



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Elko Field Office
3900 East Idaho Street
Elko, Nevada 89801
<http://www.nv.blm.gov>



In Reply Refer To:
4720 (NV-012)

November 14, 2002

Dear Interested Party,

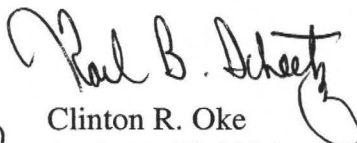
The Elko Field Office of the Bureau of Land Management Plans to capture wild horses within the Owyhee Herd Management Area.

The Action is to gather all wild horses within the Owyhee HMA and reduce the population to 231 wild horses. Approximately 1,216 wild horses within the HMA would be captured and approximately 985 animals removed. In addition, a determination would be made as to sex, age, and color, blood samples acquired, and herd health assessed (pregnancy/parasites loading/physical condition/etc.). Animals will be sorted as to age, sex, temperament and/or physical condition, and selected animals returned to the range. Surplus animals would be transported to BLM holding facilities and available for adoption.

A copy of the preliminary environmental analysis was mailed to all interested public for review on September 3, 2002. Two comment letters were received. All pertinent comments received from the preliminary environmental assessment were addressed in the environmental assessment.

A Copy of the Owyhee Herd Management Area Capture Plan Environmental Assessment (BLM/EK/PK-2002-38), Finding of No Significant Impact/Decision Record, and subsequent Full Force and Effect Decision are included for you information. If you have any questions, please contact Bryan Fuell at 775-753-0314.

Sincerely,


Clinton R. Oke
for Assistant Field Manager
Renewable Resources

Enclosure:

1. Owyhee HMA Capture Plan Environmental Assessment (BLM/EK/PK-2002-38)
2. Finding of No Significant Impact/Decision Record (BLM/EK/PK-2002-38)

11/14/02

**FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION RECORD**

**OWYHEE HERD MANAGEMENT AREA
CAPTURE PLAN ENVIRONMENTAL ASSESSMENT
(EA#BLM/EK/PL-2002-038)**

DECISION

It is my decision to select Alternative 3 as described in the Owyhee Herd Management Area Capture Plan Environmental Assessment #BLM/EK/PL-2002-038.

Alternative 3 is to gather all horses within the Owyhee Herd Management Area (HMA) and reduce the population to the Appropriate Management Level (AML). This Alternative implements the AML identified in the Owyhee Allotment Final Multiple Use Decision. The selection of Alternative 3 is due to budget constraints anticipated for FY2003, limited facility space in BLM preparation facilities, and lack of availability of immunocontraceptive vaccine, Porcine Zona Pellucida (PZP). This action for the Owyhee HMA would be to capture approximately 1,216 wild horses and remove 985 head, determine sex, age, and color, acquire blood samples, and assess herd health (pregnancy/parasites loading/physical condition/etc.). Animals will be sorted as to age, sex, temperament and/or physical condition, and selected animals returned to the range. A minimum of 231 wild horses would be returned to the HMA, which represents the upper range of the AML established through monitoring data. Surplus animals would be transported to BLM holding facilities and be made available for adoption.

The Action does not include the treatment of released mares with a revised immunocontraceptive vaccine, PZP.

Implementation of Alternative 3 is contingent upon the lack of availability of immunocontraceptive vaccine, PZP. If vaccine is made available the alternate plan will be to implement Alternative 1 as described in Owyhee HMA Capture Plan EA #BLM/EK/PL-2002-038.

Alternative 1 is to gather all horses within the Owyhee HMA and reduce the population to AML. Approximately 1,216 wild horses would be captured and 985 animals removed. This would include conducting immunocontraception research on 120 mares, monitoring results as appropriate. A minimum of 231 wild horses would be returned to the HMA, which represents the upper range of the AML established through monitoring data. Excess wild horses would be transported to a BLM adoption preparation/holding facility and be would available for adoption.

This decision incorporates the Standard Operating Procedures identified in Appendix II of this EA as stipulations. All trap sites and holding facilities will be inventoried for cultural resources prior to construction.

Per Instruction Memorandum (IM-2002-053), this Decision has taken into consideration the President's National Energy Policy and Executive Order 13212. The Proposed Action and

Alternatives would not generate any adverse energy impacts or limit energy production and distribution.

RATIONALE

This Environmental Assessment (#BLM/EK/PL-2002-038) has been prepared to assess the environmental impacts of adjusting the numbers of wild horses within the Owyhee Herd Areas. The emphasis of this integrated management program will be to achieve and maintain wild horse AML, collect information on herd characteristics, determine herd health, maintain sustainable rangelands, maintain a healthy and viable wild horse population, and conduct fertility research (if available).

Alternative 3 and 1 are in conformance with the wild horse objectives in the Elko Resource Management Plan.

FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of potential environmental impacts contained in EA #BLM/EK/PL-2002-038, I have determined that this action will not have a significant effect on the human environment. Therefore, in accordance with Section 102(2)(C) of the National Environmental Policy Act, the preparation of an environmental impact statement is not required.

Appeal Procedures

The Record of Decision for the Owyhee HMA Emergency Capture Plan Environmental Assessment is placed in Full Force and Effect in accordance with Title 43 of the Code of Federal Regulations at 4770.3(c). If you wish to appeal this decision, it may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with 43 CFR part 4. If you appeal, your appeal must be filed with the Bureau of Land Management at the following address:

Clinton R. Oke, Assistant Field Manager
Bureau of Land Management
Elko Field Office
3900 East Idaho Street
Elko, NV 89801

Your appeal must be filed within thirty (30) days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant to regulation 43 CFR 4.21 (58 FR 4942, January 19, 1993) for a stay (suspension) of the decision during the time that your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal. Copies of the notice of appeal and petition for a stay must also be submitted to the:

Interior Board of Land Appeals
Office of Hearings and Appeals
801 North Quincy Street
MS-300-QC
Arlington, VA 22203


and to the appropriate office of the Solicitor:

Office of the Regional Solicitor
6201 Federal Building
125 South State Street
Salt Lake City, UT 84138-1180

at the same time the original documents are filed with this office.

If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.
A petition for a stay is required to show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellants success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.


CLINTON R. OKE
Assistant Field Manager
Renewable Resources

11/14/02
DATE

11/14/02

OWYHEE HERD MANAGEMENT AREA CAPTURE PLAN
ENVIRONMENTAL ASSESSMENT

BLM/EK/PL2002/038

November 14, 2002

ELKO FIELD OFFICE

I Introduction/Purpose and Need

Introduction

The Owyhee Herd Management Area (HMA) is managed by the Elko Field Office (EFO) of the Bureau of Land Management (BLM). Table I depicts the approximate acres within the HMA and the breakdown of public verses private lands. The HMA is located within the Owyhee Grazing Allotment (Map1). Since 1971, there has been two BLM authorized removals with a total of 750 wild horses removed from the HMA

Table I

HMA	Acres Public Land	Acres Private Land	Acres Total
Owyhee	336,262	2,025	338,287

Resource conditions are currently being adversely affected by severe drought conditions in the northwest portion of the Elko District. Emergency gathers due to drought conditions have been completed on the Rock Creek and Little Humboldt HMA's this summer. These two HMA's border the Owyhee HMA on its southern boundary. As of July 1 the Owyhee area is below 65% of normal precipitation. These drought conditions have increased over the last 5-7 years. With only partial removals, and population levels increasing in size, demand for forage has continued to intensify, and impacts to vegetation and riparian resources have expanded. Utilization levels have continued to be in excess of objectives and obtainment of a desirable healthy vegetation community is not possible. Competition with livestock and wildlife populations for available forage have greatly accelerated. **Although this proposed gather is scheduled and not an emergency gather, a reduction in wild horse numbers will relieve demands for water and forage resources.**

With passage of the Wild Horse and Burro Act of 1971, Congress found that: "Wild horses are living symbols of the pioneer spirit of the West". In addition, the Secretary was ordered to "manage wild free-roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands". The procedures and policies implemented to accomplish this mandate have been constantly evolving over the years.

Throughout this period, BLM experience and knowledge of the effects of current and past management on wild horses and burros has grown. For example, wild horses have been shown to be capable of 15 to 25% increases in numbers annually. This can result in a doubling of the wild horse population about every 3 to 5 years. At the same time, nationwide awareness, and

attention has grown. As these factors have come together, the emphasis of the wild horse program has shifted.

Program goals have expanded beyond simply establishing a “thriving natural ecological balance” by setting and achieving an appropriate management level (AML) for individual herds, to achieving and maintaining viable, vigorous, and stable populations.

The Appropriate Management Level (AML) for this HMA has been previously established through the Allotment Evaluation /Multiple Use Decision process based on monitoring data and following a thorough public review. Documents containing this information are available for public review at the Elko Field Office.

This document has been prepared to assess the environmental impacts of adjusting the numbers of wild horses within the Owyhee HMA.

Purpose and Need for Action

The Elko Field Office proposes to implement a program of integrated wild horse management in the Owyhee HMA. The emphasis of this integrated management program will be to achieve and maintain wild horse AML, collect information on herd characteristics, determine herd health, maintain sustainable rangelands, maintain a healthy and viable wild horse population, and conduct fertility control research. All activities will be conducted according to a specified set of standardized operating procedures (SOP's) (Appendix II).

Land Use Plan Conformance Statement

The Elko Resource Management Plan (RMP), Issue: Wild Horses, management prescriptions 1 and 3 which directs the management in the project area, was approved March 11, 1987. The Proposed Action is in conformance with this Plan and is consistent with federal, state, and local laws, and regulations.

Relationship to Statutes, Regulations, Policies, Plans, or Other Environmental Analysis

The AML was established through an allotment evaluation, final multiple use decision (FMUD) and Environmental Assessment for the Owyhee Allotment, dated April 19, 2002. The AML as stated in the FMUD for this allotment, is a range of 139-231 wild horses for the Owyhee HMA. The Owyhee Allotment Final Evaluation describes all range, riparian, and wildlife habitat conditions in full and should be referred to for detailed descriptions.

Environmental analyses (EA) have been conducted in past years. These analyses have covered the impacts of various removal methods on wild horses, and other critical elements of the human environment, to manage wild horses within the Owyhee HMA. These documents include:

- 1) Elko District Office Wild Horse Management Removal Plan and Environmental Assessment EA# NV-010-0-19, 1981
- 2) Owyhee Herd Management Area Wild Horse Removal Plan and Environmental Assessment Drought Emergency BLM/EK/PL-2000-026, June 7, 2000.
- 3) Owyhee Allotment Evaluation Environmental Assessment BLM/EK/PL-2002-01, April 19, 2002

The Elko Field Office is supporting research aimed at controlling the reproduction rate of wild horses through a collaborative effort to develop an immunocontraceptive vaccine. The vaccine is a safe, humane and inexpensive tool, when used with management prescriptions, and may reduce the frequency of gathering excess wild horses. Studies have been conducted on a varied group of HMA's in Nevada and will be used to develop management strategies implementing fertility control treatment.

All the documents listed above are available in the EFO for public review.

II The Proposed Action and Alternatives

The Proposed Action, three management alternatives, and the No Action Alternative will be analyzed within this document, and impacts identified. The description of all of the alternatives is given below.

Actions in common with all alternatives except the No Action Alternative

During the gather activities, regardless of what action alternative is selected, the EFO Wild Horse Specialist would determine sex, age and color, assess herd health (pregnancy/parasite loading/physical condition/etc), and sort individuals as to age, size, sex, temperament and/or physical condition, and to return selected animals to the range. In addition, several types of data would be collected, including biological samples, for analysis and inclusion into planning documents. These activities are summarized below, and apply to all alternatives analyzed in this EA with the exception of the No Action Alternative.

A. Gather Operations

The BLM, EFO through the use of the Great Basin Wild Horse and Burro Gather Contract would conduct the Owyhee HMA Wild Horse Gather. The gather would take place during the

Fall of 2002.

Multiple capture sites (traps) may be used to capture wild horses from the HMA. Whenever possible, capture sites would be located in previously disturbed areas. All capture and handling activities (including capture site selections) would be conducted in accordance with Standard Operating Procedures (SOPs) described in Appendix II. Selection of capture techniques would be based on several factors such as herd health, season of the year and environmental considerations. It is estimated that three or four trap sites would be required to complete the gather. When animals are released, every effort would be made to release them back into the same general area from which they were gathered.

A Veterinarian would be on call throughout the duration of the gather operations to examine animals and make recommendations to the EFO WH&B Specialist for care and treatment of wild horses. Consultation with the veterinarian would take place prior to euthanasia in accordance with Washington Office Instruction Memorandum 2001-165.

Young foals that are gathered as orphans, are weak, or need special care would be adopted to qualified adopters immediately. Every precaution is always taken to ensure that young or weak foals are safely gathered and cared for. Often times, no orphans are encountered, and other times, the frequency increases due to environmental or animal conditions. When a young foal is encountered that needs assistance, caring adopters must be contacted quickly to ensure the survival of the animal. The occurrence of capturing a weak or orphaned foal during late fall gathers is very low.

A cultural resources investigation by an archeologist or an archeological technician would be conducted prior to trap or holding facility construction. If cultural resources were found, an alternative site would be selected. Impacts to cultural resources are not anticipated as a result of the proposed action or Alternatives.

B. Selection Criteria

Wild Horses will be selected for release back onto the HMA that will adhere to both the characteristics for the HMA, and the National Selective Removal Policy to the extent possible.

1. National Selective Removal Policy

In accordance with the *Gather Policy and Selective Removal Criteria for Wild Horses, Washington Office IM 2002-095*, the following priorities would be followed when selecting wild horses to return to the HMA:

a. Age Class Five Years and Younger: Wild horses five years of age and younger

may be removed and placed into the national adoption program.

b. Age Class Ten Years and Older: Wild horses ten years of age and older may be removed and placed into long-term holding.

Long-term holding are facilities contracted by the Bureau used to house horses that have been determined unadoptable. These facilities provide forage, water, veterinarian, and all other needs for these animals on a permanent basis.

Any animals within this age class that are in the Henneke category of 2 or less and have no chance of timely improvement would be evaluated for euthanasia. Any euthanasia would be in accordance with Washington Office Instruction Memorandum 2001-165. Older horses that, in the opinion of the Authorized Officer, may survive if released but probably would not tolerate the stress of removal, preparation, and holding would be evaluated for return to the HMA.

c. Age Class Six to Nine Years: Wild horses aged six to nine years old should be removed last and only if the HMA cannot achieve AML without their removal.

2. HMA Objectives

Determination of which horses would be returned to the range would be based on an analysis of existing population characteristics and individual HMA objectives. Wild horses would be selected and released back to the HMA, which represent the historic characteristics of the Owyhee HMA. This will include selecting animals of moderate or larger stature, average or better confirmation, and coloring patterns, which reflect the historic range of colors found within the Owyhee HMA. These herd characteristics were determined from data collected through previous gathers.

3. Age Structure and Sex Ratios

Additional, goals for the gather include releasing horses within all age classes except weanlings. Animals would be selected for release that represent near normal age class distribution and sex ratios as indicated by data collected during gathers on other HMA's managed by the EFO including bordering HMA's.

The task of selecting 185-231 animals for release (depending upon the alternative selected) from an estimated population of 1,216 would not be a simple task. To enhance the selection process, it is anticipated that many more animals in excess of AML would initially be separated for release, and then a final sorting completed to select the exact animals for release, based on

traits and ages of all of the animals selected. For example, it would not be unusual to separate 200-300 animals from which to make the final selection of 185-231 animals for release. Additionally, in the case that a certain number of wild horses evade capture, and have been confirmed by the EFO WH&B Specialist, the total number of animals released may be reduced by this number.

C. Data Collection

During the Owyhee HMA gather, data would be collected on the population. This data would facilitate preparation of Population Management Plans (PMP). The following data would be collected during the gather, to assure an adequate database to prepare a PMP:

1. Blood Samples. Blood samples would be collected and analyzed to establish genetic baseline data (genetic diversity, historical origins of the herd, unique markers, plus norms for herd) for the HMA. These samples would be collected from release animals. This information would be used to insure the herd is maintaining a diversified genetic structure.

The minimum sample size is 25 percent of AML or a minimum of 25 samples and not more than 100 per population. A sample is defined as the collective blood for an individual animal. (i.e., two tubes for horses). Blood would be drawn from both mares and studs in a ratio similar to the sex ratio released.

The test would consist of looking at 29 systems (17 typing and 12 DNA). The data would be compared to similar data from both domestic and other wild horse/burro populations. A sample of DNA would be preserved (frozen) for each horse tested. Blood samples would be sent to Dr. Gus Cothran of the University of Kentucky for analysis. A Veterinarian or other trained personnel would draw blood from the wild horses.

2. Sex ratio/Age Structure. The number of release animals along with their sex and age would be recorded. An estimate of the number, sex, and age of animals that were not gathered, would be determined and recorded.

3. Reproduction and Survival. Information on reproduction and survival would be collected to the extent possible, through documentation of the wild horses captured during the gather, and the age of those released following the gather.

4. Characteristics. Color and size of the animals would be recorded. The type of horse would be noted if it can be determined, or a general impression of the type of

horses gathered within the HMA. The blood analysis would provide a comparison with domestic breeds and other wild populations that have been tested.

Incidence of albinism, parrot mouth, club feet, severely crooked legs or any other negative trait believed to be genetic, would be recorded along with the disposition of that animal.

5. Condition Class. Condition class would be recorded using the Henneke System, and would be recorded for the Owyhee HMA in general, as well as for those animals that are exceptions to average such as noticeably thin, or fat wild horses.

6. Other data. All other data believed to be essential to the Population Management Planning effort would be collected during the gather. This may include parasite load, disease (from blood samples), percentage of pregnant mares, or other data.

D. Strangles research data collection

As part of ongoing strangles research conducted by Colorado State University, biological samples may be collected from wild horses captured during the gather operation.

BLM field personnel at gather sites would be responsible for identifying animals showing clinical signs of *S. equi* and/or *S. zoo* infection.

BLM field personnel at gather sites would be responsible for collecting samples on clinically ill animals and forwarding the samples to CSU-CVEADSS.

Nasal swab sample would be collected for each horse showing signs of respiratory disease. Animals would be sampled if they meet the following criteria:

1. Nasal discharge from one or both nostrils that is white/green or cloudy white.
2. Abscesses under or behind the jaw, whether they are broken open or not.

E. Population Modeling

In an attempt to predict population dynamics for the Proposed Action and all Alternatives (including No Action), a computer simulation was used. The numbers, age, and sex of animals proposed for removal were analyzed with The Wild Horse Population Model Version 1.35 WinEquus developed by Dr. Steven Jenkins, Associate Professor, University of Nevada

Reno(Jenkins 3/02). Appendix I show the results and establishes the parameters used for this HMA's Proposed Action and Alternatives.

I. Proposed Action

The Proposed Action for the Owyhee HMA would be to capture approximately 1,216 wild horses and remove 1,031. This would include conducting immunocontraception research on approximately 95 mares, monitoring results as appropriate. A minimum of 185 wild horses would be returned to the HMA, which represents the 80% range of the AML established through monitoring data. Excess wild horses would be transported to a BLM adoption preparation/holding facility and be would available for adoption.

The Proposed Action is based on the BLM's 2000 Wild Horse Strategy where all HMA's would be gathered to reach AML over a 10 year period. The plan outlines a 4 year gather cycle to manage wild horses Bureau wide. The strategy is to implement population management for each HMA where wild horses would be managed in a range from 40% below AML, to AML (see Table II). AML is the maximum number of wild horses for the HMA. The proposed action would be implemented in the fall of 2002. The Proposed Action identifies to reduce the population to 20% below of AML instead of 40%. This change in proposed action is due to budget constraints anticipated for FY2003 and limited facility space in BLM preparation facilities.

The following table shows the 2002 population estimate. This data was used to determine the estimated number of wild horses to be removed, and released back into the HMA.

Table II

Owyhee HMA Pasture	Estimated 2002 Population	AML Range	Estimated #'s To Remove	Estimated #'s To Release
Star Ridge	905	75-125	805	100
Dry Creek	60	44-73	0	59
Chimney Creek	251	20-33	225	26
Total	1216	139-231	1030	185

All of the mares to be released back to the HMA would be treated with an immunocontraceptive vaccine, Porcine zona pellucidae (PZP). The inoculation of mares would consist of a liquid dose of PZP vaccine and a time released portion of the drug in the form of pellets. The approach incorporates the PZP into a non-toxic, bio-degradable material which

can be formed into small pellets. The pellets are injected with the liquid and are designed to release PZP at several points in time much the way time-release cold pills work. This formulation would be delivered as an intramuscular injection by a jabstick syringe, into the mares in the working chute. Upon impact the liquid in the chamber would be propelled into the muscle along with the pellets. This delivery method has been used previously to deliver immunocontraception vaccine with acceptable results. Such a vaccine would permit a single injection to cause up to two years of contraception at approximately 90% efficiency the first year and 80+% the second.

Delivery of the vaccine would be by means of syringe or dart with a 12 gauge needle or 1.5" barbless needle respectfully. 0.5 cc of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be placed in the barrel of the syringe or dart needle and would be injected with the liquid. Only trained personnel would mix and/or administer the vaccine.

All treated mares would be identified and freezemarked with a Nevada State approved identification (such as a letter or a number) on the left hip to enable positive identification for future tracking and data collection of the animals. Appropriate data would be collected for inclusion in the Population Management Plan.

Inoculated mares would foal normally in 2003, and the contraceptive would limit foal production in 2004 and 2005. Near normal foaling rates would be expected to resume in 2006. It is estimated that 100% of the released mares (95 mares) would receive fertility control treatments. The treatment will be administered at the completion of capture in each capture area, just prior to release. The use of fertility control would not remove the genetic contribution of treated animals from the population but only delay their contribution for the treatment period.

The implementation of the Proposed Action would prevent the population from increasing beyond the upper range of the AML (231 animals) until the fourth year, in which a gather would be scheduled depending upon funding, population growth increases and site-specific qualifiers. This would ensure a vigorous and viable breeding population, reduce stress on vegetative communities and wildlife, and be in compliance with the Wild Free Roaming Horse and Burro Act, Resource Advisory Council Standards and Guidelines, and Land Use Plan management objectives.

Alternative 1 (Removal to AML & Use of Immunocontraceptives)

Alternative 1 is to gather all horses within the Owyhee HMA and reduce the population to AML, not below. Approximately 1,216 wild horses would be captured and 985 animals removed. This would include conducting immunocontraception research on approximately 120

mares, monitoring results as appropriate. A minimum of 231 wild horses would be returned to the HMA, which represents the upper range of the AML established through monitoring data. Excess wild horses would be transported to a BLM adoption preparation/holding facility and be would available for adoption. Prodical and delivery of the immunocontraception vaccine would be as described under the Proposed Action

Inoculated mares would foal normally in 2003, and the contraceptive would limit foal production in 2004 and 2005 . Near normal foaling rates would be expected to resume in 2006.

Table III shows the estimated current wild horse population, AML, removal, and release numbers:

Table III

Owyhee HMA Pasture	Estimated 2002 Population	AML	Estimated #'s To Remove	Estimated #'s To Release
Star Ridge	905	125	780	125
Dry Creek	60	73	0	73
Chimney Creek	251	33	218	33
Total	1216	231	985	231

Alternative 2 (Removal to 20% below AML without the use of Immunocontraceptives)

Alternative 2 for the Owyhee HMA would be to reduce the population to 20% below AML by capturing approximately 1,216 wild horses and removing 1,031 wild horses. This Alternative differs from the Proposed Action by not incorporating the use of fertility control measures for research and to regulate reproductive capacity of the herd.

The population would increase at normal annual rates, exceeding the upper range of AML two year sooner, in which a gather would be scheduled depending upon funding, population growth increases and site-specific qualifiers.

Alternative 3 (Removal to AML without the use of Immunocontraceptives)

Alternative 3 for the Owyhee HMA would be to reduce the population to AML, not below. Approximately 1,216 wild horses would be captured and 985 animals removed. This alternative differs from Alternative 1 by not incorporating the use of fertility control measures for research and to regulate reproductive capacity of the herd.

The wild horse population would increase annually, in excess of the upper limit of AML until the next gather, which would be scheduled in approximately four years depending upon funding, population growth increases and site-specific qualifiers.

Alternative 4 (No Action)

Under this alternative a wild horse gather would not take place in the Owyhee HMA. There would be no active management to control the size of this population at this time. Under this alternative, the current population of 1,216 wild horses would continue to increase at a rate of 17-20% annually. Predators are not known to substantially regulate wild horses in the Owyhee HMA. This alternative would result in a steady increase in wild horse numbers, which would greatly exceed the carrying capacity of the range.

The population of wild horses would compete for the available water and forage resources. The areas closest to the water would experience severe utilization and degradation of the range resource. Over the course of time, the animals would deteriorate in condition as a result of declining forage availability and the increasing distance traveled to forage. The mares and colts would be affected most severely. The continued increases in population would eventually lead to catastrophic losses to the herd, which would be a function of the available forage and water and the degradation of the habitat. A point would be reached where the herd reaches the ecological carrying capacity and both the habitat and the wild horse population would be critically unhealthy.

Ecological carrying capacity of a population is a scientific term, which refers to the level at which density-dependant population regulatory mechanisms would take effect within the herd. At this level, the herd would show obvious signs of ill fitness, including poor individual animal condition, low birth rates, and high mortality rates in all age classes due to disease and/or increased vulnerability to predation. In addition, irreparable damage would occur to the habitat through overgrazing, which is not only depended upon by wild horses but by wildlife (which include sensitive species), and permitted livestock. All multiple uses of the area would be impacted. Significant loss of the wild horses in the Owyhee HMA due to starvation and disease would have obvious consequences to the long-term viability to the herd. Irreparable damage to the resources, which would include primarily vegetative, soil and riparian resources, would have obvious impacts to the future of the Owyhee HMA and all other users of the resources, which depend upon them for survival.

An emergency gather was completed in 2000 due to drought. The waters in the Dry Creek Pasture of the HMA dried up, and over six hundred wild horses were using one last remaining water source that itself was quickly drying up. The vegetation in the area had been severely utilized and the six hundred wild horses were ranging out numerous miles to find forage. Most

of the animals gathered from this area were in very poor condition.

The No Action alternative was eliminated from further consideration due to several factors.

This alternative would not be acceptable to the BLM nor most members of the public. The BLM realizes that some members of the public advocate "letting nature take its course", however allowing horses to die of dehydration and starvation would be inhumane treatment and clearly indicates that an overpopulation of horses exists in the HMA. The Wild Free-Roaming Horse and Burro Act of 1971 mandates the Bureau to "*prevent the range from deterioration associated with overpopulation*", and "*remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area*". Additionally, Promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state "*Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*". (emphasis added).

The No Action alternative would not comply with the Northeastern Great Basin RAC Standards and Guidelines for Rangeland Health and Healthy Wild Horse and Burro Populations, which require that "Wild horses and burros exhibit characteristics of a healthy, productive, and diverse population. Age structure and sex ratios are appropriate to maintain the long term viability of the population as a distinct group. Herd management areas are able to provide suitable feed, water, cover and living space for wild horses and burros and maintain historic patterns of habitat use".

The No Action Alternative would be unacceptable, and would violate the Wild Free Roaming Horse and Burro Act, Federal Regulations, BLM Policy and Resource Advisory Council Standards and Guidelines, and therefore will not be analyzed further in this document.

III Affected Environment

Critical Elements of the Human Environment

The following critical elements of the human environment are not present or are not affected by the proposed action or Alternatives:

Areas of Critical Environmental Concerns

Cultural Resources - A cultural resources investigation by an archaeologist or an archaeological technician would be conducted prior to trap or holding facility construction. If cultural resources are found, an alternative site would be selected.

Environmental Justice

Farm Lands (prime or unique)

Flood Plains

Native American Religious Concerns - Various tribes and bands of the Western Shoshone have stated that federal projects and land actions could have widespread effects to their culture and religion because they consider the landscape as sacred and as a provider. However, the proposed action has a low potential to negatively impact any specific Native American religious aspect or Traditional Cultural Property. Native American consultation was deemed unnecessary at this time.

Paleontology

Wastes (hazardous or solid)

Water Quality (drinking/ground)

Bureau Specialists have further determined that the following resources, although present in the project area, are not affected by the proposed action: Livestock Grazing, Lands, Recreation, Geologic Resources, Forestry and Social and Economic Resources.

Resources Present and Brought Forward for Analysis:

Owyhee Herd Management Area (NV-101)

The Owyhee HMA is located in northwestern Elko County, approximately 90 air miles northwest of Elko, Nevada. The area is within the Columbia Plateau and Great Basin physiographic regions, characterized by a high, rolling plateau underlain by basalt flows covered with a thin loess and alluvial mantle. On many of the low hills and ridges that are scattered throughout the area, the soils are underlain by bedrock. Elevations within the HMA range from approximately 5,100 feet to 5,600 feet. Precipitation ranges from 6 to 14 inches; averaging 9.48 inches annually, occurring primarily in the winter and spring. Average annual temperature is 43 to 47 degrees F. The area is also utilized by domestic livestock and numerous wildlife species. The Owyhee HMA is bordered to the west by the Little Owyhee HMA (managed by the Winnemucca Field Office) and the Little Humboldt and Rock Creek HMAs to the south. All of these HMAs have healthy populations of wild horses and although not documented it is believed that wild horses manage to do some mixing between HMAs.

Past capture data was used to determine typical animal colors and approximate percentage of frequency within the herd. The majority of horses exhibit grey(29%) sorrel (21%), bay (17%), and black (11%) color patterns; however there are brown(6%), red roan (6%), strawberry roan (3%), palomino (2%), chestnut (2%), and various other colors(3%).

Post gather data was used to determine age structure within the herd. Approximately 80% of the herd is 0-13 years old and 20% is 14-20+.

Air Quality

The air-shed in the project area is a Prevention of Significant Deterioration (PSD) Class II, which means temporary, moderate deterioration of air quality is allowed.

Vegetation, Soil, and Water

Major plant associations are characterized as big sagebrush-grass and low sagebrush-grass. The big sagebrush-grass and low sagebrush-grass types are dominated by big sagebrush (*Artemisia tridentata*), low sagebrush (*Artemisia arbuscula*), shadscale (*Atriplex confertifolia*), bud sage (*Artemisia spinescens*), and rabbit brush (*Chrysothamnus* spp.) respectively. Major grass species include bluebunch wheatgrass (*Agropyron spicatum*), Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), needlegrass (*Stipa* spp.), and bottlebrush squirreltail (*Sitanion hystrix*). Forbs include arrowleaf balsamroot (*Balsamorhiza sagittata*), lupine (*Lupinus* spp.), phlox (*Phlox* spp.), and aster (*Aster* spp.).

The majority of soils in all the Owyhee HMA are desert soils developed under low precipitation with minimal topsoil development--Aridisols and Entisols. The soils are mostly fine textured with severe erosion potentials when disturbed. Loss of topsoil from these desert soils leads to an irreplaceable loss in soil productivity, and thus ability to regain natural plant communities if lost.

There are no known listed threatened, sensitive, or endangered plants in the proposed project area. However, two State of Nevada Listed Species have been identified as potentially occurring in the HMA (Appendix III).

Wildlife

Big Game Species: The allotment provides habitat for mule deer and pronghorn on a seasonal or yearlong basis.

Other Game and Nongame Species: There are approximately 350 species of vertebrate wildlife which occur in northeastern Nevada. The allotment provides habitat for many of these species on a seasonal or yearlong basis in association with sagebrush steppe, seasonally-flooded vegetated playa and riparian habitat types.

Migratory Birds

On January 11, 2001 President Clinton signed the Migratory Bird Executive Order. This executive order outlines the responsibilities of Federal agencies to protect migratory birds. The

United States has recognized their ecological and economic value to this country and other countries by ratifying international, bilateral conventions for the conservation of migratory birds. These migratory bird conventions impose substantive obligations on the United States for conservation of migratory birds and their habitats. The United States has implemented these migratory bird conventions through the Migratory Bird Treaty Act. President Clinton's Migratory Bird Executive Order directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. As defined in the executive order, "action" means a program, activity, project, official policy (such as a rule or regulation), or formal plan directly carried out by a Federal agency. The executive order further states that each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service that shall promote conservation of migratory bird populations. The term "action" will be further defined in this MOU as it pertains to each Federal agency's own authorities and programs.

A list of the migratory birds affected by the President's executive order is contained in 43 CFR 10.13. References to "species of concern" pertain to those species listed in the periodic report "Migratory Nongame Birds of Management Concern in the United States", priority migratory bird species as documented by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 CFR 17.11.

The Proposed Action is located within sagebrush habitat types. The Nevada Partners in Flight Bird Conservation Plan identifies the following bird species associated with each of these ecotypes: Sagebrush Obligates: Sage Grouse.

Other: Black Rosy Finch, Ferruginous Hawk, Gray Flycatcher, Loggerhead Shrike, Vesper Sparrow, Prairie Falcon, Sage Sparrow, Sage Thrasher, Swainson's Hawk, Burrowing Owl, and Calliope Hummingbird.

Other associated species: Brewer's Sparrow, Western Meadowlark, Black-throated Sparrow, Lark Sparrow, Green-tailed Towhee, Brewer's Blackbird, Horned Lark, and Lark Sparrow.

BLM Special Status Species

Based on consultation with Nevada Division of Wildlife regarding 1995 input submitted by the U.S. Fish and Wildlife Service and BLM file data, one threatened species, one candidate species, twelve BLM sensitive species and seven State of Nevada Listed Species have been identified as potentially occurring in the HMA on a seasonal or year long basis (Appendix III).

Wilderness

Portions of the South Fork Owyhee and Owyhee Canyon Wilderness Study Areas (WSA) lie within the Owyhee HMA (Map 2).

Visual Resources

Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and a delineation of distance zones. Based on these factors, BLM administered lands are placed into four visual resource inventory classes. Class I and II are the most valued, Class III representing a moderate value, and Class IV being of least value. The proposed project area consists of Class IV. Visual resource classes serve two purposes: (1) an inventory tool that portrays the relative value of visual resources, and (2) a management tool that portrays the visual management objective. The Class IV objective is to provide for management objectives which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention.

Invasive Non-Native Species

Noxious weed and invasive non-native species introduction and proliferation is a growing concern among local and regional interests. A noxious weed survey including invasive and non-native species in the Owyhee HMA has been partially completed. This survey indicated that the following invasive weeds occur within the HMA

<u>Scientific Name</u>	<u>Common Name</u>
<i>Cirsium vulgare</i>	bull thistle
<i>Cardaria draba</i>	hoary cress
<i>Onopordum acanthium</i>	scotch thistle
<i>Cirsium arvense</i>	Canada thistle

These weeds occur in a variety of habitats including road side areas, rights-of-way, wetland meadows, as well as undisturbed upland rangelands.

Livestock Grazing

The grazing permittee for the Owyhee Allotment is Agri Beef Company. Agri Beef Company's total permitted active grazing use for the allotment is 29,903 Animal Unit Months (AUMs). The percent public land for which the allotment is licensed is 98%. The allotment was evaluated

between 1977 to 2000 and ending on April 19, 2002 with the issuance of the Final Multiple Use Decision (FMUD).

An Allotment Management Plan (AMP) was developed in 1987 for the allotment. In order to implement the AMP cross fencing of the allotment was completed which resulted in five native pastures (Star Ridge, Dry Creek, Chimney Creek, Upper and Lower Fourmile Pastures), and one seeding pasture (Winters Creek Seeding). The AMP implemented a combination rest-rotation and deferred-rotation system to provide growing season rest in each of the native pastures one year out of two. The rest-rotation use on both the Star Ridge and Dry Creek pastures outlined in the AMP is from March 1 to August 15. However, in order to reduce hot season grazing use on the South Fork Owyhee River, the ranch voluntarily ceased grazing use by June 30, within the Star Ridge Pasture beginning in 1995. Deferred-rotation use on the Lower and Upper Fourmile and Chimney Creek Pastures is from March 1 to May 15 and November 15 to January 31 one year and August 16 to October 15 the next year. The grazing system outlined above was not fully implemented until the 1990 grazing season when all the fencing was in place. The FMUD formalized this grazing system.

Wild Horses

Wild horses are introduced species within North America and have few natural predators. Few natural controls act upon wild horse herds making them very competitive with native wildlife and other living resources managed by the Bureau. Wild horses have been shown to be capable of 15 to 25% increases in numbers annually. This can result in a doubling of the population about every 3 years. In the Owyhee HMA, wild horse population growth rates (percentage of foals <1) have been verified as high as 20%(averaging 16-18%). Estimated herd populations for the Owyhee HMA as determined from post and current gather data, census(last census 1997-766 animals counted), seasonal distribution, and ground observations are as follows:

<u>HMA</u>	<u>Estimated Summer 2002 Population</u>
Owyhee	1,216

The Owyhee HMA has undergone 2 removals since passage of the act.

Sex ratios for wild horses within the Owyhee HMA are representative of other HMA's in the EFO and the West at large. At birth, sex ratios are roughly equal. This balance shifts to favor mares throughout the younger age classes. This pattern shifts again at around 15 years of age favoring studs.

IV Environmental Consequences

Proposed Action and Alternatives

Air Quality

The most significant impacts to air quality would be moderate increases in noise, dust, and combustion engine exhaust generated by mechanical equipment. Impacts would be temporary, small in scale, and dispersed throughout the proposed capture. Impacts would be kept to a minimum by following the standard operating procedure listed in Appendix II.

Vegetation, Soil, and Water

Proposed Action- would reduce the wild horse population to 20% below AML in the Owyhee HMA which would promote the achievement and long term maintenance of a thriving natural ecological balance for a period longer than the Alternatives. The Proposed Action would result in improved forage availability, vegetation density, vigor, plant reproduction, and productivity. Wild horse numbers would not exceed carrying capacity for approximately four years.

Implementation of the Proposed Action would lessen the impact of hoof action on the soil around unimproved springs and stream bank riparian areas which should lead to an improvement in stream bank stability and improved riparian habitat conditions. There would also be a reduction in hoof action on upland habitat area and reduced competition for available water sources.

Impacts to vegetation and soils under implementation of the Proposed Action or Alternatives 1,2, and 3 could include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts are created by vehicle traffic, and hoof action of penned horses, and can be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Since most trap sites and holding facilities are re-used during recurring wild horse gather operations, any impacts would remain site specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore generally be adjacent to or on roads, pullouts, water haul sites, or other flat spots which were previously disturbed.

Alternative 1-would reduce the current wild horse population to AML in the Owyhee HMA and help in promoting a progression toward achieving a thriving natural ecological balance. This would result in improved forage availability, vegetation density, vigor, reproduction, and

productivity over current conditions. However, the population of wild horses would exceed their carrying capacity in less than two years. The impacts to forage availability, vegetation density, vigor, plant reproduction, and productivity would improve in the short term but would quickly regress to current conditions. The progression toward and maintenance of a thriving natural ecological balance would occur but much slower under the Alternative 1 than management outlined in the Proposed Action.

Alternative 2 or 3/No Fertility Control -would reduce the wild horse population to 20% below AML or to AML as described in the Proposed Action and alternative 1. However, under these Alternatives there would be no use of fertility control. The mares would not be treated and the population growth would not be delayed two years. The effects would be the same as described in the Proposed Action and alternative 1, except the carrying capacity would be exceeded at an increased rate. The impacts to forage availability, vegetation density, vigor, plant reproduction, and productivity would improve in the short term but would more quickly regress to current conditions. The progression toward and maintenance of a thriving natural ecological balance would occur slower under the Alternatives 2 and 3 than management outlined in the Proposed Action and Alternative 1.

Wildlife/Migratory Birds/BLM Special Status Species

Proposed Action - Implementation of the Proposed Action would result in reduced competition with wildlife species which would increase the quantity and quality of available forage and cover on sagebrush steppe, vegetated playa and riparian habitat types. It would help to provide improved habitat conditions for BLM Special Status Species and migratory birds. In the case of raptors that are BLM Special Status Species, the Proposed Action would help to provide improved habitat for prey species. There would be less disturbance associated with wild horses along stream bank riparian habitat and adjacent upland habitat. This should result in improved habitat conditions on existing and potential interior redband trout streams for a sustained period of time.

The immediate impacts to wildlife populations from the Proposed Action and Alternatives 1,2, and 3 would be potential disturbance and displacement from the helicopter and increased traffic. These disturbances would be during the capture period only.

Alternative-2- Fewer wild horses would result in reduced competition with wildlife which would temporarily increase the quantity and quality of available forage. However, the population of wild horses would exceed their carrying capacity in less than two year. Reduced numbers of wild horses would cause fewer impacts to stream bank riparian habitat and adjacent upland habitat. This would result in short term improvements to habitat conditions on existing and potential interior redband trout streams. The impacts to wildlife and fisheries and

their associated habitats would improve but would more quickly regress to "pre-removal" conditions.

Alternative 2 or 3/No Fertility Control -Implementation would reduce the wild horse population to 20% below AML or to AML as described in the Proposed Action and alternative 1. However, with these Alternatives there would be no use of fertility control. The mares would not be treated and the population growth would not be delayed one year. The effects would be the same as described in the Proposed Action and alternative 1, except the carrying capacity would be exceeded at an increased rate.

Wilderness

No impacts to wilderness values are anticipated to occur since all trap sites and holding facilities would be located outside wilderness study areas. Wilderness values would be positively affected by implementation of the Proposed Action or Alternatives 1, 2, and 3 as it would result in an improved ecological condition of the plant communities that are aesthetically more appealing to the public than the existing situation.

Visual Resources

The proposed project activities would result in minimal, temporary impacts. For the duration of the proposed gather, traps and corrals would introduce weak horizontal lines to the foreground. No obvious changes in texture due to vegetation disturbance would be produced since traps and corrals would be located in previously disturbed areas. Visual resource management objectives for Class IV VRM areas would be met.

Invasive Non-Native Species

Noxious weed impacts associated with the Proposed Action or Alternatives 1,2, and 3 include potential importation or transportation of new species of weeds to the Owyhee HMA area, spread of existing noxious weed seeds and plant parts to new areas in the HMA, and increases in the size of existing weed infestation sites. These impacts would potentially be accomplished by contractor vehicles and livestock entering the area and through feeding of contaminated hay to captured horses which are released before seeds pass through their system.

Indirect impacts vary among the alternatives and would likely occur with the decrease in the population of wild horses within the HMA, and reduced concentration of animals near water sources. Utilization levels on key species would decrease, and less ground disturbance would occur near the water sources and on trails to water sources. The likelihood of invasion by noxious and other non-native species to these areas would be lessened. The degree of the

impacts to noxious weeds would be directly proportional to the population size of the wild horses. The Proposed Action or Alternative that results in the lowest population for the herd would result in the smallest incidence of noxious weed invasion or spread. The Alternative that results in the largest population of wild horses would impact noxious weeds the most, and would result in an increased likelihood of noxious weed invasion.

Livestock Grazing

Proposed Action or Alternatives -A reduction in wild horses would lead to less competition between cattle and wild horses for water and forage resources. During the proposed gather, livestock could be displaced or disrupted from their normal distribution patterns. Gates may be opened and fences cut to facilitate the gathering of wild horses. These improvements would be closed or repaired as soon as possible to alleviate any unwanted livestock movements.

Wild Horses

Impacts to wild horses under the Proposed Action or Alternatives 1, 2, and 3 may occur to either individual animals or the population as a whole. These impacts include handling stress associated with the herding, capture, processing, and transportation of animals from temporary trap sites to temporary holding facilities, and from the temporary holding facilities to an adoption preparation facility. Following administration of the immunocontraceptive fertility control vaccines, under the Proposed Action or Alternative 1, minor swelling may occur at the injection site and/or an injection site injury may occur, however this is rare. The intensity of these impacts vary by individual, and are indicated by behaviors ranging from nervous agitation to physical distress. Mortality of wild horses captured during a gather does occur, however it is infrequent and typically is no more than one half to one percent of the animals captured.

Impacts which can occur after the initial stress may include spontaneous abortion in mares, and increased social displacement and conflict in studs. Although, spontaneous abortion following capture is very rare. Traumatic injuries that may occur typically involve biting and/or kicking that results in bruises and minor swelling which normally does not break the skin. These impacts are known to occur intermittently during wild horse gather operations. The frequency of occurrence of these impacts among a population varies with the individual.

Population wide impacts can occur during or immediately following implementation of the Proposed Action or Alternatives. They include the displacement of bands during capture and the associated re-dispersal, modification of herd demographics (age and sex ratios), temporary separation of members of individual bands of horses, reestablishment of bands following releases, and the removal of animals from the population. With the exception of changes to herd demographics, direct population wide impacts over the last 20 years have proven to be

temporary in nature with most if not all impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release except a potential heightened shyness toward human contact. Observations of animals following release have shown horses relocate themselves back to their home ranges within 12 to 24 hours of release.

The effect of removing wild horses from the population would not be expected to have a significant impact on herd dynamics or population variables, as long as the selection criteria for removal ensured a "typical" population structure was maintained. Obvious potential impacts on horse herds and populations from exercising poor selection criteria not based on herd dynamics includes modification of age or sex ratios to favor a particular class of animal.

The Proposed Action and Alternatives 1, 2, and 3 would mitigate the potential adverse impacts on wild horse populations by establishing a procedure for determining what selective removal criteria is warranted for the herd. This flexible procedure (Appendix II SOP's) would allow for correction of any existing discrepancies in herd demographics which could predispose a population to increased chances for catastrophic impacts. The Proposed Action would also establish a standard (2000 National Strategy) for selection which would minimize the possibility for developing negative age or sex based selection effects to the population in the future.

Population wide indirect impacts would not appear immediately as a tangible effect and are more difficult to quantify. Population wide indirect impacts would be associated primarily with the use of fertility control drugs and would involve reductions in short term fecundity of initially a large percentage of mares in a population, increasing herd health as AML's are achieved, and potential genetic issues regarding the control of contributions of mares to the gene pool, especially in small populations. Again, with implementation of the Proposed Action or Alternative 1, these impacts would be expected to be mitigated by an overall lessening of the need to impose fertility control treatments on a high proportion of the mare population, and all mares would be expected to successfully recruit some percentage of their offspring into the population.

Alternatives 1, 2, and 3 would allow for achievement of the program objectives but at a higher ultimate cost through increased gather intervals and increased numbers of excess wild horses.

V Cumulative Impacts

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of

time.

Implementation of the Proposed Action or Alternatives 1, 2, or 3 would reduce the wild horse population to 20% below AML or to AML in the Owyhee HMA which would help to promote a thriving, natural, and ecological balance. This would result in increased vegetation density, vigor, reproduction, productivity, and forage availability.

Adverse impacts to vegetation with implementation of the Proposed Action or Alternatives 1, 2, or 3 would include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts created by vehicle traffic, and hoof action of penned horses, can be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Since most trap sites and holding facilities are re-used during recurring wild horse gather operations, any impacts would remain site specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore generally be adjacent to or on roads, pullouts, water haul sites, or other flat spots which were previously disturbed. These common practices would minimize the cumulative effects of these impacts.

Past, present, and reasonably foreseeable activities which would be expected to contribute to the cumulative impacts of implementing the Proposed Action include: past selective removal gathers which may have altered the age structure, composition, and sex ratios of the wild horse populations, continued livestock grazing in the allotments, and increasing recreational uses. These past, present, and reasonably foreseeable activities would be expected to generate cumulative impacts to the Proposed Action by influencing the habitat quality, abundance, and continuity for the Owyhee HMA wild horses.

These impacts would be expected to be marked by changes occurring slowly over time. The EFO would continue to identify these impacts as they occur, and mitigate them as needed on a project specific basis to maintain habitat and herd quality. At the same time, horse herds would be expected to continue to adapt to these small changes to availability and distribution of critical habitat components (food, water, shelter, space). The Proposed Action would contribute to the cumulative impacts of future actions by initially achieving 20% below AML, and establishing a process whereby biological and/or genetic issues associated with herd or habitat fragmentation would become apparent sooner and mitigating measures implemented quicker.

VI Consultation and Coordination

Mitigation Measures

The Proposed Action incorporates proven standard operating procedures which have been developed over time. These SOP's (Appendix II) represent the "best methods" for reducing impacts associated with gathering, handling, transporting and collecting herd data.

Additional mitigation measures are not warranted.

List of Preparers

Bryan Fuell	Wild Horse and Burro Specialist
Kathy McKinstry	Natural Resource Specialist
Karl Scheetz	Sup. Rangeland Management Specialist
Lorrie West	Environmental Coordinator
Ken Wilkinson	Wildlife, Migratory Birds, BLM Special Status Species
Carol Marchio	Air Quality, Floodplains, Soils, and Water Quality
Julie Pallette	Visual Resource Management
Bryan Hockett	Cultural Resources
Tamara Hawthorne	Wilderness
Mark Coca	Noxious Weeds

Persons, Groups, and Agencies Consulted

- American Horse Protection Assoc.
- The Fund for Animals, Inc
- Anna Charlton-Rutgers Law School
- Colorado Wild Horse and Burro Coalition
- Elko County Commissioners
- Wild Horse Spirit
- Nevada Commission for the Preservation of Wild Horses
- Craig Downer
- Dean Rhoads
- Donald Molde, MD
- Ellison Ranching Company
- Te-Moak Tribe of Western Shoshone
- HSUS
- International Society for the Protection of Mustangs & Burros
- Kathryn Cushman

- Western Shoshone Historic Preservation Society
- National Mustang Assoc.
- Natural Resources Defense Council
- Nevada State Clearing House
- Nevada Outdoor Recreation Association
- Nevada State Dept. of Agriculture
- Nevada Woolgrowers Association
- Nevada Farm Bureau Federation
- Nevada Cattleman's Association
- Resource Concepts Inc.
- Rick Sorenson
- Sierra Club
- Steven Fulstone
- Nevada Dept. of Wildlife
- Hammond Ranches, Inc.
- Nel Mori
- US Fish and Wildlife Service
- Agri Beef Company
- Western Exploration, Inc.
- Wild Horse Organized Assistance
- Leta Collard
- Mel Griffeth

APPENDIX I POPULATION MODELING

In an attempt to predict population dynamics, a computer simulation was run using the wild horse population model developed by Dr. Stephen Jenkins of the University of Nevada, Reno (Jenkins 2002). To obtain herd parameters used in the model the book "Wild Horses of the Great Basin" by Joel Berger was used. The model was run for the HMA using 100 trials starting with the 2002 population. The following parameters were used:

Number of animals captured - 95% / Number of released mares inoculated (fertility) - 100%
Survival probability adult - .903 / Effectiveness with treated mares - 90% year 1, 80% year 2
Survival probability foal - .851 / Sex Ratios at birth -50% male - 50%-female
% Mares and age begin to foal - 2yrs-.36%, 3yrs-.44%, 4-10yrs-.82%, 11-20-.76%

Number of horses by year for the Owyhee HMA

Proposed Action.

20% below AML/Fertility Control

Year	Owyhee
2002	1216
2003	204
2004	209
2005	225
2006	272
2007	323

Alternative 1.

AML/Fertility Control

Year	Owyhee
2002	1216
2003	254
2004	260
2005	273
2006	338
2007	391

APPENDIX I (CONTINUED)

Alternative 2.
20% below AML, No Fertility

Year	Owyhee
2002	1216
2003	206
2004	249
2005	296
2006	361
2007	416

Alternative 3.
AML, No Fertility

Year	Owyhee
2002	1216
2003	251
2004	299
2005	356
2006	413
2007	475

Alternative 4.
No Action

Year	Owyhee
2002	1216
2003	1391
2004	1696
2005	1903
2006	2372
2007	2882

APPENDIX II

STANDARD OPERATING PROCEDURES

Gathers would be conducted by contractors or agency personnel. The same procedures for gathering and handling wild horses apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed to ensure the welfare, safety and humane treatment of the wild horses (WH) in accordance with the provisions of 43 CFR 4700.

Gathers are normally conducted for one of the following reasons:

1. Regularly scheduled gathers to obtain or maintain the Appropriate Management Level (AML).
2. Drought conditions that could cause mortality to WH due to the absence of water or forage, and where continued grazing may result in a downward trend to the vegetative communities due to plant mortality and reduced vigor and productiveness.
3. Fires that remove forage to the extent that there is inadequate forage to sustain the population or to allow recovery of native vegetation.
4. Utilization levels that reach a point where a continued increase in utilization would cause a downward trend in the plant communities and impede meeting standards for rangeland health.
5. Monitoring indicates that WH use would begin to cause a downward trend in riparian function or not permit the recovery of riparian vegetation determined to be in undesirable condition.

A. CAPTURE METHODS USED IN THE PERFORMANCE OF A GATHER-Contract Operations

1. Helicopter - Drive Trapping

Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If this method is selected the following applies:

- a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the BLM. Under no circumstances shall animals be tied down for more than one

hour.

- b. The contractor shall assure that bands remain together, and that foals shall not be left behind.
- c. A domestic saddle horse(s) may be used a pilot (or "Judas") horse to lead the wild horses into the trap site. Individual ground hazers may also be used to assist in the gather.

2. Helicopter - Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If this method is selected the following applies:

- a. Under no circumstances shall animals be tied down for more than one hour.
- b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

3. Bait Trapping

Capture attempts may be accomplished by utilizing bait (feed or water) to lure animals into a temporary trap. If this method is selected the following applies:

- a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
- b. All trigger and/or trip gate devices must be approved by the BLM prior to capture of animals.
- c. Traps shall be checked a minimum of once every 10 hours

B. BLM conducted Helicopter - Non-Contract Operations

1. Gather operations will be conducted in conformance with the Wild Horse and Burro Aviation Management Handbook (March 2000).
2. Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation

C. Safety and Communications

1. The Contractor shall have the means to communicate with the BLM and all contractor personnel engaged in the capture of wild horses and burros utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.
 - a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the BLM violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the BLM.
 - b. The Contractor shall obtain the necessary FCC licenses for the radio system.
 - c. All accidents occurring during the performance of any delivery order shall be immediately reported to the BLM.
2. Should the helicopter be employed, the following will apply:
 - a. The Contractor must operate in compliance with all applicable Federal, State, and local laws and regulations.
 - b. Fueling operations shall not take place within 1,000 feet of the animals.

D. Trapping and Care

1. The primary concern of the contractor is the safe and humane handling of all animals captured. All capture attempts shall incorporate the following:
 - a. All trap and holding facility locations must be approved by the BLM prior to construction. The Contractor may also be required to change or move trap locations as determined by the BLM. All traps and holding facilities not located on public land must have prior written approval of the landowner.
2. The rate of movement and distance the animals travel shall not exceed limitations set by the BLM who will consider terrain, physical barriers, weather, condition of the animals

and others factors.

3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
 - a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.
 - b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered with plywood (without holes) or like material.
 - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable restraining chute to restrain, age, or provide additional care for animals shall be placed in the runway in a manner as instructed by or in concurrence with the BLM.
 - d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.
 - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.
4. No fence modifications will be made without authorization from the COR/PI. The Contractor/BLM shall be responsible for restoration of any fence modification which he has made.
5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor/BLM shall be required to wet down the ground with water.
6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex,

and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age or other similar practices. In these instances, a portable restraining chute will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires the animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the Contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the BLM.

7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day.
8. It is the responsibility of the Contractor/BLM to provide security to prevent loss, injury or death of captured animals until delivery to final destination.
9. The Contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses (or burros) is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Destruction of Wild Horses and Burros and Disposal of Remains, and is in accordance with BLM policy as expressed in Instructional Memorandum No. 98-141.

Any captured horses that are found to have the following conditions may be humanely destroyed:

- a. The animal shows a hopeless prognosis for life.
 - b. Suffers from a chronic disease.
 - c. Requires continuous care for acute pain and suffering.
 - d. Not capable of maintaining a body ratio of one.
 - e. The animal is a danger to itself or others.
10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the BLM for unusual circumstances. Animals to be released back into the HA following gather operations

may be held up to 21 days or as directed by the BLM. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the BLM. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the BLM. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the BLM.

11. The BLM will issue a Notice of Intent to Impound Unauthorized Livestock prior to all gathers. Branded or privately owned animals whose owners are known will be impounded by BLM, and if not redeemed by payment of trespass and capture fees, will be sold at public auction. If owners are not known, the private animals will be turned over to the State for Processing under Nevada estray laws.

E. Motorized Equipment

1. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The Contractor shall provide the BLM with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.
2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.
3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.

4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the BLM.
5. Floors of tractor-trailers, stock trailers, and the loading chute shall be covered and maintained with wood shavings to prevent the animals from slipping.
6. Animals to be loaded and transported in any vehicle or trailer shall be as directed by the BLM and may include limitations on numbers according to age, size, sex, temperament, and animal condition. The following minimum square feet per animal shall be allowed in all trailers:
 - 11 sq. ft. per adult horse (1.4 linear ft. in an 8ft. wide trailer);
 - 8 sq. ft. per adult burro (1.0 linear ft. in an 8ft. wide trailer);
 - 6 sq. ft. per horse foal (.75 linear ft. in an 8ft. wide trailer);
 - 4 sq. ft. per burro foal (.50 linear ft. in an 8ft wide trailer);
7. Prior to any gathering operations, the BLM will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine the level of activity likely to cause undue stress to the animals, and whether such stress would necessitate a veterinarian be present. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed. The Contractor will be appraised of all the conditions and will be given directions regarding the capture and handling of animals to ensure their health and welfare is protected.
8. If the BLM determines that dust conditions are such that animals could be endangered during transportation, the Contractor will be instructed to adjust speed.
9. Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the BLM, to relieve stress caused by specific conditions at the time of the gather (i.e. dust, rocky

terrain, temperatures, etc.).

F. Animal Characteristics and Behavior

Releases of wild horses would be near available water. If the area is new to them, a short term adjustment period may be required while the wild horses become familiar with the new area.

G. Public Participation

It is BLM policy that the public will not be allowed to come into direct contact with WH being held in BLM facilities. Only BLM personnel, or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

H. Responsibility and Lines of Communication

The Contracting Officer's Representative, Bryan Fuell, and assigned Project Inspectors from Elko Field Office, have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Assistant Field Manager for Renewable Resources and the Elko Field Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, and Palomino Valley Wild Horse and Burro Center. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries will be handled through the Assistant Field Manager for Renewable Resources. This individual will be the primary contact and will coordinate the contract with the Palomino Valley Wild Horse and Burro Center to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

The contract specifications require humane treatment and care of the animals during removal operations. These specifications are designed to minimize the risk of injury and death during and after capture of the animals. The specifications will be vigorously enforced.

Should the Contractor show negligence and/or not perform according to contract stipulations, he will be issued written instructions, stop work orders, or defaulted.

Appendix III

Threatened, Endangered, Candidate, State of Nevada Listed and BLM Sensitive Species of Plants and Animals Documented or Potentially Occurring on the Owyhee HMA on a Seasonal or Year-long Basis (as of December 15, 1999¹).

COMMON NAME	SCIENTIFIC NAME
Federally Endangered Species	
none	none
Federally Threatened Species	
<i>Birds</i>	
bald eagle	<i>Haliaeetus leucocephalus</i>
Federal Candidate Species	
Columbia spotted frog	<i>Rana luteiventris</i>
State of Nevada Listed Species^{2, 3}	
<i>Birds</i>	
golden eagle ⁴	<i>Aquila chrysaetos</i>
burrowing owl ⁴	<i>Athene cucularia</i>
ferruginous hawk	<i>Buteo regalis</i>
Swainson's hawk	<i>Buteo swainsoni</i>
osprey	<i>Pandion haliaetus</i>
white pelican ⁴	<i>Pelecanus erythrorhynchos</i>
white-faced ibis ⁴	<i>Plegadis chihi</i>
Nevada BLM Sensitive Species³	
<i>Mammals (bats)</i>	
small-footed myotis	<i>Myotis ciliolabrum</i>
long-eared myotis	<i>Myotis evotis</i>
fringed myotis	<i>Myotis thysanodes</i>
long-legged myotis	<i>Myotis volans</i>
Yuma myotis	<i>Myotis yumanensis</i>
pale Townsend's big-eared Bat	<i>Plecotis townsendii pallescens</i>
Pacific Townsend's big-eared bat	<i>Plecotis townsendii townsendii</i>
<i>Birds</i>	
western sage grouse ⁴	<i>Centrocercus urophasianus</i>

<i>Fishes</i>	
interior redband trout ⁴	<i>Onchorhynchus mykiss gibbsi</i>
<i>Mussels</i>	
California floater ⁴	<i>Anodonta californiensis</i>
<i>Plants</i>	
grimy ivesia ⁴	<i>Ivesia rhypara var. rhypara</i>
Packard stickleaf ⁴	<i>Mentzelia packardiae</i>

¹ Based on input provided by BLM, Nevada Division of Wildlife, and U.S. Fish and Wildlife Service in BLM Instruction Memorandum No. NV-98-013 (February 27, 1998). BLM Elko Field Office input provided for BLM Instruction Memorandum No. NV-98-013 was entitled "Former Candidate Category 2 Species On Or Suspected On Elko District -BLM Lands Recommended As BLM Sensitive Species As Of 5/96". Information: Per October 25, 1999 Federal Register, peregrine falcon is no longer listed as a threatened species, and, in effect, is no longer "listed".

² Per wording for Table IIa. in BLM Instruction Memorandum No. NV-98-013 for Nevada State Protected Animals That Meet BLM's 6840 Policy Definition: Species of animals occurring on BLM-managed lands in Nevada that are: (1) "protected" under authority of Nevada Administrative Codes 501.100 - 503.104; (2) also have been determined to meet BLM's policy definition of "listing by a State in a category implying potential endangerment or extinction"; and (3) are not already included as BLM Special Status Species under federally listed, proposed, or candidate species.

³ Nevada BLM policy is to provide State of Nevada Listed Species and Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species in BLM Manual 6840.06C.

⁴ Documented adjacent to or within the HMA.

Definitions

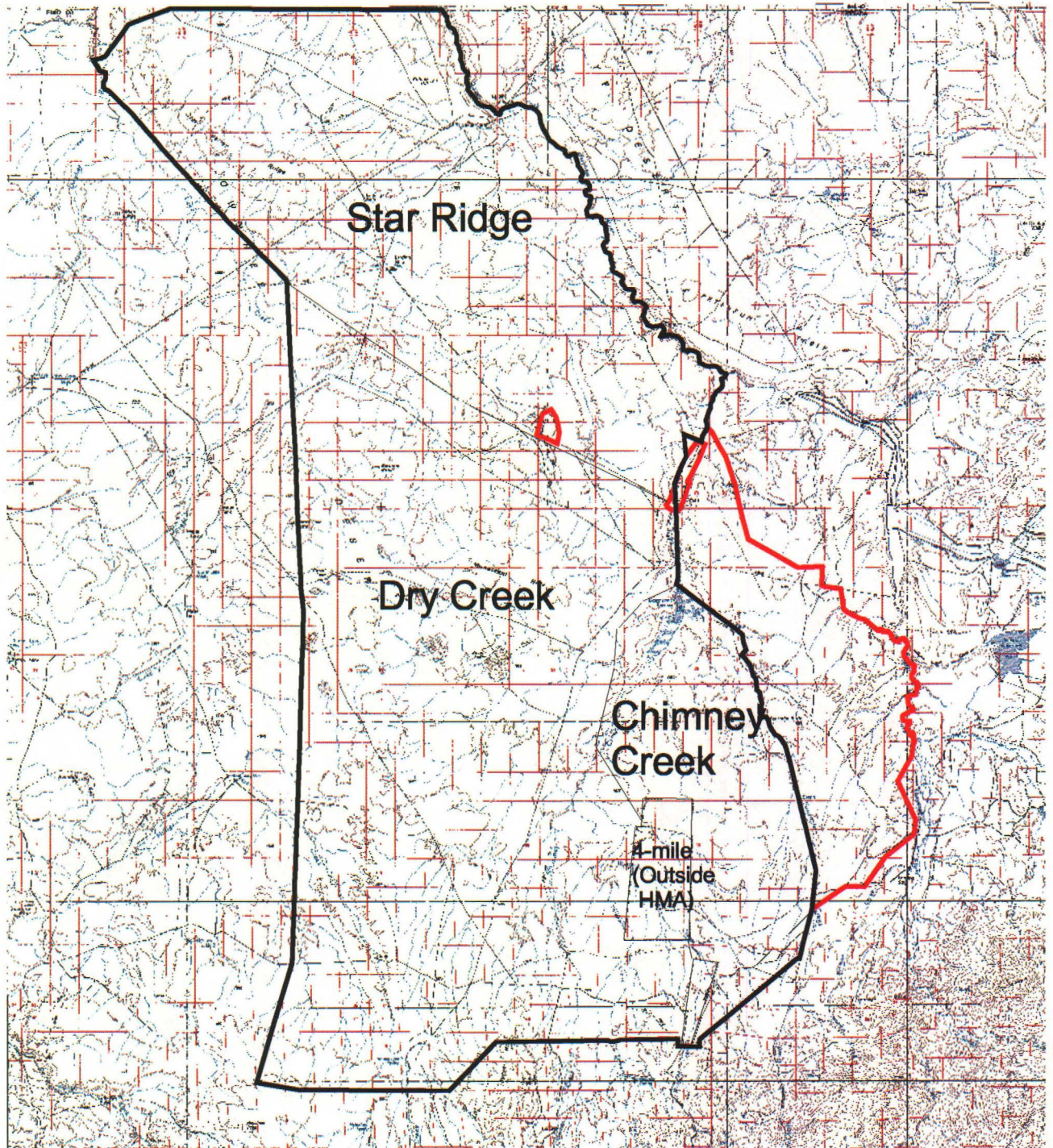
Threatened Species: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate Species: Plant and Animal taxa considered for possible addition to the List of Endangered and Threatened Species.

BLM Sensitive Species: Species that are currently 1.) Under status review by the U.S. Fish and Wildlife Service; or 2.) whose numbers are declining so rapidly that Federal listing may become necessary; or 3.) With typically small and widely dispersed populations; or 4) those inhabiting ecological refugia or other specialized or unique habitats.

State of Nevada Listed Species: Only those State-protected animals that have been determined to meet BLM's Manual 6840 policy definition (shown above).

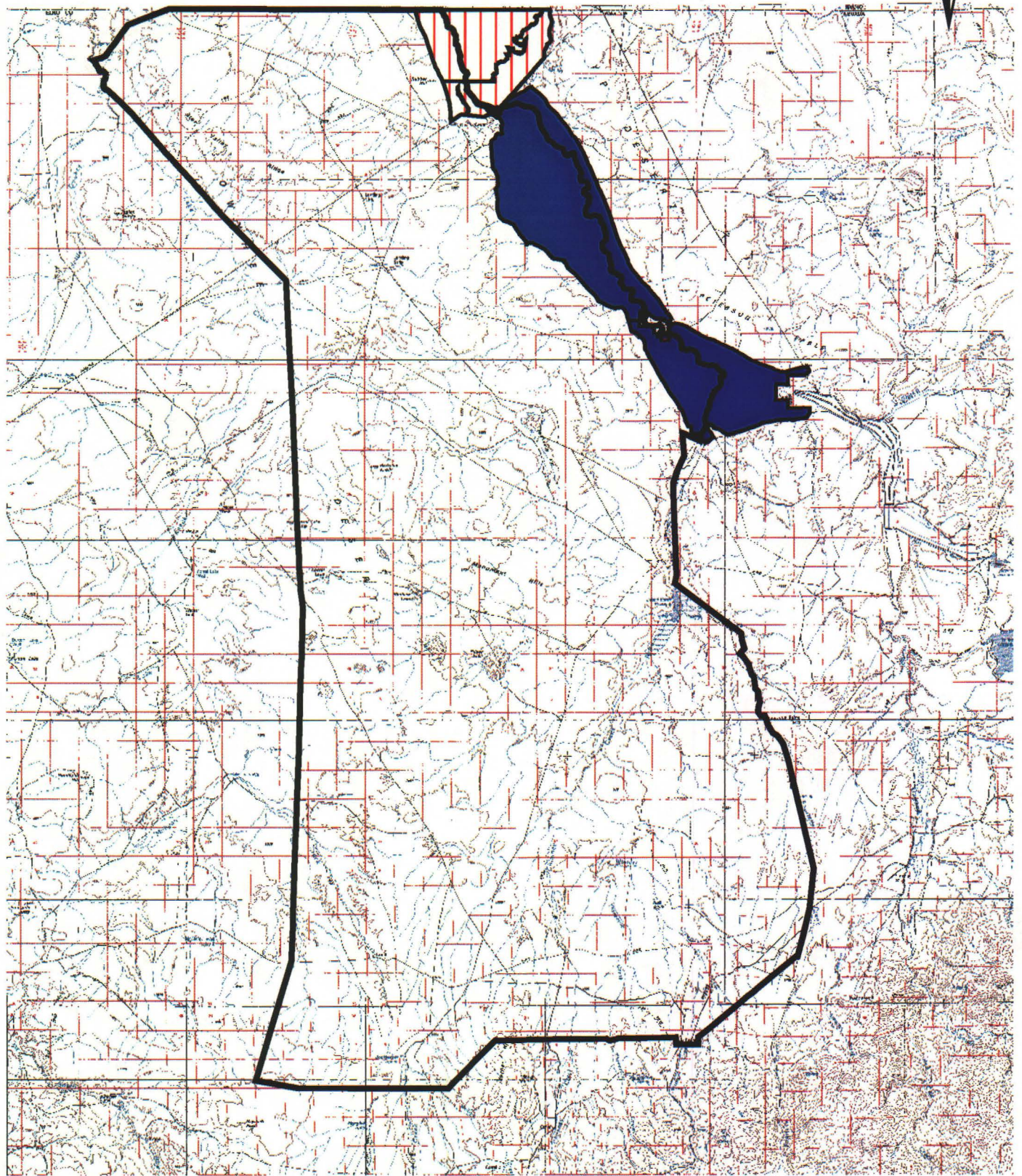
MAP 1






-  Owyhee HMA & Allotment
-  Owyhee Allotment (Outside HMA)



MAP 2 WSA's



-  Owyhee HMA
-  South Fork Owyhee River WSA
-  Owyhee Canyon WSA



MAP 2-1

SHEEP ALLOTMENT COMPLEX

EXISTING & PROPOSED PASTURES, USE AREAS & RANGE IMPROVEMENTS

Sheep Complex Allotments

Sheep Complex Use Areas

Range Improvements

Existing

Proposed

Spring

Land Status

Public (BLM Admin.)

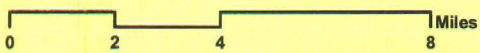
Dept. Of Defense

Private

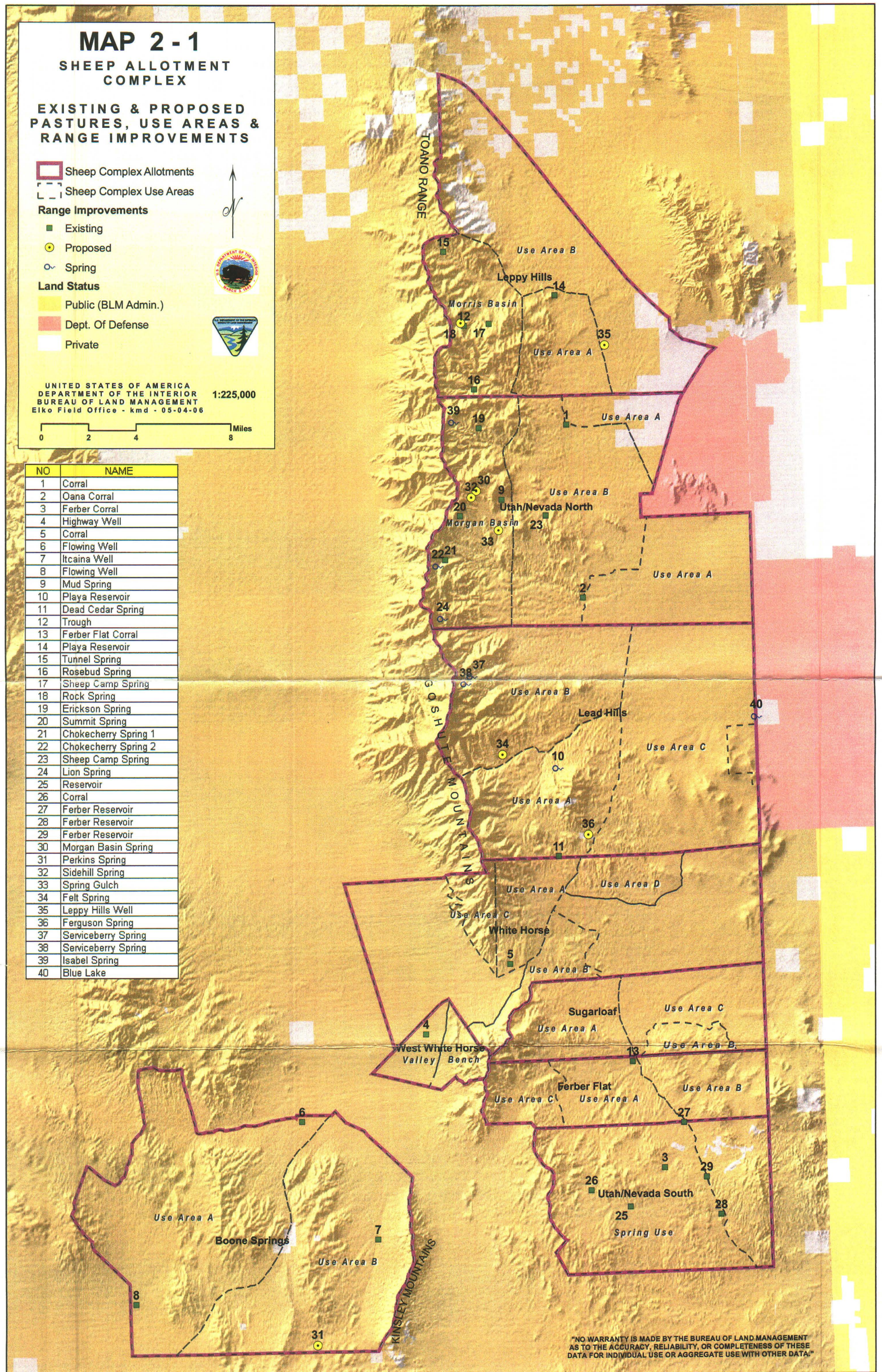


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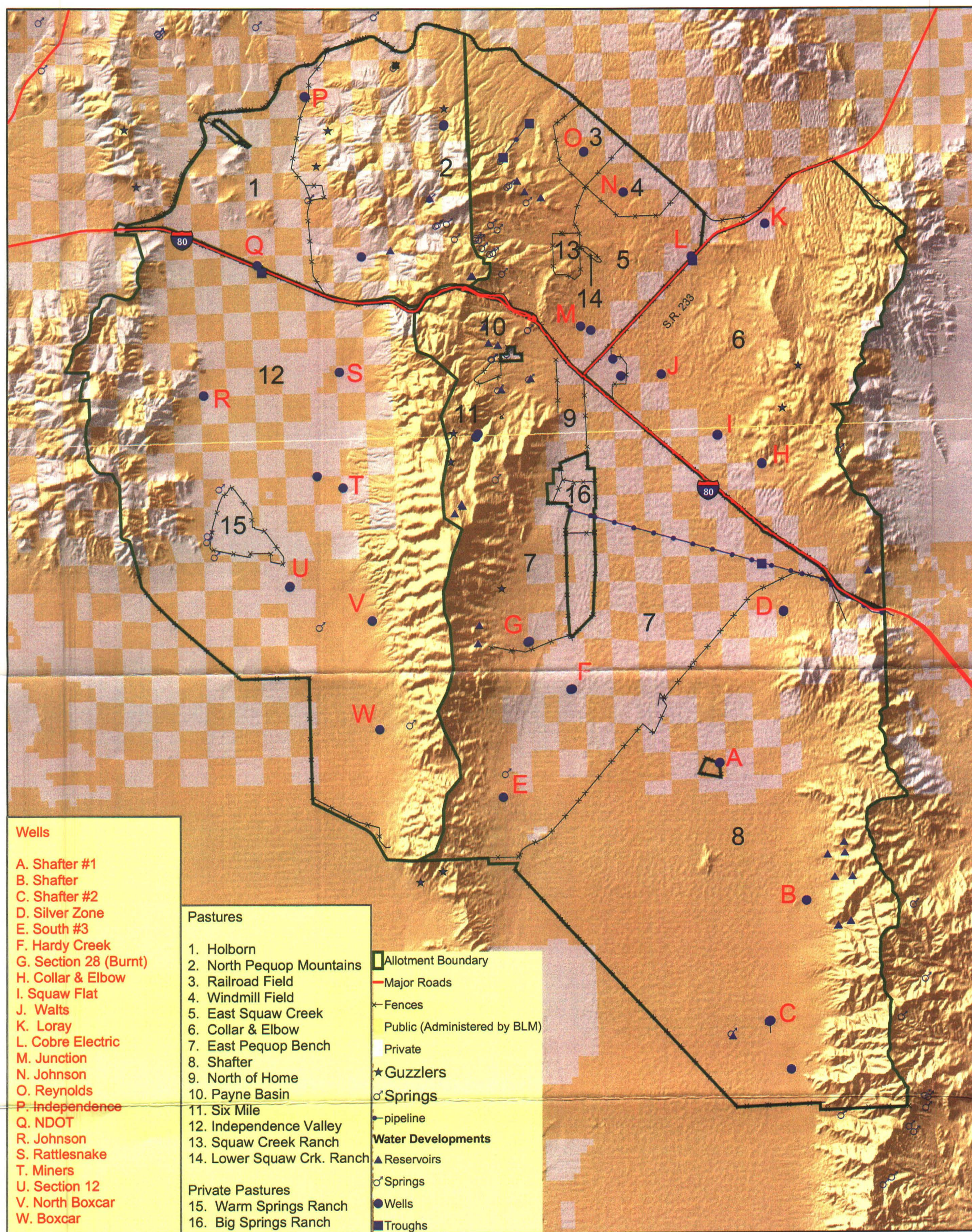


NO	NAME
1	Corral
2	Oana Corral
3	Ferber Corral
4	Highway Well
5	Corral
6	Flowing Well
7	Itcaina Well
8	Flowing Well
9	Mud Spring
10	Playa Reservoir
11	Dead Cedar Spring
12	Trough
13	Ferber Flat Corral
14	Playa Reservoir
15	Tunnel Spring
16	Rosebud Spring
17	Sheep Camp Spring
18	Rock Spring
19	Erickson Spring
20	Summit Spring
21	Chokecherry Spring 1
22	Chokecherry Spring 2
23	Sheep Camp Spring
24	Lion Spring
25	Reservoir
26	Corral
27	Ferber Reservoir
28	Ferber Reservoir
29	Ferber Reservoir
30	Morgan Basin Spring
31	Perkins Spring
32	Sidehill Spring
33	Spring Gulch
34	Felt Spring
35	Leppy Hills Well
36	Ferguson Spring
37	Serviceberry Spring
38	Serviceberry Spring
39	Isabel Spring
40	Blue Lake



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Map 2-2 Big Springs Pastures, Use Areas and Existing Range Improvements

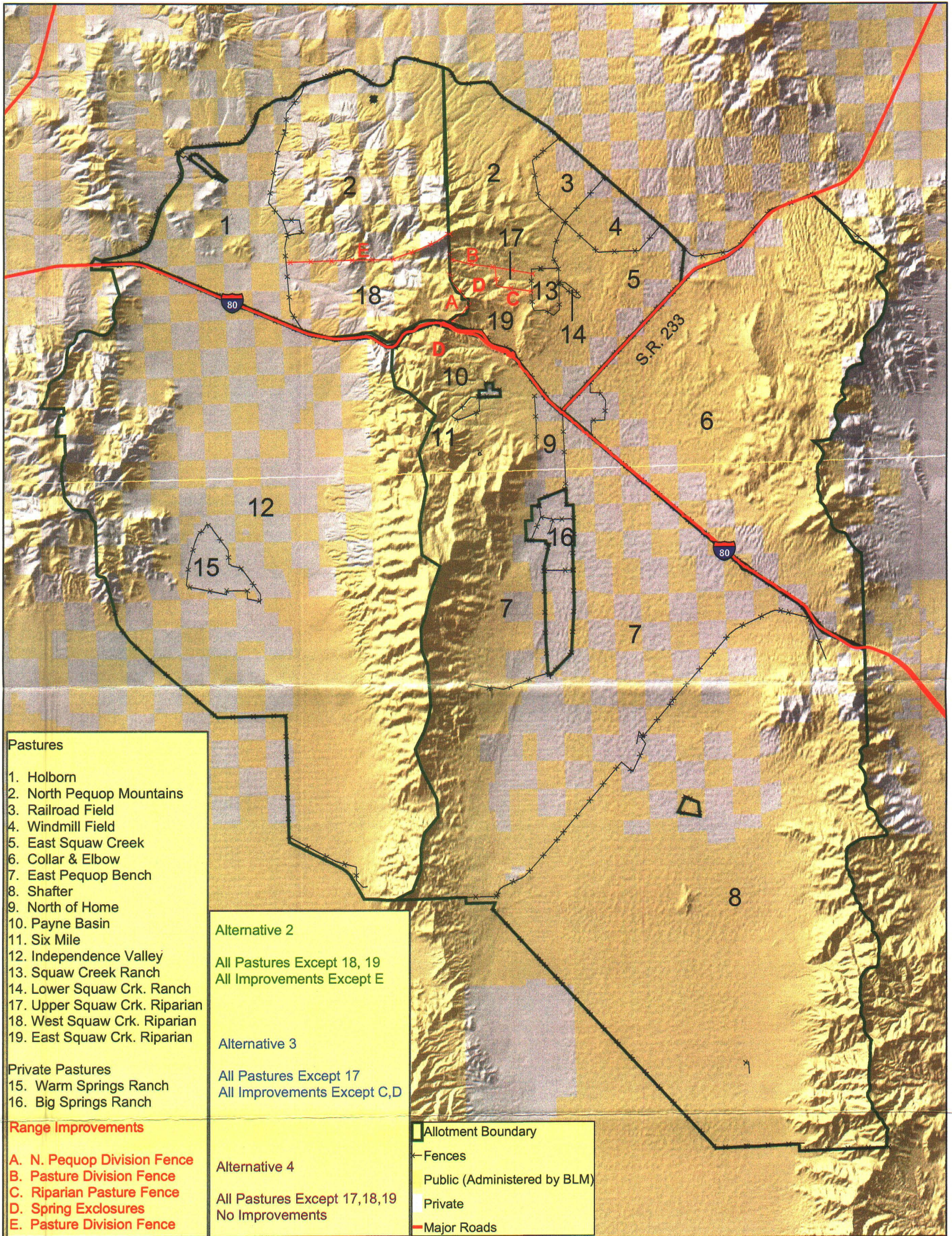


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Map 2-3 Big Springs Alternatives Proposed Range Improvements/Pastures



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MAP 2 - 5

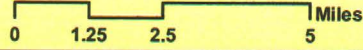
OWYHEE ALLOTMENT PROPOSED & EXISTING RANGE IMPROVEMENTS, PASTURES & USE AREAS



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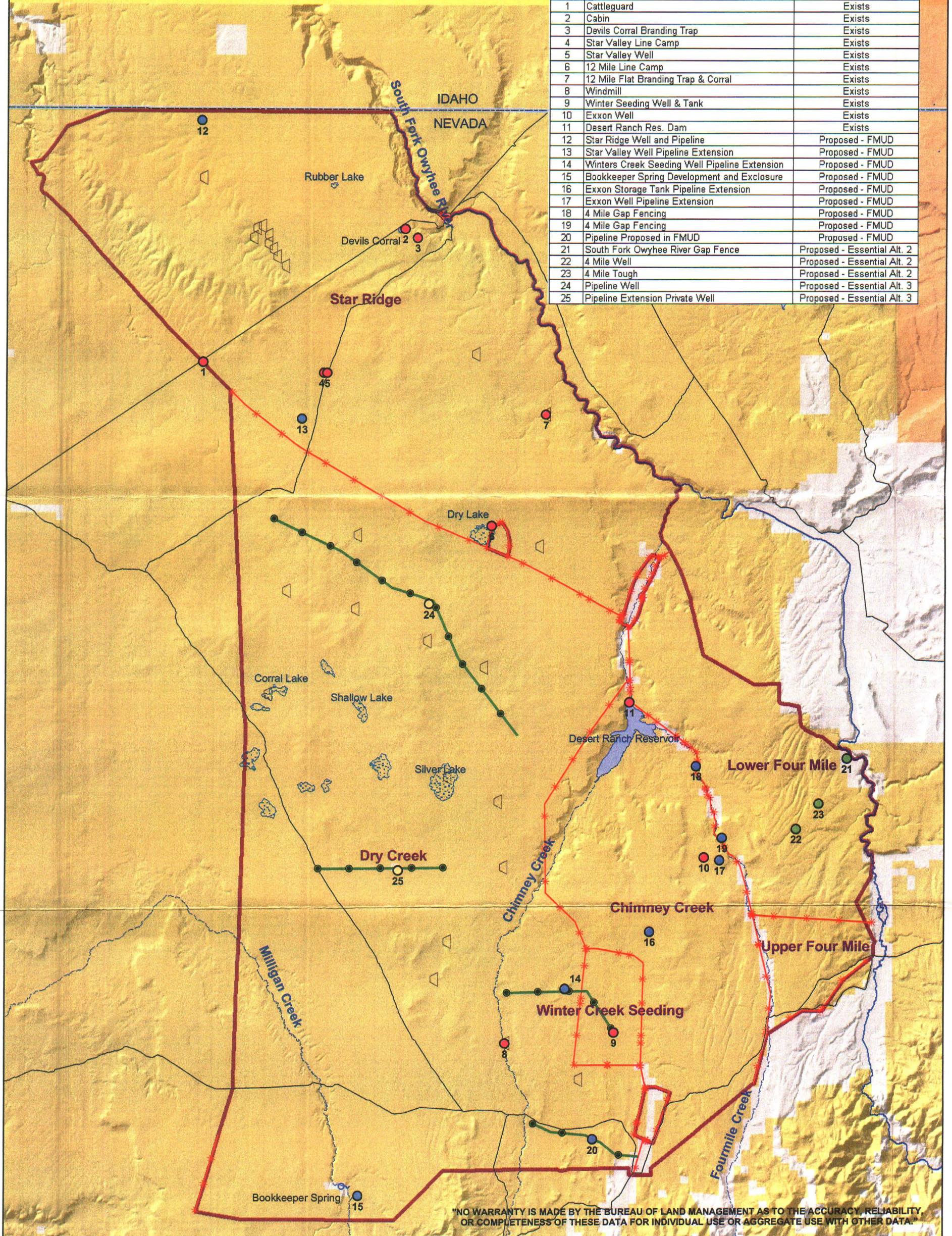


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- Owyhee Allotment
- Springs
- Reservoirs
- Intermittent Waters
- South Fork Owyhee River
- Intermittent Streams
- Ephemeral Streams
- Public (BLM Admin.)
- Native American Resrv.
- Private
- Range Improvements**
- Exists
- Proposed - FMUD
- Proposed - Essential Alt. 2
- Proposed - Essential Alt. 3
- Owyhee Pit Reservoirs
- Proposed Pipeline
- *— Existing Fence
- Roads
- Nevada-Idaho Boundary

NO	NAME	STATUS
1	Cattleguard	Exists
2	Cabin	Exists
3	Devils Corral Branding Trap	Exists
4	Star Valley Line Camp	Exists
5	Star Valley Well	Exists
6	12 Mile Line Camp	Exists
7	12 Mile Flat Branding Trap & Corral	Exists
8	Windmill	Exists
9	Winter Seeding Well & Tank	Exists
10	Exxon Well	Exists
11	Desert Ranch Res. Dam	Exists
12	Star Ridge Well and Pipeline	Proposed - FMUD
13	Star Valley Well Pipeline Extension	Proposed - FMUD
14	Winters Creek Seeding Well Pipeline Extension	Proposed - FMUD
15	Bookkeeper Spring Development and Enclosure	Proposed - FMUD
16	Exxon Storage Tank Pipeline Extension	Proposed - FMUD
17	Exxon Well Pipeline Extension	Proposed - FMUD
18	4 Mile Gap Fencing	Proposed - FMUD
19	4 Mile Gap Fencing	Proposed - FMUD
20	Pipeline Proposed in FMUD	Proposed - FMUD
21	South Fork Owyhee River Gap Fence	Proposed - Essential Alt. 2
22	4 Mile Well	Proposed - Essential Alt. 2
23	4 Mile Tough	Proposed - Essential Alt. 2
24	Pipeline Well	Proposed - Essential Alt. 3
25	Pipeline Extension Private Well	Proposed - Essential Alt. 3



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