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Bureau of Land Management**

**Environmental Assessment
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Onaqui Mountain Herd Management Area Fertility Control

Location: Townships 5 to 10 South, Range 5 to 9 West, various sections, Tooele County, Utah

Applicant/Address: Not Applicable



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1 PURPOSE & NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Onaqui Mountain Herd Management Area Fertility Control project as proposed by the Bureau of Land Management (BLM) Salt Lake Field Office (SLFO).

This EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record (DR) may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A DR, including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in Pony Express Resource Management Plan (January 1990), as amended.

1.2 Background

The SLFO proposes to treat mares within the Onaqui Herd Management Area (HMA) with the fertility control drug ZonaStat-H which is the liquid native Porcine Zona Pellucida (PZP). This drug is federally approved by the Environmental Protection Agency (EPA) and registered under the number 86833-1. PZP is a naturally occurring pig protein which degrades quickly in the environment. If eaten, it is digested like any other protein and cannot pass through the food chain (Kirkpatrick *et al.* 2006).

The analysis area is located in Townships 5 to 10 South, Ranges 5 to 9 West, various sections, Salt Lake Meridian, Tooele County, Utah (Map, Appendix A).

Additional information on BLM procedures are found on the Washington Office Wild Horse Program website.¹ BLM has also prepared a webpage explaining Myths and Facts.² Lastly, information about the reproductive control employed by the BLM can be accessed on the Fertility Control webpage.³

The management of the Onaqui HMA in the past has been to gather and remove horses. A small percentage of released mares from the last three gathers (2005, 2009, and 2012) have been treated with fertility control drugs. There has been a reduced foaling rate following the treatments; however, it doesn't last the 3 - 4 years between gathers. It cost \$83,219.14 in 2012 to gather 155 head, remove 34 head and transport them to the holding facility in Delta, Utah.

For comparison, a PZP-22 dose costs approximately \$305 each. That is the cost of the pellets, liquid PZP, and equipment to administer the PZP-22. ZonaStat-H is approximately \$30 per dose. This is the cost of the PZP, adjuvant and the dart to administer the dose. The adjuvant is what the PZP is mixed with to help the immune system to have a response to the PZP. This comparison is for the drug, and delivery method, it doesn't include the gather cost, personal cost or vehicle cost.

To date, gathers and removals alone have not addressed the fundamental problem, which is the reproduction rate of the horses remaining on the range.

1.3 Purpose and Need

The purpose of the Proposed Action is to consider a fertility control treatment program that would maintain the herd population between 160 to 175 adult wild horses which is within the appropriate management level (AML) of 121–210 wild horses. The purpose is also to stabilize the population in order to reduce the need for costly larger helicopter gather and removal operations. BLM needs to maintain wild horse herd numbers to levels consistent with the AML while managing herd genetic viability and the health of individual wild horses and to make progress towards achieving standards of rangeland health. The need for the Proposed Action is to maintain the population in a thriving natural ecological balance by maintaining the wild horse population within the AML and to analyze the impacts to the wild horses from utilization of fertility control.

The BLM will decide whether or not to apply fertility control measures on select mares on the Onaqui HMA through 2020 (or as long as it can be reasonably concluded that no new information and no new circumstances arise that need to be considered and those that are analyzed within this document have not substantially changed in the area of analysis) in order to help maintain the AML of 121–210 wild horses through remote darting application utilizing single dose PZP inoculations into selected mares over eighteen months of age.

¹ The BLM wild horse program website can be accessed online at:

<http://www.blm.gov/wo/st/en/prog/whbprogram.html>

² The BLM Myths and Facts website can be accessed online at:

http://www.blm.gov/wo/st/en/prog/whbprogram/history_and_facts/myths_and_facts.html

³ The BLM Fertility Control webpage can be accessed online at:

http://www.blm.gov/wo/st/en/prog/whbprogram/science_and_research/fertility_control.html

1.4 Conformance with BLM Land Use Plan(s)

The alternatives have been reviewed to determine if they conform to the land use plan goals and objectives as required by 43 CFR 1610.5. Although it is not specified, the alternatives described in this EA conform to the Record of Decision (ROD) for the Pony Express RMP (1990), as amended, under the Wild Horse Program, Decision 1 (Manage Herd Size).

The alternatives are also consistent with the Pony Express RMP decisions related to the management of the following resources, including but not limited to: recreation, air quality, soil, water, visual resources, cultural resources and wildlife management.

SLFO's herd management objective balances a healthy population of wild horses with improvements in rangeland and watershed conditions and wildlife habitat needs.

1.5 Relationship to Statutes, Regulations, or Other Plans

The project is consistent with Federal environmental laws and regulations, Executive Orders (EO), and Department of Interior and BLM policies. It is in compliance with state laws and local and county ordinances and plans to the maximum extent possible.

In addition, the following laws, regulations, EOs and instruction memorandum (IM) provide the foundation for managing resources on the public lands:

Wild Free-Roaming Horses and Burros Act of 1971, (Public Law 92–195 as amended), and with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700, and policies outlined by BLM.

The Wild Free-Roaming Horses and Burros Act of 1971, (P. L. 92–195) as amended, Section 1333 (b) (1), states the Secretary of the Interior shall “determine appropriate management levels of wild free-roaming horses and burros on areas of public lands; and determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization or natural controls on population levels).” According to 43 CFR 4700.0–6, “Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.”

Other EISs and EAs that influence the scope of this document include:

- Proposed Pony Express RMP and Final EIS (9/1988)
- Draft Pony Express RMP and Draft EIS (5/1988)
- Wild Horse Appropriate Management Level and Herd Management Area/Herd Area Boundary (2/2003)
- Onaqui Mountain Wild Horse Gather (7/2005)
- Onaqui Mountain Wild Horse Gather (9/2009)
- Cedar Mountain and Onaqui Mountain Wild Horse Herd Management Areas Capture, Treat and Release Plan Fertility Control with Limited Removal (1/2012)

Other Management Plans that influence the scope of this document include:

- Tooele County Master Plan, as revised

These documents and their associated information and analyses are hereby incorporated by reference, based on their use and consideration by various authors of this document. The attached Interdisciplinary Team Checklist, Appendix B was developed after consideration of these documents and their content.

1.6 Identification of Issues

The proposed action was reviewed by an interdisciplinary team composed of resource specialists from the SLFO. This team identified resources within the Onaqui HMA which might be affected and considered potential impacts using current office records and geographic information system (GIS) data. The result of the review is contained in the Interdisciplinary Team Checklist, Appendix B.

On June 2, 2014, the SLFO posted the proposed action on the Utah BLM Environmental Notification Bulletin Board (ENBB)⁴ and solicited input and feedback concerning the project in a 30 day scoping period.

Two letters were received within the 30 scoping period. One letter was from Iron County and the other from State of Utah Public Lands Policy Coordination Office. Both are in support of the proposal and managing wild horses on the range within AML.

Issues that will be carried forward for analysis and identified through the process described above include the following:

- Impacts to individual wild horses and the herd. Measurement indicators for this issue include:
 - Expected impacts to individual mares from darting stress.
 - Expected impacts to herd social structure.
 - Expected effectiveness of proposed fertility control application.
 - Potential effects to genetic diversity.
 - Potential impacts to animal health and condition.

1.7 Issues Considered but Eliminated from Further Analysis

Many resources and their uses were considered by the interdisciplinary team and this review is documented in the checklist in Appendix B. Where resources are not present (NP) (not present in the area impacted by the proposed or alternative actions) or not impacted (NI) (present, but not affected to a degree that detailed analysis is required), a rationale for not considering them further is provided in the checklist.

1.8 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered and/or developed a range of action alternatives. These alternatives are presented in Chapter 2.

⁴ The ENBB is a BLM webpage that is available for public use to review current projects. It can be accessed online at: <https://www.blm.gov/ut/enbb/index.php>. Search by Salt Lake Field Office, environmental assessments and the Onaqui Mountain HMA Fertility Control entry.

The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

2 DESCRIPTION OF ALTERNATIVES

2.1 Introduction

The alternatives discussed in this section are: Alternative A – Proposed Action (Conduct Fertility Control with Management Requirements) and Alternative B – No Action (Do Not Conduct Fertility Control Measures).

There were no other alternatives suggested by the public during the scoping period or identified by the SLFO interdisciplinary team. Other alternatives were not considered because the issues identified during scoping did not indicate a need for additional alternatives or protective measures beyond those contained in the Proposed Action. The No Action is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action.

2.2 Alternative A – Proposed Action

The SLFO proposes to apply fertility control to select mares on the Onaqui HMA through 2020 (or as long as it can be reasonably concluded that no new information and no new circumstances have substantially changed in the area of analysis) in order to help maintain a population of 160-175 adult wild horses which is within the AML range of 121–210 adult wild horses. The fertility control would involve the use of PZP, single dose inoculations and the delivery system would be through the use of dart guns. If it is determined that a mare or mares cannot be approached within darting range on foot, then baiting (not trapping) would be used to treat the mares. Baiting would be with salt, mineral, or weed free hay in areas that horses utilize in their normal movements throughout the HMA.

The expectations for the proposed action include: the short-term goal is to bring growth rates to less than seven percent and the long-term goal is to reduce the need for gathers and removals, without jeopardizing the genetic health of the herd.

The Proposed Action incorporates the following actions and management requirements:

- The fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs) as presented in Appendix C.
- PZP mixing procedures would follow those listed in Appendix D. The PZP protocol would be examined annually, in line with any new instructions provided by SCC.
- Horse Immunocontraception Data Sheets would be prepared and updated as presented in Appendix E. An individual mare's previous records would be reviewed prior to any darting activity.
- Mares would be individually marked and/or be individually recognizable without error. No mare would be treated unless she has been identified for treatment.

- PZP would be administered in the one year liquid doses and would start in 2015 and go through 2020. If monitoring shows successful applications, no negative reactions and reduction in foaling rates, the fertility control treatments would continue beyond 2020 as long as it can be reasonably concluded that no new information and no new circumstances arise that need to be considered and those that are analyzed within this document have not substantially changed within the HMA. Fertility control applications would also depend on annual funding and the presence of qualified applicators.
- Ideal time to booster previously treated mares would be between February through April of each year. However, if a previously treated mare is missed, a booster shot could be administered at any time of the year. Each mare would have an identification sheet with pictures, describing any markings, brands, scars or other distinguishing marks. At the beginning of each year, a list of the mares identified for treatment would be created. That information would be loaded into a format that is easy to use in the field (book or electronic device).
- New mares (over the age of 18 months) coming into treatment would be given the primer dose between November through January of each year. New mares would receive their booster between February and April. Age would be based on when the horses are observed being new herd foals. For older previously treated horses, it would come from the treatments data sheets. Aging older untreated horses would be based off of photographs or similar documentation provided by volunteers knowledgeable of the herd/bands. For an age of a mare that cannot be established, that mare would be allowed to raise a foal to one year of age then begin treatment.
- Primer inoculations would be administered to mares that are at least 18 months old. Mares that are 2-4 years old would be treated. The 5 year old mares would be taken off the treatment schedule until they have produced at least one foal that lives to be one year old. After a mare produces one foal that survives for a year, she would be put back on PZP treatments.
- Flexibility in determining which mares are selected for treatment is vital to the success of the fertility control program. Adjustments would be made if it is found that there is a severe reaction by an individual mare, that a mare can contribute more to genetic diversity or a mare that might have a negative effect to the genetic diversity of the herd. This information would be documented on the Data Sheet.
- If timing or funding constraints arise, a treatment priority would consider the band or herd composition and priority would be given based on age class. Priorities would be as established as follows:
 - 1) 2-4 year old mares,
 - 2) mares just coming back onto treatment, and
 - 3) older mares that have received several treatments since producing a live foal.
- The annual treatment schedule, database and Data Sheets would be reviewed/approved by the authorized officer with the SLFO wild horse specialist and/or darting specialist. An annual monitoring report would be prepared for the authorized officer and filed with the HMA records. This monitoring report would

show PZP orders placed/costs, planned treatment schedule/actual treatments (number/dates of mares treated), lost darts, negative reactions/BLM action taken for that mare, number of new/current year foals counted/observed, unique circumstances, off road vehicular use, general rangeland condition/water availability, volunteer efforts, correspondence between/among SLFO and the Science and Conservation Center (SCC) and National Wild Horse and Burro Program (WH&B) Office and other pertinent information.

The PZP field darting treatment protocol would take approximately two to three years after initiation to fully implemented. Field darting would be conducted in an opportunistic manner while the specialist is conducting routine monitoring activities as part of normal duties in the field. Ordinarily, field darting activities would be conducted on foot. Access throughout the HMA would be achieved by the use of 4X4 vehicles and other off-highway vehicles (OHVs). Vehicles would be utilized on existing roads and trails in the HMA. On a case-by-case basis, the use of OHVs off existing roads and trails may be allowed for administrative purposes; however, such use shall be made only with the approval of the authorized officer.

Personnel authorized for field darting of the Onaqui horses must be trained for this task and certified by the SCC at ZooMontana in Billings, Montana. Additionally, all work would be conducted in accordance with the SOPs (Appendix C) and mixing procedures (Appendix D).

The SLFO would work with the National WH&B Office in Reno, Nevada, and the SCC at ZooMontana to order the PZP vaccine. The SCC then prepares and ships the order to the SLFO. Each dose would consist of 100 micrograms of PZP in 0.5 cc buffer (a phosphate buffered saline solution). Mixing the vaccine would be accomplished as described in the Wild Horse Contraceptive Training Manual (mixing procedures in Appendix D). Remote application would be by means of 1.0 cc Pneu-dart darts, with either 1.25 or 1.5 inch barbless needles, delivered by either Dan-inject or Pneu-dart CO₂ powered or cartridge fired guns. An attempt would be made to recover all darts (normally about a 98% recovery is expected).

SLFO would be applying adaptive management principles. If policies change or the vaccine effects or effectiveness prove undesirable, then the application of the PZP fertility control measures would be stopped or reconsidered based on new scientific information. If PZP is dropped from BLM use and is replaced by another drug or immunization for fertility control purposes, that method would be applied by the SLFO in future treatments.

2.2.1 Horse Identification

The treated mares would be individually marked and/or be individually recognizable without error. During past treatments mares have been branded on the hip and the neck. These brands would help in the identification of the horses. During any future gathers new brands would be put on mares released back to the HMA. Any mares without brand would be identified by color, leg and face markings, and any other unique markings or scars. Once each horse is positively identified, their information would be compiled into a database along with photographs. Individual identification information (photographs and unique characteristics) would be compiled into books or put onto an electronic

device that can be taken to the field. Individual numbers are assigned to each herd/band member based on these unique characteristics. Unique numbers would be assigned to all mares and documented on the Data Sheets. A filly under 18 months would be tracked on her mother's Data Sheet. A filly over 18 months of age would receive her own number and Data Sheet. Maternal kinship would be tracked or followed through Data Sheet notes.

2.2.2 Record Keeping

All darting, foaling, and health data would be recorded as per the Data Sheet (Appendix E). Data Sheets would be prepared and maintained in the SLFO. Initially, copies of the data sheets would be sent to the National WH&B Program Office and to the SCC. Thereafter, only treatment updates or new mare Data Sheets would be sent annually.

2.2.3 Regulatory Authorization

As previously stated in section 1.2, the liquid PZP vaccine, known as ZonaStat - H is federally approved by the EPA registration number 86833-1. Training is required by the SCC to receive and/or administer PZP to wild horses.

2.3 Alternative B – No Action

Under the No Action Alternative, one-year PZP would not be remotely applied to wild horse mares in the Onaqui HMA. A plan to gather and to apply fertility control would be evaluated and implemented at a later time. The BLM would continue vegetation and population monitoring.

2.4 Alternatives Considered, but Eliminated from Further Analysis

2.4.1 Helicopter Capture, Treat and Release Wild Horses

Under this alternative, the BLM would implement a helicopter gather and capture as much of the population as possible to selectively remove excess wild horses and apply two-year fertility control (PZP-22) to mares identified for release. This would immediately reduce the herd size to about 160–175 adult horses and treat about 65–70 mares. This alternative was considered but eliminated from further analysis because it would result in greater disturbance to individual wild horses and the herd than the Proposed Action. It is also estimated to be substantially more expensive to implement.

2.4.2 Bait Trapping with Selective Removal

Under this alternative, the SLFO considered analyzing future use of bait trapping to remove selected animals. This would have helped control the population numbers. This was eliminated because of the current space limitations in both short and long term holding facilities.

2.4.3 Change AML Numbers and Decrease Livestock Grazing

Under this alternative BLM would adjust the AML numbers, HMA boundary and decrease livestock grazing permitted numbers. This alternative was considered but eliminated from detailed analysis. In 2003, BLM readdressed the wild horse AML in the Wild Horse AML and HMA Boundary EA and its corresponding DR/FONSI. The HMA boundary and AML was adjusted and expanded to be consistent with the area the horses occupied in 1971 when the Act was passed. The livestock and wildlife forage allocations

remain as established in the ROD for the Pony Express RMP. Reconsidering allocations is outside the scope of this EA. In addition, SLFO is not undergoing land use planning level decisions such as closing areas to livestock grazing or policy making decisions such as the BML's utilization of gathers in this EA.

2.5 Summary

This chapter has described the range of action alternatives. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

3 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix B and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting

As presented in the Interdisciplinary Team Checklist (Appendix B), only those resources or uses that have been identified as a potential impact are carried forward for detailed analysis. Resources that are not present or would not be impacted to a degree that requires detailed analysis are described in the Checklist.

3.3 Wild Horses

The estimated population in 2015 is 317 wild horses. Table 1 shows wild horse data collected and estimated from the last three gathers in the HMA. Some of the mares were treated in 2012. It is estimated that 60% of the mares on the range have been treated. The 2012 gather and treatment were conducted in February. In September 2012, the SLFO conducted an aerial monitoring survey of the HMA. During this flight, 169 horses were counted. Of those, 31 were foals. From this aerial survey, it is estimated that 70% of the horses in the HMA were counted. This survey was not completed because air space priorities were given to fire operations on the north end of the HMA and military activity on the west of the HMA.

Table 1 Monitoring data collected at HMA gathers.

Year	Total Gathered	Released	Stallions Released	Released Untreated Mares	Treated & Released	Retreated & Released	Estimated Population Remaining
2005	256	97	41	4	56	N/A	125
2009	218	34	17	3	14	9	124
2012	155	121	64	0	57	22	179

Note: there are five (5) mares that have been treated all three times. Thirteen (13) mares were treated in 2005 and again in 2012. Four (4) mares were treated in 2009 and again in 2012.

During the 2013 monitoring activities, it was noticed that there was a reduction in the numbers of foals born. An estimated 7 percent growth rate to the population has been established and is compared to the 16-20 percent observed before any treatment or in years after the mares returned to fertility.

In 2005, there were 256 horses gathered of those 97 were released and 56 were mares that received PZP-22. This left an estimated population of one hundred twenty-five (125) horses in the HMA. This was the first time PZP was used in the HMA.

In 2009, there were 218 horses gathered of those 34 were released and 14 were mares treated with PZP-22. Three older mares were released untreated due to loss of vaccine while mixing. Nine of the mares were treated for the second time and five were new mares added to the treatment program. The estimated post gather population was one hundred twenty-four (124).

In 2012, one hundred fifty-five horses (155) were gathered. Fifty-seven (57) mares were treated with PZP-22. Twenty-two of those mares had received treatment in either 2005 or 2009. Thirty-five of the mares were treated for the first time. There was an estimated post gather population of one hundred seventy-nine horses (179).

The 2012 Cedar Mountain and Onaqui Mountain Wild Horse Herd Management Areas Capture, Treat and Release Plan Fertility Control with Limited Removal EA identified and analyzed the effects to the environment are incorporated here by reference. For a complete description of the affected environment and environmental consequences, see pages 14-22 and 22-37 of the EA.⁵

Recent research indicates that, normally using the standard two-inoculation protocol, efficacy in wild horses is about 95% (Kirkpatrick and Turner 2008). Reversal of contraceptive effects depends on the number of years of consecutive treatment. For example, mares treated for three consecutive years have an average time of 3.7 years to return to fertility, but the range is 1-8 years (Kirkpatrick and Turner 2002). The same study demonstrated that mares treated from one to five consecutive years returned to fertility, but mares treated for seven consecutive years did not. There could be some differences seen with the Onaqui horses as they have received the experimental drug PZP -22 and the mares in the study on Assateague Island have been given just the liquid form or ZonaStat-H. Blood samples were collected in 2005 on horses from the HMA that were removed. A genetic study was completed and the report was received in 2008. The report showed that the herd has genetic variability that is at a critically low level. The heterozygosity values combined with the high number of rare alleles suggested that the loss of variation was fairly recent and likely due to a bottleneck in population size. Genetic similarity values were about average or similar to other values found in Utah herds. The report stated that the number of genetic variants observed in the Onaqui HMA is above average for feral herds; however, about 1/3 of those variants were at a low frequency. It also suggested bringing in two or three young mares from another herd would likely benefit the herds overall long-term genetic health.

⁵ The EA can be found at:

http://www.blm.gov/style/medialib/blm/ut/natural_resources/wild_horses_and_burros/cedar_onaqui.Par.87472.File.dat/FinalEA.pdf

The SLFO does not have any record of a bottleneck in the population size. One possible solution as to the loss of variation could occur if a group of horses moves to the edge of or outside the HMA boundaries and there is no interchange of horses from other bands within the HMA.

After the gather in 2005, the herd was augmented with approximately 10 stallions and 10-15 mares from other HMAs. This was done to help with genetic viability, to increase size of the individuals and adoptability of the Onaqui HMA wild horses. Every 3-4 years since then, another 3-5 horses have been released. Additional genetic testing would be conducted at the next gather on wild horses that are released back to the HMA.

4 ENVIRONMENTAL IMPACTS

4.1 Introduction

The potential consequences or effects of each alternative are discussed in this section. The intent is to provide the scientific and analytical basis for comparison of the effect of each alternative.

4.2 General Analysis Assumptions and Guidelines

In accordance with 40 CFR 1502.24, methodology and scientific accuracy, the general analysis assumptions and guidelines are established in the appendices to this EA. This impact analysis assumes that a 100 percent treatment rate would be attained for identified mares. Liquid dose PZP is at least 95% effective in most herds. The SOP's in Appendix C, for use and application of PZP are incorporated as part of the proposed action. Impacts to the wild horses take the form of direct and indirect impacts and affect the individual or the population as a whole.

The proposed action incorporates proven standard operating procedures (Appendix C) and mixing protocol (Appendix D) which represents the "best methods" for ensuring quality results, minimizing risks and reducing impacts associated with this activity. Protocols have been specifically developed for remote-delivery techniques of the fertility control vaccine. All activity would be carried out according to current BLM policy with the intent of conducting as safe and humane an operation as possible.

4.3 Direct and Indirect Impacts

Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

4.3.1 Alternative A – Proposed Action

4.3.1.1 Wild Horses

The immune-contraceptive PZP vaccine meets the requirements for an ideal contraceptive agent including criteria for safety and efficacy. These requirements are.

- Efficacy of at least 90%.
- The ability to deliver the contraceptive agent remotely
- Reversibility of the agent's contraceptive action
- Safety for administration to pregnant mares

- Lack of effects upon social structures and behaviors
- Lack of long-term debilitating health side effects
- Low cost
- Inability of the contraceptive agent to pass through the food chain

When injected, PZP vaccine acts as an antigen and causes the mare's immune system to produce antibodies. These antibodies then bind to eggs in the mare's ovaries and effectively block sperm binding and fertilization (ZooMontana 2000). The vaccine is relatively inexpensive and can be remotely administered in the field. Research has demonstrated that contraceptive efficacy is 95% for mares treated twice in the first year and boosted annually (Turner and Kirkpatrick 2002). Contracepted mares sometimes show improvements in body condition and may actually live longer (Turner and Kirkpatrick 2002).

Safety of the contraceptive agent is an important consideration. The agent to be used in the Onaqui Mountain HMA is liquid, one-year PZP and has been studied and applied to wild horses for over 24 years. The vaccine's contraceptive effects are reversible, if used no more than five consecutive years (Kirkpatrick and Turner 2002). The PZP vaccine is safe to use in pregnant mares: it would not affect the health or survival of foals that were in utero when the mother was treated (Turner and Kirkpatrick 2002). This is an important consideration given the 340 day gestation period of horses and the likelihood that some pregnant animals could be unknowingly treated in the course of management/treatment.

The liquid one-year PZP vaccine has not been found to affect seasonal birth patterns among treated animals, or the survival of offspring born to mares previously treated at Assateague Island National Seashore (AINS) (Kirkpatrick and Turner 2003). A recent study of behavioral effects, conducted on Cape Lookout National Seashore in North Carolina, indicated there was an increase in mare movement between bands during the non-reproductive season (Nunez *et al.* 2009). However, the control group for this study was a group of untreated mares whose foals were captured and removed annually, thus there was no way to separate the effects of the gather and removal from the PZP treatment.

Direct individual impacts are those impacts that are immediately associated with implementation of the proposed action. These impacts include stress associated with the remote-darting activity for delivery of the vaccine. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. Impacts to individual mares from application of PZP (granulomas, nodules) would be monitored on a regular basis. Mares would be observed following each treatment. Mares with any adverse reactions outside of those that could be expected from routine or normal darting activity would be removed from the treatment protocol. Any adverse effects would be documented in the data sheets and when needed there would be consultation with a veterinarian.

Both short and long-term effects of immune-contraception are important considerations. Other than occasional injection site reactions, no deleterious short-term health effects have been noted. Among wild horses on AINS, only three abscesses appeared after 381 treatments (0.007%). In another study, 60 wild mares receiving the standard two-

inoculation protocol of PZP followed by a booster inoculation and observed in captivity for one month did not form a single abscess. Among zoo animals treated with PZP, 1,185 treatments with either darts or hand injections resulted in a total of 16 abscesses (0.013%) (Lyda *et al.* 2005). In another study of injection site reactions in wild horses, nodules occurred in about 25% of the mares inoculated by dart in two herds, abscesses were too infrequent to allow meaningful analysis of the relation between covariates and the rate of abscess formation (Roelle and Ransom 2009). In all cases, the abscesses were not a health threat and they resolved themselves within a few weeks.

Population-wide direct impacts are immediate effects which would occur during or immediately following implementation of the proposed action. Remote-delivery of the fertility control vaccine would result in disturbances to the herd and support a feasible level of management. Direct population-wide impacts might consist of a heightened awareness of human presence following the darting activity. This is likely to be temporary in nature but may persist for some time in some mares.

To ensure the genetic diversity of the herd and to help with the adoptability of horses from the Onaqui HMA, in 2005 the SLFO released approximately 10 stallions and 10-15 mares from other HMAs. Since this large 2005 release, every 3-4 years SLFO has released another 3-5 horses into the HMA.

If the treatment window is missed on any mare, she would be treated when the opportunity arises. In conversations with Jay Kirkpatrick PhD, PZP researcher and director of SCC, after the third year you can start to miss a year of treatment now and then.

4.3.1.2 Protective Measures

An individual mare's previous records would be reviewed prior to any darting activity. The presence of abscesses should be minimized when utilizing the SOPs (Appendix C) and mixing protocol (Appendix D). In order to mitigate the impacts of fertility control, all vaccine would be controlled, handled and administered by trained, certified and experienced darters. These personnel would be on-site during all phases of the operation, and would be responsible for the accurate identification of individual age-specific mares.

4.3.1.3 Residual Impacts

Indirect individual impacts are those impacts that occur after the initial stress event and may develop as a result of the application of fertility control vaccine. Impacts that may occur include increased social disorder among the horses and/or a prolonged foaling season. However, personal observations (by the SLFO Wild Horse Specialist) of the foaling season within the Onaqui Mountain over the last 10 years have shown the mares foaled in February through November. Impacts may also result in an opportunity for increased fitness and body condition in treated mares.

Mares on liquid one-year PZP-treatment had improved body condition scores, decreased herd and foal mortality, and substantially increased longevity (Turner and Kirkpatrick 2002; Kirkpatrick and Turner 2007). Previous studies revealed no large changes in the estrous behavior or reproductive endocrine parameters (Kirkpatrick *et al.* 1992, 1995). However, Nunez *et al.* (2010) found increased estrous behavior among treated mares out

of breeding season. Ransom *et al.* (2010) found increased reproductive behaviors among treated mares during breeding seasons in different populations.

Ransom *et al.* (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in 3 populations of wild horses, which is consistent with Powell's (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom *et al.*'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population, presumably because energy expenditure was reduced by the absence of pregnancy and lactation.

In two studies involving a total of 4 wild horse populations, both Nunez *et al.* (2009) and Ransom *et al.* (2010) found that PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other mammal species can regularly demonstrate estrus behavior while contracepted (Shumake and Wilhelm 1995; Heilmann *et al.* 1998; Curtis *et al.* 2002). Ransom *et al.* (2010) found that control mares were herded by stallions more frequently than PZP-treated mares, and Nunez *et al.* (2009) found that PZP-treated mares exhibited higher infidelity to their band stallion during the non-breeding season than control mares. Madosky *et al.* (2010) found this infidelity was also evident during the breeding season in the same population that Nunez *et al.* (2009) studied, resulting in PZP-treated mares changing bands more frequently than control mares. Treated mares may have more reproductive interactions and change bands in an effort to become pregnant.

Aggression between stallions and mares has also been studied in 3 wild horse populations and no difference was found between the treatment groups (Ransom *et al.* 2010). Harem tending by stallions, such as urine and fecal covering of mare excretion and active defense of mares against other stallions, was best explained by a model of mare body condition in the Ransom *et al.* (2010) study. Stallions in this study tended higher condition mares more frequently than lower condition mares.

As stated in Section 1.2, PZP is a naturally occurring pig protein which degrades quickly in the environment and cannot pass through the food chain, thus negating any environmental effects (Kirkpatrick *et al.* 2006). Because the applicators would be recovering any used syringe and the specific targeting of individual mares, it would be unlikely to be incorrectly applied or lost. The purchasing process for acquiring PZP and use of PZP would remain highly regulated and overseen.

4.3.1.4 Monitoring and/or Compliance

Proven mitigation and monitoring are incorporated into the proposed action and also through standard operating procedures (SOPs), which have been developed over time. These SOPs (Appendix C) and mixing protocol (Appendix D) represent the best methods for reducing impacts associated with remote application of PZP and collecting herd data.

The Horse Immunocontraception Data Sheet (Appendix E) also tracks individual mares' information including: number, color, other markings/brands, inoculation dates & doses, delivery systems, sites, reproductive history, and health issues.

4.3.2 Alternative B – No Action

4.3.2.1 Wild Horses

There would not be any stress on mares from the darting. There wouldn't be a chance of any abscesses or granulomas. The herd social structure would be the same as it is now. The herd population growth would not be not reduced. It would stay between 16–20 % instead of reducing it to around 7 % or less. No possible impacts to the genetic diversity of the herd as all horse would have a chance to reproduce. Similar to the proposed action, new individuals would be brought to the HMA every 3-5 years.

Gathers and corresponding processing and adoptions would be necessary every 4-5 years to maintain at AML population numbers.

Genetic viability samples would be collected during gathers and sent for testing. Data would not be collected. SOPs would not be required.

4.3.2.2 Protective Measures

No special protective measures would be put in place. SLFO would continue to monitor horse condition, horse population, and utilization of the rangeland.

4.3.2.3 Residual Impacts

The health and condition of the horses would stay about the same as it is without any fertility control treatment. Any young or old mares that have foals would be expected to be in poorer body condition than if they had received treatment. Long term degradation to the range from over grazing could also be expected if gathers are not conducted.

4.3.2.4 Monitoring and/or Compliance

There would be no special monitoring or compliance needed.

4.4 Cumulative Impacts Analysis

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.4.1 Wild Horses

Past or ongoing actions that affect the same components of the environment as the proposed action are: past, present and future wild horse selective removals, fertility control treatments, natural mortality including variable predation, disturbance due to recreation and hunting, and increased or decreased size and quality of rangeland available for wild horse use. BLM would identify these impacts as they occur and mitigate them as needed on a project specific basis to maintain a thriving natural ecological balance and maintain acceptable levels of herd health. The Proposed Action would contribute to the cumulative impacts of future actions by maintaining the wild horse population near the mid-point of AML. Monitoring and management actions

would establish a process whereby biological and/or genetic issues would be identified and resolved over time.

Due to the relatively long time between generations (~10 years) and the long reproductive lifespan of individual horses, the loss of genetic material from the herd would be relatively slow and could be monitored and mitigated by management. There would be minimal impact to herd genetic diversity by restricting first time births to later in a mare's life and reducing the lifetime contribution of older mares.

Past actions that have affected the genetic diversity of the herd are: from 2005 to 2011 the SLFO has released horses from other HMA's to ensure the genetic diversity of the herd is not lost and/or increased. In 2005, there were approximately 10 stallions and 15 mares released. Since then SLFO has also released 3–5 mares every 3–4 years. The released horses came from other states as well as other HMA's within Utah. The color and confirmation of wild horses within the HMA has changed. SLFO's previous efforts were focused at improving confirmation, color and size of individual horses in ways that would increase the likelihood that the wild horse would be adopted in subsequent adoption markets. The public market was saturated with previously adopted wild horses.

In the future, SLFO would be proposing to do selective removals with bait trapping. While doing the bait trapping horses may be gathered that are not candidates for removal. SLFO staff would be on site to determine if the horses caught in the trap should be removed or not. For mares that it is determined they would be released back onto the HMA and they have either not been treated because the darter could not get close enough to an individual mare or if they are due for a booster. That treatment would be done before being released.

The existing/current uses of the public land would continue within the HMA. Recreation levels could increase along with the Wasatch Front population trends. More people would be viewing herd activities. Public outreach would continue. Visitors could see darting activity and would ask questions of the applicator.

PZP could be dropped from BLM use if another treatment or immunization effort is brought forward by the veterinary or scientific community that is shown to control equine populations.

New proposals brought to the SLFO for consideration undergo an interdisciplinary review. Any impacts to wild horses would be identified and protective measures would be applied.

5 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The ID Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2 Persons, Groups, and Agencies Consulted

Persons, agencies and organizations that were consulted with or contacted during this EA are identified in Table 2.

Table 2 People, agencies and organizations consulted/coordinated.

Name	Purpose and Authorities for Consultation or Coordination	Findings and Conclusions
Public Land Policy Coordination Office	Coordination as per BLM letter to PLPCO, November 9, 2012 regarding the process for notifying the State of Utah of projects that occurs within GRS habitat.	A coordination email was sent to PLPCO regarding the proposed action. A letter was received July 1, 2014 in support of the proposed action.
Confederated Tribes of the Goshute Reservation, Skull Valley Band of the Goshute Tribe, Paiute Tribe, and Ute Indian Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1996) and NHPA (16 USC 470).	The following Tribes were consulted via certified letter on 5/16/2014: Confederated Tribes of the Goshute Reservation, Skull Valley Band of the Goshute Tribe, Paiute Tribe, and Ute Indian Tribe. No comments were received by any of these tribes.
Jay F. Kirkpatrick PhD	The Science and Conservation Center	Email correspondence about timing of treatments, history of PZP and the treatment protocol on Assateague horses.
Wild Horse Groups/Individuals (over 500)	Coordination as per public outreach provisions of NEPA. Mailing list.	Several individuals and groups participated in the public comment period. Refer to 5.4 to 5.4.2 and Table 3.
Media (approximately 150)	Coordination as per public outreach provisions of NEPA. Mailing list.	A press release was issued on 2/20/2015 announcing the public comment period on the EA and unsigned FONSI.

5.3 Preparers

An interdisciplinary team prepared the document and analyzed the impact alternatives on the various resources (Table 3).

Table 3 List of preparers.

Name	Title	Responsible for the Following Section(s) of this Document
Tami Howell	Wild Horse Specialist	Wild Horses, Project Lead
Chris Bryan	Wildlife Biologist	Wildlife Habitat
Ray Kelsey	Outdoor Recreation Planner	Recreation/National Historic Trails
Mike Sheehan	Archaeologist	Cultural, Archaeological Clearance
Pamela Schuller	Planning & Environmental Specialist	NEPA Compliance

Refer also to the specialists identified in the Interdisciplinary Team Checklist (Appendix B).

5.4 Public Participation

As part of the preparation of this document and the NEPA process, the SLFO conducted Public/Agency Scoping (6/2/14–7/2/14). There were two comments received during the scoping period.

Section 1.6, Identification of Issues, of this EA, describes the public participation process used to identify the issues that are analyzed. The public participation process included a notification posted on the ENBB (<https://www.blm.gov/ut/enbb>) on June 2, 2014 and 30 day scoping period. SLFO did receive scoping comments or inquiries from the public. These comments were used to help identify issues and formulate alternatives.

The SLFO ran a 17 day public comment period on the EA and unsigned FONSI from 2/17/2015 through 3/6/2015. On 3/9/2015, SLFO extended the Comment Period through 3/13/15. The project information was also posted to the Utah Wild Horse Program’s “In the Spotlight”⁶ webpage on March 30, 2015.

The SLFO utilized and coordinated the NEPA public participation requirements to assist the agency in satisfying the public involvement requirements under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f) pursuant to 36 CFR 800.2(d) (3). The information about historic and cultural resources within the area potentially affected by the proposed project/action/approval will assist the BLM in identifying and evaluating impacts to such resources in the context of both NEPA and Section 106 of the NHPA. The BLM consulted with Indian tribes on a government-to-government basis in accordance with Executive Order 13175 and other policies, if requested by any Tribe. If Tribal concerns are identified, including impacts on Indian trust assets and potential impacts to cultural resources, they will be given due consideration. Federal, State, and local agencies, along with tribes and other stakeholders that may be interested in or affected by the proposed project/action/approval were invited to participate in the scoping process.

5.4.1 Modifications Based on Public Comment and Internal Review

The public comment period and internal review identified necessary corrections or clarifications to this EA.

These modifications include:

1. Corrections to grammar, sentence structure, and formatting were made throughout the EA. In general, these changes were made without further clarification. Examples include: updates to the Table of Contents, changes in font size, changes in verb tense, formatting style, or insertion of footnotes. A May 2015 date was inserted into the header of each page to distinguish from the comment period version of the EA.
2. Section 1.2: additional information was provided regarding BLM’s policies and procedures. More background information was provided on PZP protein structure as well as the costs of PZP-22 and Zonastat-H.
3. Section 1.3: edits were made to purpose and need statement.

⁶ Accessed online at: http://www.blm.gov/ut/st/en/prog/wild_horse_and_burro.html

4. Section 1.4: SLFO's herd management objective was edited.
5. Section: 1.5: two additional NEPA documents were added to the list of EISs or EAs.
6. Section 2.2: the use of bate trapping was clarified. PZP mixing procedures and data sheets were incorporated into the proposed action. The proposed dosing/darting process was clarified and incorporates adaptive management principles. Mares that produce a live foal would be placed back on the treatment program. Alternative A's management actions and requirements were edited and reordered to add clarity, including the addition of annual management reviews and reporting steps.
7. Section 2.2.1: the process for identifying individuals as well as fillies over 18 months and maternal kinship was clarified.
8. Section 2.2.2: updated to clarify when records would be sent to the National WH&B Program Office and the SCC.
9. Section 2.4.3: the alternative "change AML numbers and decrease livestock grazing" was considered but eliminated from detailed analysis.
10. Section 3.2 and 3.3: the general setting was shortened just to discuss the interdisciplinary team checklist. The rest of the discussion was placed under a new subsection specifically titled "wild horses."
11. Section 3.3: edits were made to include a 2015 population estimate, gather data (Table 1), and information on blood sampling/genetic study from 2005.
12. Section 4.3.1.1: additional information regarding contraceptive agent requirements, adverse reactions, herd augmentation, and missed doses was added.
13. Section 4.3.1.2: mixing protocol and review of previous records was added.
14. Section 4.3.1.3: discussion about recovering syringes and purchasing PZP was added.
15. Section 4.3.2.1: additional information was added regarding new individuals, gathers and genetic viability.
16. Section 4.3.2.3: long term degradation discussion was added.
17. Section 4.4.1: additional information regarding color and confirmation, adoption market, other fertility or population control methods, and existing uses of the public lands were added.
18. Section 5.2: Table 2 (renumbered) was updated to include Jay Kirkpatrick, wild horse groups and media contacts.
19. Section 5.4: was updated to include the comment period.
20. 5.4.1: this section was updated to capture changes made to the EA based on internal review and public comments.

21. Section 5.4.2: this section and Table 4 were added to capture public comments and the SLFO's responses.
22. Section 6.1: new references were added for Kirkpatrick J.F., A. Rowan, N. Lamberski, K. Frank, R.O. Lyda. 2009 and the Cedar Mountain and Onaqui Mountain Wild Horse Herd Management Areas Capture, Treat, and Release Plan Fertility Control with Limited Removal Environmental Assessment (DOI-BLM-UT-W010-2011-0031-EA) and Decision Record/FONSI. 2012.
23. Appendix B: the NEPA coordinator and field manager signed the Interdisciplinary Team Checklist.
24. Appendix C: Reordered the SOPs and item 8 was edited to include a wind speed that would stop darting operations.

5.4.2 Response to Public Comment

A 23-day public review and comment period for the EA and unsigned FONSI was offered from 2/17/2015 through 3/13/15. BLM received approximately 7,299 comments⁷ from the following organizations, individuals and groupings (form letters and for or against positions):

1. The Humane Society
2. The Cloud Foundation
3. The Roaming Wild Community
4. Citizens Against Equine Slaughter
5. American Wild Horse Preservation
6. Wild Horse Observers Association
7. Kerry O'Brien
8. Protect Mustangs
9. Marybeth Devlin
10. Irene DelBono
11. Form Letters (approximately 7,232)
12. Against Letters (approximately 54)

The BLM acknowledges the support and concerns expressed by the public regarding this project. Information within the comments that is background or general in nature was reviewed; however, responses to or clarifications made to the EA from these items are not necessary. Likewise, expressions of position or opinion are acknowledged but do not cause a change in the analysis. As identified in the NEPA Handbook (H-1790-1, section 6.9.2.2 comment response), BLM looked for modifications to the alternatives and the analysis as well as factual corrections while reviewing public comments.

Overall, the commenters provided letters of support for proactively managing for wild horse health and numbers on the range. Some expressed strong opposition to sterilization, actions that separate mares from the band, livestock grazing, and using herbicide/drugs on wild horses. The letters were received via email and regular mail.

⁷ Some individuals submitted their comment letter multiple times; thereby causing an over estimated count. The record includes these duplications. When possible, these multiple copies were grouped and processed/reviewed together.

Emails comments were predominately the form letters and letters from wild horse groups. BLM received 3 letters via regular mail. These were generally supportive of the fertility control measures. The majority of the commenters were from the United States of America. However, some form letters were received from citizens of other countries including Italy, Japan, Russia, Canada, Greece and Israel.

Of the comment letters received, numerous concerns were expressed over various aspects including the age of the mares/foals receiving treatments, the appropriate use of PZP, PZP delivery methods & timing, humane treatment, appropriate management levels, tracking/documentation, negative reactions by the mares, balancing birth and death rates, removals, and modeling after working fertility control programs.

Many of the concerns raised were addressed in the comment period version of the EA although some comments triggered additional analysis, coordination or clarifications. Because of the number of letters received, the comment letters are available for public inspection at the SLFO. Copies of the comment letters can be made in their entirety at the SLFO (fees would apply as per applicable fee schedules). Copies of the comment letters will not be placed on the ENBB or another website at this time because the sheer volume received and some personal identifying information that may be present.

Section 5.4.1 Modifications Based on Public Comments and Internal Review identifies changes to this EA that were made as a result of public comments and internal review Comments and BLM’s responses to a cross section (representative sample) of the comment letters received are shown in Table 4.

Table 4 Response to comments.

#	Comment Letter/BLM Response
1	<p>The Humane Society of the United States, Gillian Lyons</p> <p>On behalf of The Humane Society of the United States (“The HSUS”), we appreciate the opportunity to comment on the Onaqui Mountain Herd Management Area Fertility Control Environmental Assessment (“EA”), dated February 2015. The HSUS has a long history of involvement in human-wildlife conflict resolution and is committed to working in a positive manner with the Bureau of Land Management (“BLM”) to promote the creation of sustainable, humane and fiscally responsible solutions to wild horse population issues. Perceived rangeland conflicts are at an all-time high and it is imperative that the BLM proceed with a national humane active management structure which lowers wild horse population numbers. One component of ensuring widespread implementation of fertility control programs is ensuring that those programs currently underway in Herd Management Areas (“HMAs”) throughout the country are managed appropriately to ensure maximum efficacy and thus, reduce population growth rates and the need and frequency of removals. As such, we are thankful for the opportunity to comment on the Salt Lake Field Office’s plan for improving fertility control implementation at the Onaqui Mountain HMA, and would appreciate if our comments, below, were incorporated into the Final Environmental Assessment.⁸</p> <p>Overview of Proposed Action. Past management in the Onaqui Mountain HMA has been to gather and remove horses. In conjunction with these gathers a small number of mares were treated with PZP-22 and rereleased onto the HMA. Such gathers and treatments occurred in 2005, 2009, and 2012, respectively. Unfortunately, as treatment occurred only</p>

⁸ Footnotes are not included here. Refer to complete letter as per email received on 3/6/2015.

#	Comment Letter/BLM Response
	<p>every 3-4 years, and only a small percentage of the HMA’s mares were treated, the fertility control program wasn’t effective at lowering population growth within the HMA¹ To correct this, the Salt Lake Field Office plans to implement a program which would remotely dart mares within the HMA with Zonastat-H every year for the next 5 years. Mares would be treated beginning at 1 year of age, and would be consecutively treated every year until they are 5. At 5, they would be removed from treatment until they have foaled. After successful foaling, that mare would be placed back on treatment for the remainder of her life.²</p> <p>Support of the Proposed Action. The HSUS supports the efforts of the Salt Lake Field Office in drafting a Proposed Action that plans to create a more in-depth fertility control program to slow the HMA’s population growth rate. In 2013, The National Research Council of the National Academy of Sciences (“NAS”) released a report commissioned by the BLM. The report found that the BLM’s practice of rounding up and removing a significant proportion of the herd’s population every three to four years could be contributing to high horse population growth rates.³ Instead, the report suggested that the BLM implement fertility control practices, focusing specifically on liquid PZP as one of the most promising methods for implementation.⁴ Unfortunately, however, BLM records indicate that the agency only treated and released 509 mares with fertility control in 2013, and in 2014 the agency only treated and released 384 mares. ⁵ Such a meager commitment to fertility control is insufficient to have a population level effect. As such, we are pleased to see that the Salt Lake Field Office is investing in long term solutions that are both humane and fiscally responsible. The reality is that while the BLM begins to invest more of its resources in population growth suppression programs, there will often be more horses on the range than it views as optimal. This is because the BLM may be unable to fund additional removals, increased numbers in longterm care, and fertility control. That said, a population growth suppression program will succeed in lowering population numbers if it is designed and conducted to effectively inoculate the appropriate ratio of total mares in a herd (between 65-85%) at the most efficacious time of year (between November and February). Such a program will optimize, to the greatest extent possible, the benefits of using fertility control and will successfully reduce population growth rates if properly implemented. However, if fertility control has been used within an HMA, and hasn’t reduced population growth rates in a sufficient manner to achieve AML, it is incumbent that field managers examine their programs for gaps in treatment protocols that allow for higher than optimal population growth rates. Those gaps must be identified and corrected to ensure that the population growth suppression program is conducted in the most effective manner possible. In this case, treatment with PZP-22 on a small percentage of the herd’s mares only once every 3-4 years was simply insufficient to successful lower population numbers within the HMA. We are pleased to see that the Salt Lake Field Office is acknowledging the past insufficiencies of their fertility control usage, and striving to create a more comprehensive program. Further, we believe that the noted expansions of PZP usage within this HMA will contribute to the success of this program. For these reasons, we support the Proposed Action’s plan to implement further more widespread fertility control usage at the Onaqui Mountain HMA.</p> <p>Additional Considerations. While The HSUS supports the Proposed Action, we do have concerns with some of points and issues raised. Keep Removals to an Absolute Minimum While we recognize that this EA proceeds with the goal of reducing the need for removals,⁷ the stated goal of the fertility control plan should be to entirely eliminate the need for round-up and removal within the HMA. Maintaining round-up and removal as a primary management strategy has led to a financially unsustainable Wild Horse and Burro</p>

#	Comment Letter/BLM Response
	<p>Program. In the last decade, the numbers of wild horses and burros removed from the range have vastly exceeded the number adopted, and as a consequence, the costs associated with caring for these animals off the range have continued to skyrocket. Taxpayers are already footing the bill for the feeding of approximately 48,000 wild horses and burros currently in the BLM’s care. In 2014, keeping wild horses and burros in government holding facilities cost American taxpayer’s \$43.235 million dollars, which is 64% of the BLM’s Wild Horse and Burro Program budget.⁸ Every animal gathered and placed into holding facilities adds to the financial burden of the Wild Horse and Burro Program, and recent estimates show that one individual animal added could potentially drain the BLM’s budget of at least \$46,000 over the course of his/her lifetime.⁹ As such, we request that implementation of this plan remain focused on the positive effects of fertility control on population reduction and strives to fully eliminate all gathers and removals within the HMA.</p> <p>Requesting Public Input. When controversial issues involving the management of wild animals arise, we believe it is essential that agencies engage in a full and open dialogue with all affected stakeholders and that a fair, rational, and objective information collection and assessment process takes place before proceeding with any proposed management action or plan. As such, we request that the Salt Lake Field Office maintain an option line of communication with interested parties with regards to future alterations of the fertility control program within this HMA, as well as any need for additional roundups.</p> <p>Conclusion. The HSUS is encouraged to see that the Salt Lake Field Office is committed to increasing the effectiveness of the population growth suppression program at the Onaqui Mountain HMA and appreciates the opportunity to comment on this Preliminary Environmental Assessment.</p>
1	<p>BLM Response: SLFO has edited sections 1.3 and 2.2 through 2.2.3 to clarify the purpose and need statements and the proposed action.</p> <p>The SLFO maintains a mailing list for the wild horse program as part of its outreach program, including media releases. As always, the public are able to access all new and updated proposals including management of wild horses through the ENBB.⁹ Table 2 was updated to include contacts with wild horse organizations, individuals and the media during the EA comment period.</p>
2	<p>The Cloud Foundation, Ginger Kathrens</p> <p>On behalf of The Cloud Foundation (TCF), a 501(c)3 non-profit corporation, on behalf of our thousands of supporters throughout the United States; The Equine Welfare Alliance; Front Range Equine Rescue; Colorado Wild Horse and Burro Coalition; and the over 90 organizations represented thereby, we would like to thank you for the opportunity to comment on DOI-BLM-UT-W010-2014-EA.</p> <p>We appreciate your willingness to listen to suggestions from numerous sources that might lead to the more effective use of PZP on mares in the Onaqui Mountain Herd Management Area (OMHMA). We support the goal of balancing recruitment with the death rate to reduce the time between removals. By remotely darting select mares with the reversible vaccine PZP, we believe you present a pathway to eliminating wild horse removals in the near future on the OMHMA.</p> <p>We respectfully submit the following comments regarding the Proposed Action as</p>

⁹ In accordance with Washington Office Instruction Memorandum 2014-106, the ENBB will be phased out and all NEPA projects would be publicly available through the Bureau-wide eplanning website.

#	Comment Letter/BLM Response
	<p>described in the EA. We support Alternative A with the following changes:</p> <p>1. Field Darting at the appropriate time of the year.</p> <p>It is our understanding that field darting is most effective from January through early spring, just preceding the breeding season in March/April. Therefore, we recommend you reexamine the start date in November and delay until January when the vaccine will likely be the most effective.</p> <p>The EA proposes darting the primer dose to young females of mares one year of age in late March to early April 2015. By darting with a booster dose 30-60 days following that treatment, the herd could then be treated annually with a single dose of one-year PZP. It is our understanding that many of the older mares received PZP-22 so they would not require a primer, only the booster.</p> <p>2. Age Specifications.</p> <p>TCF strongly opposes the PZP age specification described in the EA which proposes darting at one year of age, and continuing to treat for 5 consecutive years, then beginning PZP treatment again at age 6 or after giving birth to one live foal, for the remainder of the mare's life.</p> <p>This plan is too aggressive – mares treated for five (5) years consecutively have a significant risk of permanent sterilization.</p> <p>Instead, TCF recommends the following program, which is being used in the Pryor Mountain Wild Horse Range:</p> <ul style="list-style-type: none"> • Foals born in the fall of the year be eliminated from receiving the primer until they are at least 15 months of age or older. • Selectively booster adult mares based on age and kinship, developing a genetic variability road map based on the collective knowledge of BLM personnel and those that have followed the herd for a number of years. • TCF recommends that after the mares reach 10 years of age there should be no need to continue treating with PZP if they have been darted for 5- 7 years. The proposal to treat mares after producing a single live foal, for the remainder of their lives is extreme and not necessary to achieve the population control you are targeting. • We would encourage you to eliminate from PZP darting any mare, regardless of age, that has a life threatening reaction to the vaccine. <p>The Age Specifications described in the EA are too aggressive and could easily result in a loss of genetic variability.</p> <p>3. Flexibility:</p> <p>TCF would like to see more specific language regarding flexibility in order to change course if unintended consequences occur or unanticipated events happen (i.e. a rise in predation or a catastrophic storm), or if the genetic health of the herd can be better maintained by eliminating a particular mare from treatment.</p> <p>We suggest adding a sentence reserving the option to make changes, which is consistent with DOI Adaptive Management – learning by doing, and adapting based on what's learned. Adaptive management encourages flexibility http://www.doi.gov/ppa/upload/executive_summary-27.pdf</p> <p>4. Horse Identification:</p> <p>We praise the plan to develop a photo database compiled into books that could be taken into the field to identify mares by color, face, leg and coat patterns to insure that</p>

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	<p>identification errors do not occur.</p> <p>5. Record Keeping: As you know, accurate record keeping is essential to the success of the fertility control program. We recommend monitoring mares after treatment in order to ascertain if any have adverse reactions to the vaccine to ensure that they are not treated again.</p> <p>6. Conclusion While we wholeheartedly support managing the Onaqui wild horses on the range through the use of a fertility control program, we hope that this effort will build on the experiences and proven success of the program in the Pryor Mountain Wild Horse Range which considers kinship and genetic variability.</p> <p>With this in mind, we believe the Onaqui Mountain Fertility Control Program over all is too aggressive and could threaten the health and genetic variability of the herd.</p> <p>We also encourage the BLM to take natural measures in managing wild horses on the range, such as protection of predators, expansion of rangeland and reduction of livestock grazing within the HMA. The goal of any population control program should be to manage wild horses “on the range,” in a way that will insure the ongoing health of the heard as well as insuring that all horses remain on the range where they belong.</p> <p>By taking positive steps to perfect “on the range” management of wild horses the BLM Salt Lake City Field Office can save American taxpayers millions of dollars, and has the opportunity to serve as an example of how to transform the way wild horses are currently managed.</p> <p>Thanks for being open to our concerns. We trust you will do all you can to ensure that the Onaqui Mountain mustangs persist and thrive into the future. If you have any questions about the contents of this letter, don’t hesitate to give us a call.</p>
2	<p>BLM Response: Refer to responses to comment #1. As suggested, the SLFO has edited the proposed action to clarify what steps would be taken between the year 2015 and 2020. If the proposed action is selected and it proves successful upon implementation, the fertility control measures could be extended beyond the year 2020.</p> <p>SLFO coordinated with Jay Kirkpatrick to verify the age when a filly could safely receive a primer shot. The age of the fillies was changed to 18 months. Similarly, mares reaching 5 years of age would not receive a PZP dose. After a mare produces a live foal that lives to be 1 year old, she would be placed back on the PZP treatment program.</p> <p>Only personnel experienced with wild horses and those who are certified would be darting wild horses and reviewing/keeping the associated records.</p> <p>SLFO would be applying adaptive management principles. If policies change or the vaccine effects or effectiveness prove undesirable, then the application of the PZP fertility control measures would be stopped or reconsidered based on new scientific information.</p> <p>SLFO concurs that obtaining and maintaining accurate records is vital for the success of overall management of the wild horses within this HMA.</p>
3	<p>The Roaming Wild Community, Sylvia Johnson</p> <p>We want to thank your BLM office for soliciting public comment regarding your decision to begin remote darting fertility control management with the Onaqui Herd in Utah.</p> <p>As an award-winning documentary film that featured the Onaqui herd, we cannot tell you how much we, along with our followers, are THRILLED to hear this news and offer our support.</p> <p>We believe PZP to be a safe, humane alternative to gathers and round ups. Thank you for</p>

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	<p>pursuing this new alternative for stabilizing herd populations. As our friends at the American Wild Horse Preservation have said "This plan is in line with the recommendations of the National Academy of Sciences (NAS) and the will of the public, which wants to see wild horses and burros humanely and cost-effectively managed on the range."</p> <p>The attached image is one we have created to unite our followers and advocates everywhere. Each one you receive in your inbox is a vote of support for this safe alternative in remote darting fertility control.</p>
3	<p>BLM Response: Edits to the EA were not warranted.</p>
4	<p>Citizens Against Equine Slaughter, Nancy Watson</p> <p>As a board member speaking for Citizens Against Equine Slaughter (CAES), a 501(c)3 non-profit corporation, I'd like to thank you on behalf of our organization and our members for the opportunity to comment on DOI-BLM-UT-W010-2014-EA.</p> <p>Speaking on behalf of our supporters, we thank you for your work to reduce and ultimately end removals/roundups using Native PZP. We appreciate this opportunity to submit our suggestions, with the hope that they will result in a more effective plan utilizing Native PZP in the Onaqui Mountain Herd Management Area (OMHMA), with the ultimate goal being less removals or ultimately ending roundups.</p> <p>We support a modified version of Alternative A, outlined as follows:</p> <ol style="list-style-type: none"> 1. Field Darting must be done at specific times during each year. According to The Cloud Foundation and the Science and Conservation Center, field darting is most effective from January or February through early spring, just preceding the breeding season in March/April. Please reconsider changing the start date mentioned in the Environmental Assessment (EA) from November to a more appropriate time when the vaccine has proven to be more effective, except of course if it is an initial booster dart. Further, the EA proposes darting a primer dose for mares 1 year old with a booster dose 30-60 days afterwards, and then a single booster dose annually. However, the mares which have already received PZP-22 will need only the booster dose, understanding that a 1 year old will not likely have received PZP 22 yet. 2. There is a significant risk of permanent sterilization for mares receiving PZP treatment for 5 years or more without a 1 year break. With this in mind, we oppose the EA age specification which is to continue PZP boosters for 5 consecutive years unless a mare has two surviving offspring over 1 year old. Please consider changing this to: <ul style="list-style-type: none"> • Eliminating foals until they are at least 15 months of age • Booster the adult mares selectively with consideration to age and kinship • Stop PZP use on mares that have an adverse reaction to it. <p>The aggressiveness in the EA has no consideration for genetic viability of this herd.</p> <ol style="list-style-type: none"> 3. The only way to ensure the success of a program where the size of the herd is relatively small (genetic viability can be a concern), is through accurate record keeping. As mentioned in the EA, a database is essential for accurate horse identification, but also for accurate record keeping. <p>Thank you for introducing this fertility control program to manage the Onaqui wild horses. The success of a similar program in the Pryor Mountain Wild Horse Range will prove to be a great benefit to this effort, as they have created a model that can now be emulated in other HMA's.</p> <p>Please consider these suggested changes to your plan, as it they are in the best interest of</p>

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	<p>the herd and will ensure they are managed on the range. Additionally, natural predators should be protected so that wild horse herd populations can be managed with minimal (if any) human intervention.</p> <p>This is a giant leap forward in wild horse population management, and we praise this effort which can result in millions of dollars of taxpayer savings, and happy herds on the range rather than in holding.</p>
4	<p>BLM Response: Refer to responses to comments #1 and 2.</p> <p>The data sheet would be used to document a mare’s foals. An identification number would be assigned to a foal that would be linked to the mare on her data sheet. Modifications could be made or notes added to the data sheets in order to capture kinship. Once a filly reaches 18 months, she would receive her own data sheet and her unique number would be retained. Colts or stallions would receive a number and tracked in the database as belonging to a bachelor herd or herd stallion. Data sheets would not be maintained on individual males. Males would be identified and information maintained on the HMA spreadsheet.</p> <p>SLFO agrees that a database is necessary for managing wild horse records and is looking at acquiring systems such as WHIMS.</p>
5	<p>American Wild Horse Preservation, Grace Kuhn</p> <p>AWHPC is dedicated to preserving the American wild horse in viable free-roaming herds for generations to come, as part of our national heritage. Our grassroots efforts are supported by a coalition of over 60 historic preservation, conservation, horse advocacy and animal welfare organizations.</p> <p>Representing a broad coalition of citizens and taxpayers concerned about the preservation of wild horses on public lands, AWHPC supports the Bureau of Land Management (BLM's) goal of balancing recruitment with the death rate to eliminate future removals of wild horses from the Onaqui Mountain Herd Management Area (HMA). More than 5,200 citizens submitted comments supporting the content of this letter.</p> <p>By remotely darting select mares with the reversible vaccine PZP, we believe that the BLM presents a pathway for achieving that goal. This plan is in line with the recommendations of the National Academy of Sciences (NAS) and the will of the public, which wants to see wild horses and burros humanely and cost-effectively managed on the range.</p> <p>However, we respectfully request that the following provisions be incorporated into the final plan:</p> <ul style="list-style-type: none"> • Foals born in the fall should be exempted from receiving the PZP vaccine primer until they are at least 15 months of age. Once the PZP protocol is changed to incorporate this requirement, it should be analyzed yearly to determine the results of this change on the overall program. • All yearlings (15 months or older) treated with PZP should be permitted to foal within three years after the first inoculation. Data shows that after four or five inoculations the vaccine may become self-boosting thereby eliminating the ability of the mare to foal in the future, therefore after two inoculations each mare should be permitted to foal at least one time. • Any mare, regardless of age, which has had a negative reaction to the vaccine should be exempted from the PZP-darting program. • Mares that have never foaled and are 10 years of age or older must not be put back on PZP. All mares should have the opportunity to successfully raise at least one

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	<p>offspring to adulthood.</p> <ul style="list-style-type: none"> • Include provisions in the Proposed Action to ensure that the PZP plan is flexible enough to change course if unintended consequences occur or unanticipated events happen, or if the genetic health of the herd can be better sustained by eliminating a particular mare from treatment. • We urge you to consider a long-term goal of increasing the “Appropriate” Management Level for the very accessible and popular Onaqui wild horse population. <p>Currently, the BLM allocates over two times more forage to privately owned livestock than to federally-protected wild horses in the HMA. Wild horses should be given a fairer share of resources in this federally designated habitat area through reductions in discretionary livestock grazing.</p>
5	<p>BLM Response: Refer to responses to comments #1 and 2.</p> <p>Section 2.4.3, Change AML Numbers and Decrease Livestock Grazing, alternative was added. Adjustments to AML numbers were last addressed in EA Wild Horse Appropriate Management Level and Herd Management Area/Herd Area Boundary Environmental Assessment, EA UT 020-2002-0100 and its corresponding DR/FONSI issued on 2/19/2003. AML adjustments are not being considered at this time.</p>
6	<p>Wild Horse Observers Association, Patience O’Dowd</p> <p>The Wild Horse Observers Association, a 501(c)3 non-profit corporation, thanks you for this opportunity to support native PZP and stop the round ups.</p> <ol style="list-style-type: none"> 1. There is nothing that gives the false impression of wild horse over population more, than tens of thousands of wild horses in holding pens! 2. There is nothing that hurts genetic viability more than removals of genetic material forever followed by castration. <p>We support a modified version of Alternative A, outlined as follows:</p> <p>There is a significant risk of permanent sterilization for mares receiving PZP treatment for 6 or 7 years or more without a 1 year break. With this in mind, we would like you to consider tiering with the Pryor Mt EA where each mare in the prime birthing age group will have 2 surviving foals over 1 yr old before being darted.</p> <p>There is flexibility built in to the EA and this is important to ensure horse population neither dips nor requires a round up.</p> <p>Thank you for introducing this fertility control program to manage the Onaqui wild horses. The success of a similar program in the Pryor Mountain Wild Horse Range will prove to be a great benefit to this effort, as they have created a model that can now be emulated in other HMA's.</p> <p>The use of native PZP with a repeatable and a known efficacy unlike PZP 22 is important for stopping unfeasible and unethical round ups given the will of the people. One can build ten acre fences for peaceful lure trapping for darting if need be. Very easy to close the gates without upsetting the wild horses and little fighting inside.</p> <p>This is a giant leap forward in wild horse population management in line with recommendations by the National Academy of Sciences. The BLM must utilize relevant science rather than unknowledgeable hearsay and fear tactics. WHOA congratulates you on your choice to manage rather than zero or round up and castrate.</p>
6	<p>BLM Response: Refer to responses to comments #1 and 2.</p> <p>It is unclear what is meant by lure trapping. SLFO interprets that to mean using a</p>

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	<p>domesticated mare or saddle horse that is in season to attract herd stallions or lead mares to a specific area. Edits in the EA were made to describe bait trapping at section 2.2. SLFO considered installing fences to create permanent traps (at water sources or natural topography). To prevent injuries to individual wild horses or limit infrastructure that needs to be taken into account during fire suppression and rehabilitation plans, SLFO is trying to minimize the number of fences that are occurring within the HMA.</p> <p>In consultation with the Utah State office and looking at other working PZP treatment plans in other states, SLFO considered adjustments to the number of live foals a mare could produce over her lifetime. However, at this time because of the population size and the goal to reduce population growth to 7% the mares will be allowed to have one foal that lives to one year of age. This could change in the future if there was a need to have more foals produced or if the foal from a mare was removed, SLFO may allow her to have another one to remain on the range.</p> <p>If horses are missed in an annual cycle, it would be documented and horses would be left to the next annual darting cycle/protocol. See changes made to section 4.3.1.1.</p>
7	<p>Kerry O'Brien</p> <p>I have been following this issue for quite some time, including interviewing Dr. Kirkpatrick and Neda DeMayo who, as I'm sure you know have been successfully controlling the population of her wild horse sanctuary with Native PZP for over 15 years, as well as many other success stories.</p> <p>This program has been proven successful: 1) when implemented properly, 2) with committed follow through and 3) most importantly in Dr. Kirkpatrick's view, <i>with commitment to public education.</i></p> <p>So not only am I completely in support of using Native PZP, delivered in the least disruptive way possible, I also urge BLM to mount an aggressive public education campaign and one of the best ways to do that is by educating on the local level and enlisting local support. It has been my observation that every HMA area has many non-adversarial citizens who are already involved with and know their local horses. I urge you to use these citizens, who are educated and ready to assist. They are a huge untapped resource that can provide hundreds, if not thousands of man hours that the BLM cannot afford internally, both as on the ground volunteers and in public education. This would help head off the inevitable backlash that could sabotage the program.</p> <p>I urge you to move forward and take my suggestions into serious consideration to guarantee the success of your desperately needed contraceptive efforts. Good luck!</p>
7	<p>BLM Response: The SLFO is currently working with Wild Horses of America Foundation and local photographers to assist in the treatment program.</p> <p>The SLFO maintains a wild horse program website¹⁰ and an Onaqui HMA website.¹¹ SLFO is currently reviewing these sites as well as the rest of the field office websites, to incorporate new or updated information. Public outreach and education opportunities for the Onaqui wild horse herd would be incorporated. BLM frequently holds workshops and participates in fairs and equine shows to visit with the public about the wild horse program.</p>

¹⁰ SLFO wild horse program website can be accessed online at:
http://www.blm.gov/ut/st/en/fo/salt_lake/wild_horses___burros.html

¹¹ SLFO Onaqui HMA website can be accessed online at:
http://www.blm.gov/ut/st/en/fo/salt_lake/wild_horses___burros/onaqui_mountains_hma.html

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8	<p>Marybeth Devlin</p> <p>I have reviewed the subject EA and associated documents regarding the plan to continue, and more aggressively apply, the contraceptive Porcine Zona Pellucida (PZP), also known as ZonaStat-H, on the fillies and mares of the Onaqui Mountain Wild Horse herd. I am submitting substantive comments and new information that SLFO would do well to consider. Other information is discussed that you already know, or should know, but on which you have failed to act. For ease of reference, below are the links to the ...</p> <p>News Release http://www.blm.gov/ut/st/en/info/newsroom/2015/february/blm_seeks_public_comment0.html Environmental Assessment – 2015 https://www.blm.gov/ut/enbb/files/Onaqui_Fertility_Control_EA_2_18_15.pdf Cedar Mountain and Onaqui Mountain Wild Horse Herd Management Areas Capture, Treat and Release Plan Fertility Control with Limited Removal – 2012 http://www.blm.gov/style/medialib/blm/ut/natural_resources/wild_horses_and_burros/cedar_onaqui.Par.87472.File.dat/FinalEA.pdf</p> <p>NEPA-RELATED ISSUES</p> <p>Public Scoping -- Notice Buried -- No News-Release -- Only 2 Comments</p> <p>The EA claims that, prior its publication, the required public-scoping was conducted. However, instead of issuing the standard news-release, BLM restricted notification of the scoping-period to a posting on the "Utah BLM Environmental Notification Bulletin Board" (ENBB). However, how would the public know to look on this ENBB, when it is <i>not</i> even one of the options on Utah-BLM's online "Information Center"?</p> <p>Not surprisingly, the EA reports that only two comments were received, both in support of BLM's intensified fertility-control plan and for "managing wild horses on the range within AML." And who were the two parties that submitted comments in support of birth-control for the Onaqui wild horses and for keeping them within AML?</p> <p>The first was Iron County, whose commissioners had threatened last July -- following the Cliven Bundy standoff -- to round up wild horses themselves. Advised that doing so was illegal, Commissioner Dave Miller then co-sponsored a resolution for the states to take over management of the wild horses and burros.</p> <p>•http://www.deseretnews.com/article/865606266/Rural-Utah-will-take-wild-horse-fight-to-New-Orleans-Washington.html?pg=all</p> <p>The second comment was from the State of Utah Public Lands Policy Coordination Office, an activist-agency whose goal is to "retake ownership" of Federal land. Here's the link to an article about the PLPCO, aptly titled "The Wild Bunch".</p> <p>•http://www.cityweekly.net/utah/the-wild-bunch/Content?oid=2159976</p> <p>How curious that these entities were the only ones who were successful in learning about the scoping period. Did BLM staff alert them to check the ENBB -- and where to find it? What the inadequate number of scoping-comments evidences, is that BLM-SLFO did not provide proper notice but instead, buried that notice where it where it would be hard to find. There are many wild-horse advocacy-organizations that certainly would have submitted comments concerning SLFO's proposed management-plan for the beloved Onaqui mustangs -- if they had known the scoping period was open.</p> <p><u>Corrective Action:</u> SLFO needs to restart this process. Re-open the scoping period and properly notify the public. SLFO needs to compile an ample number of diverse comments. The Wild Horse and Burro Program is national in its constituency. Input regarding its management cannot be limited to a few local anti-wild-horse entities.</p> <p>Public-Comment Period for the EA -- Reduced 50 Percent</p> <p>As if the secretive posting of the scoping notice were not bad enough, SLFO is providing only 14 days for comments on this EA. The standard period is 30 days. By shortening the</p>

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	<p>comment-period by half, SLFO appears to be limiting public-input for a second time -- now at the EA-stage of the process.</p> <p><u>Corrective Action:</u> This EA must be rescinded until SLFO has completed the re-opened scoping process. Then, when SLFO issues a revised EA per the scoping, a full 30-day comment-period must be offered for public-input. However, to save everyone's time, the best action is to select the "No Action" alternative, which appears to be the correct path, as is evident by an analysis of the facts.</p> <p>BLM PLANS INTENSIFIED USE OF PZP ON THE ONAQUI MOUNTAIN HERD</p> <p>BLM's Proposed Action</p> <p>The EA seeks to implement a fertility-control plan through the year 2020 to limit the Onaqui herd to 160 wild horses. The current AML ranges from 121 to 210 horses; thus, 160 is <i>below</i> the midpoint between the low and high bounds. The EA says that the short-term goal is to reduce population-growth to "less than seven percent" while the long-term goal is to reduce the need for roundups and removals. To achieve this reduction, SLFO would use the one-year formulation of PZP, and field-dart "select mares." The darting would be conducted on foot, the EA says, but then clarifies that 4x4 vehicles and off-highway vehicles (OHVs) would be used to "access" the Onaqui HMA. Bait-trapping would be used as deemed necessary.</p> <p>This is not the first time that Onaqui fillies and mares have been subjected to PZP. Previously, however, the formulation used was PZP-22.</p> <p>How the Plan Would Work</p> <p>Starting in late March or early April 2015, SLFO staff would begin vaccinating yearling fillies (which BLM refers to as "mares") with a "primer" PZP-dose. About 30 to 60 days after that initial injection, staff would administer a second "booster" shot to the fillies. The need to give the second injections within a certain time-frame suggests the fillies might need to be gathered and held captive during that interval.</p> <p>From then on and for the next five consecutive years, "one-year PZP" inoculations would be given. Once a filly-becoming-a-mare reached the age of 6, PZP would be suspended until she produced "a live foal," after which she would be contracepted "for the remainder of her natural life." Mares that had previously been vaccinated with PZP -- which was the PZP-22 formulation -- would receive annual boosters in the time-frame of November through February, but would be subject to dosing at any time of year.</p> <p>The EA is ambiguous regarding how treated mares would be "identified" for staff-use in the field. Reference is made to a "photo database" and to identification "by color, face, leg, and coat pattern markings." But mention is also made of mares to be "individually marked," and that a "number of the horses have a hip brand as well as neck brands from previous PZP treatments." Thus, it is possible that SLFO will disfigure the Onaqui fillies and mares with huge freeze-marks on the hip for staff's administrative convenience. If so, persons visiting the HMA will have their experience spoiled by the hideous four-inch-high brands on the fillies and mares' coat.</p> <p>The "No Action" Alternative</p> <p>As required by NEPA, BLM presents a "No Action" option. Per this alternative, SLFO would defer the plan to gather and contracept the Onaqui herd to a later time. Until then, SLFO would continue to monitor the HMA's vegetation and the herd's population.</p> <p>The "No Action" alternative is actually the best option. Suspend contraception and let natural processes function as they will. Allow a natural ecological balance to revive and thrive in the Onaqui Mountain HMA.</p>

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	<p>SAY "NO" TO PESTICIDES</p> <p>PZP -- A Pesticide that Is Also a Bio-Hazard</p> <p>It is inappropriate to treat our wild horses as pests. But that is exactly what BLM does when it injects wild mares with PZP. Rather than being a medicine, PZP -- also known as ZonaStat-H -- is classified as a pesticide, a contraceptive used on horses labeled "pests."</p> <p>Further, PZP is a biohazard, as reflected in the warnings, excerpted below, which are included in the Environmental Protection Agency's fact-sheet.</p> <p>Personal Protective Equipment requirements include long sleeved shirt and long pants, gloves and shoes plus socks to mitigate occupational exposure.</p> <p>A warning that pregnant women must not be involved in handling or injecting ZonaStat-H and that all women should be aware that accidental self-injection may cause infertility.</p> <p>•http://www.epa.gov/pesticides/chem_search/reg_actions/pending/fs_PC-176603_01-Jan-12.pdf</p> <p>Meta-Analysis Reveals the Risk of Sterilization from ZP Contraceptives</p> <p>A recent study-of-the-studies -- that is, a meta-analysis -- was performed of the research-findings with regard to different contraceptive methods. Among the drugs analyzed were various zona pellucida (ZP) formulations. As it turns out <i>porcine</i> zona pellucida (PZP), from slaughtered pig-ovaries, is not the only ZP contraceptive in use. For instance, a particular ZP vaccine was derived from the ovaries of possums.</p> <p>The meta-analysis disclosed that ZP contraceptives often result in sterilization, which appears to be caused by ovarian dystrophy, destruction of oocytes in all growing follicles, and depletion of resting follicles. Here are some salient excerpts [with emphasis added] that give rise to concern regarding ZP-contraceptives:</p> <p>The irreversibility associated with immunization using ZP posed a major hurdle in the development of ZP based contraceptive. While irreversibility is not a major concern in case of wildlife management where long term infertility is often desirable. Therefore further development in this area resulted in production of various marketed products playing an imperative role in wildlife management.</p> <p>Further studies revealed that the infertility induced in immunized female rabbits was irreversible which could not be restored even after the administration of exogenous gonadotropins. Histological examination of ovaries showed the destruction of oocytes in all the growing follicles along with the depletion of resting follicles. This observation indicated that the infertility was a consequence of ovarian dystrophy rather than inhibition of sperm-oocyte interaction.</p> <p>The immunization of female bonnetmonkeys was carried out using purified porcine ZP3. High antiporcine ZP3 antibody titers were formed and all the animals were rendered infertile. Only 50% of the animals could regain fertility after the decline in antibody titers. Significant curtailment of fertility was also observed by using recombinant possum ZP3 in grey kangaroos. Though the results were quite exciting, histological examination of ovaries of immunized animals revealed the presence of atretic follicles with degenerating oocytes.</p> <p><i>Saunders Comprehensive Veterinary Dictionary, 3 ed.</i> explains what an "atretic follicle" is:</p> <p>Definition: atretic follicle -- an ovarian follicle in an undeveloped state due to immaturity, poor nutrition or systemic disease; manifested by prolonged anestrus.</p> <p>•http://medical-dictionary.thefreedictionary.com/atretic</p> <p>It is reasonable to conclude that PZP, whether Native PZP or PZP-22, likely has a similar effect on the ovaries, oocytes, and follicles of wild mares. Thus, permanent loss of fertility</p>

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	<p>-- even after one inoculation -- can result.</p> <p><u>Important:</u> The meta-analysis' finding that "... infertility was a consequence of ovarian dystrophy rather than inhibition of sperm-oocyte interaction" appears to disprove the theory posited by ZooMontana, which supposed that PZP "antibodies then bind to eggs in the mare's ovaries and effectively block sperm binding and fertilization ..." (cited in the EA). The new findings show that PZP works <i>not</i> by blocking the sperm <i>but by degenerating the ovaries</i>. Given these findings, PZP should be abandoned for use in wild horses.</p> <p>The meta-analysis report can be accessed at the link below.</p> <p>•http://downloads.hindawi.com/journals/bmri/2014/868196.pdf</p> <p>Earlier Meta-Analysis Disclosed PZP Side-Effects</p> <p>The meta-analysis linked below was published in the journal <i>Reproduction</i>. Studies of the side-effects of different wildlife contraceptives, including PZP, were reviewed. [Once on the site, page down to the sidebar on the right of your screen next to "Abstract" and click on "Results" and then on "Discussion."]</p> <p>•http://www.reproduction-online.org/cgi/content/full/139/1/45</p> <p>Listed below are the findings with regard to PZP:</p> <ol style="list-style-type: none"> 1. Males lose body condition while the oft-claimed improvement in female body condition did not hold up. 2. Females experienced increased irritability, aggression, and masculine behavior. 3. Mares remained sexually active beyond the normal breeding season and had more "estrus events." 4. The possibility of "selecting for immuno-compromised individuals" is raised. 5. Finally, the analysis questions the supposed benefit of mares living much longer than their normal life expectancy. <p>With regard to Finding Number 4 above, by continuing and even intensifying the use of PZP, SLFO could be selecting for immuno-compromised horses. If a disaster were to strike the Onaqui Mountain herd, fertility would need to be quickly restorable. PZP would work against saving the herd if it experienced a stochastic event.</p> <p>With regard to Finding Number 5 above, interestingly, the EA cited PZP's correlation with extended longevity of mares as if it were a benefit. Yet, for purposes of genetic sustainability, increasing the number of long-lived -- yet sterile -- mares would be disadvantageous to a herd, especially one like Onaqui, which is so low in population already.</p> <p>Potential Adverse Effects of PZP on a Developing Embryo or Fetus</p> <p>Recall the EPA's warning that pregnant women must not be involved in handling or injecting ZonaStat-H. If a mare is administered PZP when she is pregnant, might not her unborn foal be adversely affected by the drug even if the pregnancy itself continued? If the embryo or fetus were female, might the vaccine negatively impact the baby's reproductive system pre-birth? Might her developing ovaries experience dystrophy? Might she become masculinized as a result? Might she never produce foals, thereby eliminating any genetic contribution on her part? If the embryo or fetus were male, might his reproductive system be affected, considering that the testes correspond to the ovaries?</p> <p>Until these questions can be answered definitively, PZP should not be used on wild horses, whose numbers are already so low that they could qualify as an endangered species.</p> <p>Potential Adverse Effect of PZP on Yearling Fillies</p>

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	<p>At one year of age, fillies are just reaching puberty. Is it ethical to subject them at that tender age to a vaccine that will wreak havoc with their ovaries, perhaps sterilizing them permanently? Is it right to masculinize a herd's fillies?</p> <p>PZP -- Unintended Consequences and Social Disruption</p> <p>BLM's proposed action would treat both fillies and mares with the Porcine Zona Pellucida (PZP), a 95-percent-effective contraceptive pesticide. This misguided plan endangers the Onaqui Mountain herd's long-term survival. The PZP contraceptive is not without risk and can have unintended consequences, such as:</p> <ul style="list-style-type: none"> •If fillies and mares are in <i>excellent health and condition</i> at the time they are treated, PZP can cause <i>too strong</i> an immune-response, resulting in long delays in restoring fertility or outright sterilization after even the initial treatment. Multiple injections are likely to result in irreversible loss of fertility. That could be one reason why PZP is not used in humans. Note that SLFO intends to administer multiple, consecutive injections. •Ironically, PZP works <i>less well</i> in mares that are in <i>ill health or poor condition</i> -- they are <i>likely to conceive despite PZP</i> treatment. Thus, the fittest mares don't reproduce while the least fit ones -- the immuno-compromised -- often do. Ironically, PZP selects for horses with a weak immune system. •PZP does not prevent ovulation and does not change mare behavior toward stallions. As a result, mares suffer repeated, stressful, futile breedings while the band-stallions have to battle continuously to keep their always-in-estrus mares. •Out-of-season pregnancies and births occur due to the wearing off of the drug at inopportune times. Foals born at the wrong time of year may not survive, and the mares' health may be endangered as well. •There are reports of mares treated with PZP becoming masculinized. Previously, the reason for this effect was unknown. But in light of the new finding that PZP causes ovarian dystrophy, that would explain the masculine behavior. Much-less-than normal amounts of estrogen would be produced by the mares' withered ovaries. Ironically, even though PZP is touted as a <i>non-hormonal</i> contraceptive, it appears to result in <i>hormonal imbalance</i>. •Mares on PZP are less faithful to their family-band, changing allegiance over and over. Such chaos disrupts normal behavior and band-membership continuity. Band-fidelity is crucial to the survival of its members, particularly the foals. <p>The EA indicates that BLM is aware of these adverse effects. However, by merely describing the findings of various studies, and by failing to abide by the findings that disagree with the proposed plan, BLM shows itself to be ignoring the science.</p> <p>Body-Condition Improvement Could Lead to Gender-Ratio Imbalance</p> <p>The EA cites a study that noted the improved body-condition of mares whose reproduction had been curtailed via PZP. This effect is cited as if it were a good thing. However, a study of mares' body-condition and their subsequent foaling-record, showed that mares in good or improving condition tend to foal colts, while mares in poor or declining condition tend to foal fillies. The difference is significant. The researchers found that 97 percent of mares who were losing condition at time of conception foaled a filly, while 80 percent of mares who were gaining condition when they conceived foaled a colt. Therefore, PZP may correlate with an <i>improvement</i> in body-condition but lead to a <i>lopsided gender-ratio</i> favoring males</p> <ul style="list-style-type: none"> •http://www.australianwesternhorseshowcase.com.au/Features/nz-study.html <p>Coincidentally, a visitor to the Onaqui HMA in 2013 remarked on the obvious gender-</p>

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	<p>imbalance of the horses. "It seemed to me that the sex ratio of the herd was quite skewed with many more males than females"</p> <p>•http://mollyshoofjourney.blogspot.com/2013/07/my-visit-to-onaqui-mountain-mustangs.html</p> <p>However, other studies have not found that PZP helped mares be in better body-condition. Those studies found a <i>decline</i> in body-condition for stallions with <i>no improvement</i> in body-condition for mares.</p> <p>Slow Return to Fertility Acknowledged in EA</p> <p>The EA cites two studies, both by the developer of PZP, that reported the average time it takes PZP-treated mares to recover their fertility. The mean is 3.7 years, but could be as long as 8 years. Because SLFO plans to contracept fillies and mares for five consecutive years, if those mares do regain fertility, they would, on average, be about 10 years old, but they could be as old as 14. This long delay could result in their perishing of natural causes before ever giving birth.</p> <p>The EA goes on to note, apparently with curiosity but not concern about the risk of sterilization:</p> <p>The same study demonstrated that mares treated from one to five consecutive years returned to fertility, but mares treated for seven consecutive years did not. There could be some differences seen with the Onaqui horses as they have received the experimental drug PZP -22 and the mares in the study on Assateague Island have been given just the liquid form or ZonaStat-H.</p> <p>NATURAL SELECTION</p> <p>Pumas instead of PZP</p> <p>What population control is superior to PZP? Pumas. There can be no "thriving natural ecological balance" without apex predators. Mountain lions, wolves, and other such carnivores effectively control wild horse populations by targeting the weak, the sick, the young, and the old. Predators ensure survival of the fittest, as Nature intends. Therefore, the best approach is for BLM to concentrate on promoting and then protecting native predators to permit natural control of the wild horse population on the range.</p> <p>Mountain Lions Are Effective Population-Control Agents for Wild Horses</p> <p>Many studies have established that mountain lions prey on wild horses more frequently than previously believed. Canadian biologists found that cougars tended to kill younger animals, especially when preying on feral horses. Nearly all of the cougars' predation-events (86%) involved animals less than 2 years old.</p> <p>•http://sci-northern.ab.ca/wp-content/uploads/2010/12/CougarKillRateandPreyComposition.pdf</p> <p>In an interview with the <i>Billings Gazette</i>, the above study's lead researcher, Kyle Knopf, described observing a cougar that brought down a feral horse in less than 30 yards from where it attacked.</p> <p>•http://billingsgazette.com/lifestyles/recreation/article_d9cf046b-2c47-539f-a267-972e72e570b6.html</p> <p>Other research confirms that mountain lions are quite capable, all by themselves, of keeping wild horse populations in check.</p> <p>The Montgomery Pass Wild Horse Territory, on the California/Nevada border, has had its population managed by cougars alone. An eleven-year study concluded that the growth of this herd was limited by cougar predation. In fact, the population actually <i>decreased</i> over the course of the research.</p> <p>•http://www.jstor.org/discover/10.2307/3672527?uid=2129&uid=2&uid=70&uid=4&sid=21101018535373</p> <p>The Nevada Wild Horse Range (current designation) averaged <i>negative</i> population growth due to cougar predation from 1989 to 1998 (Greger and Romney, 1999).</p>

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	<p>•https://ojs.lib.byu.edu/ojs/index.php/wnan/article/viewFile/941/1745</p> <p>Per The Cloud Foundation, the Pryor Mountain herd averaged <i>no</i> population growth over a four-year period due to predation by mountain lions. Only when those lions were killed - - so that BLM could continue practicing management of the herd with PZP -- did the wild-horse population begin to grow.</p> <p>Healthy Predators, Healthy Ecosystems</p> <p>Minimum feasible management means letting natural selection do its job. Mountain lions, wolves, bears, and coyotes should be allowed to carry out their role of population-control agents. Predators will cull the weak, and a thriving natural ecological balance will ensue. Conservation Researcher Dr. Corey Bradshaw emphasizes "... just how important predators are for healthy ecosystems. Long story short – if your predators are not doing well, chances are the rest of the ecosystem is performing poorly."</p> <p>Due to pressure from livestock and hunting interests that mistakenly view predators as pests, it has been the Federal government's practice to exterminate native predators outright or to allow them to be hunted on a massive scale. That policy is wrong. Predators function to keep the ecosystem in balance. Without them, prey species decline, as do the forage-production species on which the prey-animals feed. Dr. Bradshaw warns: "Without predators, our feeble attempts to conserve ecosystems are doomed to fail." Here's the link to his article:</p> <p>•http://conservationbytes.com/2012/11/21/essential-predators/#more-8024</p> <p>Predator Protection</p> <p>The HMA should be a safe-haven for predators, which will serve as wild-horse population-control agents. SLFO should concentrate on promoting and then protecting native predators to enable natural control of the wild-horse population on the range. A puma, bear, wolf, and coyote-protection program should be implemented. BLM should collaborate with the Utah Division of Wildlife Resources to prohibit hunting of predators in the HMA. Concerned livestock operators and residents of the surrounding area should be advised to use guardian-dogs to protect their animals. There are several specialty-breeds that have been developed just for this purpose, and they are reportedly effective. Protecting one's herd is just part of the cost of doing business.</p> <p>GENETIC HEALTH AND LONG-TERM VIABILITY</p> <p>Onaqui Herd -- Gene-Pool Changed by Introduction of Mustangs from Other Herds</p> <p>The EA describes and later reiterates how SLFO has intervened over the years to inject new bloodlines into the Onaqui herd's gene-pool:</p> <p>To ensure the genetic diversity of the herd, the Salt Lake Field Office in 2005 released approximately 10 stallions and 10-15 mares from other HMA's outside the state and from within the state. Since the large release in 2005, we have every 3-4 years released another 3-5 horses into the HMA.</p> <p>Past actions that have affected the genetic diversity of the herd are: from 2005 to 2011 the SLFO has released horses from other HMA's to ensure the genetic diversity of the herd is not lost and/or increased. In 2005 there were approximately 10 stallions and 15 mares released. Since then we have also released 3-5 mares every 3-4 years. The released horses came from other states as well as other HMA's within Utah.</p> <p>These practices evidence that SLFO's population-management-approach is a <i>failed strategy</i>. If transplantation / translocation of wild horses from other HMAs -- and even from other states -- is necessary to support genetic viability, then the Onaqui herd is not genetically <i>self</i>-sustaining but is instead <i>BLM</i>-sustaining. Thus, SLFO is in violation of the Act and its implementing regulations by failing to provide for a self-sustaining herd.</p>

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	<p>The solution is to allow a higher population, per scientific guidelines.</p> <p>BLM -- Too Involved in Selecting Horses to Go, Horses to Stay</p> <p>Natural selection is the way a wild-horse herd should be molded. Human-directed selection of which horses will be allowed to breed, when, and how often, interferes with natural processes. Therefore, it is cause for concern that the EA states:</p> <p>In the future SLFO would be proposing to do selective removals with bait trapping. While doing the bait trapping we may gather horses that we don't want to remove. Salt Lake Field Office staff will be on site to determine if the horses caught in the trap should be removed or not.</p> <p>Thus, BLM is essentially running a breeding program instead of letting Nature determine those horses best-suited for survival. This is not -- and should not be -- BLM's role. Further, the projection of future removals, in spite of the ongoing, massive contraception that SLFO proposes to use on this herd, evidences that PZP does not prevent wild horses from losing their freedom.</p> <p>Genetic Analysis of the Onaqui Mountain Herd</p> <p>Per Section 6.1 "References Cited," the most recent genetic analysis on the Onaqui Mountain herd was conducted seven years ago -- in 2008. There have been two gathers with removals and fertility-control actions taken since then. Now, SLFO is planning intensified contraception in the absence of genetic data.</p> <p>Dr. Cothran's 2008 report was not included as an attachment, and the EA is silent as to his findings. The fact that SLFO has repeatedly imported wild horses from other HMAs and other states to increase the Onaqui herd's genetic diversity suggests that Dr. Cothran's analysis showed a decline in genetic variability. In such cases, Dr. Cothran typically recommends an increase in the population. However, if resources do not permit an increased population, then injecting new bloodlines is a last-ditch resort. Although the resources of the Onaqui Mountain HMA should easily accommodate a viable population, SLFO has opted to truck in horses from other HMAs. Surely this is an example of maximum meddling instead of minimal management.</p> <p><u>Recommendations:</u> SLFO needs to conduct a 100-percent evaluation of the Onaqui Mountain herd's genetic health per DNA samples tested by the Equine Genetics Lab. Per those results, and per guidance from Dr. Cothran, and per consultation with wild-horse-and-burro advocates, BLM must then develop best management practices to restore and maintain gene-pool diversity via a robust population-level. An AML is valid only if it provides for an <i>optimal</i> population -- one that can easily self-sustain its genetic viability and bounce back from random catastrophic events. Saying that the Onaqui herd must be kept "within AML" is not a meaningful statement because the current AML does not provide for a self-sustaining, genetically-viable herd. Therefore, BLM has no valid justification for contracepting <i>any</i> fillies or mares in the Onaqui HMA. It is <i>not</i> scientifically valid to contracept in ignorance -- without regard to the herd's genetics. Submitting DNA samples after-the-fact is out of order. The correct order is:</p> <ul style="list-style-type: none"> ●Sample first. ●Sample large -- 100 percent ●Sample regularly -- every year ●Test samples. ●Manage per test-results. <p>There should be no management-decisions made without knowledge of the genetic profile for each herd-member.</p>

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	<p>No Impacts to Genetic Diversity?</p> <p>The EA makes the following claim about the effects of its PZP-plan: "No possible impacts to the genetic diversity of the herd as all horse would have a chance to reproduce." A chance? SLFO evidently has not thought through its proposal because the PZP-plan would likely diminish genetic diversity to the point of causing the Onaqui herd to go extinct.</p> <p>Half of wild foals perish before their first birthday (Gregg <i>et al.</i>, 2014). So, the chances are 50:50 that a mare restricted to one live foal would lose her genetic contribution. If her foal were a colt, and if he did survive to adulthood, he might never sire an offspring, resulting in both his own and his dam's genetic contribution being zero. If the foal were a filly, and if she managed to survive to adulthood, she might well already be sterile from multiple, consecutive PZP injections, resulting in both her own and her dam's genetic contribution again being zero. At the herd-level, genetic diversity would decline steadily, as has been the case for years now. BLM's plan constitutes management-to-extinction.</p> <p>BLM -- Wrong Assumptions regarding Wild-Horse Reproduction</p> <p>The EA assures itself that ...</p> <p>Due to the relatively long time between generations (~10 years) and the long reproductive life-span of individual horses, the loss of genetic material from the herd is relatively slow and able to be monitored and mitigated by management.</p> <p>Equine reproduction is indeed a slow process. If she's lucky, a mare may produce one foal a year. Living in the wild, a mustang-mare will likely lose that foal before it reaches its first birthday. She herself may perish. All that is bad news for genetic viability at the herd-level. Hence, an <i>optimal</i> population is necessary. A self-sustaining herd should not need monitoring and mitigation by management.</p> <p>AMLs Should Provide for Better Than MVP, but Must Provide for At Least MVP</p> <p>BLM is required by law to manage the wild horses in self-sustaining herds. To be self-sustaining, a herd must be genetically viable. To achieve viability, sufficient population is necessary.</p> <p>A scientifically-valid AML needs to comply with the recommendations of the International Union for Conservation of Nature (IUCN) regarding minimum-viable population (MVP) for equids. An "appropriate management level" (AML) should have a baseline -- a starting point -- of at least 2,500 horses. This level is the recommendation of the IUCN, the world's oldest and largest global environmental organization. The IUCN is a neutral forum for practical solutions to conservation challenges and a leading authority on the preservation of genetic diversity in wild equids, including feral horses and burros. The IUCN notes that the selective pressures wild equids have endured in the wild are likely shaping them genetically to be hardy stock that could prove useful as a genetic resource.</p> <p>•http://data.iucn.org/dbtw-wpd/edocs/1992-043.pdf</p> <p>Because neither the present AML nor the most-recent population-figure reaches the minimal threshold of 2,500 individuals, the Onaqui herd is <i>under</i>-populated. The number of horses must be increased accordingly.</p> <p>Onaqui HMA -- Utah -- AML, and Acres per Wild Horse -- <i>Current</i></p> <p><u>AML</u>: 121 to 210 -- Below minimum-viable population</p> <p><u>BLM acres</u>: 206,878 which is approximately 323¼ square miles</p> <p><u>Acres per wild horse</u>: 1,063 - 1,610 -- about 1⅔ to 2½ square miles per horse</p> <p>Onaqui HMA -- Utah -- AML, and Acres per Wild Horse -- <i>Recommended</i></p>

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	<p><u>AML</u>: 2,500 -- Meets minimum-viable population per IUCN <u>BLM acres</u>: 206,878 -- which is approximately 323¼ square miles <u>Acres per wild horse</u>: 83 -- about 8 horses per square mile</p> <p>Restore Original Onaqui Mountain Herd Area</p> <p>The current HMA was carved out of a much larger herd area (HA). In that process, BLM took away 168,969 acres of wild-horse habitat. The HA needs to be reinstated as Onaqui herd habitat. The restored acres will easily support the needed increase in herd population.</p> <p><u>Restored Herd Area acres</u>: 375,847 -- which is about 587¼ square miles</p> <p>IUCN-size minimum population: 2,500 wild horses Acres per wild horse: 150- about 4 horses per square mile</p> <p>BLM's National Authorized Livestock AUMs</p> <p>But can a restored HA of 375,847 acres sustain 2,500 or more wild horses at 150 acres per horse? Can the current HMA of 206,878 acres sustain 2,500 or more wild horses at 83 acres per horse? BLM's approach to authorizing appropriate levels of livestock-grazing suggests the answer to both questions is "Yes".</p> <p>Below are the National statistics for authorized commercial livestock-grazing on BLM lands per animal-unit months (AUMs). Note the stocking rate: One cow or calf per 38 acres.</p> <p>157,000,000 acres of public lands on which BLM allows cattle 1,033,333 cow+calf pairs that BLM permits to graze = AUMs annualized 2,066,666 cow+calf pairs per typical 6-month permit = annual AUMs x 2 4,133,332 cows and calves = pairs x 2 38 acres per cow or calf</p> <p>PRINCIPAL USE</p> <p>HMA's Must Be Managed Principally for Wild Horses and Burros</p> <p>HMA's are wild-horse habitat-zones. Wild horses must enjoy principal use of their HMA's. This requirement is stated plainly in the Wild and Free-Roaming Horses and Burros Act, which stipulates that their land is to be "devoted principally but not necessarily exclusively to their welfare" Thus, HMA's do not <i>necessarily</i> have to be managed <i>exclusively</i> for wild horses ... <i>although they can be</i>. However, HMA's must be managed <i>principally</i> for the welfare of our heritage-horses.</p> <p>Moreover, multiple-use does not mean every-conceivable-use. Incompatible uses can be excluded, as Secretary Jewell testified during her Senate hearing after being nominated. Some examples of incompatible uses appear obvious -- mining and off-road vehicles. HMA's should be designated "no surface occupancy" (NSO) areas -- to preserve aesthetic and recreational values and to avoid disturbing the horses' natural behavior. HMA's should also be declared "off-limits" to off-highway-vehicles (OHVs) -- to protect the peace-and-quiet of the range and the cleanliness of the ambient air.</p> <p>Onaqui Mountain HMA is not being managed according to the Law because the wild horses are not allotted principal use of their habitat. Livestock -- like locusts -- devour the HMA's resources. The wild horses have been displaced by encroaching livestock.</p> <p>This inversion must be righted, and SLFO must employ the right mechanisms to do so. First, SLFO needs to rescind this EA. Then, it must amend the Land-Use Plan (LUP), Resource Management Plan (RMP), the Final Multiple-Use Decision (FMUD), and the Herd Management Area Plan (HMAP) to conform with the Law.</p> <p>Disproportionate Allocation of Forage Must Be Corrected</p>

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	<p>What is wrong with this picture?</p> <ul style="list-style-type: none"> • 12,097 -- Monthly grazing units (AUMs) allotted to livestock in the Onaqui HMA • 2,252 -- Maximum AUMs allotted to wild horses in the Onaqui HMA <p>Livestock have been awarded nearly 5½ times more grazing slots than the wild horses have been within the HMA. (Data on livestock AUMs found on pdf-page 17 of the 2012 Cedar Mountain and Onaqui Mountain Wild Horse Herd Management Areas Capture, Treat and Release Plan.) This proportionment is obviously inverted. It must be corrected. The Onaqui wild horses must receive the majority of the grazing slots -- the animal unit months (AUMs) -- within their HMA.</p> <p>Authorized v. Actual Livestock Use</p> <p>BLM may argue that <i>actual</i> livestock use is lower than authorized or permitted use. But because actual use is whatever the permit-holders report on Form 4130-5, and because BLM essentially takes the permit-holders' at their word and bills accordingly ... eventually ... after-the-fact ... maybe ... or maybe not -- see Bundy, Cliven -- the actual-use number is unverified and likely grossly under-reported.</p> <p>And what has Mr. Bundy been up to lately? Since the Federal authorities backed down, he has "really enjoyed some liberty and freedoms out here." <u>Translation</u>: He continues grazing his cattle on the same public lands where he hasn't paid grazing fees in 20 years. Reportedly, those unpaid fees are now up to \$1,200,000.</p> <ul style="list-style-type: none"> • http://www.washingtontimes.com/news/2014/dec/29/rancher-cliven-bundy-still-grazing-his-cattle-on-d/?page=all <p>Actual Grazing Use Report -- Form 4130-5</p> <p>As alluded to above, permittees are required to submit an annual report of how many livestock they put out on their respective allotments and for how long. Form 4130-5 "Annual Grazing Use Report" is used for this purpose. It's a one-page document that BLM estimates to take 15 minutes to complete "... including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form."</p> <ul style="list-style-type: none"> • http://www.blm.gov/style/medialib/blm/noc/business/eforms.Par.2064.File.dat/4130-005.pdf • http://www.gpo.gov/fdsys/pkg/FR-2014-08-22/html/2014-20049.htm <p>Form 4130-5 is the basis on which BLM bills the permit-holders. It is also the basis for the claim of reduced-use. Thus, grazing-use is a self-reporting, self-certifying system that is rarely verified. The ease with which permittees could game the system is obvious. Consequently, the veracity of the reports is suspect.</p> <p>Bundy-Supporting Permittee Grazed His Livestock beyond Authorized Use</p> <p>In neighboring Nevada, permit-holder Kevin Borba, whose allotment includes land inside the Fish Creek HMA, engaged in unauthorized livestock-grazing "consistently for six months" outside the permitted use. He had his cattle out there year-round. He owes \$29,410.62 in fees and fines for willful trespass, but has subsequently sued BLM over the loss of his "rights" and to stop BLM from returning <i>any</i> wild horses to the range following the recent gather.</p> <ul style="list-style-type: none"> • http://wildhorseeducation.org/2015/01/09/nevada-rancher-gets-bill-for-livestock-trespass-in-wild-horse-area/ <p>Such abuses by permittees are likely widespread. Cliven Bundy and Kevin Borba are not alone in this regard. Utah has its share of rogue-ranchers too, as events last summer demonstrated.</p> <p>POPULATION ESTIMATES</p> <p>Historical Perspective on the Onaqui Herd's Foaling-Rate</p> <p>A <i>Google</i>-search to find background information on the Onaqui Mountain herd happened across an entry by <i>kbrhorse.com</i>. The article posted at the <i>kbr</i> site mentioned that, in 1991, a population-survey had been conducted. That census counted 169 horses -- 158 adults</p>

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	<p>and 11 foals. These results suggest a foaling-rate of 6½ percent.</p> <ul style="list-style-type: none"> •http://www.kbrhorse.net/wclo/onaqui.html <p>No PZP was used back-in-the-day, yet the natural birth-or-survival rate was <i>below</i> SLFO's goal for today's Onaqui herd. Moreover, the herd has been contracepted since 2005 with powerful and long-lasting drugs. Yet, SLFO continues to estimate its population per growth-rates that are many times higher than was the case <i>without</i> the drugs.</p> <p>Longitudinal Study Demonstrates Growth-Rate of Less Than Ten-Percent</p> <p>The International Society for the Protection of Mustangs and Burros (ISPMB) recently completed a 14-year study of wild-horse population-growth. The ISPMB herds have been managed per the "hands-off" minimum-feasible level specified in the Wild and Free-Roaming Horses and Burros Act.</p> <p><u>Results:</u> Although the ISPMB alludes to a 10-percent-per-year growth-rate, to be precise, the average annual growth-rates for ISPMB's "White Sands" and "Gila" herds were, respectively, 5.08 percent and 8.73 percent. Herd-stability and the presence of older horses appeared to be key-factors in limiting each herd's growth-rate. It is significant that, during the study-period, there were ...</p> <ul style="list-style-type: none"> •No removals •No predators •No PZP <p>Here is the link to the letter sent in this regard from ISPMB to the Department of the Interior and Bureau of Land Management.</p> <ul style="list-style-type: none"> •http://www.ispmb.org/Letter.html <p>Below is the link to a recent post by ISPMB, citing the low population-growth of the Gila Herd. From a starting-population of 31, after 14 years, it reached 100 members. That growth reflects an average annual increase of 8.73 percent.</p> <ul style="list-style-type: none"> •http://ispmb.org/BirthControlDebate.html <p>Per this study, BLM's assumption of a consistent 20-percent annual growth-rate is questioned.</p> <p>Independent Research Discloses a Ten-Percent Foal-to-Yearling Survival-Rate</p> <p>A study of BLM roundup-records for a representative sample of four herd management areas was recently published (Gregg, LeBlanc, and Johnston, 2014).</p> <ul style="list-style-type: none"> •http://protectmustangs.org/wp-content/uploads/2014/04/PM-Population-Growth-4.25.14-FINAL.pdf <p>The researchers found an <i>effective</i> foal-to-yearling survival-rate of just 10 percent. No matter the birth-rate, what counts is <i>survival</i>. The same pattern likely holds true for the Onaqui herd. Yet, SLFLO's data painted a picture of a burgeoning population.</p> <p>Onaqui HMA -- Population and Gather Reports -- Data Sources</p> <p>Per a review of the ...</p> <ul style="list-style-type: none"> •<i>HMA and HA Statistics</i> reports for the Onaqui herd from 2005-2014, •<i>Completed Gathers</i> reports from 2009-2014, and the •<i>Gather-and-PZP</i> figures reported in the EA and associated documents, discrepancies were found. <p>Onaqui HMA -- Utah -- Herd Population Changes -- 2005 to 2015</p> <p>The following chart¹² merges the yearly population-estimates with the gather and contraceptive data to reveal how the numbers were calculated and <i>where errors were</i></p>

¹² The chart was not formatted for copying here in Table 4. For reviewing its content, refer to the original email sent on 3/6/2015.

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	<p><i>made</i>. <u>Note</u>: BLM has yet to announce its <i>beginning-of-the-year</i> population-figure for 2015.</p> <p>The discrepancies identified herein cast doubt on the validity of the population-estimates. These errors must be reconciled before <i>any</i> decisions regarding birth-control or removal-actions are considered.</p> <p>Societal Impact of Inflated Population-Data</p> <p>The population-estimates for the Onaqui HMA are flawed, exaggerated. The political fallout of this error has been to keep the public in an uproar over an "overpopulation" that BLM's faulty figures portrayed.</p> <p><u>Recommendations</u>: BLM needs to correct these errors and, more importantly, acknowledge them to the public. You must correct the record and make genuine efforts to stop this <i>phony-story-gone-viral</i> of a wild-horse population-explosion in Utah.</p> <p>Mistakes Cost Wild Horses Their Fertility</p> <p>The planned contraceptions appear to have been hurriedly scheduled to placate the seditious elected officials and their rogue-rancher constituents, who are making a play for taking over the Federal lands in Utah. However, the wild horses must not lose their fertility merely so that BLM can kowtow to rebellious elements in the human population. If you "come clean" and admit your errors, it will deflate the "head-of-steam" that the officials and ranchers are building due to the false appearance created by false figures.</p> <p>Neither the First Nor the Second Time Estimates Were Found to Be Flawed</p> <p>In May 2014, I submitted comments regarding the environmental assessment for Bible Spring Complex, which is located in Utah but is <i>not</i> under SLFO's jurisdiction. Cedar City Field Office administers it. For the three HMAs and the one HA that compose the Bible Spring Complex, major discrepancies were disclosed -- <i>one-year growth-rate-estimates</i> of 125%, 131%, 153%, 157%, and 249%.</p> <p>Last week, I submitted comments on Cedar City's "public health and safety" gather of over 100 wild horses from the Sulphur HMA. A review of the population-estimates for that herd disclosed that BLM had assumed an 87-percent herd-growth rate for a particular year in which PZP would have been at maximum efficacy.</p> <p>Now, a review of BLM's data for the Onaqui HMA disclosed errors that made the herd appear to be growing at high yearly rates even when PZP was at maximum effect. Numbers were increased arbitrarily.</p> <p>Thus, the many errors regarding wild-horse population-estimates, uncovered across different BLM-Utah field offices, are not isolated instances. These disparities point to a <i>systemic problem</i>.</p> <p><u>Recommendations</u>: BLM needs to correct its mathematical errors and acknowledge those mistakes to the public. Elected officials, local permittees, and ordinary taxpayers need to know that the population-estimates previously announced for the Onaqui HMA were wrong. BLM must take responsibility and inform the public that it inadvertently portrayed an incorrect picture -- an exaggerated picture -- of the herd's population.</p> <p>SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS</p> <ol style="list-style-type: none"> 1. Abandon the use of contraceptive pesticides such as PZP on the Onaqui Herd. 2. Amend the land-use plans to provide a robust AML whose low-bound is 2,500. 3. Conduct a 100-percent evaluation of the Onaqui Mountain herd's genetic status. 4. Conserve and protect native predators, especially mountain lions. 5. Restore the acreage of the original Onaqui Mountain Herd Area. 6. Adhere to the mimumim-feasible-management requirement of the Act.

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	<p>7. Administer the Onaqui HMA for the principal use of its wild horses.</p> <p>8. Correct the population-estimates and advise the public how much they were inflated.</p>
8	<p>BLM Response: The public participation process is outline in EA sections 1.2 and 5.4. As noted by the commenter, SLFO offered a 30 day public scoping period and a 17 day public comment period. SLFO received 2 comments during scoping and approximately 7,299 during the comment period. SLFO extended the comment period an additional 6 days. In this timeframe, 194 comments were received and only 2 were received after the March 13, 2015 closing date. A longer comment period was not warranted.</p> <p>In accordance with the BLM NEPA Handbook and the Utah BLM NEPA Guidebook, external scoping and comment periods are only required for an EIS. However, the authorized officer elected to offer both periods in this instance. SLFO acknowledges the point made by the commenter and will do a better job notifying the wild horse interest groups at the scoping stage of future proposals.</p> <p>Currently, BLM Utah utilizes the ENBB, NEPA register as its primary means for notifying the public of proposed actions and updates. The ENBB is a frequently used and popular webpage and is accessed by the public in a variety of ways. The ENBB and its instructions for use are the first link provided on the NEPA webpage.¹³ The ENBB is user friendly in that at the main page it will show what projects are new and updated in the past week. A user can sort projects by field office, document type and primary author/specialists. Projects, including this one, are also made available in the public room at the SLFO during normal business hours. This webpage has been available to the public, including wild horse advocacy groups, for several years. The offices that participated in the scoping period of this EA are frequent users of the ENBB.</p> <p>The length of time between when this project was initially posted, to when the EA/unsigned FONSI was released for public comment was approximately 257 days. This timeframe also included the 30 day scoping period. SLFO by practice accepts public inquiry and information throughout the NEPA process prior to making a decision. All substantive comments received before reaching a decision must be considered to the extent feasible (40 CFR 1503.4). SLFO has not rushed this project and has taken care to gather data and information and to consult with wild horse experts as well as researchers experienced with PZP use and effects.</p> <p>News releases are one form of public outreach. SLFO elected to send out a news release as well as an email to individuals on the mailing list to announce that the EA and unsigned FONSI were being made for public comment.</p> <p>The information provided was reviewed. Accredited research was incorporated into the impact analysis. Changes to the proposed action were not warranted.</p> <p>SLFO conducted a thorough review of the information provided. A comment that expresses professional disagreement with the conclusions of the analysis or asserts that the analysis is inadequate may or may not lead to changes in this EA. It is unclear where the commenter has found the information used for their comment. For example, the commenter describes “other studies have not found PZP helped mares be in better condition. Those studies found a decline in body condition for stallions and no improvement in body condition for mares.” These studies were not cited for which SLFO could review or apply that information. It is also unclear how they wanted to use or intended for it to be used within the EA. SLFO is unable to compare the content against</p>

¹³ Utah BLM NEPA webpage can be accessed online at: <http://www.blm.gov/ut/st/en/info/nepa.html>. This main page was last updated in March 2011. Specific projects, including this EA are updated as necessary.

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	<p>accredited research. The commenter states there are errors but do not specify which errors need to be fixed. Some recommendations or expectations are outside the control of the BLM (for example predator control or establishing their numbers). BLM has attempted to add clarity to numerous points made by the commenter throughout the EA. Section 3.3 was edited to incorporate population estimates and genetic information. For a summary of changes to the EA, refer to section 5.4.1.</p>
9	<p>Protect Mustangs, Anne Novak</p> <p>The public was not informed as they should have been according to NEPA of your proposal https://www.blm.gov/ut/enbb/files/Onaqui_Fertility_Control_EA_2_18_15.pdf The scoping period's notice was hidden, and the EA's comment-period was cut in half. These actions show a lack of transparency on the part of the BLM and mocks the public process to participate with comments. We request you start over with a full 30 day public comment period.</p> <p>We are against the outrageous proposal to forcibly drug any wild Onaqui mares with PZP - the EPA restricted-use pesticide also known as ZonaStat-H. (http://www.epa.gov/pesticides/chem_search/reg_actions/pending/fs_PC-176603_01-Jan-12.pdf) The drug sterilizes wild mares after multiple use and disrupts natural herd dynamics amongst other horrors. How many times has each Onaqui mare or filly been drugged previously? Drugging any wild filly under the age of 2 is barbaric. Her reproductive system has not developed completely. Forced drugging of fillies and mares until they are 6 will ruin their chances of ever producing healthy offspring who can survive the environmental changes ahead. We request you do not use PZP or any other sterilant or sterilizing procedures on the Onaqui mares for fertility control or for any other reason. Experimentation and roundups must stop now.</p> <p>Roundups increase global warming and must stop immediately. The vehicles and aircrafts used to implement the proposed PZP programs also increase global warming as well as harm the fragile ecosystem on the Onaqui herd management area.</p> <p>We endorse the no action alternative and ask that you do not remove any Onaqui wild horses as their population numbers are too low now. Land-use plans should be modified to have a higher AML ensuring herd survival and genetic variability with predators such as mountain lions protected.</p> <p>Holistic management should be used from this day forward for recovery and to adhere to the minimum-feasible-management requirement of the 1971 Free Roaming Wild Horse and Burro Protection Act.</p> <p>Our members enjoy observing, filming and photographing the Onaqui herd and would be devastated if the mares or fillies would receive PZP or any other sterilizing agent that will ruin natural herd behavior and the survival of the herd.</p>
9	<p>BLM Response: Refer to comment #8.</p> <p>BLM addresses greenhouse gases and air quality in the interdisciplinary team checklist contained with Appendix B.</p> <p>In accordance with the BLM Director's 10 year planning schedule,¹⁴ SLFO was slated to prepare its "Pre-Plan" in FY2015. However, this action was not initiated at this time. The preparation to plan document initiates the planning process. Public participation would have begun in FY2016 with the development of planning criteria and scoping. Approval to</p>

¹⁴ Director's Planning Schedule (Updated November 2013) can be accessed online at: http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/planning_images/planning_image_folder.Par.30788.File.dat/Director%20Planning%20Schedule_FY2013.pdf

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	<p>start the planning process has not been made by the WO. The plan revision's tentative schedule would be identified at that stage. The Director's planning schedule is subject to funding and prioritization.</p> <p>Certain areas of the SLFO, including the area of the Onaqui HMA, are currently under planning constraints as identified by the National Defense Authorization Acts for FY2000 and FY2006. Additional steps will be required for compliance with this law at section 2815, Study and Report on Impacts to Military Readiness of Proposed Land Management Changes on Public Lands in Utah.</p> <p>As included in section 2.4.3, forage allocations for wildlife, wild horses, livestock and watershed requirements would be reviewed at the land use planning level. Closing areas to livestock grazing can only be done at the planning level.</p> <p>As noted in our response to comment #5, adjusting the AML or HMA boundaries is outside the scope of this EA. SLFO notes that in 1999, it published in two <i>Federal Register</i> notices (Vol. 64, No. 92, May 13, 1999, pages 25900 to 25901 and Vol. 64, No. 141, July 23, 1999, page 40034) which announced our intent to amend the Pony Express RMP to establish an AML and evaluate the HMA boundaries for the Onaqui and Cedar Mountain herds. This process was completed in in 2003 as documented in the Wild Horse Appropriate Management Level and Herd Management Area/Herd Area Boundary Environmental Assessment, EA UT 020-2002-010 and its corresponding DR/FONSI issued on 2/19/2003.</p> <p>Wild horse viewing opportunities would still occur under both the proposed and no action alternatives.</p>
<p>10</p>	<p>Irene DelBono</p> <p>I have reviewed the subject EA and associated documents regarding the plan to continue to apply the contraceptive Porcine Zona Pellucida (PZP), also known as ZonaStat-H, on the fillies and mares of the Onaqui Mountain Wild Horse herd. I am submitting substantive comments.</p> <p>The following are my comments on the subject plan:</p> <p>1.3: "thriving natural ecological balance": there is nothing in this report that explains or provides data on what is being balanced, and the relative effects of all of the usage of this area that contribute "to make progress towards achieving standards of rangeland health." It is clear reading further into the report that cattle leases will not be impacted (not that there are NO cattle leases). So it appears that the entire responsibility for making progress to achieving rangeland health is on a small number of horses. Nor are there any statistics or information on what other foraging species use this area, in what numbers, and what the impacts of each are on the rangeland health.</p> <p>A complete report that gave data on the cattle and other foraging species would be necessary in order to make a determination of how effective this plan is, relative to what damage is done by cattle and what, if any, comparable measures are being taken to minimize the impacts of cattle on rangeland health.</p> <p>In addition, there are no statistics showing the number of horses each year that are expected to die from all causes. For instance, if there is a drought and no water, what effect does that have on the herd? Same for predators, disease, illness, injuries, failure to thrive, and foal mortality rates - how many foals generally achieve adulthood, and what are the causes of their deaths? Are any tests done on any of the deceased horses to determine if an outbreak of a disease is affecting them, or, as has recently been found when actual tests were done, liver and other damage from eating cattle feed.</p>

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	<p>1.5: "Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.</p> <p>See comment 1.3, incorporated herein by reference, regarding the lack of information on the "big picture" of all foragers and their relative impacts on the habitat. The balance the management plan speaks of simply cannot be determined in a vacuum, or with a spotlight on the horses while all other uses remain in darkness, unaddressed, unaccounted for, and unknown to those of us who truly want to contribute helpful suggestions and useful alternatives. This plan is extraordinarily deficient in adequate information for any kind of planning because we have no way of knowing what other contributions and detriments there are to range health. Just stating it is a problem that is attributable to the horse populations is neither scientific, nor based on data. If you have data, it should be disclosed so that full and robust comments and suggestions can be made.</p> <p>2.2: There was no indication of what precautions would be taken to insure that mixing the PZP would occur in a sanitary environment that would prevent dust and other contaminants from entering into the mix, nor whether the darts would be sterile. The problems that were noted may be from unsterile darts. There was also no information on how the darts work mechanically or how they are retrieved. Do they have sensors or other tracking mechanisms on them? Do ALL of the darts separate from the horses, and if not, what happens when the horses bump up against something or lay down on the dart? Also, the statement that PZP is approved. There is no explanation why it is approved for wild horses but not for domestic horses. If it is entirely safe, why is it not used on or recommended for domestic horses?</p> <p>There is no explanation of what the fertile stallion/mare ratio is before and after the process of darting and/or removal. There is some discussion about the effect on the relationship of the stallion and PZP treated mares, but it is inadequate to understanding the overall macro and micro effects on each band. It appears to result in disengagement from the group dynamics and connections, but no discussion of how those interactions affect what would be normal dynamics, or the negatives or positives of the change.</p> <p>2.2.2: Does the record keeping include data on horses that had records but the horses no longer appear to be with the herd? Is there any follow up? What is the ratio, of horses that are missing, of those treated with PZP and those not treated? Are any attempts made to find them and determine what happened to them so that there is better information about attrition rates and causes?</p> <p>2.2.3: See comment in 2.2, incorporated herein by reference.</p> <p>2.3 No Action: There is no data or information on what the range conditions have been historically, what they are now, and what they are anticipated to be if the plan to use PZP is put into action. How do you propose a solution for a problem (range health) without discussing the health of the range, and how the plan will address the problem. There is no information about all the contributors to the health of the range, positive and negative. Drought? Grazing? Water? Lack of vitality and vigorous regeneration of plant material?</p> <p>Are there types of grazing that are more detrimental than other types? Who are all the consumers or contributors to the health of the range? What is the contribution of each user, to or against a healthy range? What percentage of each class of user/consumer is causing the harm to the health of the range? What is being done to reduce/control/restrain the use/damage to the rangy by other users?</p> <p>While continuing to monitor vegetation and population is good, even better is to actually do something about vegetation. If farmers sat and monitored their land, without planting</p>

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	<p>anything or irrigating it, we would all starve. How about a program that plants any number of excellent foraging crops that thrive in the desert? Fix the problem, and not the symptom. If there was some co-operation among the users, it could go a long way towards fixing a lot of problems.</p> <p>2.4.1: Instead of helicopters to remove wild horses, perhaps low flying planes to seed the range.</p> <p>4.1: This is a very curious paragraph. Why is PZP 95% effective in "most" herds, but not all? What determines its effectiveness in some herds and not others? What is the difference between the herds? Have any studies been done?</p> <p>4.3.1.1: I am very disappointed that the studies are so outdated - 2000 and 2002? Surely there have been studies in the interim. Who funded those studies? Were any of the PZP manufacturers involved in the studies? Have there been any long term studies on domestic horses, including long term effects on the subjects and their offspring? If not, why not? Or were there studies but they are not being disclosed? Has the PZP formula changed since those early studies ? If so, shouldn't there be new studies? If the formula has not changed, then there is no excuse for not having a longitudinal longevity study showing its impact over the lifetime of the treated horses and their offspring.</p> <p>4.3.1.2: See comment to 2.2, incorporated herein by reference.</p> <p>4.3.1.3: Need more study and information on social disorder and prolonged foaling season. More information on why PZP treated mares change bands and exhibit higher infidelity more often.</p> <p>4.4.1: I would hope that the horses are already being studied for these components. It is precisely this lack of information or data that makes it difficult to intelligently comment on the overall plan or its details.</p> <p>Appendix A, page 23, no changes in grazing permits are warranted. No information on why, the relative effect on the range of the grazing permits vs. the horses. If the reason for the plan is to protect rangeland health, this plan is severely devoid of some of the most important information needed to determine how to protect rangeland health.</p> <p>page 26. No change to forage allocations to wildlife - wildlife would not be targeted. There is no information on what wildlife, or how large a population of wildlife there is that impacts the range. It is impossible assess and address range conditions without assessing all users and all impacts.</p>
10	<p>BLM Response: Refer to responses to comments #2, 5 and 9.</p> <p>SLFO utilized the "Thriving natural ecological balance" definition and use as established in the Act at section §1332. Definitions, (f) (2) and §1333. Powers and duties of Secretary, (a) and (b) (2) (iv).</p> <p>As per the Healthy Horses on Healthy Rangelands¹⁵ website, “the BLM’s goal is to ensure and maintain healthy wild horse populations on healthy public lands. To do this, the BLM works to achieve what is known as the Appropriate Management Level (AML) – the point at which wild horse and burro herd populations are consistent with the land’s capacity to support them. In the context of its multiple-use mission, AML is the level at which wild horses and burros can thrive in balance with other public land uses and resources, including vegetation and wildlife.”</p> <p>The HMA intersects the South Skull Valley, Onaqui Mountain West, Onaqui Mountain</p>

¹⁵ BML’s Healthy Horses on Healthy Ranges website can be accessed online at: http://www.blm.gov/wo/st/en/prog/whbprogram/herd_management.html

#	Comment Letter/BLM Response
	<p>East, South Clover, Ajax, East Onaqui R.C.A., Hill Spring, West Lookout Pass, Government Creek, Cottonwood West and Indian Springs grazing allotments. The SLFO assessed the interpreting indicators for Rangeland Health on these allotments in 1999, 2002, 2003, 2012, and 2013. It was recommended in the interpreting indicators for Rangeland Health that wild horses should be managed within the population ranges stated in the Onaqui Wild Horse Appropriate Management level amendment to the Pony Express Resource Management Plan. When livestock are a causal factor for not achieving the Utah Standards for Rangeland Health adjustments are made in accordance with environmental assessments and corresponding decision records.</p> <p>The HMA is approximately 206,795 acres. During annual monitoring, the presence or absence of individual horses is noted. If a horse cannot be located over a 2 year period, it is assumed that the horse has died. If a body of an individual horse is discovered, all attempts will be made to identify the cause of death.</p> <p>BLM has hauled water to livestock troughs that wild horses are known to frequent in periods of drought. This was last needed and done in 2002. SLFO uses other mechanisms (for example MOUs or grazing permit terms and conditions) with grazing permittees to leave water in troughs (depending on locations) that is made available to wild horses.</p> <p>PZP mixing safeguards are documented in Appendix D. Mixing would only be done by qualified specialists. Additional information on mixing procedures can be found online at: http://www.sccpzp.org/</p> <p>The darts are disposable, and after hitting the animal in the rump or hip (the only acceptable location for darting), they inject by means of a small powder charge, and then pop out. Because of their bright colors, the darts are usually retrieved in the field.</p> <p>Darts that have not been discharged cannot be discharged by stepping on them or by any other kind of casual contact. Over a six-year period on Fire Island National Seashore, and with more than 1,000 dartsing of deer, only two darts have not been recovered. Kirkpatrick <i>et al.</i> (2012).</p> <p>Record keeping would include documenting known births and deaths. If it can be shown that a wild horse has died due to violations of the Act an investigation would be pursued in accordance with the Act §1338. Criminal provisions. Efforts are made to locate all wild horses. Because of the sure size of the HMA and the effects of predation, individuals could be missed and their fate never determined.</p> <p>Rangeland within the Onaqui HMA is frequently burned over by wildfire. Emergency stabilization and rehabilitation efforts have taken place over the past 50 years or more. These efforts have included reseeding the range and fixing water troughs that have been damaged by the wildfire. Livestock and wild horse utilization studies, use pattern maps and trend studies have been collected and are available for inspection at the SLFO. Utilization levels or trend were not identified as an issue to be resolved.</p> <p>As suggested, SLFO reviewed the age of the references cited and found that the EA incorporates the most recent information to describe possible impacts. PZP use on equines has been studied in detail since the late 1980's. Domestic and wild horses are managed differently. Domestic mares are usually corralled and are not normally left with stud horses. Therefore the use of PZP is not necessary. PZP has definitely been tested and used on domestic mares. Private sanctuaries and Indian tribes are also known to use PZP for controlling equine birth rates.</p>

#	Comment Letter/BLM Response
11	<p>Form Letters, Various Individuals¹⁶</p> <p>These individuals supported the goal of balancing recruitment with death rates in effort to eliminate future removals of wild horses from the HMA. Most stated that this plan is in-line with the recommendations of the National Academy of Sciences. The Proposed Action should be adopted with some modifications (the time of year for treatment, the number of years a mare is treated, the age of a filly beginning treatment, allow mares to foal more than once in her lifetime, and develop a genetic roadmap). The use of PZP should be flexible enough to change if unintended consequences occur or unanticipated events happen. This would include eliminating a particular mare from the treatment program if the herd's genetic health would benefit.</p> <p>Consider increasing the herd AML.</p>
11	<p>BLM Response: Refer to response to comments #1 and 2.</p>
12	<p>Against Letters, Various Individuals¹⁷</p> <p>The wild horses should be left alone to forage and reproduce freely on the rangeland. Forage allocations should be fairly adjusted with domestic livestock. Emphasis should be placed on natural control methods such as predation. The use of Holistic management practices should be applied and AML levels and/corresponding HMA boundaries require adjustments. PZP causes sterilization and the use of it will cause band extinction. PZP does not stop gathers. The use of PZP is more appropriate on privately owned horses and not on wildlife.</p> <p>Concerns were expressed over notifying the public of the proposed action and the length time offered for public comment.</p>
12	<p>BLM Response: Refer to responses to comments # 7 and 8.</p> <p>The Act mandates the BLM to manage wild horses in an environmental sound manner. Allowing wild horses to reproduce freely does not meet this mandate.</p> <p>The HMA boundary and AML numbers were previously addressed by the SLFO in EA Wild Horse Appropriate Management Level and Herd Management Area/Herd Area Boundary Environmental Assessment, EA UT 020-2002-0100 and its corresponding DR/FONSI issued on 2/19/2003. Forage allocations were accommodated for wild horses, livestock, wildlife and watershed requirements.</p> <p>Additional information and links to BLM wild horse webpages were added to section 1.2.</p> <p>From 1992 to 2011 the Center for Veterinary Medicine at FDA was the regulatory authority for PZP. The use of the vaccine was authorized in horses, deer and captive wildlife through something called INADs (Investigational New Animal Drug exemptions). The next step in the FDA process is to acquire a New Animal Drug Application (NADA). This takes 10-15 years to get approval and would allow the drug to be produced commercially and sold either over the counter or by prescription for profit.</p> <p>Those making the PZP had no intentions of making it a commercial drug. The FDA was evaluating its procedures at that time.</p> <p>In 2005 the FDA signed a MOU with the EPA giving the EPA the regulatory authority for</p>

¹⁶ The content of the "form" comment letters is summarized. The form letters contained exact language/content, with some minor editing done by individuals using a web base for submitting their comments to the SLFO. Originals are available for public inspection at the SLFO.

¹⁷ The content of the "against" comment letters is summarized. Originals are available for public inspection at the SLFO.

#	Comment Letter/BLM Response
	<p>wildlife contraceptives for free-ranging wildlife; FDA retained authority for companion animals and captive wildlife.</p> <p>EPA has no office for wildlife contraceptives, so it is categorized as a pesticide. The same drug is listed as a contraceptive vaccine by the FDA.</p> <p>The BLM and the State of Utah do not consider wild horses to be wildlife. Wildlife are managed by the State government in which they occur. Wild horses are federally managed in accordance with the Act as codified in 43 CFR 4700. BLM does not have jurisdiction over predator numbers or hunting rules including the area occupied by the HMA. PZP has been widely used on numerous species to successfully control population growth rates. While it is true that PZP fertility control treatments do not prevent the need for gathers; it is also true that successful fertility control measures do reduce the need for or the frequency of large gathers. Very little information was provided in supporting the commenter’s claims that PZP causes sterilization or that herds would be eliminated. SLFO used/incorporated accredited research. Changes to the proposed action or no action alternatives were not warranted.</p>

5.5 Summary

This chapter has summarized the consultation, and coordination used in preparing this EA.

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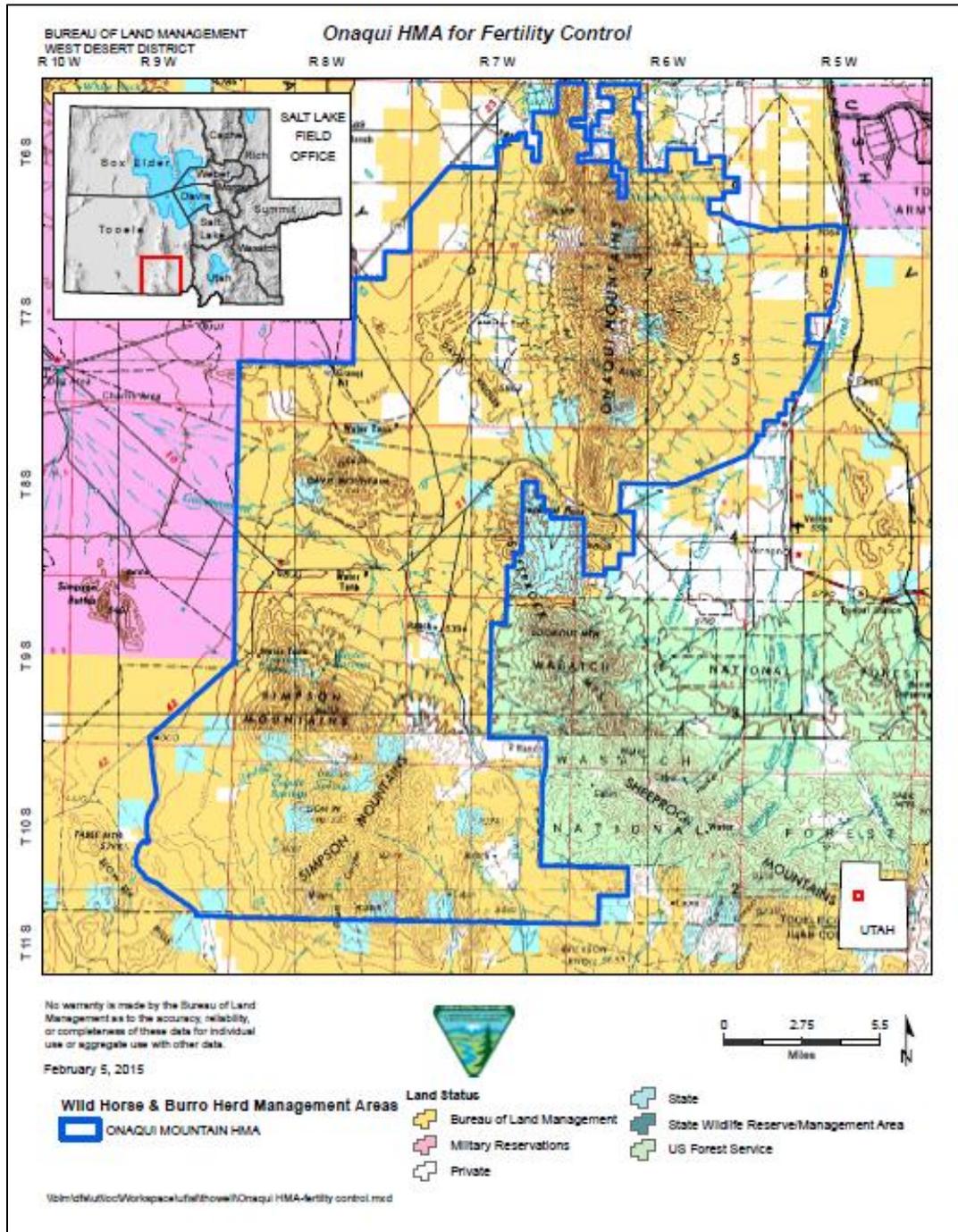
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6.2 Appendices

- A. Map
- B. Interdisciplinary Team Checklist
- C. Standard Operating and Post-Treatment Monitoring Procedures
- D. PZP Mixing Procedures
- E. Data Sheet

Appendix A, Map



Appendix B, Interdisciplinary Team Checklist

Project Title: Onaqui Mountain HMA Fertility Control

NEPA Log Number: DOI-BLM-UT-W010-2014-0021-EA

File/Serial Number: Not Applicable

Project Leader: Tami Howell

DETERMINATION OF STAFF:

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination	Signature	Date
Resources and Issues Considered (Includes Supplemental Authorities Appendix 1, H-1790-1).				
NI	Air Quality	The project is small scale and would not conflict with Utah's Dept. of Air Quality's (DAQ) State Implementation Plan (SIP); National Ambient Air Quality Standards (NAAQS) would not be exceeded. The project area is located within an attainment airshed. Emissions from vehicle traffic and fugitive dust could affect air quality in the local area while vehicle are being used in association with fertility control efforts. The proposed action would have no impact on Air Quality.	/s/ Pamela Schuller	10/24/14
NP	Areas of Critical Environmental Concern	There are no ACECs within the project area.	/s/ Pamela Schuller	10/24/14
NP	Cultural Resources	Class III Inventory not required for this project.	/s/ Mike Sheehan	10/23/14
NI	Environmental Justice	As defined in EO 12898, minority, low income populations and disadvantaged groups may be present within the project area. The project would not cause any disproportionately high and adverse effects on minority or low income populations. Visitors to the area would still be able to view wildhorses.	/s/ Pamela Schuller	10/24/14
NP	Farmlands (Prime or Unique)	Prime or unique farmlands may be present in the project area. However, the proposed action does not call for irrigation or other soil management actions.	/s/ Dylan Tucker	10/22/14
NP	Fish Habitat	There are no streams in the project area that support fish.	/s/ Chris Bryan	10/22/14

Determination	Resource	Rationale for Determination	Signature	Date
NI	Floodplains	Floodplains, as defined by EO 11988, FEMA, HUD, Corps of Engineers and the LUP, are not present. The project would not affect a county's ability to obtain and/or maintain Federal flood insurance.	/s/ Dylan Tucker	10/22/14
NI	Fuels/Fire Management	The proposed action would have no impact on fire and fuels management.	/s/ Brad Jessop	9/16/14
NI	Geology / Mineral Resources/Energy Production	The proposed action would not affect any potential mineral resources or potential energy production.	/s/Larry Garahana	10/23/14
NI	Greenhouse Gas Emissions	No standards have been set by EPA or other regulatory agencies for greenhouse gases. In addition, the assessment of greenhouse gas emissions and their impacts on climate change is still in its earliest stages of formulation. Global scientific models are inconsistent, and regional or local scientific models are lacking so that it is not technically feasible to determine the net impacts to climate due to greenhouse gas emissions. It is anticipated that greenhouse gas emissions associated with this action and its alternative(s) would be negligible.	/s/ Pamela Schuller	10/24/14
NI	Invasive Species/Noxious Weeds (EO 13112)	The proposed action would have no impact on Invasive Species/Noxious Weeds. A PUP would not be required.	/s/ Anthony VonNiederhausen	8/26/14
NI	Lands/Access	In order for the proposed action to remain an NI, access with motorized vehicles should be kept to existing roads.	/s/ Mary Higgins	10/28/14
NI	Livestock Grazing	No impact to livestock grazing would occur from this action. Changes to grazing permits are not warranted.	/s/ Dylan Tucker	10/23/14
NI	Migratory Birds	While migratory birds are present in the area, the proposed action would have no impact on nesting or breeding habitats.	/s/ Chris Bryan	10/23/14
NI	National Historic Trails	No impact to Pony Express NHT resources. Proposed actions would be localized and temporary.	/s/ Ray Kelsey	9/9/14
NI	Native American Religious Concerns	The following Tribes were consulted via certified letter on May 16, 2014: Confederated Tribes of the Goshute Reservation, Skull Valley Band of the Goshute Tribe, Paiute Tribe, and Ute Indian Tribe. No comments or concerns were expressed by the tribes.	/s/ Pamela Schuller	10/24/14

Determination	Resource	Rationale for Determination	Signature	Date
NP	Paleontology	There are no known significant paleontological resources within the proposed area; therefore, the proposed action would not affect any paleontological resources. The action is not surface disturbing.	/s/Larry Garahana	10/23/14
NI	Property Boundary Evaluation	The project would have no effect on property boundaries. Some townships in this area are unsurveyed, however, cadastral field surveys are not required for administering fertility control measures.	/s/ Pamela Schuller	10/24/14
NI	Rangeland Health Standards	No impact to rangeland health would occur from this action. The action is not surface disturbing.	/s/ Dylan Tucker	10/23/14
NI	Recreation	No impact to recreation resources, opportunities, or experiences in the project area. Proposed activities would be localized and temporary.	/s/ Ray Kelsey	9/9/14
NI	Sage Grouse Habitat	No impact to sage grouse habitat would occur from the fertility control drug application activity.	/s/ Chris Bryan	10/22/14
NI	Socio-Economics	No quantifiable additional or decreased economic impact to the local area would be caused by the proposed action. Wildhorses would still be present and the public would still have viewing opportunities.	/s/ Pamela Schuller	10/24/14
NI	Soils	Surface disturbing activity is not proposed. No impact to soils would occur from this action.	/s/ Dylan Tucker	10/23/14
NI	Threatened, Endangered, Candidate or Special Status Plant Species	Listed species are not present. No impact to Threatened, Endangered, Candidate or Special Status Plant Species would occur from this action. Darting individual mares has no possibility of affecting plants.	/s/Rodd Hardy	10/24/14
NI	Threatened, Endangered, Candidate or Special Status Animal Species	Listed species are not present. No impact to Threatened, Endangered, Candidate or Special Status Animal Species would occur from this action. Only wildhorses would be targeted at trap sites and darted.	/s/ Chris Bryan	10/22/14
NI	Vegetation Excluding Special Status Species	No impact to the vegetation would be expected to occur to the vegetation. Activity is not surface disturbing.	/s/ Dylan Tucker	10/23/14
NI	Visual Resources	No new surface disturbances would be caused by the proposed action.	/s/ Ray Kelsey	9/9/14

Determination	Resource	Rationale for Determination	Signature	Date
NP	Wastes (hazardous or solid)	Solid or hazardous wastes not anticipated to be stored, disposed of, handled, or transported. Should solid or hazardous wastes be discovered they should be reported to BLM and the State, if in excess of reportable quantities (RQs). Fertility control medication would be stored in approved containers in a secured manner at the SLFO.	/s/Wanda Grey	10/22/14
NI	Wetlands/Riparian Zones	While springs/streams may be present within the herd area, they are not affected by the proposed action.	/s/ Dylan Tucker	10/23/14
NP	Wild and Scenic Rivers	Resource is not present.	/s/ Ray Kelsey	9/9/14
NP	Wilderness/WSA	Resource is not present.	/s/ Ray Kelsey	9/9/14
NI	Lands with Wilderness Characteristics	No impacts to potential lands with wilderness character. Activity is not surface disturbing.	/s/ Ray Kelsey	9/9/14
PI	Wild Horses and Burros	This project could impact the horses. Mares would be the most impacted as they would be receiving the fertility control drugs. These impacts could be minimized by following the SOPs.	/s/ Tami Howell	8/27/14
NI	Wildlife Excluding Special Status Species	Action does not change forage allocations to wildlife. Wildlife would not be targeted.	/s/ Chris Bryan	10/22/14
NI	Woodland / Forestry	No impact will occur on the existing juniper and pinyon trees. Project would not disrupt woodland harvesting activities.	/s/Rodd Hardy	10/24/14

FINAL REVIEW

Reviewer Title	Signature	Date
Environmental Coordinator	<i>/s/ Pamela Schuller</i>	<i>5/1/15</i>
Authorized Officer	<i>/s/ Rebecca Hotze</i>	<i>5-1-15</i>

Appendix C, Standard Operating and Post-Treatment Monitoring Procedures

Standard Operating Procedures for Population-Level Fertility Control Treatments One-Year Liquid Vaccine

The following implementation and monitoring requirements are part of the Proposed Action:

1. PZP vaccine would be administered through darting by trained BLM personnel or collaborating partners only. For any darting operation, the designated personnel must have successfully completed a nationally recognized wildlife darting course and who have documented and successful experience darting wildlife under field conditions.
2. All mares targeted for treatment will be clearly identifiable through photographs to enable darters and HMA managers to positively identify the animals during the project and at the time of removal during subsequent gathers.
3. Mares that have never been treated would receive 0.5 cc of PZP vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA) and loaded into darts at the time a decision has been made to dart a specific mare. Mares identified for re-treatment receive 0.5 cc of the PZP vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
4. The liquid dose of PZP vaccine is administered using 1.0 cc Pneu-Darts with 1.5" barbless needles fired from either Dan Inject® or Pneu-Dart® capture gun.
5. Only designated darters would mix the vaccine/adjuvant and prepare the emulsion. Vaccine-adjuvant emulsion would be loaded into darts at the darting site and delivered by means of a capture gun.
6. Delivery of the vaccine would be by intramuscular injection into the left or right hip/gluteal muscles while the mare is standing still.
7. Safety for both humans and the horse is the foremost consideration in deciding to dart a mare. The Dan Inject® gun would not be used at ranges in excess of 30 m while the Pneu-Dart® capture gun would not be used over 50 m, and no attempt would be taken when other persons are within a 30-m radius of the target animal.
8. No attempts would be taken in high wind (greater than 15 mph) or when the horse is standing at an angle where the dart could miss the hip/gluteal region and hit the rib cage. The ideal is when the dart would strike the skin of the horse at a perfect 90° angle.
9. If a loaded dart is not used within two hours of the time of loading, the contents would be transferred to a new dart before attempting another horse. If the dart is not used before the end of the day, it would be stored under refrigeration and the contents transferred to another dart the next day. Refrigerated darts would not be used in the field.
10. No more than two people should be present at the time of a darting. The second person is responsible for locating fired darts. The second person should also be responsible for identifying the horse and keeping onlookers at a safe distance.
11. To the extent possible, all darting would be carried out in a discrete manner. However, if darting is to be done within view of non-participants or members of the

public, an explanation of the nature of the project would be carried out either immediately before or after the darting.

12. Attempts will be made to recover all darts. To the extent possible, all darts which are discharged and drop from the horse at the darting site would be recovered before another darting occurs. In exceptional situations, the site of a lost dart may be noted and marked, and recovery efforts made at a later time. All discharged darts would be examined after recovery in order to determine if the charge fired and the plunger fully expelled the vaccine. Personnel conducting darting operations should be equipped with a two-way radio or cell phone to provide a communications link with the Project Veterinarian for advice and/or assistance. In the event of a veterinary emergency, darting personnel would immediately contact the Project Veterinarian, providing all available information concerning the nature and location of the incident.
13. In the event that a dart strikes a bone or imbeds in soft tissue and does not dislodge, the darter would follow the affected horse until the dart falls out or the horse can no longer be found. The darter would be responsible for daily observation of the horse until the situation is resolved.

Monitoring and Tracking of Treatments

1. At a minimum, estimation of population growth rates using helicopter or fixed-wing surveys will be conducted before any subsequent gather. During these surveys it is not necessary to identify which foals were born to which mares; only an estimate of population growth is needed (i.e. # of foals to # of adults).
2. Population growth rates of herds selected for intensive monitoring will be estimated every year post-treatment using helicopter or fixed-wing surveys. During these surveys it is not necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of adults). If, during routine HMA field monitoring (on-the-ground), data describing mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.
3. A PZP Application Data sheet will be used by field applicators to record all pertinent data relating to identification of the mare (including photographs if mares are not freeze-marked) and date of treatment. Each applicator will submit a PZP Application Report and accompanying narrative and data sheets will be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
4. A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and State along with the freeze-mark(s) applied by HMA and date.

Appendix D, PZP Mixing Procedures

Mixing Vaccine and Adjuvant

Equipment Needed

2 5.0 cc glass syringes

1.5 inch needle

vial of adjuvant

vial of PZP

Luer-Lok connector

1.0 cc C-type or P-type Pneu-Dart dart with 1.5 inch barbless needle

Procedures

1. Place the 1.5 inch needle on a glass syringe
2. Draw out 0.5 cc of adjuvant
3. Using the same syringe, draw up the 0.5 cc of PZP
4. Holding the syringe very carefully (because the plunger can slip out), take off the needle and attach the syringe to the second syringe using the Luer-Lok connector (have the Luer-lok connector already attached to the second syringe).
5. Push the PZP-adjuvant mixture back and forth through the two syringes 100 times. The resulting emulsion will become thick and look white. **THIS PROCEDURE IS VERY IMPORTANT AND IS RELATED TO THE PRESENTATION OF THE ANTIGEN AND THE SUBSEQUENT EFFICACY OF THE VACCINE.**
6. Make sure all the emulsion is in one syringe.
7. Holding the first syringe very carefully (the one with the emulsion), remove the second syringe, leaving the Luer-Lock on the first syringe.
8. If you are loading a 2.0 or 3.0 mL plastic syringe for hand-delivery, attach the glass syringe to the plastic syringe and inject the PZP emulsion in to the plastic syringe. It is helpful if you move the plunger of the plastic syringe just a bit before pumping the PZP emulsion into it. After loading the plastic syringe, disconnect the glass syringe and connect an 18g. 1.5 inch needle on the plastic syringe.

Appendix E, Data Sheet

HORSE IMMUNOCONTRACEPTION DATA SHEET

HORSE MANAGEMENT AREA: Onaqui Mountain HMA

HORSE IDENTIFICATION NUMBER/NAME: _____

HORSE COLOR: _____

OTHER MARKINGS/BRANDS: _____

Inoculation Dates	PZP Dose (μg) ¹⁸	Adjuvant	Delivery System ¹⁹	Injection Site ²⁰	Vaccine Lot Number
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POST-INOCULATION REPRODUCTIVE HISTORY (Diagnosed pregnancies and/or births) DESCRIBE ANY:

¹⁸ Standard dose is 100 μg with raw vaccine

¹⁹ Pneu-Dart unless otherwise noted

²⁰ Left or right hip

