	0	0	0	05.10								
027673	00	5	072787	935.0	000	009	000	000	000	000	000	000	000	000	005	000	00		32	090	04	0	0	0	04.10									
020252	13	5	020482	935.0	000	000	000	000	000	000	000	000	000	000	000	200	00	074	32	090	05	0	0	0	04.10									
027674	02	6	072787	935.0	000	002	000	000	000	000	000	000	000	000	000	003	000	00	074	32	090	05	0	0	0	04.10								
020253	00	6	020482	935.0	000	000	000	000	000	000	000	000	000	000	000	000	100	00	074	32	090	07	0	0	0	04.10								
006766	00	5	080487	935.0	001	001	000	000	000	000	000	000	000	000	002	000	00	068	32	090	12	0	0	0	04.10									
030600	02	6	081582	935.0	000	004	000	000	000	000	000	000	000	000	003	000	00	068	32	090	12	0	0	0	04.10									
034252	03	6	051586	935.0	000	000	000	000	000	000	000	000	000	000	000	000	002	00	068	32	090	12	0	0	0									
023986	00	6	082085	935.0	002	001	000	000	000	000	000	000	000	000	003	000	00	074	33	089	14	0	0	0	05.10									
029149	02	6	082170	935.0	001	001	000	000	000	000	000	000	000	000	002	000	00	074	33	089	14	0	0	0	04.10									

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D9B-6

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00 MK4F103 TYPE 0 END OF REPORT.

STATE OF WYOMING
DATA SERVICES
WILDLIFE OBSERVATION CODING FORM

Coded By

[illegible]

FORMAT
WILDLIFE OBSERVATION CODING FORM

<u>Column</u>	<u>Description</u>
1 - 7	Observation Number
8	Sequence Number (1-8)
9	District (see codes, page 7)
10	Information Source (see codes, page 7)
11 - 12	Month (01 through 12)
13 - 14	Day (01 through 31)
15 - 16	Year
17 - 21	Species (see codes, pages 8-40)
22 - 24	Adult Males
25 - 27	Adult Females
28 - 30	Adult Unknown
31 - 33	Yearling Males
34 - 36	Yearling Females
37 - 39	Yearling Unknown
40 - 42	Juvenile Males
43 - 45	Juvenile Females
46 - 48	Juvenile Unknown
49 - 51	Unclassified
52 - 53	Age in years (eg. juv. = 0; yr1ng. = 1; 2+ = 2; etc.)
54	Quarter/Quarter Section <ul style="list-style-type: none"> 0 or blank = not recorded 1 = Northwest 2 = Northeast 3 = Southwest 4 = Southeast
55	Quarter/Half Section <ul style="list-style-type: none"> 0 or blank = not recorded 1 = Northwest 2 = Northeast 3 = Southwest 4 = Southeast 5 = North half 6 = South half 7 = East half 8 = West half
56 - 57	Section Number (0 through 36)
58	Quarter/Half Township <ul style="list-style-type: none"> 0 or blank = not recorded 1 = Northwest 2 = Northeast 3 = Southwest 4 = Southeast 5 = North Half 6 = South Half 7 = East Half 8 = West Half

FORMAT - Wildlife Observation Coding Form (continued)

<u>Column</u>	<u>Description</u>
59 - 60	Township*
60 - 63	Range*
64 - 66	Hunt Area Number (see pages 42-54)
67 - 68	Degree Block (see latalong map, page 55)
69 - 73	Habitat Type (see codes, pages 56-60)
74 - 78	Mortality Cause (see codes, page 61)
79 - 80	Animal Activity (see codes, page 62)
81	Other Information 0 = No additional information on form 1 = additional information on form A-Z = observer's individual code (each district assigns their own code for each employee)
82-83	Observer Activity (see codes, page 62)

*When coding Indian Reservation observations, the following codes should be used:

1N - 9N
 1S - 2S
 1E - 6E
 1W - 6W

HABITAT TYPE

01.00 Conifer Forests

- 01.10 Lodgepole Pine
- 01.20 Douglas Fir
- 01.30 Engelmann Spruce - Subalpine Fir
- 01.40 Ponderosa Pine (savannah)
- 01.50 Ponderosa Pine - Douglas Fir
- 01.60 Limber Pine
- 01.70 Whitebark Pine
- 01.80 Pine - Juniper
 - 01.81 Pinyon Pine - Juniper
 - 01.82 Limber Pine - Juniper
 - 01.83 Ponderosa Pine - Juniper
- 01.90 Other or Mixed Conifer Forests

02.00 Deciduous Forests

- 02.10 Aspen
 - 02.11 Aspen - Upland
 - 02.12 Aspen - Riparian
 - 02.13 Aspen - Conifer
- 02.20 Riparian - Cottonwood
 - 02.21 Cottonwood - Upland (dry site)
 - 02.22 Cottonwood - Riparian
 - 02.23 Balsam Poplar
- 02.30 Cottonwood - Dryland
 - 02.31 Plains
 - 02.32 Narrowleaf
- 02.40 Maple
 - 02.41 Boxelder Maple
 - 02.42 Rocky Mountain Maple
 - 02.43 Bigtooth Maple
- 02.50 Oak
- 02.60 Paper Birch
- 02.70 Maple - Elm - Ash
- 02.80 Other or Mixed Deciduous Forests

03.00 Woodland - Chaparral

- 03.10 Gambel Oak
- 03.20 Juniper
 - 03.21 Juniper - Sagebrush
 - 03.22 Juniper - Mountain Mahogany
 - 03.23 Juniper - Other Shrub Understory

04.00 Basin - Prairie Shrub - Shrub Steppe

- 04.10 Sagebrush - Grassland
 - 04.11 Basin Big Sagebrush
 - 04.12 Wyoming Big Sagebrush
 - 04.13 Mountain Big Sagebrush
 - 04.14 Black Sagebrush
 - 04.15 Silver Sagebrush
 - 04.16 Threetip Sagebrush
 - 04.17 Low Sagebrush (Artemisia arbuscula)
 - 04.18 Sand Sagebrush (Artemisia filifolia)
 - 04.19 Other or Mixed Sagebrush or Sagewort
- 04.20 Greasewood
 - 04.21 Greasewood - Sagebrush
 - 04.22 Greasewood - Saltbush
- 04.30 Rabbitbrush
 - 04.31 Green Rabbitbrush
 - 04.32 Rubber Rabbitbrush
 - 04.33 Rabbitbrush - Sagebrush - Mixed Shrub
- 04.40 Saltbush
 - 04.41 Gardner Saltbush
 - 04.42 Fourwing Saltbush
 - 04.43 Shadscale
 - 04.44 Saltbush - Sagebrush - Mixed Shrub
- 04.50 Winterfat
- 04.60 Woody Aster (alkali aster) Xylorhiza
- 04.70 Other or Mixed Shrub - Shrub Steppe

05.00 Mountain - Foothills Shrub - Shrub Steppe

- 05.10 Sagebrush - Grassland
 - 05.11 Basin Big Sagebrush
 - 05.12 Wyoming Big Sagebrush
 - 05.13 Mountain Big Sagebrush
 - 05.14 Black Sagebrush
 - 05.15 Silver Sagebrush
 - 05.16 Threetip Sagebrush
 - 05.17 Low Sagebrush (Artemisia arbuscula)
 - 05.18 Sand Sagebrush (Artemisia filifolia)
 - 05.19 Other or Mixed Sagebrush
- 05.20 Rabbitbrush
 - 05.21 Green Rabbitbrush
 - 05.22 Rubber Rabbitbrush
 - 05.23 Rabbitbrush - Sagebrush - Mixed Shrub
- 05.30 Mountain Mahogany
 - 05.31 True Mountain Mahogany
 - 05.32 True Mountain Mahogany - Sagebrush - Mixed Shrub
 - 05.33 Curlleaf Mountain Mahogany
 - 05.34 Curlleaf Mountain Mahogany - Sagebrush - Mixed Shrub
- 05.40 Bitterbrush
 - 05.41 Bitterbrush - Sagebrush - Mixed Shrub
- 05.50 Serviceberry
 - 05.51 Serviceberry - Sagebrush - Mixed Shrub
- 05.60 Chokecherry
 - 05.61 Chokecherry - Sagebrush - Mixed Shrub
- 05.70 Hawthorne
- 05.80 Skunkbush Sumac
- 05.90 Other or Mixed Shrub - Shrub Steppe

06.00 Riparian Shrub - Shrub Steppe

- 06.10 Willow
 - 06.11 Alpine Willow
 - 06.12 Willow - Other Shrubs
- 06.20 Hawthorne - Wild Plum - Dogwood
- 06.30 Water Birch - Bog Birch
 - 06.31 Birch - Alder
 - 06.32 Birch - Willow
 - 06.33 Birch - Other Shrubs
- 06.40 Alder
- 06.50 Shrubby Cinquefoil
- 06.60 Buffaloberry
- 06.70 Tamarisk
- 06.80 Russian Olive
- 06.90 Other or Mixed Shrub - Shrub Steppe

07.00 Grasslands

- 07.10 Eastern Great Plains Area Grasslands
 - 07.11 Shortgrass (blue grama - buffalo grass)
 - 07.12 Midgrass (blue grama - needlegrass - Western wheatgrass)
 - 07.13 Draws (bluebunch wheatgrass - needlegrass - wildrye)
 - 07.14 Sandy (muhly - sand dropseed - prairie sandreed)
 - 07.15 Tallgrass, Rough Breaks (little bluestem - sideoats grama - switchgrass punice)
 - 07.16 Tallgrass (big, sand and little bluestem - prairie sandreed - needleandthread)
 - 07.17 Annual Forb
- 07.20 Great Basin - Foothills Grasslands
 - 07.21 Bluebunch Wheatgrass - Bluegrass
 - 07.22 Thickspike - Western Wheatgrass - Needleandthread - Bluegrass - Blue Grama
 - 07.23 Annual Forb
- 07.30 Mountain - Foothills Grassland
 - 07.31 Bluebunch Wheatgrass - Idaho Fescue - Bluegrass - Needlegrass
 - 07.32 Mountain Park - Meadow (bent grasses, Idaho fescue - reed grasses - slender wheatgrass)
 - 07.33 Foothills - Mountain Forb (Northwest cinquefoil - lipine - geranium - elkweed)
 - 07.34 Annual Forb
- 07.40 Alpine Grasslands (bent grass - sheep fescue - icegrass)
- 07.50 Alpine Moss - Lichen - Forb (silene - avens - sundivort - forget-me-not)
- 07.60 Wet - Moist Meadow Grasslands
 - 07.61 Tufted Hairgrass - Reedgrass (freshwater)
 - 07.62 Inland Saltgrass - Alkali Sacaton (alkaline)
 - 07.63 Common Reed (phragmites)
 - 07.64 Grass - Sedge - Rush Meadow
- 07.70 Kentucky Bluegrass Grasslands
- 07.80 Annual Grasslands

- 08.00 Grasslike Types
 - 08.10 Sedge
 - 08.20 Sedge - Grass - Rush Meadow
- 09.00 Marsh - Swamp Wetlands
 - 09.10 Cattail
 - 09.20 Bulrush
 - 09.30 Cattail - Bulrush - Sedge
- 10.00 Aquatic
 - 10.10 Lentic or Standing Water (pond, lake, reservoir)
 - 10.11 Large Lentic (> 5 surface acres)
 - 10.12 Small Lentic (≤ 5 surface acres)
 - 10.13 Intermittent Lentic
 - 10.20 Lotic or Running Water (spring - stream - river)
 - 10.21 Large Lotic (> 50 ft. channel width)
 - 10.22 Small Lotic (≤ 50 ft. channel width)
 - 10.23 Spring
 - 10.24 Intermittent
- 11.00 Cropland - Agricultural Lands
 - 11.10 Row Crop
 - 11.11 Corn
 - 11.12 Beans
 - 11.13 Potatoes
 - 11.14 Beets
 - 11.15 Sunflower
 - 11.16 Other Row Crop
 - 11.20 Alfalfa
 - 11.21 Standing (in field)
 - 11.22 Stacked
 - 11.23 Seed Crop
 - 11.30 Irrigated Native Meadow (hayed or pastured)
 - 11.40 Irrigated Introduced Meadow (hayed or pastured)
 - 11.50 Small Grains
 - 11.51 Wheat
 - 11.52 Barley
 - 11.53 Oats
 - 11.54 Rye
 - 11.55 Other Small Grains
 - 11.60 Dryland Grass Pastures
 - 11.61 Crested Wheatgrass
 - 11.62 Russian Wildrye
 - 11.63 Other - Mixed Dryland Grass Pastures
 - 11.70 Fallow Lands
 - 11.80 Stored Crops
 - 11.90 Rural Development
 - 11.91 Ranch - Farm Facilities
 - 11.92 Shelterbelt

- 12.00 Barren - Special Features
 - 12.10 Cave
 - 12.20 Cliffs (canyon, mountain)
 - 12.30 Spires
 - 12.40 Rock Outcrop - Rock Piles
 - 12.50 Talus Slope - Talus Fields
 - 12.60 Sand Dune - Sand Blowouts
 - 12.70 Shoreline (mud flats - sand beach - gravel bar)
 - 12.80 Glacier

- 99.00 Disturbed Areas
 - 99.10 Roadside - Railroad Banks
 - 99.20 Mined Area (unreclaimed)
 - 99.30 Mined Area (reclaimed)
 - 99.31 Grass (native species)
 - 99.32 Grass (introduced species)
 - 99.33 Shrub - Shrub-Grass
 - 99.34 Deciduous Tree
 - 99.35 Coniferous Tree
 - 99.40 Sprayed Area
 - 99.41 Sagebrush
 - 99.42 Other Shrub
 - 99.43 Other
 - 99.50 Burned Area
 - 99.51 Grass
 - 99.52 Sagebrush
 - 99.53 Other Shrub
 - 99.54 Woodland or Chaparral
 - 99.55 Deciduous Tree
 - 99.56 Coniferous Tree
 - 99.57 Marsh
 - 99.60 Logged - Clearcut Area
 - 99.61 Lodgepole Pine
 - 99.62 Ponderosa Pine
 - 99.63 Douglas Fir
 - 99.64 Spruce - Fir
 - 99.65 Other or Mixed Conifer
 - 99.66 Deciduous
 - 99.70 Logged - Thinned
 - 99.71 Lodgepole Pine
 - 99.72 Ponderosa Pine
 - 99.73 Douglas Fir
 - 99.74 Spruce - Fir
 - 99.75 Other or Mixed Conifer
 - 99.76 Deciduous
 - 99.80 Oil and Gas Sites
 - 99.90 Urban/Built Up
 - 99.91 Garbage Dump
 - 99.92 Other

MORTALITY CODES

- 01.00 Cause Undetermined
- 02.00 Harvest
 - 02.01 Legal Harvest (animal harvested in season, with license and within bag limit)
 - 02.02 Illegal Harvest (mortality resulting from intentional violation)
 - 02.03 Cripple Loss (any carcass escaping hunters bag but not verified as intentional violation)
 - 02.04 Depredation Harvest (legal harvest during established depredation season)
 - 02.05 Scientific Collection
 - 02.06 Trapped and Transplanted
- 03.00 Accidents
 - 03.01 Highway Accident
 - 03.02 Railroad Accident
 - 03.03 Electrocution
 - 03.04 Drowning
 - 03.05 Trapping Mortality
 - 03.06 Urban Accident
- 04.00 Fence
 - 04.01 Highway Right-of-Way
 - 04.02 Railroad Right-of-Way
 - 04.03 Range Fence
- 05.00 Physiological Stress
 - 05.01 Starvation
 - 05.02 Dehydration
 - 05.03 Parasitism
 - 05.04 Exposure
- 06.00 Disease
- 07.00 Predation
 - 07.01 Wild Mammal
 - 07.02 Coyote
 - 07.03 Bobcat
 - 07.04 Mountain Lion
 - 07.05 Black Bear
 - 07.06 Grizzly Bear
 - 07.07 Red Fox
 - 07.40 Feral Mammal
 - 07.41 Dog
 - 07.42 Feral Cat
 - 07.50 Wild Avian
 - 07.51 Golden Eagle
- 08.00 Pesticide and Pollution

ANIMAL ACTIVITY CODES*

0	or blank if undetermined
01	Courtship
02	Reproductive (i.e., breeding, nesting, etc.)
03	Loafing, Roosting, Resting, Etc.
04	Migration
05	Feeding
06	Disturbed
07	Damage
08	Sign (tracks, scat, etc.)
09	Watering
10	Escape (direct flight)
11	Territorial Behavior
12	Predation
13	Standing
14	Walking
15	Running
16	Hiding
17	Flying
18	Swimming
19	Entrapped (trapped in fence, etc.)
20	Trapped and Released
21	Trapped and Transplanted
22	Released from Transplant
23	Tagged Animal

* Number of animals observed must be entered in the appropriate column unless animal activity is 02, 07, 08, 11, or 23.

OBSERVER ACTIVITY

01	Casual Observation
02	Classification Counts
03	Aerial Trend Counts
04	Ground Trend Counts
05	Live Trapping Operation - Animal
06	Permanent Check Station
07	Field Check
08	Other Check Station
09	General Census
10	Mortality Transects
11	Nesting/Production Survey
12	Marked Animal
13	Damage Control

WYOMING GAME AND FISH DEPARTMENT

Jim Geringer, Governor



John Baughman, Governor

October 14, 1996

Post-It® Fax Note	7671	Date	10/28	# of pages	2
To	Doug Beahm	From	Paul H		
Co./Dept.		Co.			
Phone #		Phone #			
Fax #		Fax #			

WER 8435
Intermountain Resources
Power Resources, Inc.'s
Proposed In-Situ Uranium Mine
Gas Hills Project Area
Fremont County

715-3603

MR. JIM ORPET
INTERMOUNTAIN RESOURCES
P.O. BOX 1589
LARAMIE, WY 82070

Dear Jim,

I have reviewed the Appendix D-9 you prepared for the Power Resources, Inc.'s proposed in-situ uranium mine in Fremont County. In general, the Appendix contains the wildlife information necessary to comply with state regulations for a non-coal mine. However, a wildlife monitoring and mitigation plan must be developed for this mine before the Wyoming Game & Fish Department can concur with this permit application. As you indicated in our discussion on October 4, 1996, you will prepare these sections once Power Resources, Inc. has determined the extent of the mining activity and associated disturbances. I am willing to review the monitoring and mitigation plans when they become available. Following are our specific comments on Appendix D-9.

only
Raptors
T+E
MBHFE

1. Description of Study Area. The written description of wildlife habitats on the study area is sufficient. However, you should also include a tabular summary of acres by habitat type, and amount of the habitat type to be disturbed if that information is available. If this table is included in Appendix D-8, please provide the appropriate reference.
2. Big Game Ranges. The Wyoming Game & Fish Department uses the word "crucial", not "critical" for designation of big game ranges vital to the survival of local populations. "Critical" is the U.S. Fish and Wildlife Service term indicating habitat vital to the survival of endangered species. To avoid confusion, critical should be changed to crucial in all appropriate references to big game habitat.

Mr. Jim Orpet
October 14, 1996
Page 2 - WER 8435

3. Sage Grouse. As per our conversation, the proposed permit expansion area should be surveyed for leks. Please contact the local wildlife biologist (Pat Hnilicka) concerning known lek locations in this area. Also, please consult with Pat H. regarding the appropriateness of conducting brood surveys.
4. Raptors, Migratory Birds of High Federal Interest and Threatened and Endangered Species. Please contact the U.S. Fish and Wildlife Service to determine if a monitoring and/or mitigation plan will be necessary for the above species. If so, a letter of plan approval, for each group, from the U.S. Fish and Wildlife Service should be included in the permit application.
5. Wildlife Observations. Please provide written acknowledgement that all species observed on the permit area were noted, even if specific surveys for those species were not conducted.
6. Population Estimates. The 1991 big game population estimates provided in Appendix D-9 are outdated. More recent estimates are available, and should be included.

Please clarify if the Bureau of Land Management will require an environmental assessment for this activity. If you have any questions don't hesitate to give me a call.

Sincerely,



Pat Deibert
Staff Biologist

cc: Steve Platt, Lander DEQ
Ramona Christenson, Cheyenne DEQ
Tom Collins, Wyoming Game & Fish Department
USFWS
File



Permit Preparation

• Baseline Inventories

• Wildlife

• Vegetation

• Soils

P.O. Box 1589 Laramie, Wyoming 82070

(307) 745-3803

November 5, 1996

Mr. Chris Lidstone
Lidstone & Anderson, Inc.
736 Whalers Way, Suite F-200
Fort Collins, CO 80525

RE: PRI Gas Hills Project

Dear Mr. Anderson,

Transmitted herewith are the draft Appendix D9 and several Mine Plan sections that pertain to wildlife impacts, monitoring and mitigation. As noted, these are drafts since we have not yet received new maps, detailed disturbance areas with acreages and mine sequence, or vegetation type permit area acreages and disturbance acreages.

Also included is a small scale map showing information that will need to be drafted. This map is only provided for your reference and should not be used for drafting since sites cannot be accurately transferred from this map. We will plot the accurate sites when we receive new maps and will then submit those to you for drafting.

Following receipt of the rest of the information we will also prepare a raptor, MBHFI and T&E monitoring and mitigation plan for submittal to the USFWS for approval.

For your information I will be out of the office from November 16 through November 24 but would like to finish this up prior to then. Please contact me if you have any questions, comments or revisions.

Sincerely,


Jim Orpet

WYOMING
GAME AND FISH DEPARTMENT

Jim Geringer, Governor



John Baughman, Governor

Comments
on original
submitted to
WDEQ

October 14, 1996

WER 8435
Intermountain Resources
Power Resources, Inc.'s
Proposed In-Situ Uranium Mine
Gas Hills Project Area
Fremont County

MR. JIM ORPET
INTERMOUNTAIN RESOURCES
P.O. BOX 1589
LARAMIE, WY 82070

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only
Raptors
T+E +
MBHFI

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Sincerely,



Pat Deibert
Staff Biologist

cc: Steve Platt, Lander DEQ
Ramona Christenson, Cheyenne DEQ
Tom Collins, Wyoming Game & Fish Department
USFWS
File

**THIS PAGE IS AN
OVERSIZED DRAWING OR
FIGURE,
THAT CAN BE VIEWED AT THE
RECORD TITLED:
DRAWING NO. PLATE D8-1W,
GAS HILLS PROJECT
VEGETATION MAP
FREMONT AND NATRONA COUNTIES,
WY**

**WITHIN THIS PACKAGE... OR
BY SEARCHING USING THE
DOCUMENT/REPORT NO.
PLATE D8-1W**

NOTE: Because of these page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.

D-01

APPENDIX D11 - WETLANDS

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APPENDIX D11 - WETLANDS

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APPENDIX D11 - WETLANDS

1.0 INTRODUCTION

Potential wetlands which occur within the study area and are delineated, based on vegetative characteristics, on Plate D8-1 (East and West). The purpose of this initial survey was to identify all areas of potential wetlands within the proposed permit area. Specifically areas within drainages and lowlands were targeted for field investigation based on aerial photo interpretation and general field observation by BKS personnel. In addition to these area surface and/or ground water reservoirs in the area may represent wetlands. These include the A-8, VECA, PC pits (AML projects) and the Buss I pit (PRI Permit 438). These reservoirs are shown on Plates D1-1E and D1-1W.

Prior to disturbance a jurisdictional determination of wetlands will be completed in cooperation with the U. S. Army Corps of Engineers (COE). As discussed in Section 4.0, Mitigation Measures, disturbance of wetland areas by wellfield development is unlikely and the migration measure will be avoidance. In some cases crossing either with an access road or pipe line will be necessary and permitting under the COE Nationwide program will be required.

2.0 METHODOLOGY

The 1996 potential wetland survey was conducted by BKS Environmental Associates, Inc. Although the three characteristics of jurisdictional "wetlands" include hydrophytic vegetation, hydric soils, and wetland hydrology and are outlined in the 1987 Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87_1. Potential wetland areas within the Permit Area were identified primarily on vegetation characteristics. Should a jurisdictional determination of wetlands be necessary, it is likely that some of the areas delineated by vegetative characteristics will not meet jurisdictional criteria.

Potential areas were delineated by map topographic features and generally consisted of pockets within wet draws and drainages outlined on the 1"=500' scale proposed permit vegetation maps (Plates D8-1E and D8-1W). The delineated areas were then targeted for further field investigation and surveyed for the presence of hydrophytic vegetation.

3.0 RESULTS AND DISCUSSION

In addition to mine pit reservoirs, potential jurisdictional wetlands on the Permit Area are located in ephemeral drainages and near seeps or springs which have consistently high water tables throughout the growing season. The following vegetation subtypes, tentatively identified by BKS, include: sedge meadows near Cameron Spring and the lower reaches of West Canyon Creek; willow thickets in the upper reaches of West Canyon Creek near the Beaver Rim; and relatively small pockets of sedge meadow and/or salt tolerant vegetation within ephemeral pools located in small drainages. Within the smaller ephemeral drainages, pockets of potential wetlands are generally small and confined within definite narrow channels.

A small amount of flowing water was evident in the West Canyon Creek Drainage and at Cameron Spring. Otherwise, little or no flow is evident within ephemeral channels. *Juncus* sp. is the most common species near dried pools within channels. Various *Carex* spp. are dominant in the sedge meadows. *Salix* spp. dominate the overstory in the willow thicket areas.

Topography is important in this area to the development of potential wetlands. Proximity to the Beaver Rim or incised drainages within the Bottomland Sagebrush allow the collection of water at or near the surface necessary for the development of wetlands.

4.0 MITIGATION MEASURES

Although the limits for the general mine units cross some potential wetland areas, these areas are generally narrow and can be avoided during wellfield development. As an example Mine Unit No. 4 crosses portions of the West Canyon Creek Drainage. Following completion of delineation drilling in this area, wellfield design will locate injection and recovery wells outside the boundary of the wetlands. However, it may be necessary to cross the wetland areas with access roads and pipe lines. In this event, a mitigation plan and 404 permit will be developed for approval by WDEQ and the COE prior to any disturbance.